**MINUTES OF THE 120TH MEETING OF STATE LEVEL EXPERT APPRAISAL COMMITTEE (SEAC), JHARKHAND HELD ON 20TH, 21ST, 22ND, 23RD AND 24TH JANUARY, 2025.**

The 120th meeting of State Level Expert Appraisal Committee (SEAC), Jharkhand was held on 20th, 21st, 22nd, 23rd and 24th January, 2025 under the Chairmanship of Shri Ashok Kumar Singh, IFS (Retd.) in the Conference Room at SEAC, Ranchi.

The following members were present:

| | | |
|---|---|---|
| 1. | Shri Ashok Kumar Singh, IFS (Retd.) | - Chairman |
| 2. | Shri Niranjan Lal Agarwalla | - Member |
| 3. | Dr. Raju Kumar | - Member (Not present on 20.01.2025) |
| 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 17th, 18th, 19th, 20th, 21st and December, 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 : January 20th, 2025 [Monday]**

A. **Deputy Commissioner –cum- District Magistrate, Sahibganj or through authorized representative.**

i. **Final District Survey Report (DSR) for Minor Minerals other than Sand Mining or River Bed Mining (Stone / Earth Work), Distt. Sahibganj.**

The Final DSR was submitted by Deputy Commissioner, Sahibganj. He was represented by Shri Krishna Kumar Kisku, District Mining Officer, Sahibganj at the SEAC meeting on 20.01.2025.

During the meeting the DMO, Sahibganj 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 18.10.2024. 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 / Earth Work) of District Sahibganj is recommended to SEIAA for approval.**

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

i. **Revised District Survey Report (DSR) for Minor Minerals other than Sand Mining or River Bed Mining (Stone / Earth Work), Distt. Bokaro.**

The DSR for Bokaro District for Minor Minerals other than Sand Mining or River Bed Mining (Stone / Earth Work) was appraised in 103rd meeting of SEAC held during 14 – 18.04.2023 and approved by SEIAA in its 104th meeting held during 27 – 28.04.2023.

The Deputy Commissioner, Bokaro vide letter no. 67/M, dated 16.01.2025 has submitted revised DSR by including the other left out potential area for mining activity.

This revised and updated DSR was taken up for appraisal at the SEAC meeting on 20.01.2025. He was represented by Shri Ravi Kumar Singh, District Mining Officer, Bokaro.

During the meeting the DMO, Bokaro 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 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 revised and updated DSR for Minor Minerals other than Sand Mining or River Bed Mining (Stone / Earth Work) of District Bokaro is recommended to SEIAA for approval.**

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C. **Letter no. 42/Khanan, dated 09.01.2025 of District Mining Officer, Chatra regarding application for Environmental Clearance of Gerua Stone Mine of M/s Satya Stone Mines (Prop. : Shri Kamlesh Prajapati), Village : Gerua, Thana : Hunterganj, Distt. : Chatra, Jharkhand (4.52 Acre). (Proposal no.: SIA/JH/MIN/ 505783 /2024)**

Letter no. 42/Khanan, dated 09.01.2025 of District Mining Officer, Chatra addressed to Member Secretary, SEIAA referring to the cluster certificate memo no. 1171/Khanan, dated 28.10.2024.

The Committee has taken in to consideration the statements made in the letter from DMO, Chatra and is of the opinion as follows :

**The cluster certificate states that there is existence of only 01 mine for which Letter of Intent (LoI) has been granted, namely Gerua Stone Mine of M/s Satya Stone Mines (Prop. : Shri Kamlesh Prajapati), Village : Gerua, Thana : Hunterganj, Distt. : Chatra, Jharkhand (4.52 Acre). It further states that 03 other mines have submitted application for consideration for grant of LoI.**

It is evident that the DMO, Chatra is not aware of the definition of cluster as clarified in the Gazette Notifications issued by MoEF&CC, Govt. of India. Mere submission of application for grant of LoI are not considered as part of cluster.

Further the Committee is of the view that the decision taken in 119th meeting of SEIAA and SEAC is correct.

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D. **Consideration of proposals :**

1. **Suggapahari Stone Mine of M/s Ganpati Stone Works (Partners : Shri Sanjay Kumar Mandal & Shri Sudeep Kumar), Village : Suggapahari, Thana : Gopikandar, Distt. : Dumka, Jharkhand (1.43 Ha).**

**(Proposal no.: SIA/JH/MIN/ 506236 /2025)**

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

This is a new project which has been taken for appraisal on 20.01.2025.

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

**Application for Environmental Clearance (EC).**

**EC Application for: Proposed Capacity: 39561 Cum. / annum or 106814 TPA**

**Project and Location Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Suggapahari Stone Mine | |
| 2 | Lessee: | : | Partners :<br>1.Shri Sanjay Kumar Mandal<br>2. Shri Sudeep Kumar | |
| 3 | Lessee Address | : | **1.Shri Sanjay Kumar Mandal**<br>S/o Late Sushil Mandal<br>R/o Vill- Kharauni bazar, PO- Karudih, PS- Gopikandar,Dumka,<br>**2. Shri Sudeep Kumar**<br>S/o Mahendra Prasad Sah<br>R/o Vill- Dangalpara, Hajla road, PO+PS+Dist- Dumka. | |
| 4 | Lease Area | : | 1.43 Ha | |
| 5 | Type of Land | : | Non Forest Raiyati Land | |
| 6 | Project Cost | | Capital Cost: Rs. 99.38 Lakhs | Recurring Cost: Rs. 9.38 |

| | | | | |
|---|---|---|---|---|
| | | | | Lakhs |
| 7 | EMP Budget | : | Capital Cost: Rs. 4.40Lakhs | Recurring Cost: Rs5.37Lakhs |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves | : | cum.: - 147710 Cum | Tonnes : 398816 Tons |
| 10 | Mine Life | : | 5 years. | |
| 11 | Man power | : | 16 Person | |
| 12 | Water Requirement | : | 6.58 KLD (Drinking: 0.240KLD, Dust Suppression: 3.6 KLD, Plantation: 2.736 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 | : | Brahmani River –9 km North Direction | |
| 17 | Nearest Habitation | : | Suggapahari village – 0.650 km | |
| 18 | Nearest Rail Station | : | Pakdaha Harinsing Railway Station is at Aerial distance of 25 km South East direction | |
| 19 | Nearest Air Port | : | Deoghar Airport is at Aerial distance of 90 km W direction. | |
| 20 | Nearest Forest | : | More than 250 m, as per Division Forest Officer Dumka . letter no.- 1154 Dated- 20/05/2021 | |
| 21 | Road & Highways | : | A well motorable road is connected to the mine site at a distance of 9 m North direction, this road connects to a village road, after 4.62 km it is connected to SH 18 (Dumka – Sahibganj) North West, from the mine site. | |

**CO-ORDINATES**

| Point Name | Latitude | Longitude |
|---|---|---|
| 1 | 24° 26' 03.44900387" N | 087° 31' 59.83255124" E |
| 2 | 24° 26' 04.14031732" N | 087° 32' 01.06477213" E |
| 3 | 24° 26' 04.73420805" N | 087° 32' 02.29337709" E |
| 4 | 24° 26' 05.17577893" N | 087° 32' 03.93808726" E |
| 5 | 24° 26' 05.41836677" N | 087° 32' 04.88981482" E |
| 6 | 24° 26' 05.18095505" N | 087° 32' 04.85949295" E |
| 7 | 24° 26' 04.51582201" N | 087° 32' 04.58242690" E |
| 8 | 24° 26' 03.83861033" N | 087° 32' 04.28868383" E |
| 9 | 24° 26' 03.13983034" N | 087° 32' 03.84806923" E |
| 10 | 24° 26' 02.34856853" N | 087° 32' 03.37675373" E |
| 11 | 24° 26' 01.67773756" N | 087° 32' 02.94011887" E |

| | | |
|---|---|---|
| 12 | 24° 26' 00.94065053" N | 087° 32' 02.48832307" E |
| 13 | 24° 26' 00.52103491" N | 087° 32' 02.31548844" E |
| 14 | 24° 26' 00.17043471" N | 087° 32' 02.27910220" E |
| 15 | 24° 25' 59.63211106" N | 087° 32' 02.31548844" E |
| 16 | 24° 25' 59.63487169" N | 087° 32' 01.62718209" E |
| 17 | 24° 25' 59.56395786" N | 087° 32' 00.89642513" E |
| 18 | 24° 25' 59.45612049" N | 087° 31' 59.87306218" E |
| 19 | 24° 25' 59.41298554" N | 087° 31' 59.67407493" E |
| 20 | 24° 25' 59.55757388" N | 087° 31' 59.38336405" E |
| 21 | 24° 26' 00.00000000" N | 087° 31' 59.43448619" E |
| 22 | 24° 26' 00.40806923" N | 087° 31' 59.50725867" E |
| 23 | 24° 26' 00.89471368" N | 087° 31' 59.66171877" E |
| 24 | 24° 26' 00.86997845" N | 087° 32' 00.49035471" E |
| 25 | 24° 26' 00.85663493" N | 087° 32' 01.07173858" E |
| 26 | 24° 26' 01.52864505" N | 087° 32' 01.13541911" E |
| 27 | 24° 26' 01.50009738" N | 087° 32' 00.63173095" E |
| 28 | 24° 26' 01.48461419" N | 087° 32' 00.15455548" E |
| 29 | 24° 26' 01.79908466" N | 087° 32' 00.02517154" E |
| 30 | 24° 26' 02.11943708" N | 087° 32' 00.03831634" E |
| 31 | 24° 26' 02.92835497" N | 087° 32' 00.05885246" E |
| 32 | 24° 26' 03.18716262" N | 087° 31' 59.91198093" E |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 22 | 201 (P) |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 774/M, dated 05.07.2024. |
| 2 | CO | : | The CO, Gopikandar vide letter no. 329/Ra., dated 15.07.2021 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. 167/M, dated 10.02.2024 certified that no other mining lease area exists within 500 meters radius |

| | | | |
|---|---|---|---|
| | | | from proposed project site. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Hazaribag vide letter no. 795, dated 09.05.2024 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. 1154, dated 20.05.2021 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Dumka District (Sl. no. 31, Page no. 155). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 10.04.2021. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Dumka vide Letter No. 1248/M, dated 01.11.2024. |
| 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 | : | 1.43 Ha | Life of Mine – 5year |
| 3 | Waste Generation | : | 22239 cum | |
| 4 | Stripping Ratio | : | 29:50 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size | : | 6 m x 6 m, | |
| 7 | Elevation of Mine | : | 184mAMSL | |
| 8 | Ground Level Elevation | : | 176 m AMSL | |
| 9 | Ultimate Working Depth | : | 151.5 m AMSL | |
| 10 | Water Table | : | Post Monsoon – 99m AMSL Pre Monsoon – 94m AMSL | |
| 11 | Topography of Mine | : | Area represents gently sloping land. | |
| 12 | Explosive Requirement | : | 36.45 kg Slurry explosives/day | |
| 13 | Diesel/Fuel requirement | : | HSD –260 liters / day (78 KL/year) | |

Production Details

| Year | Production of Stone / Year | | | Per Day Production | | Removal of O.B. | |
|---|---|---|---|---|---|---|---|
| | Cum recoverable 95% | T.F. | Tonnes | Cum | Tonnes | Cum | Production per day cum (O.B. |
| 1st | 38065 | 2.7 | 102774 | 127 | 343 | 22239 | 74 |
| 2nd | 39561 | 2.7 | 106814 | 132 | 356 | 0 | 0 |
| 3rd | 31661 | 2.7 | 85484 | 106 | 285 | 0 | 0 |
| 4th | 23760 | 2.7 | 64153 | 79 | 214 | 0 | 0 |
| 5th | 14663 | 2.7 | 39591 | 49 | 132 | 0 | 0 |
| Total | **147710** | 2.7 | **398816** | **132 (max)** | **356 (max)** | **22239** | **74** |

Land Use

Existing Land Use pattern

| SL. No. | Pattern | Existing Land Use (Ha) |
|---|---|---|
| 1 | Mining Activities | 0.000 |
| 2 | Offices/ Store etc. | 0.000 |
| 3 | Dumping | 0.000 |
| 4 | Mining Road | 0.000 |
| 5 | Garland drain | 0.000 |
| 6 | Settling Tank | 0.000 |
| 7 | Green belt | 0.000 |
| 8 | Safety Zone | 0.000 |
| 9 | Stone Stock yards | 0.000 |
| 10 | Unutilized | 1.430 |
| 11 | Crusher | 0.000 |
| **Total** | | **1.430** |

Land Use Pattern for Proposed Plan Period:

| Sl. No. | Pattern of Utilization | Proposed Land use for current plan period (Ha.) | Area to be converted in the conceptual period. |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 1 | Mining Activities | 0.822 | Water body |
| 2 | Offices/ Store etc. | 0.002 | Plantation |
| 3 | Dumping | 0.104 | Plantation - |
| 4 | Mining Road | 0.000 | Water body |
| 5 | Garland drain | 0.030 | - |
| 6 | Settling Tank | 0.015 | - |
| .7 | Green belt | 0.000 | Green Belt |
| 8 | Safety Zone | 0.416 | Plantation |
| 9 | Stone Stock yards | 0.000 | |
| 10 | Unutilized | 0.041 | |
| 11 | Crusher | 0.000 | |
| **Total** | | 1.430 | - |

Land Use Pattern after Life of the Mine:

| Si. No. | Pattern of Utilization | Land used at the conceptual stage i.e. end of mine life in (Ha.) | Area to be converted in the conceptual period. |
|---|---|---|---|
| 1 | Mining Activities | 0.822 | Water body |
| 2 | Offices/ Store etc. | 0.002 | Plantation |
| 3 | Dumping | 0.104 | Plantation - |
| 4 | Mining Road | 0.000 | Water body |
| 5 | Garland drain | 0.030 | - |
| 6 | Settling Tank | 0.015 | - |
| 7 | Green belt | 0.041 | Green Belt |
| 8 | Safety Zone | 0.416 | Plantation |
| 9 | Stone Stock yards | 0.000 | |
| 10 | Unutilized | 0.000 | |
| 11 | Crusher | 0.000 | |
| **Total** | | 1.430 | - |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

| S. No. | Location | | Area/Length | No of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | | 0.416+ 0.147Ha | 900 |
| 2 | Along Approach | | 9 m | 12 |

| | | | | |
|---|---|---|---|---|
| | Road | | | |
| TOTAL | | | | 912 Trees |

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

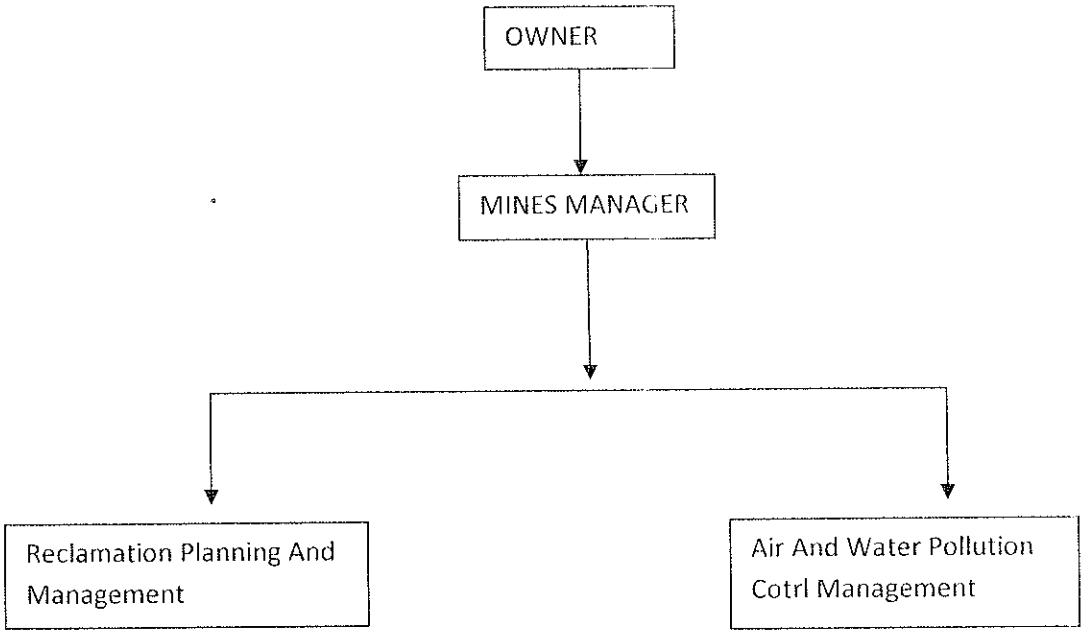
- **Budget for Environmental Management**

| Sl. No. | Particulars | Capital Cost in Rs. | Recurring Cost in Rs. per year |
|---|---|---|---|
| 1 | Water facility for Dust Suppression, watering plants etc. (Rs. 1100 per Tanker) | -- | 3,30,000 |
| 2 | Plantation:<br>12X 800 = Rs 9600 (Gabion Plantation along approach road)<br>900 X 400 = 3,00,000 (Plantation within lease area)<br>(also includes Fertilizer, Pesticides, Maintenance) | 3,69,600 | 3660 |
| 3 | Fencing | 70,000 | |
| 4 | Environmental Monitoring (One Day Monitoring)<br>• Ambient Air 24 hrs (3 point) -Rs.27,270<br>• Ground Water (2 point) -Rs.12,420<br>• Noise 24 hrs (3 point) -Rs.21,000<br>• Soil (3 point) -Rs.40,920<br>**Total -Rs. 1,01,610 (Per Season)**<br>**At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220**<br>**Source: Central Pollution Control Board**<br>**Notification, New Delhi, the 23rd February, 2022** | -- | 2,03,220 |
| Total | | **4,39,600** | **5,36,880** |

Environment Monitoring Programme :

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

Organization Structure




**Solid Waste Management**

During first year 22239 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 Suggapahari Stone Mine of M/s Ganpati Stone Works (Partners : Shri Sanjay Kumar Mandal & Shri Sudeep Kumar), Village : Suggapahari, Thana : Gopikandar, Distt. : Dumka, Jharkhand (1.43 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"EkPed Ma KeNaam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

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

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

**********

2. **Hathbari Stone Deposit of M/s Limeswood Construction Pvt. Ltd. (Partners : (i) Shri Avinash Kumar (ii) Shri Sanjay Kumar Singh (iii) Om Prakash Sharma), Village : Hathbari, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.80 Ha).**

**(Proposal no.: SIA/JH/MIN/ 513962 /2025)**

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

This is a new project which has been taken for appraisal on 20.01.2025.

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

**Application for Environmental Clearance (EC).**

**EC Application for: Proposed Capacity: 50550 Cum. / annum or 136484 TPA**

**Project and Location Details:**

| Sl | Parameter | | Details |
|---|---|---|---|
| 1 | Project Name | : | Hathbari Stone Deposit |
| 2 | Lessee: | : | M/S Limeswood Construction Pvt. Ltd<br>Director:<br>1. Shri Avinash Kumar,<br>2. Shri Sanjay Kumar Singh,<br>3. Shri Om Prakash Sharma |
| 3 | Lessee Address | : | **C/O - Shri Avinash Kumar**<br>S/o-Shri Sudheshwar Singh<br>R/o 2540, Gandhi Nagar, Ashiana, Patna, Bihar, Pin - 800025.<br>**Shri Sanjay Kumar Singh**<br>S/o- Shri Thakur Lalan Prasad Singh<br>Flat No. 402-A , Jagsuman Apartment,Aryan Nagar Argora Kathal Mor Road , Pundag Ranchi ,State – Jharkhand ,834004<br>**Shri Om Prakash Sharma** |

| | | | | |
|---|---|---|---|---|
| | | | S/o- Shri dal Chandra Sharma<br>Village & P.o- Asaholi , P.s- Raipur ,Dist- Bhilwara, State- Rajasthan , 311801 | |
| 4 | Lease Area | : | 2.80 Ha | |
| 5 | Type of Land | : | Non Forest Raiyati Land | |
| 6 | Project Cost | | Capital Cost: Rs. 99.38 Lakhs | Recurring Cost: Rs. 9.38 Lakhs |
| 7 | EMP Budget | : | Capital Cost: Rs. 9.55 Lakhs | Recurring Cost: Rs. 6.19 Lakhs |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves | : | cum.: 237272 cum | Tonnes: 640634 tons |
| 10 | Mine Life | : | 5 years. | |
| 11 | Man power | : | 31 Person | |
| 12 | Water Requirement | : | 7.3 KLD (Drinking: 0.465 KLD, Dust Suppression: 0.8 KLD, Plantation: 6.812 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 | : | The nearest water source is BrahmaniRiver flowing East to West at 7.47 km North Direction from the Deposit site. | |
| 17 | Nearest Habitation | : | Hathbari Village – 1 Km | |
| 18 | Nearest Rail Station | : | PinargariaRailway Station at areal distance of 2.70 km in North direction. | |
| 19 | Nearest Air Port | : | Deoghar Airport is at areal distance of 98.4 km NW direction. | |
| 20 | Nearest Forest | : | More than 250 m, as per Division Forest Officer Dumka. letter no.- 111 Dated- 12/01/2024 | |
| 21 | Road & Highways | : | The distance of Approach Road is 100m, after that this road connects to village road. The village road continues for 2.11 km and after this the road connects to MDR Sarasdangal to Shikaripara. | |

**CO-ORDINATES**

| Point NO. | Latitude | Longitude |
|---|---|---|
| 1 | 24° 11' 22.17180463" N | 087° 37' 44.75328950" E |
| 2 | 24° 11' 22.44835669" N | 087° 37' 45.17394687" E |
| 3 | 24° 11' 23.21275746" N | 087° 37' 44.89187446" E |
| 4 | 24° 11' 23.64360024" N | 087° 37' 44.49052979" E |

| | | |
|---|---|---|
| 5 | 24° 11' 23.98883602" N | 087° 37' 44.69516080" E |
| 6 | 24° 11' 23.09655356" N | 087° 37' 47.52891347" E |
| 7 | 24° 11' 23.04880787" N | 087° 37' 48.70460938" E |
| 8 | 24° 11' 22.83685902" N | 087° 37' 49.51190386" E |
| 9 | 24° 11' 22.13522920" N | 087° 37' 51.37618163" E |
| 10 | 24° 11' 21.89701415" N | 087° 37' 51.08954986" E |
| 11 | 24° 11' 22.31371988" N | 087° 37' 50.26334441" E |
| 12 | 24° 11' 22.08975187" N | 087° 37' 50.20308192" E |
| 13 | 24° 11' 21.79772852" N | 087° 37' 50.02571841" E |
| 14 | 24° 11' 21.46031976" N | 087° 37' 49.76869627" E |
| 15 | 24° 11' 21.76235357" N | 087° 37' 48.909329 77" E |
| 16 | 24° 11' 21.00008314" N | 087° 37' 48.47114441" E |
| 17 | 24° 11' 20.87238948" N | 087° 37' 48.61530611" E |
| 18 | 24° 11' 20.51544715" N | 087° 37' 49.63019397" E |
| 19 | 24° 11' 19.09753706" N | 087° 37' 48.88371140" E |
| 20 | 24° 11' 18.76048651" N | 087° 37' 49.69576808" E |
| 21 | 24° 11' 18.32574085" N | 087° 37' 50.54445737" E |
| 22 | 24° 11' 18.16136924" N | 087° 37' 50.92469768" E |
| 23 | 24° 11' 18.07020342" N | 087° 37' 51.11234383" E |
| 24 | 24° 11' 17.65377009" N | 087° 37' 50.76483048" E |
| 25 | 24° 11' 17.93896760" N | 087° 37' 50.28156553" E |
| 26 | 24° 11' 18.27271593" N | 087° 37' 49.47413776" E |
| 27 | 24° 11' 18.08182672" N | 087° 37' 49.31660479" E |
| 28 | 24° 11' 17.83106849" N | 087° 37' 49.74350550" E |
| 29 | 24° 11' 17.49094490" N | 087° 37' 50.22126546" E |
| 30 | 24° 11' 17.05579096" N | 087° 37' 49.74601454" E |
| 31 | 24° 11' 17.76336892" N | 087° 37' 48.74608145" E |

| | | |
|---|---|---|
| 32 | 24° 11' 17.90214520" N | 087° 37' 49.04345677" E |
| 33 | 24° 11' 18.33997510" N | 087° 37' 48.25825284" E |
| 34 | 24° 11' 18.61400581" N | 087° 37' 47.69928099" E |
| 35 | 24° 11' 18.71746940" N | 087° 37' 47.28922164" E |
| 36 | 24° 11' 19.90913427" N | 087° 37' 47.74806533" E |
| 37 | 24° 11' 20.11541918" N | 087° 37' 47.34306440" E |
| 38 | 24° 11' 20.27533232" N | 087° 37' 46.88450152" E |
| 39 | 24° 11' 18.73563339" N | 087° 37' 46.08764075" E |
| 40 | 24° 11' 18.45127164" N | 087° 37' 46.81812982" E |
| 41 | 24° 11' 18.27401342" N | 087° 37' 46.74516150" E |
| 42 | 24° 11' 18.05600816" N | 087° 37' 47.45300709" E |
| 43 | 24° 11' 17.67312995" N | 087° 37' 48.56816297" E |
| 44 | 24° 11' 17.57309460" N | 087° 37' 48.44761683" E |
| 45 | 24° 11' 17.13959317" N | 087° 37' 49.06664414" E |
| 46 | 24° 11' 16.86446048" N | 087° 37' 49.41217105" E |
| 47 | 24° 11' 16.14382688" N | 087° 37' 48.48195943" E |
| 48 | 24° 11' 16.96822157" N | 087° 37' 47.67189555" E |
| 49 | 24° 11' 17.28166239" N | 087° 37' 46.65553848" E |
| 50 | 24° 11' 17.00355325" N | 087° 37' 46.52554828" E |
| 51 | 24° 11' 17.17108638" N | 087° 37' 46.04823634" E |
| 52 | 24° 11' 17.30665111" N | 087° 37' 46.10012269" E |
| 53 | 24° 11' 17.80094439" N | 087° 37' 45.22269737" E |
| 54 | 24° 11' 18.05312828" N | 087° 37' 44.65445469" E |
| 55 | 24° 11' 18.06761946" N | 087° 37' 44.47569293" E |
| 56 | 24° 11' 18.14951615" N | 087° 37' 44.11476738" E |
| 57 | 24° 11' 18.24230580" N | 087° 37' 43.76149091" E |
| 58 | 24° 11' 18.42900561" N | 087° 37' 43.87881740" E |

| | | |
|---|---|---|
| 59 | 24° 11' 18.65067113" N | 087° 37' 43.66195779" E |
| 60 | 24° 11' 19.01363136" N | 087° 37' 43.2753566630" E |
| 61 | 24° 11' 19.38266754" N | 087° 37' 43.01411277" E |
| 62 | 24° 11' 19.41720477" N | 087° 37' 42.89409214" E |
| 63 | 24° 11' 19.49803467" N | 087° 37' 42.89414444" E |
| 64 | 24° 11' 19.66268344" N | 087° 37' 42.91846898" E |
| 65 | 24° 11' 20.16009692" N | 087° 37' 42.62371897" E |
| 66 | 24° 11' 20.39523855" N | 087° 37' 42.46613115" E |
| 67 | 24° 11' 20.85558735" N | 087° 37' 42.65203764" E |
| 68 | 24° 11' 21.18120910" N | 087° 37' 42.93764315" E |
| 69 | 24° 11' 21.38368408" N | 087° 37' 43.31375326" E |
| 70 | 24° 11' 21.52056042" N | 087° 37' 43.56796577" E |
| 71 | 24° 11' 21.87370037" N | 087° 37' 44.29990336" E |

LAND DETAILS

| Khata no. | Plot no. |
|---|---|
| 17, 41, 20, 01, 38, 71, 55, 74, 75, 62, 28, 50, 67, 53, 76, 42, 15, 65, 24, 68, 09, 34, 27, 19, 14, 04, 36 | 1, 2, 3, 4/P, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16/P, 17/P, 18, 19, 20, 23, 24, 25, 26, 28/P, 30/P, 31/P, 32/P, 35/P & 42/P |

STATUTORY CLEARANCES

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 775/M, dated 06.07.2024. |
| 2 | CO | : | The CO, Shikaripara vide letter no. 155/Ra., dated 04.03.2024 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. 27/M, dated 04.01.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site. |

| | | | |
|---|---|---|---|
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Hazaribag vide letter no. 354, dated 26.02.2024 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. 111, dated 12.01.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Dumka District (Sl. no. 15, Page no. 151). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 06.07.2023. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Dumka vide Letter No. 1324/M, dated 06.12.2024. |
| 9 | Qualified Person | : | Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Semi-Mechanized Method | |
| 2 | Quarry Area | : | 2.80 Ha | Life of Mine – 5 year |
| 3 | Waste Generation | : | 27535cum | |
| 4 | Stripping Ratio | : | 07:10 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size | : | 2 m x 3 m, | |
| 7 | Elevation of Mine | : | 89 m AMSL | |
| 8 | Ground Level Elevation | : | 83 AMSL | |
| 9 | Ultimate Working Depth | : | 57 m AMSL | |
| 10 | Water Table | : | Post Monsoon – 22m AMSL Pre Monsoon – 17m AMSL | |
| 11 | Topography of Mine | : | Area represents gently sloping land. | |
| 12 | Explosive Requirement | : | 47.4 kg Nitro mix explosives | |
| 13 | Diesel/Fuel requirement | : | HSD – 329liters / day (98.7KL/year) | |

Production Details

| Year | Production of Stone / Year | | | Per Day Production | | Removal of O.B. | |
|---|---|---|---|---|---|---|---|
| | Cum | T.F. | Tonnes | Cum | Tonnes | Cum | Production per day cum (O.B.) |
| 1st | 38356 | 2.7 | 103562 | 128 | 345 | 27535 | 92 |
| 2nd | 49790 | 2.7 | 134432 | 166 | 448 | 0 | 0 |
| 3rd | 50350 | 2.7 | 135945 | 168 | 453 | 0 | 0 |
| 4th | 50550 | 2.7 | 136484 | 168 | 455 | 0 | 0 |
| 5th | 48227 | 2.7 | 130212 | 161 | 434 | 0 | 0 |
| Total | **237272** | **2.7** | **640634** | **168 (Max.)** | **455 (Max.)** | **27535** | **92** |

Land Use pattern

| Si. No. | Pattern of Utilization | Present/Existing land use pattern in (Ha.) | Land used at the conceptual stage i.e. end of Deposit life in (Ha.) | Area to be converted in the conceptual period. |
|---|---|---|---|---|
| 1 | Mining Activities | 0.000 | 1.550 | Water body |
| 2 | Offices/ Store etc. | 0.000 | 0.000 | Plantation |
| 3 | Dumping | 0.000 | 0.200 | Plantation |
| 4 | Mining Road | 0.000 | 0.000 | Water body |
| 5 | Garland drain | 0.000 | 0.060 | - |
| 6 | Settling Tank | 0.000 | 0.020 | - |
| 7 | Green belt | 0.000 | 0.000 | Green Belt |
| 8 | Safety Zone | 0.000 | 0.970 | Plantation |
| 9 | Stone Stock yards | 0.000 | 0.000 | |
| 10 | Unutilized | 2.800 | 0.000 | |
| 11 | Crusher | 0.000 | 0.000 | |
| **Total** | | **2.800** | **2.800** | - |

ENVIRONMENT MANAGEMENT

Green Belt Development

| S. No. | Location | Area/Length | No of Trees |
|---|---|---|---|
| 1 | Safety Zone+ Dumping | 0.97 Ha+0.20 Ha | 1872 |
| 2 | Along Approach Road | 100 m | 132 |
| TOTAL | | | **2004** |

- 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. 1100 per Tanker) | -- | 3,30,000 |
| 2 | Plantation:<br>132X 800 = Rs 105,600 (Gabion Plantation along approach road)<br>1,872 X 400 = 7,48,800 (Plantation within lease area)<br>(also includes Fertilizer, Pesticides, Maintenance) | 8,54,400 | 8,5440 |
| 3 | Fencing | 1,00,000 | |
| 4 | Environmental Monitoring (One Day Monitoring)<br>• Ambient Air 24 hrs (3 point) -Rs.27,270<br>• Ground Water (2 point) -Rs.12,420<br>• Noise 24 hrs (3 point) -Rs.21,000<br>• Soil (3 point) - | -- | 2,03,220 |

| | | | |
|---|---|---|---|
| | Rs.40,920<br><br>Total<br>-Rs. 1,01,610 (Per Season)<br><br>At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220<br><br>Source: Central Pollution Control Board<br><br>Notification, New Delhi, the 23rd February, 2022 | | |
| **Total** | | **9,54,400** | **6,18,660** |

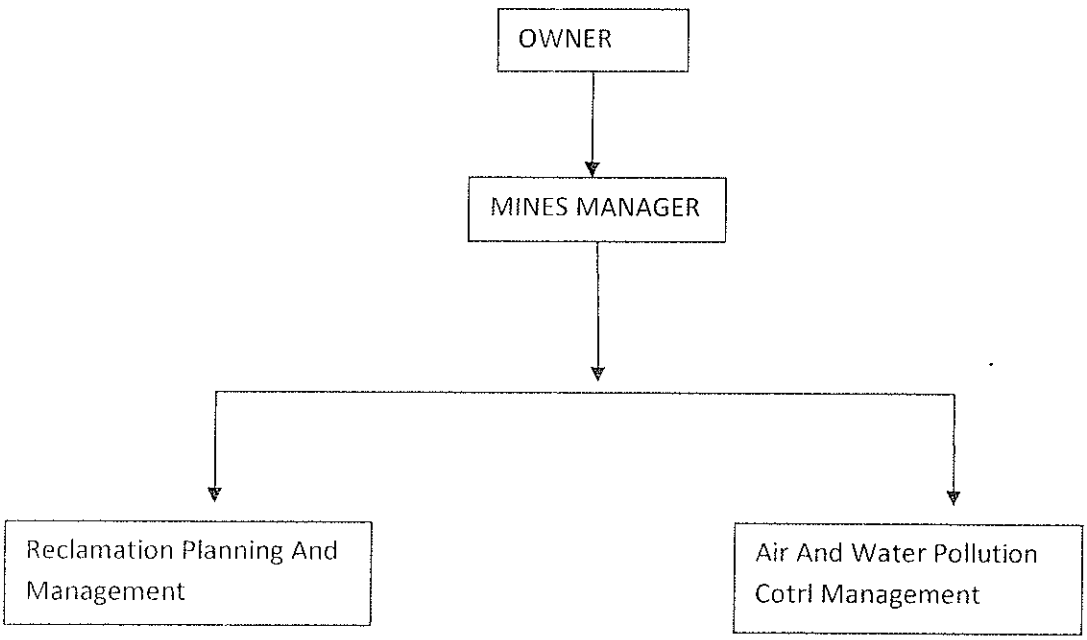
**Environment Monitoring Programme**

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

**Solid Waste Management**

27535 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

**Organization Structure**



**Water Quality Management**

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

**Air Quality Management**

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

Mitigation measures:

**Use of Sharp Drill Bits**

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

**Blasting –** Blasting 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 Hathbari Stone Deposit of M/s Limeswood Construction Pvt. Ltd. (Partners : (i) Shri Avinash Kumar (ii) Shri Sanjay Kumar Singh (iii) Om Prakash Sharma), Village : Hathbari, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.80 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"EkPed Ma KeNaam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

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

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

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

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

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3. **Manjhladih Stone Mine of Shri Sanjay Prasad Singh, Village : Manjhladih, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.93 Ha).**

**(Proposal no.: SIA/JH/MIN/ 514138 /2024)**

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

This is a new project which has been taken for appraisal on 20.01.2025.

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

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

**ToR Application for: Proposed Capacity: 90,171Cum. / annum or 2,43,462 TPA**

**Project and Location Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Manjhladih Stone Mine | |
| 2 | Lessee: | : | Shri Sanjay Prasad Singh | |
| 3 | Lessee Address | : | S/o Shri Rajnandan Singh<br>R/o Goshala Road 2nd Floor, Near Karbala, P.O + Thana + Dist. - Dumka. | |
| 4 | Lease Area | : | 2.93 Ha | |
| 5 | Type of Land | : | Non Forest Raiyati Land | |
| 6 | Project Cost | | Capital Cost: Rs. 138.99 Lakhs | Recurring Cost: Rs. 40.31 Lakhs |
| 7 | EMP Budget | : | Capital Cost: Rs. 7.69 Lakhs | Recurring Cost: Rs. 5.20 Lakhs |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves | : | cum.: 4,29,758cum | Tonnes: 11,60,347tons |
| 10 | Mine Life | : | 5 years. | |
| 11 | Man power | : | 39Person | |
| 12 | Water Requirement | : | 6.36 KLD (Drinking: 0.59 KLD, Dust Suppression: 1.20KLD, Plantation: 4.57KLD) | |
| 13 | Water Source | : | From Nearby villages by tankers | |
| 14 | DG Set / power | : | 20 KVA D.G. Set proposed | |
| 15 | Crusher | : | No crusher | |
| 16 | Nearest Water Body | : | Brahmani River – 6.56 km – North direction | |
| 17 | Nearest Habitation | : | Haripur Village – 0.566 Km in E Direction | |
| 18 | Nearest Rail Station | : | PakdahaHarinsing Railway Station at areal distance of 4.7 km in NW direction. | |
| 19 | Nearest Air Port | : | Deoghar Airport is at areal distance of 92.65 km NW direction | |
| 20 | Nearest Forest | : | More than 250 m, as per Division Forest Officer Dumka. letter no.- 1858 Dated: 12.08.2024 | |
| 21 | Road & Highways | : | The distance of Approach Road is 0.300 Km, after that this road connects to village road. The village road connects to NH 114A. | |

CO-ORDINATES

| Point ID | Longitude | Latitude |
|---|---|---|
| 1 | 087° 34' 42.27787780" E | 24° 11' 44.22174858" N |
| 2 | 087° 34' 42.87062099" E | 24° 11' 43.87090500" N |
| 3 | 087° 34' 43.16848657" E | 24° 11' 44.31107757" N |
| 4 | 087° 34' 43.78692951" E | 24° 11' 43.81857758" N |
| 5 | 087° 34' 44.36016025" E | 24° 11' 43.25521103" N |

| | | |
|---|---|---|
| 6 | 087° 34' 44.01982322" E | 24° 11' 42.92447361" N |
| 7 | 087° 34' 43.48150515" E | 24° 11' 42.46650652" N |
| 8 | 087° 34' 43.15191528" E | 24° 11' 42.58439091" N |
| 9 | 087° 34' 43.03175928" E | 24° 11' 42.06765558" N |
| 10 | 087° 34' 42.96215275" E | 24° 11' 41.60977960" N |
| 11 | 087° 34' 43.59200160" E | 24° 11' 41.40632380" N |
| 12 | 087° 34' 43.30387271" E | 24° 11' 40.88966127" N |
| 13 | 087° 34' 42.91275187" E | 24° 11' 40.28676080" N |
| 14 | 087° 34' 42.41719648" E | 24° 11' 39.59518907" N |
| 15 | 087° 34' 42.97463561" E | 24° 11' 39.39903350" N |
| 16 | 087° 34' 43.60426613" E | 24° 11' 39.06264026" N |
| 17 | 087° 34' 44.58763863" E | 24° 11' 38.73126437" N |
| 18 | 087° 34' 45.21162909" E | 24° 11' 38.53645916" N |
| 19 | 087° 34' 44.96876174" E | 24° 11' 38.18660544" N |
| 20 | 087° 34' 44.55577845" E | 24° 11' 38.00256100" N |
| 21 | 087° 34' 44.24170486" E | 24° 11' 37.43858462" N |
| 22 | 087° 34' 44.14111557" E | 24° 11' 36.56432887" N |
| 23 | 087° 34' 43.99786728" E | 24° 11' 35.10415561" N |
| 24 | 087° 34' 43.46644385" E | 24° 11' 33.88135283" N |
| 25 | 087° 34' 42.92577625" E | 24° 11' 33.95020609" N |
| 26 | 087° 34' 42.13654529" E | 24° 11' 34.30834672" N |
| 27 | 087° 34' 41.20111926" E | 24° 11' 34.87344211" N |
| 28 | 087° 34' 40.69975757" E | 24° 11' 35.11628394" N |
| 29 | 087° 34' 40.37317327" E | 24° 11' 35.22244795" N |
| 30 | 087° 34' 39.92034036" E | 24° 11' 35.81995235" N |
| 31 | 087° 34' 40.00874631" E | 24° 11' 36.57868811" N |
| 32 | 087° 34' 40.06408218" E | 24° 11' 37.14025878" N |
| 33 | 087° 34' 39.29627041" E | 24° 11' 37.31672227" N |
| 34 | 087° 34' 38.55950262" E | 24° 11' 37.56061636" N |
| 35 | 087° 34' 38.68935062" E | 24° 11' 38.04597614" N |
| 36 | 087° 34' 39.09897777" E | 24° 11' 38.36861574" N |
| 37 | 087° 34' 39.31482081" E | 24° 11' 38.92667865" N |
| 38 | 087° 34' 39.51313453" E | 24° 11' 40.03881644" N |
| 39 | 087° 34' 39.90909443" E | 24° 11' 40.94707481" N |
| 40 | 087° 34' 40.32876082" E | 24° 11' 41.48255977" N |
| 41 | 087° 34' 40.97742888" E | 24° 11' 41.12179465" N |
| 42 | 087° 34' 41.50283670" E | 24° 11' 42.00604278" N |
| 43 | 087° 34' 42.01080528" E | 24° 11' 42.63371644" N |
| 44 | 087° 34' 42.15974204" E | 24° 11' 43.01367275" N |
| 45 | 087° 34' 41.58050333" E | 24° 11' 43.41545207" N |
| 46 | 087° 34' 41.95756160" E | 24° 11' 43.83903132" N |

LAND DETAILS

| Khata no. | Plot no. |
|---|---|
| 24 | 1309 |
| 44 | 1311 |
| 16 | 1310 |
| 13 | 1319 |
| 48 | 1313 |
| 20 | 1305 (P) & 1312 |

STATUTORY CLEARANCES

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 1059/M, dated 13.09.2024. |
| 2 | CO | : | The CO, Shikaripara vide letter no. 779/Ra., dated 30.08.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Dumka vide memo no. 1119/M, dated 01.10.2024 certified that 01 other mining lease area (4.04 Acre) and 06 LoI (4.80 Acre, 7.39 Acre, 3.27 Acre, 4.45 Acre, 4.08 Acre & 6.56 Acre) exists within 500 meters radius from proposed project site and total area is 41.84 Acre. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Hazaribag vide letter no. 1878, dated 27.08.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Dumka Forest Division vide letter no. 1858, dated 12.08.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Dumka District (Sl. no. 66, Page no. 162). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 31.07.2024. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Dumka vide Letter No. 1337/M, dated 09.12.2024. |
| 9 | Qualified Person | : | Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him. |

Working Details

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Semi-Mechanized Method | |
| 2 | Quarry Area | : | 2.93 Ha | Life of Mine – 5year |
| 3 | Waste Generation | : | 37400cum | |
| 4 | Stripping Ratio | : | 02:05 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size | : | 6 m x 6 m | |
| 7 | Elevation of Mine | : | 159m–142m AMSL | |
| 8 | Ground Level Elevation | : | 160 AMSL | |
| 9 | Ultimate Working Depth | : | 38 m AMSL | |
| 10 | Water Table | : | Post Monsoon – 93m AMSL Pre Monsoon – 97 m AMSL | |
| 11 | Topography of Mine | : | Area represents gently sloping land. | |
| 12 | Explosive Requirement | : | 79 kg Slurry explosives/day | |
| 13 | Diesel/Fuel requirement | : | HSD – 440 liters / day (132 KL/year) | |

Production Details

| Year | Production of Stone / Year | | | Per Day Production | | Removal of O.B. | |
|---|---|---|---|---|---|---|---|
| | Cum | T.F. | Tonnes | Cum | Tonnes | Cum | Production per day cum (O.B. |
| 1st | 78594 | 2.7 | 212202 | 262 | 707 | 37400 | 125 |
| 2nd | 86336 | 2.7 | 233107 | 288 | 777 | 0 | 0 |
| 3rd | 86849 | 2.7 | 234492 | 289 | 782 | 0 | 0 |
| 4th | 87809 | 2.7 | 237083 | 293 | 790 | 0 | 0 |
| 5th | 90171 | 2.7 | 243462 | 301 | 812 | 0 | 0 |
| Total | **429758** | **2.7** | **1160347** | 301 (Max.) | **812 (Max.)** | **37400** | 125 |

Land Use pattern

| SL | Pattern of Utilization | Existing Land Use (Ha) | Proposed Land Use (Ha) | Conceptual Land Use (Ha) | Area to be converted in the conceptual period. |
|---|---|---|---|---|---|
| 1 | Mining Activities | 0.000 | 1.904 | 1.904 | Water body |
| 2 | Dumping | 0.000 | 0.250 | 0.250 | Green belt |
| 3 | Garland drain | 0.000 | 0.040 | 0.040 | Plantation |
| 4 | Settling Tank | 0.000 | 0.024 | 0.024 | Water body |
| 5 | Safety Zone | 0.000 | 0.702 | 0.702 | Green belt |

| | | | | | |
|---|---|---|---|---|---|
| 6 | Unutilized | 2.930 | 0.010 | 0.010 | Green belt |
| | **TOTAL** | **2.930** | **2.930** | **2.930** | - |

ENVIRONMENT MANAGEMENT

**Green Belt Development**

| S. No. | Location | | Area/Length | No of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | | 0.702 Ha | 1123 |
| 2 | Along Approach Road | | 300m | 400 |
| **TOTAL** | | | | **1523** |

- 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<br>400 X 800 = Rs 3,20,000 (Gabion Plantation along approach road)<br>1,123 X 400 = 4,49,200 (Plantation within lease area)<br>(also includes Fertilizer, Pesticides, Maintenance) | 7,69,200 | 76,920 |
| 3 | Fencing | 100,000 | - |
| 4 | Environmental Monitoring (One Day Monitoring)<br>• Ambient Air 24 hrs (3 point) - Rs.27,270<br>• Ground Water (2 point) - Rs.12,420<br>• Noise 24 hrs (3 point) - Rs.21,000 | -- | 2,03,220 |

| Sl.No. | Particulars | Capital Cost in Rs. | Recurring Cost in Rs. per year |
|---|---|---|---|
| | • Soil (3 point) -Rs.40,920<br>Total -Rs. 1,01,610<br>(Per Season)<br>At least two seasons in a Year -Rs. 1,01,610 x 2<br>= Rs. 2,03,220<br>Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022 | | |
| Total | | 8,69,200 | 5,20,140 |

**Environment Monitoring Programmed**

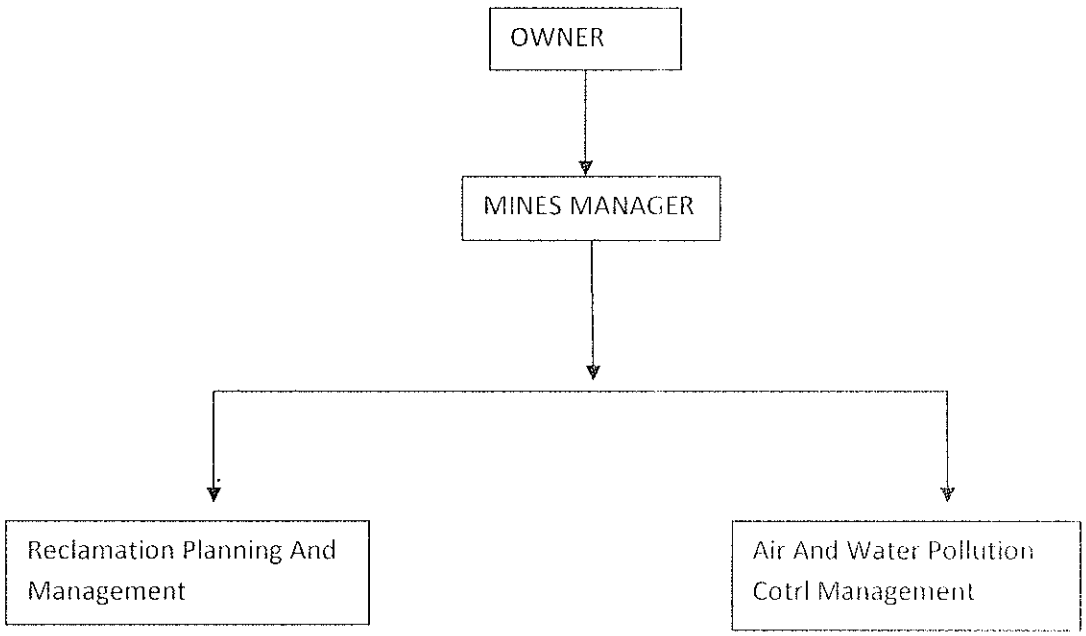
| SL. No. | Description | No. Of Monitoring Stations | Duration |
|---|---|---|---|
| 1. | Air | 3 stations | 6 Monthly |
| 2. | Water | 2 stations | 6 Monthly |
| 3. | Noise | 3 stations | 6 Monthly |
| 4. | Soil | 3 Station | 6 Monthly |

**Note: Monitoring period March, 2025 to May, 2025.**

**Solid Waste Management**

37400cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

**Organization Structure**



Water Quality Management

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

**Air Quality Management**

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

Mitigation measures:

Use of Sharp Drill Bits

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

Blasting – Blasting 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 |
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| | | | | | |
|---|---|---|---|---|---|
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| 4 | Drilling | Exposure to Dust | Frequent | Insignificant | 5 |
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| 6 | Loading/Unloading | Bodily injury by hitting by loading material, Exposure to Dust | Very Unlikely | Minor | 20 |
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***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**"

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- Dust generation during drilling
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- Entrapment in by moving part of the drilling equipment

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

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

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

**Health Hazards**

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

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

**Accident at Site**

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

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

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

**Transportation**

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

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

**Undertaking submitted affirming:**

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

**Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 20, 21, 22, 23 & 24.01.2025, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure II alongwith following specific condition :-**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

**********

4. Manjhladih Stone Mine of Shri Saradindu Mal, Village : Manjhladih, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.99 Ha).

(Proposal no.: SIA/JH/MIN/ 508499 /2025)

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

This is a new project which has been taken for appraisal on 20.01.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 85673 Cum. (Max.) / 231317 Tons (max.) per year

Project and Location Details:

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Manjhladih Stone Mine | |
| 2 | Lessee: | : | Shri Saradindu Mal | |
| 3 | Lessee Address | : | S/o Kanai Mal<br>Ward- 0016, Vidyasagar pally, Rampurhat, Chakla math, Rampurhat M,<br>Birbhum, WB 731224. | |
| 4 | Lease Area | : | 2.99 Ha | |
| 5 | Type of Land | : | Non Forest Raiyati Land | |
| 6 | Project Cost | | Capital Cost: Rs. 130.19 Lakhs | Recurring Cost: Rs. 17.85 Lakhs |
| 7 | EMP Budget | : | Capital Cost: Rs. 7.89 Lakhs | Recurring Cost: Rs. 5.82 Lakhs |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves | : | 319451 cum | 862517tons |
| 10 | Mine Life | : | 5 years. | |
| 11 | Man power | : | 24 Person | |
| 12 | Water Requirement | : | 6.28 KLD<br>Drinking: 0.36 KLD<br>Dust Suppression: 0.880 KLD<br>Plantation: 5.04 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 | : | Brahamani river at 6 km N direction | |
| 17 | Nearest | : | Manjhladih Village – 0.600 Km in W Direction | |

| | | | |
|---|---|---|---|
| | Habitation | | |
| 18 | Nearest Rail Station | : | Pakdaha Harinsing Railway Station at areal distance of 4.7 km in NW direction |
| 19 | Nearest Air Port | : | Deoghar Airport is at aerial distance of 92.65 km NW direction. |
| 20 | Nearest Forest | : | More than 250 m, as per Division Forest Officer Dumka. letter no.- 1119 Dated- 18/04/2023. |
| 21 | Road & Highways | : | The distance of Approach Road is 0.22 Km, after that this road connects to village road. The village road continues for 2.94 km and after this the road connects to NH 114A. |

**CO-ORDINATES**

| Point Name | Latitude | Longitude |
|---|---|---|
| 1 | 24°11'51.31"N | 87°34'41.09"E |
| To | | |
| 2 | 24°11'48.70"N | 87°34'49.82"E |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 03 | 1358 |
| 06 | 1292 (P), 1293, 1355 (P) & 1360 (P) |
| 16 | 1366 (P) |
| 20 | 1289 (P) |
| 21 | 1367 (P) |
| 30 | 1357 (P) |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 973/M, dated 17.08.2024. |
| 2 | CO | : | The CO, Shikaripara vide letter no. 578/Ra., dated 28.04.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Dumka vide memo no. 510/M, dated 08.04.2023 certified that 01 other mining lease area (4.04 Acre) exists within 500 meters radius from proposed project site and total area is 11.43 Acre. |

| | | | |
|---|---|---|---|
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Hazaribag vide letter no. 565, dated 23.03.2024 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. 1119, dated 18.04.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | The DMO, Dumka vide letter no. 29/M, dated 07.01.2025 clarified that the details mentioned in Sl. No. 55, Page no. 328 (Hindi version) of approved DSR to be considered as correct details. |
| 7 | Gram Sabha | : | Gram Sabha conducted on 05.04.2022. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Dumka vide Letter No. 1276/M, dated 13.11.2024. |
| 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 | : | 0.655 Ha | Life of Mine – 7year |
| 3 | Waste Generation | : | 39232 cum | |
| 4 | Stripping Ratio | : | 33:50 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size | : | 6 m x 6 m, | |
| 7 | Elevation of Mine | : | 138 mAMSL–127mAMSL | |
| 8 | Ground Level Elevation | : | 138 m RL | |
| 9 | Ultimate Working Depth | : | 36 m | |
| 10 | Water Table | : | Post Monsoon – 76 mbgl Pre Monsoon – 80 mbgl | |
| 11 | Topography of Mine | : | Area represents gently sloping land. | |
| 12 | Explosive Requirement | : | 74.84 kg Slurry explosives/day | |
| 13 | Diesel/Fuel requirement | : | HSD – 315 liters / day (94.5 KL/year) | |

Production Details

| Year | Production of Stone / Year | | | Per Day Production | | Removal of O.B. |
|---|---|---|---|---|---|---|
| | Cum | T.F. | Tonnes | Cum | Tonnes | Cum |
| 1st | 5670 | 2.7 | 15309 | 19 | 51 | 6426 |
| 2nd | 5617 | 2.7 | 15166 | 19 | 51 | 6314 |
| 3rd | 4914 | 2.7 | 13268 | 16 | 44 | 0 |
| 4th | 4838 | 2.7 | 13063 | 16 | 44 | 0 |
| 5th | 11660 | 2.7 | 31482 | 39 | 105 | 0 |
| Total | 32699 | 2.7 | 88287 | 39 Max | 105 Max | 12740 |

Land Use

EXISTING, PROPOSED & CONCEPTUAL LAND USE

| Sl. No. | Pattern of Utilization | Present/ Existing land use pattern in (Ha.) | Proposed Land use for current plan period (Ha.) | Land used at the conceptual stage i.e. end of mine life in (Ha.) | Area to be converted in the conceptual period. |
|---|---|---|---|---|---|
| 1 | Mining Activities | 0.000 | 1.934 | 1.934 | Water body |
| 2 | Offices/ Store etc. | 0.000 | 0.015 | 0.015 | Plantation |
| 3 | Dumping | 0.000 | 0.098 | 0.098 | Plantation |
| 4 | Mining Road | 0.000 | 0.000 | 0.051 | - |
| 5 | Garland drain | 0.000 | 0.051 | 0.051 | - |
| 6 | Safety Zone | 0.000 | 0.868 | 0.868 | Plantation |
| 3 | Stone Stock Yards | 0.000 | 0.000 | 0.000 | - |
| 4 | Unutilized | 2.990 | 0.005 | 0.005 | Greenbelt |
| Total | | 2.990 | 2.990 | 2.990 | - |

ENVIRONMENT MANAGEMENT

Green Belt Development

| S. No. | Location | | Area/Length | No of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | | 0.868 Ha | 1389 |
| 2 | Along Approach Road | | 220 m | 146 |
| TOTAL | | | | 1681 |

- 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<br>292 X 800 = Rs 2,33,600 (Gabion Plantation along approach road)<br>1389 X 400 = 5, 55,600 (Plantation within lease area)<br>(also includes Fertilizer, Pesticides, Maintenance) | 7,89,200 | 78,920 |
| 3. | Fencing | 100000 | |
| 4. | Environmental Monitoring (One Day Monitoring)<br>• Ambient Air 24 hrs (3 point) -Rs.27,270<br>• Ground Water (2 point) -Rs.12,420<br>• Noise 24 hrs (3 point) -Rs.21,000 | -- | 2,03,220 |

| | | | |
|---|---|---|---|
| | • Soil (3 point) -Rs.40,920<br>Total - Rs. 1,01,610 (Per Season)<br>At least two seasons in a Year -Rs. 1,01,610 x 2<br>= Rs. 2,03,220<br>Source: Central Pollution Control Board<br>Notification, New Delhi, the 23rd February, 2022<br>Source: CPCB Notification, New Delhi 23 Feb 2022 | | |
| Total | | 8,89,200 | 5,82,220 |

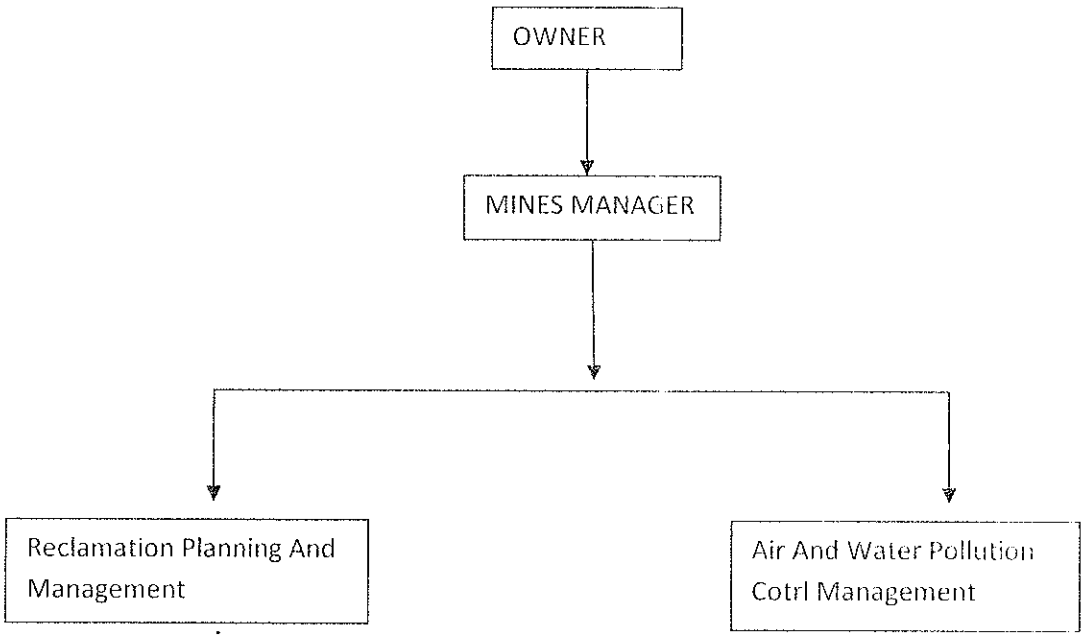
Environment Monitoring Programme

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

**Solid Waste Management**

During first& secondyear12,740cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Organization Structure



Water Quality Management

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

Air Quality Management

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

Mitigation measures:

Use of Sharp Drill Bits

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

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

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

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

**Health Hazards**

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

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

**Accident at Site**

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

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

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

**Transportation**

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

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

- Only trained drivers will be hired.

**Undertaking submitted affirming:**

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

**Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Manjhladih Stone Mine of Shri Saradindu Mal, Village : Manjhladih, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.99 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"EkPed Ma KeNaam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a

time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

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

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

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

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

**********

5. **Salbonapahar Stone Mine of M/s Jyoti Construction and Engineering Pvt. Ltd., Village : Salbonapahar, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.808 Ha).**

**(Proposal no.: SIA/JH/MIN/ 516848 /2025)**

The application submitted is for grant of EC under B2 category.

The cluster report has been issued by DMO, Dumka vide memo no. 1342/M, dated 09.11.2023.

The Committee is of the opinion that the status of cluster is likely to be changed during the period of 15 months, as several ECs in the Salbonapahar village has been issued by SEIAA.

**The PAs are required to submit current cluster report for further necessary action.**

**On the receipt of the same the proposal will be taken up for consideration.**

**********

6. Chhatarchua Stone Mine of Shri Hari Nandan Choudhary, Village : Chhatarchua, Thana : Gopikandar, Distt. : Dumka, Jharkhand (1.768 Ha).

(Proposal no.: SIA/JH/MIN/ 518613 /2025)

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

This is a new project which has been taken for appraisal on 20.01.2025.

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

**Application for Environmental Clearance (EC).**

**EC Application for: Proposed Capacity: 24130 Cum. (Max.) / 65151Tons (max.) per year**

**Project and Location Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Chhatarchua Stone Mine | |
| 2 | Lessee: | : | Shri Hari Nandan Choudhary | |
| 3 | Lessee Address | : | S/o Shri Bindeshwari Choudhary<br>Vill- Ghatrasikpur,PS- Gopikandar,<br>Dist- Dumka, Jharkhand | |
| 4 | Lease Area | : | 1.768Ha | |
| 5 | Type of Land | : | Non Forest Raiyati Land | |
| 6 | Project Cost | | Capital Cost: Rs. 101.651 Lakhs | Recurring Cost: Rs. 7.1Lakhs |
| 7 | EMP Budget | : | Capital Cost: Rs. 9.49Lakhs | Recurring Cost: Rs. 5.88Lakhs |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves | : | 83885 cum | 226490 tons |
| 10 | Mine Life | : | 5 years. | |
| 11 | Man power. | : | 19 Person | |
| 12 | Water Requirement | : | 6.92 KLD<br>Drinking: 0.285 KLD<br>Dust Suppression: 1.6 KLD<br>Plantation: 4.230 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 | : | Bansloi river at 7 km N direction | |
| 17 | Nearest Habitation | : | Chhatarchua Village -- 0.600 Km in W Direction | |

| | | | |
|---|---|---|---|
| 18 | Nearest Rail Station | : | Shikaripara Railway Station at areal distance of 23.5 km in SE direction |
| 19 | Nearest Air Port | : | Deoghar Airport is at aerial distance of 80.05 km NW direction. |
| 20 | Nearest Forest | : | More than 250 m, as per Division Forest Officer Dumka. letter no.-439 Dated- 09/02/2016. |
| 21 | Road & Highways | : | The distance of Approach Road is 357m, after that this road connects to SH (Dumka-Sahibganj). |

**CO-ORDINATES**

| Point Name | Latitude | Longitude |
|---|---|---|
| 1 | 24°26'57.39"N | 87°30'35.65"E |
| To | | |
| 2 | 24°26'50.01"N | 87°30'33.79"E |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 16 | 516(P) |
| 10 | 517(P), 518(P), 519(P), 520(P), 521 |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 1104/M, dated 26.09.2024. |
| 2 | CO | : | The CO, Gopikandar vide letter no. 211/Ra., dated 10.06.2024 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. 1354/M, dated 13.12.2024 certified that 01 other mining lease area (6.56 Acre) exists within 500 meters radius from proposed project site and total area is 11.69 Acre. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Hazaribag vide letter no. 1912, dated 30.08.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Dumka Forest Division vide letter no. 439, dated 09.02.2016 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |

| | | | |
|---|---|---|---|
| 6 | DSR | : | This project is mentioned in approved DSR of Dumka District (Sl. no. 233, Page no. 64). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 30.01.2024. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Dumka vide Letter No. 26/M, dated 07.01.2025. |
| 9 | Qualified Person | : | Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Semi-Mechanized Method | |
| 2 | Quarry Area | : | 0.655 Ha | Life of Mine – 7year |
| 3 | Waste Generation | : | 9200 cum | |
| 4 | Stripping Ratio | : | 33:50 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size | : | 6 m x 6 m, | |
| 7 | Elevation of Mine | : | 180mAMSL–179 mAMSL | |
| 8 | Ground Level Elevation | : | 179 m RL | |
| 9 | Ultimate Working Depth | : | 13m | |
| 10 | Water Table | : | Post Monsoon – 88 mbgl Pre Monsoon – 83.3 mbgl | |
| 11 | Topography of Mine | : | Area represents gently sloping land. | |
| 12 | Explosive Requirement | : | 17.82 kg Slurry explosives/day | |
| 13 | Diesel/Fuel requirement | : | HSD – 246liters / day (73.8 KL/year) | |

**Production Details**

| Year | Production of Stone / Year | | | Per Day Production | | Removal of O.B. | |
|---|---|---|---|---|---|---|---|
| | Cum recoverable 95% | T.F. | Tonnes | Cum | Tonnes | Cum | Production per day cum (O.B.) |
| 1st | 24130 | 2.7 | 65151 | 80 | 217 | 9200 | 31 |
| 2nd | 18525 | 2.7 | 50018 | 62 | 167 | 0 | 0 |
| 3rd | 16150 | 2.7 | 43605 | 54 | 145 | 0 | 0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4th | 13728 | 2.7 | 37064 | 46 | 124 | 0 | 0 |
| 5th | 11353 | 2.7 | 30652 | 38 | 102 | 0 | 0 |
| Total | 83885 | | 226490 | 80(max) | 217(max) | 9200 | 31 |

Land Use

EXISTING, PROPOSED & CONCEPTUAL LAND USE

| Sl. No. | Pattern of Utilization | Present/Existing land use pattern in (acres) | Land used at the conceptual stage ie end of mine life in (Ha) | Area to be converted in the conceptual period. |
|---|---|---|---|---|
| 1 | Mining Activities | 0.000 | 0.493 | Water body |
| 2 | Offices/ Store etc. | 0.000 | 0.000 | Plantation |
| 3 | Dumping | 0.000 | 0.000 | Plantation - |
| 4 | Mining Road | 0.000 | 0.000 | Water body |
| 5 | Garland drain | 0.000 | 0.013 | - |
| 6 | Settling Tank | 0.000 | 0.000 | - |
| 7 | Green belt | 0.000 | 0.000 | Green Belt |
| 8 | Safety Zone | 0.000 | 0.435 | Plantation |
| 9 | Pre mined area | 0.827 | 0.827 | |
| 10 | Unutilized | 0.941 | 0.000 | |
| 11 | Crusher | 0.000 | 0.000 | |
| Total | | 1.768 | 1.768 | - |

ENVIRONMENT MANAGEMENT

Green Belt Development

| S. No. | Location | | Area/Length | No of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | | 0.435 Ha | 696 |
| 2 | Along Approach Road | | 375 m | 714 |
| TOTAL | | | | 1410 |

- 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<br>714 X 800 = Rs 5,71,200 (Gabion Plantation along approach road)<br>696 X 400 = 2,78,400 (Plantation within lease area)<br>(also includes Fertilizer, Pesticides, Maintenance) | 8,49,600 | 84960 |
| 3 | Fencing | 100000 | |
| 4 | Environmental Monitoring (One Day Monitoring)<br>• Ambient Air 24 hrs (3 point) -Rs.27,270<br>• Ground Water (2 point) -Rs.12,420<br>• Noise 24 hrs (3 point) -Rs.21,000<br>• Soil (3 point) -Rs.40,920<br>Total -Rs. 1,01,610 (Per Season)<br>At least two seasons in a Year -Rs. 1,01,610 x 2<br>= Rs. 2,03,220<br>Source: Central Pollution Control Board | -- | 2,03,220 |

| | | | |
|---|---|---|---|
| | Notification, New Delhi, the 23rd February, 2022<br><br>Source: CPCB Notification, New Delhi 23 Feb 2022 | | |
| Total | | 9,49,600 | 5,88,180 |

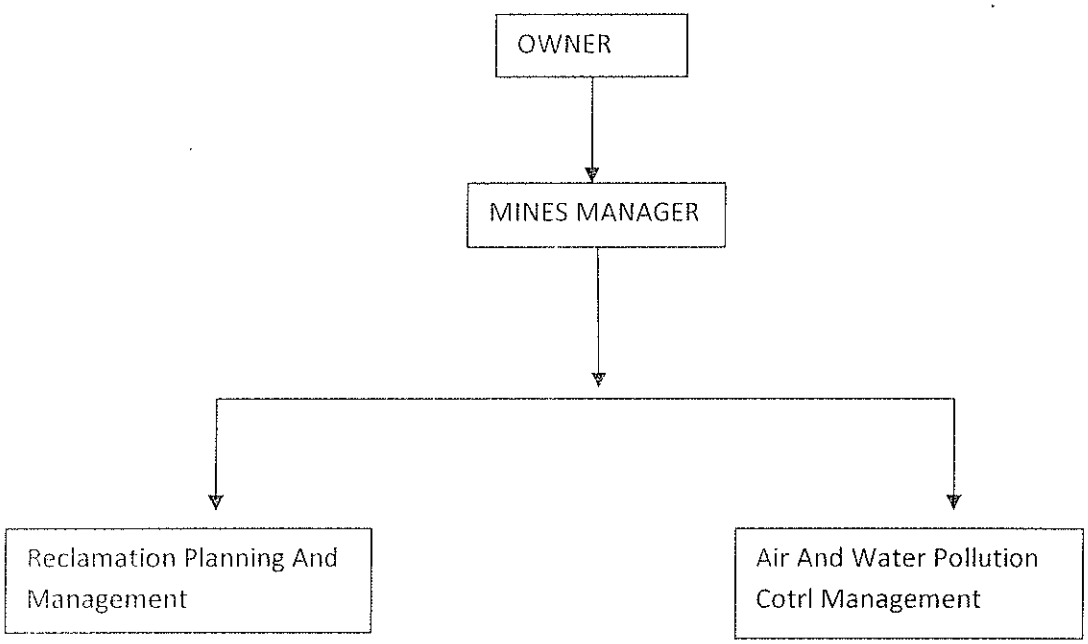
Environment Monitoring Programme

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

Solid Waste Management

During first& secondyear12,740cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Organization Structure




Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.

- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

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

Mitigation measures:

Use of Sharp Drill Bits

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

Blasting – Blasting 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 | Very | Minor | 20 |

| | | | | | |
|---|---|---|---|---|---|
| | | hitting by loading material, Exposure to Dust | Unlikely | | |
| 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.

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- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
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To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

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- Mine road shall be made smooth regularly with a road roller.
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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 Chhatarchua Stone Mine of Shri Hari Nandan Choudhary, Village : Chhatarchua, Thana : Gopikandar, Distt. : Dumka, Jharkhand (1.768 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

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

photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

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

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

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

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

**********

7. **Chaparna Stone Mine of M/s Rudraksh Metalics, Village : Chaparna, Thana no. : 285, Thana : Lesliganj, Distt. : Palamau, Jharkhand (1.17 Ha).**

**(Proposal no.: SIA/JH/MIN/ 518622 /2025)**

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

This is a new project which has been taken for appraisal on 20.01.2025.

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

**Application for Environmental Clearance (EC).**

**EC Application for: Proposed Capacity: 25248 Cum. (Max.) / 70694Tons (max.) per year**

**Project and Location Details:**

| Sl | Parameter | | Details |
|---|---|---|---|
| 1 | Project Name | : | Chaparna Stone Mine |
| 2 | Lessee: | : | M/s Rudraksh Metalics<br>Partners- 1. Shri Sachidanand Singh<br>2. Shri Jai Kishan Kumar<br>3. Shri Sumit Kumar Yadav |
| 3 | Lessee Address | : | At Village- Chaparna, Thana No.-285,<br>Thana- Lesliganj, District-palamu, Jharkhand |
| 4 | Lease Area | : | 1.17 Ha |

| | | | | |
|---|---|---|---|---|
| 5 | Type of Land | : | Non Forest Raiyati Land | |
| 6 | Project Cost | | Capital Cost: 113.52 Lakhs | Recurring Cost: Rs. 11.735 Lakhs |
| 7 | EMP Budget | : | Capital Cost: Rs. 3.956 Lakhs | Recurring Cost: Rs. 5.832 Lakhs |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves | : | 171456cum | 480077 tons |
| 10 | Mine Life | : | 10 years. | |
| 11 | Man power | : | 30 Person | |
| 12 | Water Requirement | : | 3.8 KLD<br>Drinking: 0.29 KLD<br>Dust Suppression: 1.08 KLD<br>Plantation:2.43 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 | : | Maila river at7 km N direction | |
| 17 | Nearest Habitation | : | Chaparna Village – 0.500 Km in W Direction | |
| 18 | Nearest Rail Station | : | Kechki Railway Station is at areal distance of 13.28 km in SW direction | |
| 19 | Nearest Air Port | : | Ranchi Airport is at aerial distance of 129.57 km SE direction. | |
| 20 | Nearest Forest | : | More than 250 m, as per Division Forest Officer NOC. letter no.-1910 Dated- 03/07/2024 | |
| 21 | Road & Highways | : | The distance of Approach Road is 190m, after that this road connects to village road. The village road continues for 4.73 km and after this the road connects to MDR Latehar - Daltonganj Road | |

CO-ORDINATES

| Point Id | Latitude | Longitude |
|---|---|---|
| 1 | 23° 58' 7.530" N | 084° 16' 9.435" E |
| To | | |
| 2 | 23° 58' 1.956" N | 084° 16' 13.246" E |

LAND DETAILS

| Khata no. | Plot no. |
|---|---|
| 04 | 174 (P) & 179 (P) |

| | |
|---|---|
| 24 | 180 (P) |

STATUTORY CLEARANCES

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | The Letter of Intent (LoI) has been issued by District Mining Officer, Palamau, Medininagar vide letter no. 2103/M, dated 09.10.2024. |
| 2 | CO | : | The CO, Satbarwa, Palamau vide letter no. 474, dated 12.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II. PAs have submitted an EMP for 4-5 houses within 500 meters, River / Nala at a distance of 400 meters and Primary Health Center at a distance of 400 meters. |
| 3 | DMO | : | DMO, Palamau, Medininagar vide memo no. 95/M, dated 15.01.2025 certified that no other mining lease area exists within 500 meters radius from proposed project site. |
| 4 | DFO Wild Life | : | Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 679, dated 01.08.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve. |
| 5 | DFO Territorial | : | Division Forest Officer, Medininagar Forest Division vide letter no. 1910, dated 03.07.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Palamau District (Sl. no. 26, Page no. 107). |
| 7 | Gram Sabha | : | BDO, Satbarwa, Palamau vide letter no. 1122, dated 30.10.2023 informed that Gram Sabha conducted on 29.03.2023. |
| 8 | Mine Plan Approval | : | Approved by Assistant Director, Geology District Geological Officer, Palamau vide Letter No. 05, dated 15.01.2025. |
| 9 | Qualified Person | : | Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him. |

Working Details

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Semi-Mechanized Method | |
| 2 | Quarry Area | : | 0.488Ha | Life of Mine – 10 year |

| | | | | |
|---|---|---|---|---|
| 3 | Waste Generation | : | 7872cum | |
| 4 | Stripping Ratio | : | 33:50 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size | : | 6 m x 6 m, | |
| 7 | Elevation of Mine | : | 281 m AMSL – 259 m AMSL | |
| 8 | Ground Level Elevation | : | 262 m RL | |
| 9 | Ultimate Working Depth | : | 22 m | |
| 10 | Water Table | : | Post Monsoon – 59 mbglPre Monsoon – 54mbgl | |
| 11 | Topography of Mine | : | Area represents gently sloping land. | |
| 12 | Explosive Requirement | : | 23.562 kg Slurry explosives/day | |
| 13 | Diesel/Fuel requirement | : | HSD – 204 liters / day (61.2 KL/year) | |

**Production Details**

| Year | Production of Stone / Year | | | Per Day Production | | Removal of O.B. | |
|---|---|---|---|---|---|---|---|
| | Cum | T.F. | Tonnes | Cum | Tonnes | Cum | Production per day cum (O.B.) |
| 1st | 20832 | 2.8 | 58330 | 69 | 194 | 7872 | 26 |
| 2nd | 20928 | 2.8 | 58598 | 70 | 195 | 0 | 0 |
| 3rd | 19200 | 2.8 | 53760 | 64 | 179 | 0 | 0 |
| 4th | 25248 | 2.8 | 70694 | 84 | 236 | 0 | 0 |
| 5th | 21888 | 2.8 | 61286 | 73 | 204 | 0 | 0 |
| Total | **108096** | **2.8** | **302669** | **84 (MAX.)** | **236 (MAX.)** | **7872** | **26 (MAX.)** |

**Land Use**

**EXISTING, PROPOSED & CONCEPTUAL LAND USE**

| Si. No. | Pattern of Utilization | Present/ Existing land use pattern in (Ha.) | Proposed Land use for current plan period (Ha.) | Land used at the conceptual stage i.e. end of mine life in (Ha.) | Area to be converted in the conceptual period. |
|---|---|---|---|---|---|
| 1 | Mining Activities | 0.000 | 0.488 | 0.777 | Water body |
| 2 | Garland drain | 0.000 | 0.027 | 0.027 | Included in Safety Zone |
| 3 | Safety Zone | 0.000 | 0.393 | 0.393 | Plantation |

| | | | | | |
|---|---|---|---|---|---|
| 4 | Unutilized | 1.170 | 0.289 | 0.000 | Plantation |
| Total | | 1.170 | 1.170 | 1.170 | - |

ENVIRONMENT MANAGEMENT

Green Belt Development

| S. No. | Location | | Area/Length | No of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | | 0.393 Ha | 629 |
| 2 | Along Approach Road | | 0.270 m | 180 |
| TOTAL | | | | 809 |

- 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. 1100 per Tanker) | -- | 3,30,000 |
| 2 | Plantation<br>180 X 800 = Rs 1,44,000 (Gabion Plantation along approach road)<br>629 X 400 = 2, 51,600 (Plantation within lease area)<br>(also includes Fertilizer, Pesticides, Maintenance) | 3,95,600 | 50,000 |
| 3 | Fencing | 100000 | |

| | | | |
|---|---|---|---|
| 4 | Environmental Monitoring (One Day Monitoring)<br>• Ambient Air 24 hrs (3 point) - Rs.27,270<br>• Ground Water (2 point) - Rs.12,420<br>• Noise 24 hrs (3 point) - Rs.21,000<br>• Soil (3 point) - Rs.40,920<br>Total -Rs. 1,01,610 (Per Season)<br>At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220<br>Source: Central Pollution Control Board<br>Notification, New Delhi, the 23rd February, 2022<br>Source: CPCB Notification, New Delhi 23 Feb 2022 | -- | 2,03,220 |
| Total | | 4,95,600 | 5,83,220 |

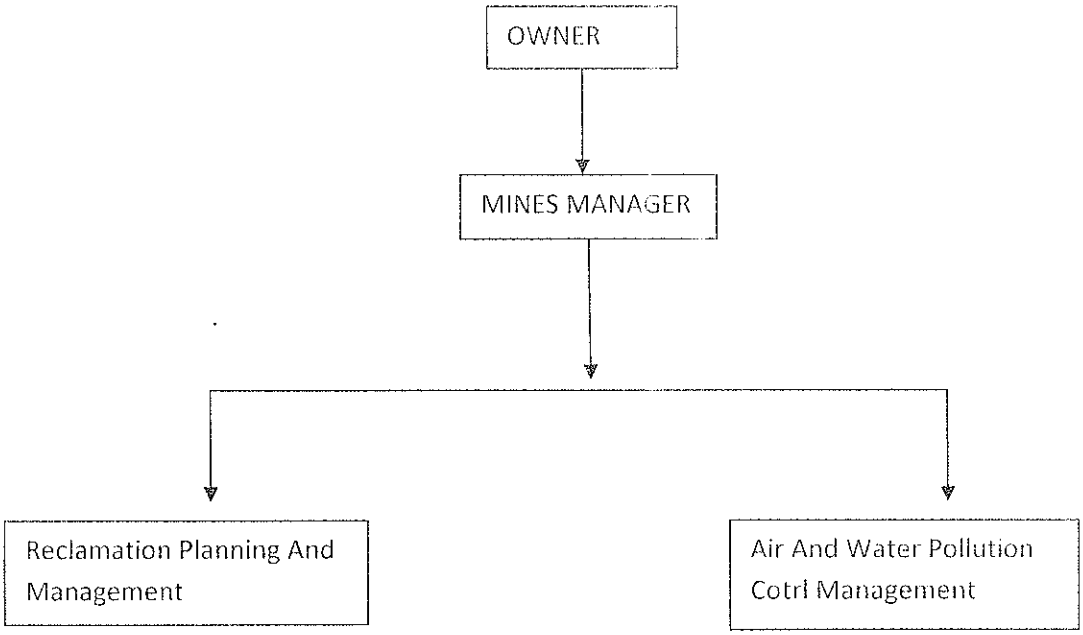
Environment Monitoring Programme

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

Solid Waste Management

During first& secondyear12,740cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Organization Structure




Water Quality Management

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

Air Quality Management

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

Mitigation measures:

Use of Sharp Drill Bits

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

Blasting – Blasting 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.

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

**Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Chaparna Stone Mine of M/s Rudraksh Metalics, Village : Chaparna, Thana no. : 285, Thana : Lesliganj, Distt. : Palamau, Jharkhand (1.17 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

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

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

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

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

**********

8. Phuljori Stone Mine of Partner : Mr. Azad Ansari, Village : Phuljori, Thana : Jamtara, Distt. : Jamtara, Jharkhand (2.10 Ha).

(Proposal no.: SIA/JH/MIN/ 501146 /2025)

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

This is a new project which has been taken for appraisal on 20.01.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 39672 Cum. / annum or 107114 TPA

Project and Location Details:

| Sl | Parameter | | Details |
|---|---|---|---|
| 1 | Project Name | : | Phuljori Stone Mine |
| 2 | Lessee: | : | Partners -<br>1. Shri Azad Ansari<br>2. Shri Krishn Kumar Mandal<br>3. Shri BhibhisanMurmu<br>4. Shri Mastan Marandi<br>5. Shri Anil Tudu<br>6. Atika Marandi<br>7. Jyotin Marandi<br>8. Sunil Marandi<br>9. Sankirtan Marandi |
| 3 | Lessee Address | : | 1. Shri Azad Ansari,<br>S/O Late Mustakim Ansari,<br>R/o Village– Khadkabad, Post – Barba Purva, Thana – Govindpur, Dist – Dhanbad,<br>2. Shri Krishn Kumar Mandal, S/O Shankar Mandal<br>3. Shri BhibhisanMurmu<br>S/O HaradhanMurmu,<br>4. Shri Mastan Marandi<br>S/O Ramsai Marandi<br>5. Shri Anil Tudu<br>S/O Anant Tudu<br>6. Atika Marandi<br>S/O Budhan Marandi<br>7. Jyotin Marandi<br>S/O Divakar Marandi<br>8. Sunil Marandi<br>S/O Late Mano Marandi & |

| | | | | |
|---|---|---|---|---|
| | | | 9. Sankirtan Marandi, S/O Mihir Marandi, R/O all the partners Vill – Phuljori, P.O – Chalna, Thana + Dist – Jamtara (Jharkhand) | |
| 4 | Lease Area | : | 2.10 Ha | |
| 5 | Type of Land | : | Non Forest Raiyati Land | |
| 6 | Project Cost | | Capital Cost: Rs. 103.85 Lakhs | Recurring Cost: Rs. 17.3 Lakhs |
| 7 | EMP Budget | : | Capital Cost: Rs. 6.55 Lakhs | Recurring Cost: Rs 5.630 Lakhs |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves | : | cum.: - 244505 Cum | Tonnes : 660163.5 Tons |
| 10 | Mine Life | : | 5 years. | |
| 11 | Man power | : | 31 Person | |
| 12 | Water Requirement | : | 6.521 KLD (Drinking: 0.465 KLD, Dust Suppression: 1.64 KLD, Plantation: 4.416 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 | : | Barakar river – 3 Km in SW direction. | |
| 17 | Nearest Habitation | : | Phuljori Village – 0.50 Km in East direction | |
| 18 | Nearest Rail Station | : | Jamtara Railway Station is 11.73 km (aerial distance) in North - East direction. | |
| 19 | Nearest Air Port | : | Deoghar Airport at 56.55 km N direction. | |
| 20 | Nearest Forest | : | More than 250 m, as per Division Forest Officer, Jamtara. letter no.- 780 Dated-25/05/2024. | |
| 21 | Road & Highways | : | A well Motorable road is connected to the mine site at a distance of 0.26 km SE direction. NH – 419 (Dhanbad – Jamtara) Road is at aerial distance of 1.03 Km North Direction. | |

**CO-ORDINATES**

| Point ID | Latitude | Longitude |
|---|---|---|
| P1 | 23° 56' 33.21995071" N | 086° 41' 28.38803394" E |
| P2 | 23° 56' 33.12359874" N | 086° 41' 28.96724385" E |
| P3 | 23° 56' 33.05160290" N | 086° 41' 29.61229486" E |
| P4 | 23° 56' 32.99240232" N | 086° 41' 30.21728469" E |

| | | |
|---|---|---|
| P5 | 23° 56' 33.01057428" N | 086° 41' 30.55531330" E |
| P6 | 23° 56' 32.86551437" N | 086° 41' 30.71476119" E |
| P7 | 23° 56' 32.86114521" N | 086° 41' 30.90331677" E |
| P8 | 23° 56' 32.55645432" N | 086° 41' 30.91233284" E |
| P9 | 23° 56' 32.19372088" N | 086° 41' 30.80726796" E |
| P10 | 23° 56' 32.11323326" N | 086° 41' 31.17515242" E |
| P11 | 23° 56' 32.03249739" N | 086° 41' 31.19225133" E |
| P12 | 23° 56' 31.26293374" N | 086° 41' 30.84996835" E |
| P13 | 23° 56' 31.30088201" N | 086° 41' 31.32116895" E |
| P14 | 23° 56' 30.97944772" N | 086° 41' 31.47739058" E |
| P15 | 23° 56' 30.34118393" N | 086° 41' 31.24834586" E |
| P16 | 23° 56' 30.18349408" N | 086° 41' 31.14158811" E |
| P17 | 23° 56' 29.83717469" N | 086° 41' 31.47110796" E |
| P18 | 23° 56' 29.51907919" N | 086° 41' 31.41129906" E |
| P19 | 23° 56' 29.23228315" N | 086° 41' 31.50691307" E |
| P20 | 23° 56' 28.80756511" N | 086° 41' 31.57587139" E |
| P21 | 23° 56' 28.28529580" N | 086° 41' 31.57857165" E |
| P22 | 23° 56' 28.19055695" N | 086° 41' 31.63386224" E |
| P23 | 23° 56' 28.11629811" N | 086° 41' 31.99488653" E |
| P24 | 23° 56' 27.25113544" N | 086° 41' 32.08981249" E |
| P25 | 23° 56' 27.16956993" N | 086° 41' 32.22843606" E |
| P26 | 23° 56' 27.15723444" N | 086° 41' 32.44979645" E |
| P27 | 23° 56' 26.54368139" N | 086° 41' 32.60947486" E |
| P28 | 23° 56' 26.36809766" N | 086° 41' 32.59503591" E |
| P29 | 23° 56' 26.14159267" N | 086° 41' 32.53141515" E |
| P30 | 23° 56' 25.64891413" N | 086° 41' 32.40477731" E |
| P31 | 23° 56' 25.95268793" N | 086° 41' 31.88920406" E |

| | | |
|---|---|---|
| P32 | 23° 56' 25.96892631" N | 086° 41' 31.71709855" E |
| P33 | 23° 56' 26.11395209" N | 086° 41' 31.36201770" E |
| P34 | 23° 56' 26.38930485" N | 086° 41' 30.47315437" E |
| P35 | 23° 56' 26.47946036" N | 086° 41' 30.30519625" E |
| P36 | 23° 56' 26.86226725" N | 086° 41' 29.94576063" E |
| P37 | 23° 56' 27.37275195" N | 086° 41' 29.30461449" E |
| P38 | 23° 56' 27.63752137" N | 086° 41' 29.12168258" E |
| P39 | 23° 56' 27.78029361" N | 086° 41' 29.19951063" E |
| P40 | 23° 56' 28.44381808" N | 086° 41' 28.45485381" E |
| P41 | 23° 56' 28.53742133" N | 086° 41' 28.10980892" E |
| P42 | 23° 56' 28.74791347" N | 086° 41' 28.11726445" E |
| P43 | 23° 56' 29.04275752" N | 086° 41' 28.35363440" E |
| P44 | 23° 56' 29.54387703" N | 086° 41' 27.60001773" E |
| P45 | 23° 56' 29.77128736" N | 086° 41' 26.94976128" E |
| P46 | 23° 56' 29.77317721" N | 086° 41' 26.66094427" E |
| P47 | 23° 56' 29.89138609" N | 086° 41' 26.48955641" E |
| P48 | 23° 56' 30.58050258" N | 086° 41' 26.66791431" E |
| P49 | 23° 56' 31.21147738" N | 086° 41' 26.82876461" E |
| P50 | 23° 56' 31.94379563" N | 086° 41' 27.04958059" E |
| P51 | 23° 56' 32.13245623" N | 086° 41' 27.47064187" E |
| P52 | 23° 56' 32.31489867" N | 086° 41' 27.87192415" E |

LAND DETAILS

| Khata no. | Plot no. |
|---|---|
| 4, 54, 26, 3, 77, 78, 63, 11 | 1806,1810,1812,1813,1814,1815,1816,1817, 1819,1827,1828,1830,1831,1832 |

STATUTORY CLEARANCES

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | The Letter of Intent (LoI) has been issued by District Mining Officer, Jamtara vide letter no. 545/M, dated 29.07.2024. |
| 2 | CO | : | The CO, Jamtara vide letter no. 182/Ra., dated 19.02.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Jamtara vide memo no. 60, dated 19.01.2024 certified that 01 other mining lease area (3.14 Acre) exists within 500 meters radius from proposed project site and total area is 8.35 Acre . |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Hazaribag vide letter no. 1258, dated 29.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Jamtara Forest Division vide letter no. 780, dated 25.05.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Jamtara District (Sl. no. 06, Page no. 114 A). |
| 7 | Gram Sabha | : | BDO, Jamtara vide letter no. 791/Vi., dated 21.06.2024 informed that Gram Sabha conducted on 12.06.2024. |
| 8 | Mine Plan Approval | : | Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Memo No. 290/M, dated 13.12.2024. |
| 9 | Qualified Person | : | Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him. |

Working Details

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Semi-Mechanized Method | |
| 2 | Quarry Area | : | 2.10 Ha | Life of Mine – 9 year |
| 3 | Waste Generation | : | 28859.6 cum | |
| 4 | Stripping Ratio | : | 03:02 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size | : | 6 m x 6 m, | |
| 7 | Elevation of Mine | : | 189 m AMSL | |
| 8 | Ground Level Elevation | : | 176 m AMSL | |
| 9 | Ultimate Working | : | 141 m AMSL | |

| | | | |
|---|---|---|---|
| | Depth | | |
| 10 | Water Table | : | Post Monsoon – 97m AMSL Pre Monsoon – 91 m AMSL |
| 11 | Topography of Mine | : | Area represents gently sloping land. |
| 12 | Explosive Requirement | : | 18.48 kg Slurry explosives/day |
| 13 | Diesel/Fuel requirement | : | HSD –293 liters / day (87.9 KL/year) |

**Production Details**

| Year | Production of Stone / Year | | | Per Day Production | | Removal of O.B. | |
|---|---|---|---|---|---|---|---|
| | Cum | T.F. | Tonnes | Cum | Tonnes | Cum | Production per day cum (O.B. |
| 1st | 30189 | 2.7 | 81510 | 101 | 272 | 14790 | 49 |
| 2nd | 30189 | 2.7 | 81510 | 101 | 272 | 14790 | 49 |
| 3rd | 20748 | 2.7 | 56020 | 69 | 187 | 11648 | 39 |
| 4th | 39672 | 2.7 | 107114 | 132 | 357 | 0 | 0 |
| 5th | 15548 | 2.7 | 41980 | 52 | 140 | 0 | 0 |
| Total | **136346** | **2.7** | **368134** | **132 Max.** | **357 Max.** | **41228** | 49 |

**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 | Road | 0.00 | 0.00 |
| 5 | Garland drain | 0.00 | 0.00 |
| 6 | Settling Pond | 0.00 | 0.00 |
| 7 | Green belt/ Safety Zone | 0.00 | 0.00 |
| 8 | Stone Stock Yards | 0.00 | 0.00 |
| 9 | Unutilized | 5.21 | 2.10 |
| | TOTAL | **5.21** | **2.10** |

Land Use Pattern for Proposed Plan Period:

| SL | Pattern | Proposed Land Use (Acres) | Proposed Land Use (Ha) |
|---|---|---|---|
| 1 | Mining Area | 3.22 | 1.30 |
| 2 | Office | 0.03 | 0.01 |
| 3 | Dumping | 0.50 | 0.20 |
| 4 | Road | 0.05 | 0.02 |
| 5 | Garland drain | 0.08 | 0.03 |
| 6 | Settling Tank | 0.01 | 0.00 |
| 7 | Safety Zone | 1.25 | 0.50 |
| 8 | Stone Stock yards | 0.00 | 0.00 |
| 9 | Green Belt | 0.07 | 0.02 |
| | **TOTAL** | **5.21** | **2.10** |

Land Use Pattern after Life of the Mine:

| SL | Pattern | Conceptual Land Use (Acres) | Conceptual Land Use (Ha) | Area to be converted in the conceptual period. |
|---|---|---|---|---|
| 1 | Mining Area | 3.22 | 1.30 | Water body |
| 2 | Office | 0.03 | 0.01 | Green Belt |
| 3 | Dumping | 0.50 | 0.20 | Green Belt |
| 4 | Road | 0.05 | 0.02 | Water body |
| 5 | Garland drain | 0.08 | 0.03 | - |
| 6 | Settling Tank | 0.01 | 0.00 | - |
| 7 | Safety Zone | 1.25 | 0.50 | Greenbelt |
| 8 | Stone Stock yards | 0.00 | 0.00 | - |
| 9 | Green Belt | 0.07 | 0.02 | Greenbelt |
| | **TOTAL** | **5.21** | **2.10** | |

ENVIRONMENT MANAGEMENT

**Green Belt Development**

| S. No. | Location | | Area/Length | No of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | | 0.505+0.200 Ha | 1,128 |
| 2 | Along Approach Road | | 260 m | 344 |
| TOTAL | | | | **1412 Trees** |

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

- **Budget for Environmental Management**

| Sl. No. | Particulars | Capital Cost in Rs. | Recurring Cost in Rs. per year |
|---|---|---|---|
| 1 | Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker) | -- | 3,00,000 |
| 2 | Plantation:<br>344X 800 = Rs 2,75,200 (Gabion Plantation along approach road)<br>1128 X 400 = 4,51,200 (Plantation within lease area)<br>(also includes Fertilizer, Pesticides, Maintenance) | 7,26,400 | 72640 |
| 3 | Fencing | 56,000 | |
| 4 | Environmental Monitoring (One Day Monitoring)<br>• Ambient Air 24 hrs (3 point) -Rs.27,270<br>• Ground Water (2 point) -Rs.12,420<br>• Noise 24 hrs (3 point) -Rs.21,000<br>• Soil (3 point) -Rs.40,920<br>**Total -Rs. 1,01,610 (Per Season)**<br>**At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220**<br>**Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022** | -- | 2,03,220 |
| **Total** | | 7,82,400 | 575,860 |

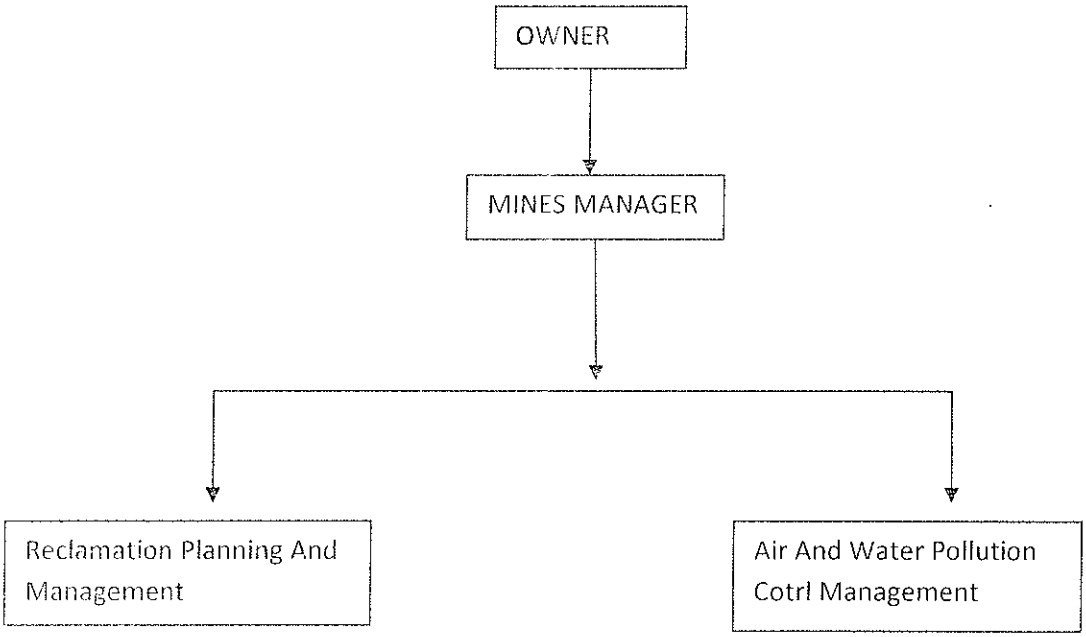
**Environment Monitoring Programme :**

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

Solid Waste Management

During first year 41228cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Organization Structure




Water Quality Management

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

Air Quality Management

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

Mitigation measures:

Use of Sharp Drill Bits

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

Blasting – Blasting 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 Phuljori Stone Mine of Partner : Mr. Azad Ansari, Village : Phuljori, Thana : Jamtara, Distt. : Jamtara, Jharkhand (2.10 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"EkPed Ma KeNaam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

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

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

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

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

**********

9. Salbonapahar Stone Mine of M/s Alliance Infra and Mines (Partners : (i) Shri Sanjay Kumar Verma (ii) Shri Ashutosh (iii) Md. Irfan), Village : Salbonapahar, Thana : Shikaripara, Distt. : Dumka, Jharkhand (0.80 Ha).

(Proposal no.: SIA/JH/MIN/ 517909 /2025)

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

This is a new project which has been taken for appraisal on 20.01.2025.

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

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

**EC Application for: Proposed Capacity: 16,715Cum. / annum or 45,131 TPA**

**Project and Location Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Salbonapahar Stone Mine | |
| 2 | Lessee: | : | M/S Alliance Infra and Mines<br>Partners:<br>1. Shri Sanjay Kumar Verma,<br>2. Shri Ashutosh,<br>3. Md. Irfan | |
| 3 | Lessee Address | : | M/s Alliance Infra and Mines.<br>Partners:<br>1. Shri Sanjay Kumar Verma, S/o Late Kailash Prasad Verma, R/o Vill+PO+PS-Shikaripara,<br>2. Shri Ashutosh, S/o Shri Mahanand Chaudhary, R/o H. no. 41, SFRHS Lane No. 2, Laxmi Nagar, Behind Sai mandir, East Delhi, 110092.<br>3. MD. Irfan, S/o MD. Israr, R/o H. no. 41, KH No.137/12, Second Floor, Lane No. 4, Block A/2, West Santnagar, North Delhi, 110084. | |
| 4 | Lease Area | : | 0.80 Ha | |
| 5 | Type of Land | : | Non Forest Raiyati Land | |
| 6 | Project Cost | | Capital Cost: Rs. 107.09 Lakhs | Recurring Cost: Rs. 4 Lakhs |
| 7 | EMP Budget | : | Capital Cost: Rs. 4.976 Lakhs | Recurring Cost: Rs. 5.429 Lakhs |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves | : | cum.: 70,860cum | Tonnes: 1,91,321tons |
| 10 | Mine Life | : | 5 years. | |
| 11 | Man power | : | 22Person | |
| 12 | Water Requirement | : | 3.31 KLD (Drinking: 0.33 KLD, Dust Suppression: 0.90KLD, Plantation: 2.08KLD) | |

| | | | |
|---|---|---|---|
| 13 | Water Source | : | From Nearby villages by tankers |
| 14 | DG Set / power | : | 20 KVA D.G. Set proposed |
| 15 | Crusher | : | No crusher |
| 16 | Nearest Water Body | : | Brahmani river at 6.64 km North direction. |
| 17 | Nearest Habitation | : | Saharpur Village – 1.48 Km in SE Direction |
| 18 | Nearest Rail Station | : | PakdahaHarinsing Railway Station at areal distance of 6 km in North direction. |
| 19 | Nearest Air Port | : | Deoghar Airport is at areal distance of 92 km NW direction. |
| 20 | Nearest Forest | : | More than 250 m, as per Division Forest Officer Dumka. letter no.- 660 Dated- 01.03.2023 |
| 21 | Road & Highways | : | Approach Road is 0.226 Km, after that this road connects to NH-114A (Dumka-Rampurhat road), at 6.8 km at NW direction. |

CO-ORDINATES

| Point ID | Latitude | Longitude |
|---|---|---|
| 1 | 24° 11' 10.47741230" N | 087° 34' 10.35913810" E |
| 2 | 24° 11' 09.99308538" N | 087° 34' 10.87686688" E |
| 3 | 24° 11' 09.53882012" N | 087° 34' 11.32779195" E |
| 4 | 24° 11' 09.03779227" N | 087° 34' 11.84218054" E |
| 5 | 24° 11' 08.50336256" N | 087° 34' 12.33652802" E |
| 6 | 24° 11' 08.30629161" N | 087° 34' 12.22964208" E |
| 7 | 24° 11' 07.98897397" N | 087° 34' 11.98580853" E |
| 8 | 24° 11' 07.59149187" N | 087° 34' 11.58164606" E |
| 9 | 24° 11' 07.12386587" N | 087° 34' 11.09397895" E |
| 10 | 24° 11' 06.43244744" N | 087° 34' 10.58627072" E |
| 11 | 24° 11' 06.26209797" N | 087° 34' 10.50276608" E |
| 12 | 24° 11' 05.87797661" N | 087° 34' 10.35579791" E |
| 13 | 24° 11' 05.33884608" N | 087° 34' 09.96630787" E |
| 14 | 24° 11' 05.86418386" N | 087° 34' 09.80496713" E |
| 15 | 24° 11' 06.45636308" N | 087° 34' 09.62309817" E |
| 16 | 24° 11' 07.04854230" N | 087° 34' 09.44122921" E |
| 17 | 24° 11' 07.46453864" N | 087° 34' 09.25288263" E |

| | | |
|---|---|---|
| 18 | 24° 11' 07.93183392" N | 087° 34' 09.04130995" E |
| 19 | 24° 11' 08.42072675" N | 087° 34' 08.81995875" E |
| 20 | 24° 11' 08.90961958" N | 087° 34' 08.59860755" E |
| 21 | 24° 11' 09.17301465" N | 087° 34' 08.89438331" E |
| 22 | 24° 11' 09.43640973" N | 087° 34' 09.19015906" E |
| 23 | 24° 11' 09.71249000" N | 087° 34' 09.50017948" E |
| 24 | 24° 11' 09.98857027" N | 087° 34' 09.81019989" E |
| 25 | 24° 11' 10.23299129" N | 087° 34' 10.08466899" E |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 16 | 164 (P) |
| 34 | 165 (P) |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 1073/M, dated 20.09.2024. |
| 2 | CO | : | The CO, Shikaripara vide letter no. 711/Ra., dated 27.05.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Dumka vide memo no. 1243/M, dated 28.10.2024 certified that 07 other mining lease area ( 7.00 Acre, 4.62 Acre, 5.10 Acre, 5.06 Acre, 7.34 Acre, 2.81 Acre 4.66 Acre) and 04 LoI (7.27 Acre, 6.94 Acre, 7.39 Acre & 4.01 Acre) exists within 500 meters radius from proposed project site and total area is 62.20 Acre. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Hazaribag vide letter no. 469, dated 18.03.2024 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. 660, dated 01.03.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Dumka District (Sl. |

| | | | |
|---|---|---|---|
| | | | no. 67, Page no. 163). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 17.03.2023. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Dumka vide Letter No. 25/M, dated 07.01.2025. |
| 9 | Qualified Person | : | Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Semi-Mechanized Method | |
| 2 | Quarry Area | : | 0.80 Ha | Life of Mine – 5year |
| 3 | Waste Generation | : | 2415cum | |
| 4 | Stripping Ratio | : | 01:05 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size | : | 5 m x 5 m | |
| 7 | Elevation of Mine | : | 242m–236m AMSL | |
| 8 | Ground Level Elevation | : | 242 AMSL | |
| 9 | Ultimate Working Depth | : | 32 m AMSL | |
| 10 | Water Table | : | Post Monsoon – 64m AMSL Pre Monsoon – 69.5m AMSL | |
| 11 | Topography of Mine | : | Area represents gently sloping land. | |
| 12 | Explosive Requirement | : | 17.82 kg Slurry explosives/day | |
| 13 | Diesel/Fuel requirement | : | HSD – 232 liters / day (69.6 KL/year) | |

**Production Details**

| Year | Production of Stone / Year | | | Per Day Production | | Removal of O.B. | |
|---|---|---|---|---|---|---|---|
| | Cum | T.F. | Tonnes | Cum | Tonnes | Cum | Production per day cum (O.B. |
| 1st | 12323 | 2.7 | 33273 | 41 | 111 | 2415 | 8 |
| 2nd | 11865 | 2.7 | 32034 | 40 | 107 | 0 | 0 |
| 3rd | 16715 | 2.7 | 45131 | 56 | 150 | 0 | 0 |
| 4th | 13307 | 2.7 | 35928 | 44 | 120 | 0 | 0 |
| 5th | 16584 | 2.7 | 44777 | 55 | 149 | 0 | 0 |
| Total | **70794** | | **191144** | **56 (Max.)** | **150 (Max.)** | **2415** | **8** |

Land Use pattern

| SL | Pattern of Utilization | Present/Existing land use pattern in (Ha) | During plan period land use pattern in (Ha) | Area to be converted in the conceptual period. |
|---|---|---|---|---|
| 1 | Mining Activities | 0.293 | 0.536 | Water body |
| 2 | Offices/Store etc. | 0.000 | 0.000 | Plantation |
| 3 | Dumping | 0.000 | 0.000 | Plantation |
| 4 | Mining Road | 0.000 | 0.000 | Water body |
| 5 | Garland drain | 0.000 | 0.018 | - |
| 6 | Settling Tank | 0.000 | 0.000 | - |
| | Green belt | 0.000 | 0.000 | Green belt |
| 7 | Safety Zone | 0.000 | 0.246 | Plantation |
| 8 | Stone Stock yards | 0.000 | 0.000 | - |
| 6 | Unutilized | 0.507 | 0.000 | - |
| 11 | Crusher (Mobile Crusher) | 0.000 | 0.000 | - |
| | TOTAL | 0.800 | 0.800 | - |

ENVIRONMENT MANAGEMENT

Green Belt Development

| S. No. | Location | | Area/Length | No of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | | 0.246 Ha | 394 |
| 2 | Along Approach Road | | 226m | 300 |
| TOTAL | | | | 694 |

- 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<br>300 X 800 = Rs 2,40,000 (Gabion Plantation along approach road)<br>394 X 400 = Rs. 1,57,600 (Plantation within lease area)<br>(also includes Fertilizer, Pesticides, Maintenance) | 3,97,600 | 39,760 |
| 3 | Fencing | 100,000 | - |
| 4 | Environmental Monitoring (One Day Monitoring)<br>• Ambient Air 24 hrs (3 point) - Rs.27,270<br>• Ground Water (2 point) - Rs.12,420<br>• Noise 24 hrs (3 point) - Rs.21,000<br>• Soil (3point) -Rs.40,920<br>**Total -Rs. 1,01,610**<br>**(Per Season)**<br>**At least two seasons in a Year -Rs. 1,01,610 x 2**<br>**= Rs. 2,03,220**<br><br>Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022 | -- | 2,03,220 |
| **Total** | | **4,97,600** | **5,42,980** |

Environment Monitoring Programmed

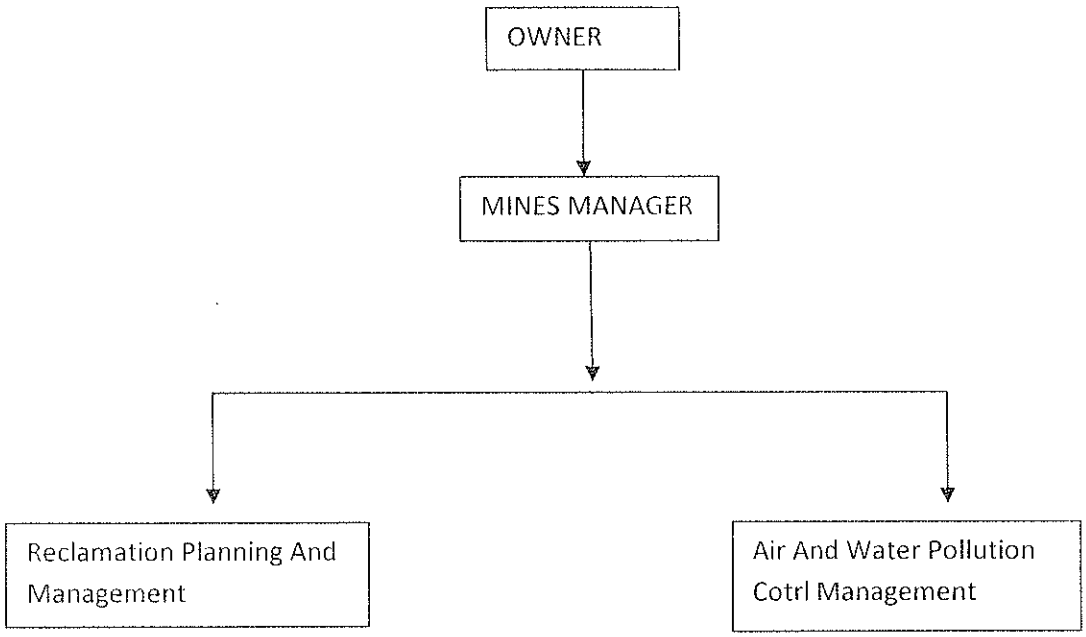
| SL. No. | Description | No. Of Monitoring Stations | Duration |
|---|---|---|---|
| 1. | Air | 3 stations | 6 Monthly |
| 2. | Water | 2 stations | 6 Monthly |
| 3. | Noise | 3 stations | 6 Monthly |
| 4. | Soil | 3 Station | 6 Monthly |

Note: Monitoring period March 2025 to May 2025

Solid Waste Management

2415cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Organization Structure




Water Quality Management

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

Air Quality Management

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

Mitigation measures:

Use of Sharp Drill Bits

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

Blasting – Blasting 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.
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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 20, 21, 22, 23 & 24.01.2025, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in** Annexure II **alongwith following specific condition :-**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

**********

Day 2 : January 21st, 2025 [Tuesday]

## Consideration of proposals :

1. **Brick Soil Mining for M/s Piyush Bricks (Prop. : Smt. Pushpa Kumari), Village : Senha, Thana : Senha, Thana no. : 189, Distt. : Lohardaga, Jharkhand (0.92 Ha).**

   **(Proposal no.: SIA/JH/MIN/ 501526 /2025)**

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

   This is a new project which has been taken for appraisal on 21.01.2025.

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

   **Application for Environmental Clearance (EC).**

   **EC Application for: Proposed Capacity– 10 cum/Day or 2000 cum per year**

   **Project and Location Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Brick Soil Mining for M/s Piyush Bricks | |
| 2 | Lessee: | : | M/s Piyush Bricks<br>Proprietor – Smt. Pushpa Kumari | |
| 3 | Lessee Address | : | AT – GGS ROAD, GYAN SHARDA COMPLEX,<br>BESIDE ALLAHABADBANK, HAZARIBAGH,<br>DISTRICT – HAZARIBAGH, STATE – JHARKHAND, PIN CODE - 825301 | |
| 4 | Lease Area | : | 0.92 Ha | Acres–2.28 Acre |
| 5 | Type of Land | : | Non Forest Raiyati Land | |
| 6 | Project Cost | : | Capital: 1.63 Lakhs | Recurring: 28.22 lakhs / year |
| 7 | EMP Budget | : | Capital: 1.63 Lakhs | Recurring: 2.21 lakhs / year |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves | : | cum.: 12584 cum | Tonnes: |
| 10 | Mine Life | : | 6 years | |
| 11 | Man power | : | 16 | |
| 12 | Water Requirement | : | 4.79KLD (Drinking: 0.64 KLD, Industrial: 3.68 KLD, Plantation: 0.47 KLD) | |
| 13 | Water Source | : | By authorised hired water tankers | |
| 14 | DG Set / power | : | - | |
| 15 | Crusher | : | No crusher | |
| 16 | Nearest Water | : | South Koel river is situated at a distance of 1.02 km in East | |

| | | | |
|---|---|---|---|
| | Body | | direction. |
| 17 | Nearest Habitation | : | Senha, at 1.0 KM in North direction. |
| 18 | Nearest Rail Station | : | Lohardaga Railway station, approx. 9.88 km towards North-East direction. |
| 19 | Nearest Air Port | : | Birsa Munda Airport, at a distance of69.37 km East direction |
| 20 | Nearest Forest | : | Open mixed jungle at a distance of 4.5 km in South direction. |
| 21 | Road & Highways | : | NH – 143 A, Approx. 400m in West direction. |

**CO-ORDINATES:**

| LABEL | LATITUDE | LONGITUDE |
|---|---|---|
| 1 | N23°22'32.94" | E84°39'03.08" |
| 2 | N23°22'32.50" | E84°39'03.00" |
| 3 | N23°22'32.33" | E84°39'03.71" |
| 4 | N23°22'31.32" | E84°39'03.41" |
| 5 | N23°22'30.34" | E84°39'03.13" |
| 6 | N23°22'29.10" | E84°39'02.78" |
| 7 | N23°22'27.79" | E84°39'02.50" |
| 8 | N23°22'28.08" | E84°39'01.46" |
| 9 | N23°22'26.85" | E84°39'01.04" |
| 10 | N23°22'26.95" | E84°39'00.67" |
| 11 | N23°22'28.76" | E84°39'00.67" |
| 12 | N23°22'30.48" | E84°39'01.12" |
| 13 | N23°22'32.10" | E84°39'01.55" |
| 14 | N23°22'33.22" | E84°39'01.84" |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 859 | 3960 (P) |
| 799 | 3989 (P) |
| 429 | 3991 (P) |
| 158 | 3961 (P) |
| 891 | 3989 (P) / 5689 (P), 3989 (P) / 5688 (P) |
| 342 | 3990 (P) |
| 549 | 3995 (P) |

## STATUTORY CLEARANCES

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | Land agreement made. |
| 2 | CO | : | The CO, Senha (Lohardaga) vide letter no. 377, dated 17.05.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Lohardaga vide memo no. 1462/M, dated 20.12.2023 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. 58, dated 18.01.2024 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. 58, dated 03.01.2024 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved District Survey Report (DSR) of Lohardaga District (Sl. no. 05, Page no. 25) within coordinates 23°22'25'' to 23°22'33.23'' N, 84°39'0.56'' to 84°39'7.55'' E<br>The DMO, Lohardaga vide memo no. 950/M, dated 26.11.2024 has certified that all the khata number and plot numbers are located within the coordinates mentioned in the DSR i.e. 23°22'25'' to 23°22'33.23'' N, 84°39'0.56'' to 84°39'7.55'' E |
| 7 | Gram Sabha | : | BDO, Senha (Lohardaga) vide letter no. 486, Dated 20.05.2024 informed that Gram Sabha conducted on 17.02.2024. |
| 8 | Mine Plan Approval | : | Approved by DMO, Lohardaga vide Memo No. 932/M, dated 22.11.2024 |
| 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 manual method | |
| 2 | Quarry Area | : | 0.92 Ha / 2.28 Acres | Life of Mine – 6 years |
| 3 | Waste Generation | : | 352 cum | |
| 4 | Stripping Ratio | : | 1:0.02 | |

| | | | |
|---|---|---|---|
| 5 | Working Days | : | 200 |
| 6 | Benches: size & No | : | 1.5 meter |
| 7 | Elevation of Mine | : | 650 m AMSL to 648 m AMSL |
| 8 | Ground Level Elevation | : | 652m AMSLto 650m AMSL |
| 9 | Ultimate Working Depth | : | 648m AMSL |
| 10 | Water Table | : | 638m AMSL |
| 11 | Topography of Mine | : | Area represents gently sloping land. |
| 12 | Explosive Requirement | : | NA |
| 13 | Diesel/Fuel requirement | : | 120 litre/day |

**Production Details**

| Year | Production of Recoverable Soil (volume in Cum) | Production of Bricks Block in Nos. |
|---|---|---|
| 1st | 2000 | 8,00,000 |
| 2nd | 2000 | 8,00,000 |
| 3rd | 2000 | 8,00,000 |
| 4th | 2000 | 8,00,000 |
| 5th | 2000 | 8,00,000 |
| **Total** | **10000** | **40,00,000** |

**Land Use**

**Land Use Pattern at the end of Plan Period (5 Years Plan Period):**

| Category | Area in Ha. | Area in Acres |
|---|---|---|
| Quarry | 0.590 | 1.46 |
| Plantation in Safety | 0.049 | 0.12 |
| Blocked area due to | 0.127 | 0.31 |
| **Total Area in Used** | **0.766** | **1.89** |
| Balance Unused Area | 0.154 | 0.39 |
| **Total Applied Area** | **0.920** | **2.28** |

**Land Use Pattern after Life of the Mine:**

| Category | Area in Ha. | Area in Acres |
|---|---|---|
| Quarry | 0.744 | 1.85 |
| Green Belt | 0.049 | 0.12 |
| Blocked area due to | 0.127 | 0.31 |

| | | |
|---|---|---|
| **Total Area in Used** | **0.920** | **2.28** |
| Balance Unused Area | Nil | Nil |
| **Total Applied Area** | **0.920** | **2.28** |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

| Year | Place of Plantation | Spacing b/w plants | Total No. of Plants | Area Cover in Square Meters | Total Area in Ha. | Species |
|---|---|---|---|---|---|---|
| 1st | Safety Zone | 2.5 x 2.5 | 79 | 490 | 0.049 | Gulmohar, Gular, Sagwan, Sakua Fruit Bearing Trees Mango, Jackfruit, Guava |
| | Haul Road | 3 x 3 | 159 | 470 | 0.047 | |
| 2nd | Care & Protection | --- | --- | --- | --- | |
| 3rd | Care & Protection | --- | --- | --- | --- | |
| 4th | Care & Protection | --- | --- | --- | --- | |
| 5th | Care & Protection | --- | --- | --- | --- | |
| **Total** | | | **238** | **960** | **0.096** | |

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

**Environment Management Budget**

| PROPOSED FOR ENVIRONMENT MANAGEMENT COST | | | |
|---|---|---|---|
| **S.NO.** | **Mitigative measures to protect Environment** | **Capital Cost (in Lakh)** | **Recurring cost (In Lakh)** |
| 01. | Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) | 0.00 | 1.5 |
| 02. | Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and | 0.715 | 0.119 |

| | | | |
|---|---|---|---|
| | fences) @ No. of plants 1966 x 500Rs. | | |
| 03 | Garland Drain and Desiltation pond | 0.92 | 0.092 |
| 04. | Environment Monitoring (Air, Water, Noise & Soil Monitoring) | 0.00 | 0.50 |
| **TOTAL** | | **1.635** | **2.211** |

**Environment Monitoring Plan (post operation)**

**Monitoring Parameters and Frequency of Monitoring**

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

**Undertaking submitted affirming:**

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

h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.

i. If any tree felling than necessary permission shall be taken from the competent authority.

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

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

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

**Solid Waste Management**

During first, second, third and fourth year gritty soil & intercalated waste will be removed (43778$m^3$ ) this soil and waste will be temporarily backfill within the exhausted quarry and in fifth year (2782.5$m^3$) removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

**Water Quality Management**

A. Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.

B. 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.

C. 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.

D. Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.

E. Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.

F. Sewage from rest shelter would be treated in Septic Tank soak pit.

**Air Quality Management**

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

Mitigation measures:

I. **Use of Sharp Drill Bits**

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

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

a. Controlled blasting would be practiced

b. Optimum quantity of explosives would be used.

c. Blasting to be done during favorable weather conditions.

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

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

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

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

**RISK ASSESSMENT**

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

**Hazard identification & Risk Analysis in Stone Mining operation**

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

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

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

**Preventive Measures:**

**Slope Failure**

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

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

- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

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

Control Measures

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

Dust generation during drilling

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

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

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

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

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

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

**Blasting Operations**

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

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

**Handling of Explosives**

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

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

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

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

**Health Hazards**

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

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

**Accident at Site**

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

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

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

Transportation

The usual method of transporting minerals from the working face is by trucks

/tippers/dumpers. Large earth moving equipment's are used for loading /transporting largequantity of mineral from a mine. During transportation of minerals in the mining area,utmost care will be taken by the vehicle operator to avoid any accident with any incomingvehicle by keeping sufficient gap between the two vehicles, keep safe distance from theedge of the mineface, avoid any accident to a worker crossing the haul road and shallmaintain low speed. The vehicle operator shall not try to overtake another vehicle.

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

**Organizational Structure:**

**Introduction**

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

**Environmental Policy**

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

**EMP Cell Objectives**

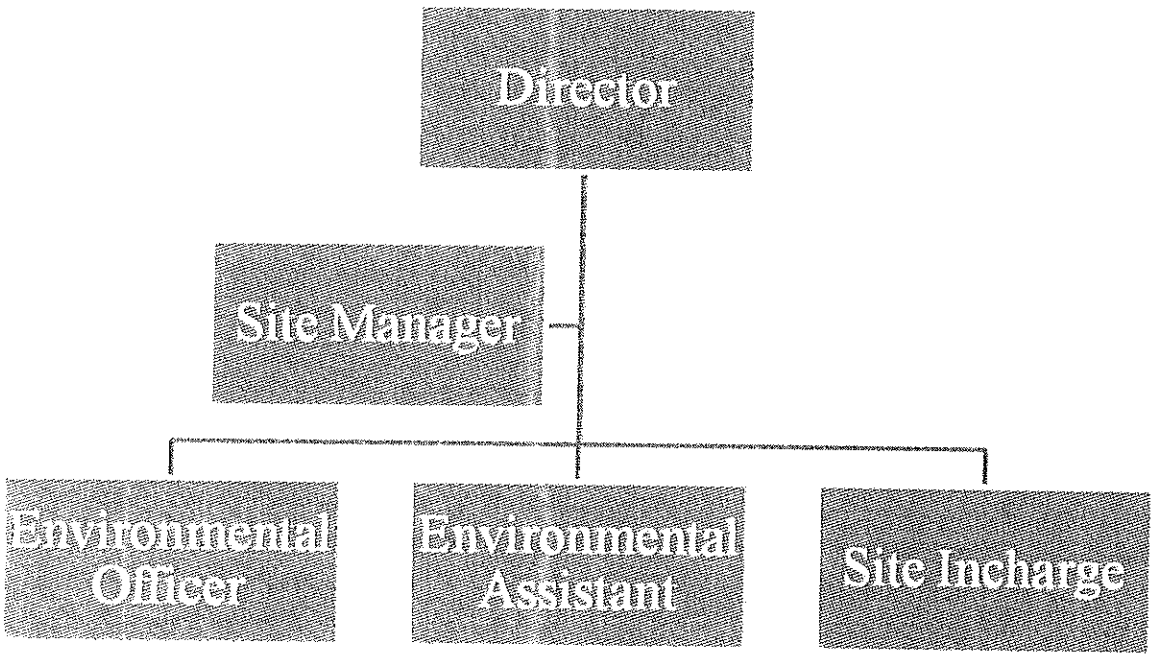
The EMP Cell objectives are:
- Minimize environmental impacts on air, water, soil, and biodiversity

- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

**EMP Cell Structure**

The EMP Cell consists of three members:

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




EMP Cell structure

**Roles and Responsibilities**

**Environmental Officer (EO)**

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

**Environmental Assistant (EA)**

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment

- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

**Administrative Assistant (AA)**

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

**Director/Top Management Responsibilities**

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

**EMP Process Flow**

The EMP process flow includes:

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

**Key Decision Points**

Key decision points include:

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

**Documentation**

Documentation includes:

- EMP manual
- Monitoring records
- Reports

- Inspection records
- Training records

**Implementation Timeline**

The implementation timeline consists of:

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

**Reporting**

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

**Conclusion**

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

**Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Brick Soil Mining for M/s Piyush Bricks (Prop. : Smt. Pushpa Kumari), Village : Senha, Thana : Senha, Thana no. : 189, Distt. : Lohardaga, Jharkhand (0.92 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

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

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be

maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

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

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

**********

2. **Phuljori Stone Deposit of M/s Sri Balajee Minerals Corporation (Partners : Shri Anant Prasad & Others), Village : Phuljori, Tehsil : Jamtara, Distt. : Jamtara, Jharkhand (1.27 Ha).**

**(Proposal no.: SIA/JH/MIN/ 514301 /2025)**

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

This is a new project which has been taken for appraisal on 21.01.2025.

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

**Application for Environmental Clearance (EC).**

**EC Applicationfor :Boulder Stone:33453.3 $M^3$/Annum (90324 T/Annum, Peak)**

**Project and Location Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Phuljori Stone Deposit | |
| 2 | Lessee: | : | M/s Sri Balajee Minerals Corporation,(Partner:Sri Anant Prasad) Prasad Singhania) | |
| 3 | Lease Address | : | Mouza–Phuljori,Thana–Jamtara<br>District–Jamtara,State–Jharkhand. | |
| 4 | Lease Area | : | Ha: 1.27ha. | Acres: 3.14Ac. |
| 5 | Type of Land | : | NonForest–RayatiLand | |
| 6 | Project Cost | : | Capital : Rs. 10,88,900 | Recurring : Rs. 56,04,150 / Year |
| 7 | EMP Budget | : | Capital : Rs. 3,88,900 | Recurring : Rs. 6,07,650 / Year |
| 8 | New or Expansion | : | NeworExpansion | |
| 9 | Mineable Reserves | : | Cu.M.:2,25,882 | Tonnes: 6,09,883 |
| 10 | Mine Life | : | 07 years | |
| 11 | Man power | : | 17 | |

| | | | |
|---|---|---|---|
| 12 | Water Requirement | : | 10.998 KLD (including 0.68 KLD for Domestic, 5.238 KLD for Horticulture & 5.08 KLD for Dust Suppression) |
| 13 | Water Source | : | Authorized Water Tanker |
| 14 | DG Set / power | : | Not required |
| 15 | Crusher | : | Not withinmineleasearea |
| 16 | Nearest Water Body | : | Rajia River 1.25KM/ Barakar River – 2.5 km. |
| 17 | Nearest Habitation | : | PhuljoriVillage: 2.00KM;Jamtara: 15KM |
| 18 | Nearest Rail Station | : | Jamtara - 15KM |
| 19 | Nearest Air Port | : | Deoghar - 90KM |
| 20 | Nearest Forest | : | Not within250m |
| 21 | Road & Highways | : | Govindpur – Jamtara Road – 1.25KM; |

**CO-ORDINATES**

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | | From23°56'21.31094" N | To 23°56'25.96682" N |
| 2 | Longitude | | From86°41'32.76917" E | To86°41'38.64991" E |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 52 | 1859, 1873, 1874, 1875, 1876, 1877, 1878, 1879 & 1881 |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | The Letter of Intent (LoI) has been issued by District Mining Officer, Jamtara vide letter no. 66/M, dated 25.01.2024. |
| 2 | CO | : | The CO, Jamtara vide letter no. 503/Ra., dated 12.04.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Jamtara vide memo no. 179, dated 22.02.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Hazaribag vide letter no. 55, dated 12.01.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary. |

| | | | |
|---|---|---|---|
| 5 | DFO Territorial | : | Division Forest Officer, Jamtara Forest Division vide letter no. 524, dated 15.04.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Jamtara District (Sl. no. 129, Page no. 128 & 129). |
| 7 | Gram Sabha | : | BDO, Jamtara vide letter no. 1275/Vi., dated 23.12.2023 informed that Gram Sabha conducted on 08.12.2023. |
| 8 | Mine Plan Approval | : | Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Memo No. 41/DDM, dated 20.02.2024. |
| 9 | Qualified Person | : | Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Semi-mechanized "OTFM" Method | |
| 2 | Quarry Area | : | Plan period-- 0.849 ha. | Life of Mine : 7 Years |
| 3 | Waste Generation | : | Plan period-- 21,526.8$m^3$ | |
| 4 | Stripping Ratio | : | 0.13(overallstrippingratio) | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 6mx6mand 5benches. | |
| 7 | Elevation of Mine | : | 203mAMSL | |
| 8 | Ground Level Elevation | : | 192mAMSL | |
| 9 | Ultimate Working Depth | : | 175 mAMSL | |
| 10 | Water Table | : | 172 mAMSL | |
| 11 | Topography of Mine | : | Gentle slopefromNorth - Westto South - East. | |
| 12 | Explosive Requirement | : | 11,290kg/year | |
| 13 | Diesel/Fuel requirement | : | Transport Vehicle & Machineries- 150 Litre/d(DG set not required) | |

**Production Details**

| Year | Production of stone (Cum) | Production of stone (Tonne) | Waste Generation (Cum) | Bench AMSL in Meters |
|---|---|---|---|---|
| 1st | 32,068.20 | 86,584.14 | 1687.80 | 199 – 193 |
| 2nd | 32,481.45 | 87,699.92 | 1709.55 | 193 – 187 |
| 3rd | 33,045.75 | 89,223.53 | 1739.25 | 187 – 181 |

| | | | | |
|---|---|---|---|---|
| 4th | 33,316.50 | 89,954.55 | 1753.50 | 181 - 175 |
| 5th | 33,453.30 | 90,323.91 | 1760.70 | 193 - 181 |
| **Total** | **1,64,365.20** | **4,43,786.05** | 8650.80 | |

**Land Use**

| SL | Pattern | Existing Land Use(Ha) | ProposedCurrentPlan Period (Ha) | ProposedLand Useat End of LifeofMine (Ha) | Land Usageat ConceptualStage |
|---|---|---|---|---|---|
| 1 | MiningArea | 0.000 | 0.849 | 0.849 | 0.447- WaterBody |
| 2 | Dump | 0.000 | 0.000 | 0.000 | - |
| 3 | Office/Store | 0.000 | 0.000 | 0.000 | - |
| 4 | Crusher | 0.000 | 0.000 | 0.000 | - |
| 5 | Road | 0.000 | 0.000 | 0.000 | - |
| 6 | Safety Zone | 0.000 | 0.421 | 0.421 | Green Belt |
| 7 | Unutilized | 1.270 | 0.000 | 0.000 | - |
| | **TOTAL** | **1.270** | **1.270** | **1.270** | |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

| Sl. No | LOCATION | | Area/Length | No. of Trees |
|---|---|---|---|---|
| 1. | Safety Zone | : | 0.421ha | 673trees |
| 2. | Haul/ApproachRoad | : | 100m | 200 (two row & 2m X 2m spacing) |
| **TOTAL** | | | | **873** |

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

**Environment Management Budget**

| BUDGETARY PROVISION FOR ENVIRONMENT MANAGEMENT PLAN (EMP) | | |
|---|---|---|
| 873 Tree Plantation<br>@Rs.300 per Tree for planting & @Rs.50 per tree for maintenance | 2,61,900 | 43,650 |
| Water Tanker @Rs. 500 per Tanker for Dust Suppression (5.08 KLD) & Horticulture (4.038 KLD)<br>5.08 KLD + 4.038 KLD = 9.118 KLD | 0 | 3,87,000 |

| | | |
|---|---|---|
| 9.118 KLD X 300 Days = 2735.4 KLD<br>2735.4 KLD / 4 KLD = 684 Tankers | | |
| Garland Drain & Parapet wall | 1,27,000 | 1,27,00 |
| Environment Monitoring & Compliance | 0 | 50,000 |
| **Total** | **3,88,900** | **6,07,650** |

**Environment Monitoring Plan (post operation)**

**Monitoring Parameters and Frequency of Monitoring**

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

**Undertaking submitted affirming:**

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

h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

**Solid Waste Management**

During first, second, third and fourth year gritty soil & intercalated waste will be removed (17909$m^3$ ) this soil and waste will be temporarily backfill within the exhausted quarry and in fifth year (3850$m^3$) removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

**Water Quality Management**

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

**Air Quality Management**

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

Mitigation measures:

<u>Use of Sharp Drill Bits</u>

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

<u>Blasting –</u> 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.

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

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

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

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

**RISK ASSESSMENT**

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

**Hazard identification & Risk Analysis in Stone Mining operation**

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

**NOTE**: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.
The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

**Preventive Measures:**

**Slope Failure**

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

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

- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

**Drilling Operations**

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

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

**Falls from the edge of a bench**

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

**Control Measures**

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

  Dust generation during drilling

  The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.
- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

**Noise Generation during drilling**

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

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

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

**Blasting Operations**

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

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

**Handling of Explosives**

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

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

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

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

**Health Hazards**

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

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

**Accident at Site**

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

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

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

**Transportation**

The usual method of transporting minerals from the working face is by trucks

/tippers/dumpers. Large earth moving equipment's are used for loading /transporting largequantity of mineral from a mine. During transportation of minerals in the mining area,utmost care will be taken by the vehicle operator to avoid any accident with any incomingvehicle by keeping sufficient gap between the two vehicles, keep safe distance from theedge of the mineface, avoid any accident to a worker crossing the haul road and shallmaintain low speed. The vehicle operator shall not try to overtake another vehicle.

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

**Organizational Structure:**

**Introduction**

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

**Environmental Policy**

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

**EMP Cell Objectives**

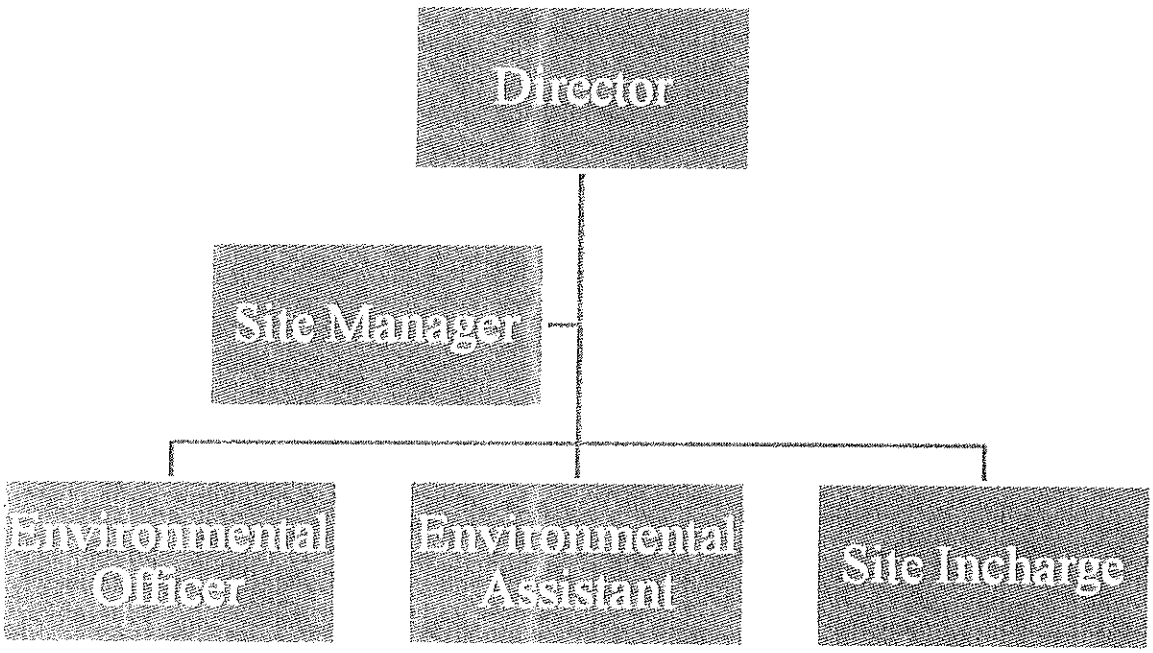
The EMP Cell objectives are:

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

**EMP Cell Structure**

The EMP Cell consists of three members:

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




EMP Cell structure

**Roles and Responsibilities**

**Environmental Officer (EO)**

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

**Environmental Assistant (EA)**

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment

- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

**Administrative Assistant (AA)**

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

**Director/Top Management Responsibilities**

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

**EMP Process Flow**

The EMP process flow includes:

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

**Key Decision Points**

Key decision points include:

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

**Documentation**

Documentation includes:

- EMP manual
- Monitoring records
- Reports

- Inspection records
- Training records

**Implementation Timeline**

The implementation timeline consists of:

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

**Reporting**

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

**Conclusion**

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

**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 Phuljori Stone Deposit of M/s Sri Balajee Minerals Corporation (Partners : Shri Anant Prasad & Others), Village : Phuljori, Tehsil : Jamtara, Distt. : Jamtara, Jharkhand (1.27 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"EkPed Ma KeNaam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests .

Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

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

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

**********

3. **Badri Stone Deposit of M/s Rampyari Mines & Mineral Pvt. Ltd., Village : Badri, Tehsil : Angara, Distt. : Ranchi, Jharkhand (1.242 Ha).**

**(Proposal no.: SIA/JH/MIN/ 517870 /2025) (New EC)**

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

This is a new project which has been taken for appraisal on 21.01.2025.

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

**Application for Environmental Clearance (EC).**

**EC Application for: Proposed Capacity–167751Tonnes per year or 62130 cum per year**

**Project and Location Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Badri Stone Deposit | |
| 2 | Lessee: | : | M/s Rampyari Mines & Minerals Pvt. Ltd.,<br>Director : Sri Ramprawesh Paswan S/o Sti Sitaram Paswan | |
| 3 | Lessee Address | : | Permanent Address : Harhad, P.S. Pratappur, District : Chatra<br>Present Address : Near P.H.D. Colony, Bariyatu Road, District Ranchi, Jharkhand | |
| 4 | Lease Area | : | 1.242 Ha. | 3.07 Acre |
| 5 | Type of Land | : | Non-Forest Raiyati Land | |
| 6 | Project Cost | : | Capital : Rs. 11,46,700 | Recurring : Rs. 86,30,170 per year |
| 7 | EMP Budget | : | Capital : Rs. 4,46,700 | Recurring : Rs. 5,44,170 per year |
| 8 | New or Expansion | : | New | |
| 9 | Mineable | : | 296400 Cum | 800280 Tonnes |

| | | | |
|---|---|---|---|
| | Reserves | | |
| 10 | Mine Life | : | 5 Years |
| 11 | Man power | : | 17 |
| 12 | Water Requirement | : | 12.10 KLD |
| 13 | Water Source | : | By authorised hired water tankers |
| 14 | DG Set / power | : | - |
| 15 | Crusher | : | No crusher |
| 16 | Nearest Water Body | : | Subarnarekha River (0.6 Km) |
| 17 | Nearest Habitation | : | Badri Village (0.63 Km) |
| 18 | Nearest Rail Station | : | New Jonha Railway Station (10 Km) |
| 19 | Nearest Air Port | : | Birsa Munda Airport, Ranchi (35 Km) |
| 20 | Nearest Forest | : | Open Mixed Jungle (0.7 Km) |
| 21 | Road & Highways | : | NH-320 Ormanjhi – Gola Road (3.5 km) |

**CO-ORDINATES**

| PILLAR_NO | LATITUDE | LONGITUDE |
|---|---|---|
| P1 | 23°26' 57.175" N | 85°37' 59.464" E |
| P2 | 23°26' 57.171" N | 85°38' 0.628" E |
| P3 | 23°26' 58.343" N | 85°38' 1.015" E |
| P4 | 23°26' 57.525" N | 85°38' 1.376" E |
| P5 | 23°26' 57.724" N | 85°38' 1.843" E |
| P6 | 23°26' 57.220" N | 85°38' 2.178" E |
| P7 | 23°26' 56.656" N | 85°38' 2.384" E |
| P8 | 23°26' 55.821" N | 85°38' 3.479" E |
| P9 | 23°26' 55.510" N | 85°38' 3.561" E |
| P10 | 23°26' 55.515" N | 85°38' 3.456" E |
| P11 | 23°26' 54.289" N | 85°38' 3.786" E |
| P12 | 23°26' 53.723" N | 85°38' 3.351" E |
| P13 | 23°26' 53.674" N | 85°38' 1.428" E |
| P14 | 23°26' 53.549" N | 85°38' 1.200" E |
| P15 | 23°26' 53.556" N | 85°38' 0.949" E |
| P16 | 23°26' 53.070" N | 85°38' 0.839" E |
| P17 | 23°26' 53.249" N | 85°37' 59.438" E |
| P18 | 23°26' 54.200" N | 85°37' 59.696" E |
| P19 | 23°26' 55.598" N | 85°37' 59.579" E |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 09 | 414 (P) |
| 10 | 415 (P) |
| 96 | 411 & 412 |
| 44 | 525, 526, 527, 528 & 529 |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | The Letter of Intent (LoI) has been issued by District Mining Officer, Ranchi vide letter no. 1565/M, dated 01.10.2024. |
| 2 | CO | : | The CO, Angara, Ranchi vide letter no. 385 (ii), dated 20.04.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Ranchi vide memo no. 1901/M, dated 14.12.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Ranchi vide letter no. 352, dated 06.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Ranchi Forest Division vide letter no. 1390, dated 20.04.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Ranchi District (Sl. no. 05, Page no. 55). |
| 7 | Gram Sabha | : | BDO, Angara, Ranchi vide letter no. 575 (ii), dated 02.07.2024 informed that Gram Sabha conducted on 08.04.2024. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Ranchi vide Memo No. 1910/M, dated 14.12.2024. |
| 9 | Qualified Person | : | Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him. |

Working Details

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Semi-mechanized "OTFM" Method | |
| 2 | Quarry Area | : | 1.242 Ha. / 3.07 Acres | Life of Mine – 5 years |
| 3 | Waste Generation | : | 42240 cum | |
| 4 | Stripping Ratio | : | 1:0.14 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 6m to 6m and 6 in numbers | |
| 7 | Elevation of Mine | : | 487 m AMSL to 480 m AMSL | |
| 8 | Ground Level Elevation | : | 440m AMSL | |
| 9 | Ultimate Working Depth | : | 450m AMSL | |
| 10 | Water Table | : | 435m AMSL | |
| 11 | Topography of Mine | : | Area represents gently sloping land. | |
| 12 | Explosive Requirement | : | 63 kg/day | |
| 13 | Diesel/Fuel requirement | : | 400 litre/day | |

Production Details

| Year | Production of Stone in Cum | Production of Stone in Tonnes | Removal of gritty soil in cum | Intercalated waste in Cum | Total Waste in Cum |
|---|---|---|---|---|---|
| 1st | 57684 | 155747 | 19200 | 3036 | 22236 |
| 2nd | 58254 | 157286 | 0 | 3066 | 3066 |
| 3rd | 58938 | 159133 | 0 | 3102 | 3102 |
| 4th | 59394 | 160364 | 7440 | 3126 | 10566 |
| *5th* | *62130* | *167751* | *0* | *3270* | *3270* |
| **Total** | **296400** | **800280** | **26640** | **15600** | **42240** |

Land Use

| Pattern of Utilization | Existing Land Use (Ha) | At the end of Plan period (Ha) | Conceptual stage (in Ha) | | |
|---|---|---|---|---|---|
| | | | Public use | Water body | Plantation |
| Excavation | 0.0 | 0.890 (0.222 Ha. area shall be backfilled, 0.462 Ha. converted into water reservoir & 0.206 Ha. shall be left as dead benches) | 0.428 | 0.462 | 0.0 |
| Road | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

| | | | | | |
|---|---|---|---|---|---|
| Crusher | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Safety Zone | 0.0 | 0.352 | 0.0 | 0.0 | 0.352 |
| Waste Dump | **0.0** | **0.0** | 0.0 | 0.0 | 0.0 |
| **Total Area in Use** | **0.0** | **1.242** | **0.428** | 0.462 | 0.352 |
| *Unused Area* | *1.242* | *0.0* | *0.0* | | |
| **Total Applied Area** | **1.242** | **1.242** | **1.242** | | |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

| Area in Safety Zone (Ha.) | Approach Road Area (Ha.) | Total Area for Plantation (Ha.) | No. of Plants | Timeline |
|---|---|---|---|---|
| 0.352 | 0.320 | 0.672 | 1075 | 1st Year |

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

**Environment Management Budget**

| **BUDGETARY PROVISION FOR ENVIRONMENT MANAGEMENT PLAN (EMP)** | | |
|---|---|---|
| 1075 Tree Plantation<br>@Rs.300 per Tree for planting & @Rs.50 per tree for maintenance | 322500 | 53750 |
| Water Tanker @Rs. 500 per Tanker for Dust Suppression (4.968 KLD) & Horticulture (6.45 KLD)<br>4.968 + 6.450 = 11.418 KLD<br>11.418 KLD X 300 Days = 3425 KLD<br>3425 KLD / 4 KLD = 856 Tankers | 0 | 428000 |
| Garland Drain & Parapet wall | 124200 | 12420 |
| Environment Monitoring & Compliance | 0 | 50000 |
| **Total** | **446700** | **544170** |

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

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

**Undertaking submitted affirming:**

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

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

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

**Solid Waste Management**

During first, second, third and fourth year gritty soil & intercalated waste will be removed (17909$m^3$ ) this soil and waste will be temporarily backfill within the exhausted quarry and in fifth year (3850$m^3$) removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

**Water Quality Management**

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

**Air Quality Management**

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

Mitigation measures:

**Use of Sharp Drill Bits**

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

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

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

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

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

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

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

RISK ASSESSMENT

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

**Hazard identification & Risk Analysis in Stone Mining operation**

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

**NOTE**: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.
The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

**Preventive Measures:**

**Slope Failure**

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

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

**Drilling Operations**

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

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

**Falls from the edge of a bench**

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

**Control Measures**

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

  Dust generation during drilling

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

**Noise Generation during drilling**

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

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work

in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

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

**Blasting Operations**

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

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

**Handling of Explosives**

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

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

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

- Proper and safe storage of explosives in approved and Licensed Magazine.

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

**Health Hazards**

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

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

**Accident at Site**

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

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

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

**Transportation**

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

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

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

**Organizational Structure:**

**Introduction**

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

**Environmental Policy**

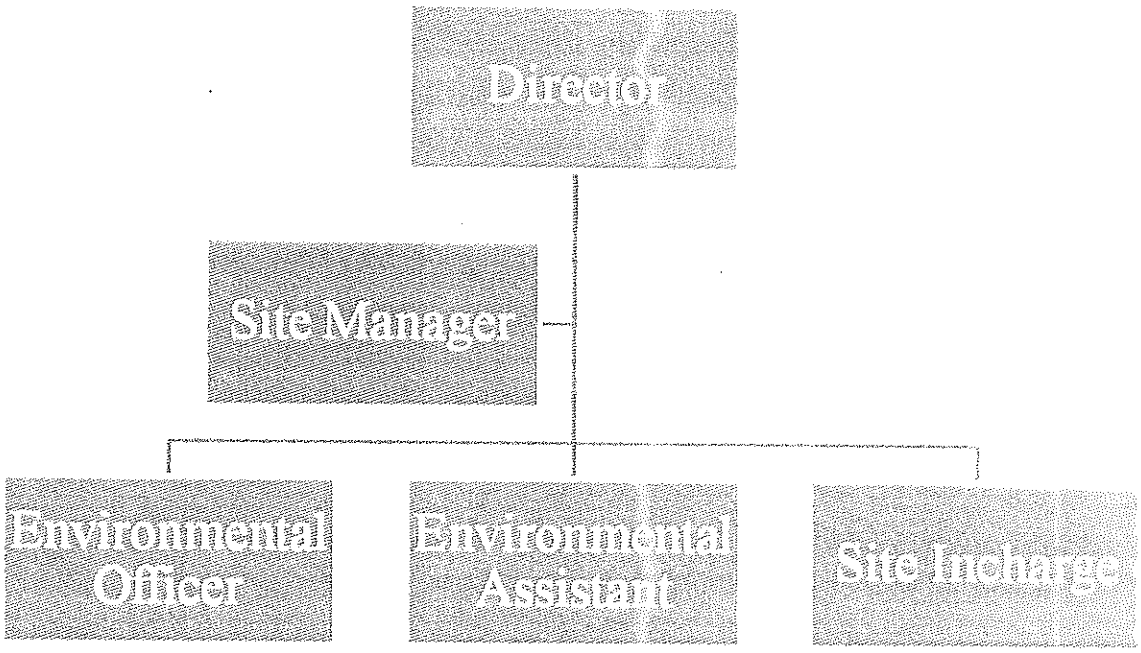
Our company is committed to:
- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

**EMP Cell Objectives**

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

**EMP Cell Structure**

The EMP Cell consists of three members:
- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks




EMP Cell structure

**Roles and Responsibilities**

**Environmental Officer (EO)**

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

**Environmental Assistant (EA)**

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

**Administrative Assistant (AA)**

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation

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

**Director/Top Management Responsibilities**

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

**EMP Process Flow**

The EMP process flow includes:

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

**Key Decision Points**

Key decision points include:

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

**Documentation**

Documentation includes:

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

**Implementation Timeline**

The implementation timeline consists of:

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

**Reporting**

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

**Conclusion**

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

**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 Badri Stone Deposit of M/s Rampyari Mines & Mineral Pvt. Ltd., Village : Badri, Tehsil : Angara, Distt. : Ranchi, Jharkhand (1.242 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

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

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

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

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

**********

4. Peraidih Stone Deposit of M/s Kingstone Mining & Minerals (Partners : Smt. Sangita Kumari Agrawal & Shri Shammi Mittal), Village : Peraidih, Tehsil : Tamar, Distt. : Ranchi, Jharkhand (2.02 Ha).

(Proposal no.: SIA/JH/MIN/ 518209 /2025)

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

This is a new project which has been taken for appraisal on 21.01.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity–181121Tonnes per year or 64686 cum per year

Project and Location Details:

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Peraidih Stone Deposit | |
| 2 | Lessee: | : | M/s Kingstone Mining & Minerals,<br>Partners : 1. Smt. Sangita Kumari Agrawal & 2. Sri Shammi Mittal | |
| 3 | Lessee Address | : | Flat No. 201, Aravali Enclave, Pandra Road, Near V Mart, P.O. Hehal, Ranchi, Jharkhand - 834005 | |
| 4 | Lease Area | : | 2.02 Ha. | 5.00 Acre |
| 5 | Type of Land | : | Non-Forest Raiyati Land | |
| 6 | Project Cost | : | Captial : Rs. 11,03,600 | Recurring : Rs. 1,17,10,800 / Year |
| 7 | EMP Budget | : | Capital : Rs. 4,03,600 | Recurring : Rs. 5,58,300 per year |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves | : | 323387 Cum | 905482 Tonnes |
| 10 | Mine Life | : | 5 Years | |
| 11 | Man power | : | 35 | |
| 12 | Water Requirement | : | 13.51 KLD | |
| 13 | Water Source | : | By authorised hired water tankers | |
| 14 | DG Set / power | : | - | |
| 15 | Crusher | : | No crusher | |
| 16 | Nearest Water Body | : | Kanchi River (2.88 Km) | |
| 17 | Nearest Habitation | : | Binsaidih Village (0.58 Km) | |
| 18 | Nearest Rail Station | : | Tiruldih Railway Station (25.24 Km) | |
| 19 | Nearest Air Port | : | Birsa Munda Airport, Ranchi (42.80 Km) | |

| | | | |
|---|---|---|---|
| 20 | Nearest Forest | : | None |
| 21 | Road & Highways | : | NH-43(5.80 km) |

**CO-ORDINATES**

| BOUNDARY PILLARS | LATITUDE | LONGITUDE |
|---|---|---|
| 1 | N23°06'50.78" | E85°41'01.87" |
| 2 | N23°06'50.96" | E85°41'00.80" |
| 3 | N23°06'51.27" | E85°40'59.24" |
| 4 | N23°06'51.32" | E85°40'58.58" |
| 5 | N23°06'51.14" | E85°40'57.09" |
| 6 | N23°06'50.91" | E85°40'56.18" |
| 7 | N23°06'50.87" | E85°40'55.62" |
| 8 | N23°06'52.08" | E85°40'55.89" |
| 9 | N23°06'53.40" | E85°40'55.91" |
| 10 | N23°06'54.54" | E85°40'55.94" |
| 11 | N23°06'55.40" | E85°40'55.90" |
| 12 | N23°06'55.92" | E85°40'57.10" |
| 13 | N23°06'56.07" | E85°40'58.02" |
| 14 | N23°06'56.01" | E85°40'59.04" |
| 15 | N23°06'55.07" | E85°40'59.77" |
| 16 | N23°06'53.84" | E85°41'00.61" |
| 17 | N23°06'53.01" | E85°41'01.19" |
| 18 | N23°06'51.76" | E85°41'01.60" |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 122 | 1581 (P) |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | The Letter of Intent (LoI) has been issued by District Mining Officer, Ranchi vide letter no. 270/M, dated 17.02.2024. |
| 2 | CO | : | The CO, Tamar, Ranchi vide letter no. 61 (ii), dated 06.02.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Ranchi vide memo no. 1335/M, dated 03.09.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site. |

| | | | |
|---|---|---|---|
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Ranchi vide letter no. 851, dated 09.10.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Khunti Forest Division vide letter no. 26, dated 11.01.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Ranchi District (Sl. no. 09, Page no. 66). |
| 7 | Gram Sabha | : | BDO, Tamar, Ranchi vide letter no. 266, dated 13.02.2024 informed that Gram Sabha conducted on 25.01.2024. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Ranchi vide Memo No. 1906/M, dated 14.12.2024. |
| 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 | : | Semi-mechanized "OTFM" Method | |
| 2 | Quarry Area | : | 1.60 Ha. | Life of Mine – 5 years |
| 3 | Waste Generation | : | 17021 cum | |
| 4 | Stripping Ratio | : | 1:0.14 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 6m to 6m and 8 in numbers | |
| 7 | Elevation of Mine | : | 284 m AMSL to 296m AMSL | |
| 8 | Ground Level Elevation | : | 284 m AMSL | |
| 9 | Ultimate Working Depth | : | 248 m AMSL | |
| 10 | Water Table | : | 219m AMSL | |
| 11 | Topography of Mine | : | Area representshilly land with gently sloping land. | |
| 12 | Explosive Requirement | : | 94.5kg/day | |
| 13 | Diesel/Fuel requirement | : | 400 litre/day | |

**Production Details**

| Year | Production of Stone in Cum | Production of Stone in Tonnes | Removal of gritty soil in cum | Removal of gritty soil in Tonnes | Intercalated waste in Cum |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| 1st | 64666 | 181064 | 1932 | 2898 | 3403 |
| 2nd | 64670 | 181077 | 000 | 000 | 3404 |
| 3rd | 64686 | 181121 | 000 | 000 | 3405 |
| 4th | 64670 | 181077 | 2378 | 3567 | 3404 |
| 5th | 64686 | 181121 | 000 | 000 | 3405 |
| **Total** | **323378** | **905460** | **4310** | **6465** | **17021** |

**Land Use**

| Pattern of Utilization | Existing Land Use (Ha) | At the end of Plan period (Ha) | Conceptual stage (in Ha) | | |
|---|---|---|---|---|---|
| | | | Public use | Water body | Plantation |
| Excavation | 0.0 | 1.60 (including backfilling of 0.24 Ha.) | 0.0 | 1.60 | 0.0 |
| Road | 0.04 | 0.0 | 0.0 | 0.0 | 0.0 |
| Crusher | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Safety Zone | 0.0 | 0.42 | 0.0 | 0.0 | 0.42 |
| Waste Dump | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Total Area in Use** | **0.04** | **2.02** | **0.0** | **1.60** | 0.42 |
| *Unused Area* | **1.98** | **0** | **0** | | |
| **Total Applied Area** | **2.02** | **2.02** | **2.02** | | |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

| Area in Safety Zone (Ha.) | Approach Road Area (Ha.) | Total Area for Plantation (Ha.) | No. of Plants | Timeline |
|---|---|---|---|---|
| 0.42 | 0.0 | 0.42 | 672 | 1st Year |

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

**Environment Management Budget**

| BUDGETARY PROVISION FOR ENVIRONMENT MANAGEMENT PLAN (EMP) | | |
|---|---|---|
| 672 Tree Plantation<br>@Rs.300 per Tree for planting & @Rs.50 per tree for | 201600 | 33600 |

| | | |
|---|---|---|
| maintenance | | |
| Water Tanker @Rs. 500 per Tanker for Dust Suppression (8.08 KLD) & Horticulture (4.032 KLD)<br>8.08 + 4.032 = 12.112 KLD<br>12.112 KLD X 300 Days = 3633.6 KLD<br>3633.6 KLD / 4 KLD = 908.25 Tankers (say; 909) | 0 | 454500 |
| Garland Drain & Parapet wall | 202000 | 20200 |
| Environment Monitoring & Compliance | 0 | 50000 |
| **Total** | **403600** | **558300** |

**Environment Monitoring Plan (post operation)**

**Monitoring Parameters and Frequency of Monitoring**

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

**Undertaking submitted affirming:**

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

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

**Solid Waste Management**

During first, second, third and fourth year gritty soil & intercalated waste will be removed (17909$m^3$ ) this soil and waste will be temporarily backfill within the exhausted quarry and in fifth year (3850$m^3$) removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

**Water Quality Management**

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

**Air Quality Management**

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

Mitigation measures:

**Use of Sharp Drill Bits**

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

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

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

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

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

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

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

RISK ASSESSMENT

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

**Hazard identification & Risk Analysis in Stone Mining operation**

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

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

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

**Preventive Measures:**

**Slope Failure**

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

workers engaged in loading material and driving vehicles. To manage the face stability, the Following measures will be taken:

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

**Drilling Operations**

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

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

**Falls from the edge of a bench**

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

**Control Measures**

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

  Dust generation during drilling

  The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.
- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.

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

**Noise Generation during drilling**

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

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

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

**Blasting Operations**

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

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

**Handling of Explosives**

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how

risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

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

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

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

**Health Hazards**

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

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

**Accident at Site**

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

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

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

**Transportation**

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

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

**Organizational Structure:**

**Introduction**

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

**Environmental Policy**

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources

- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

**EMP Cell Objectives**

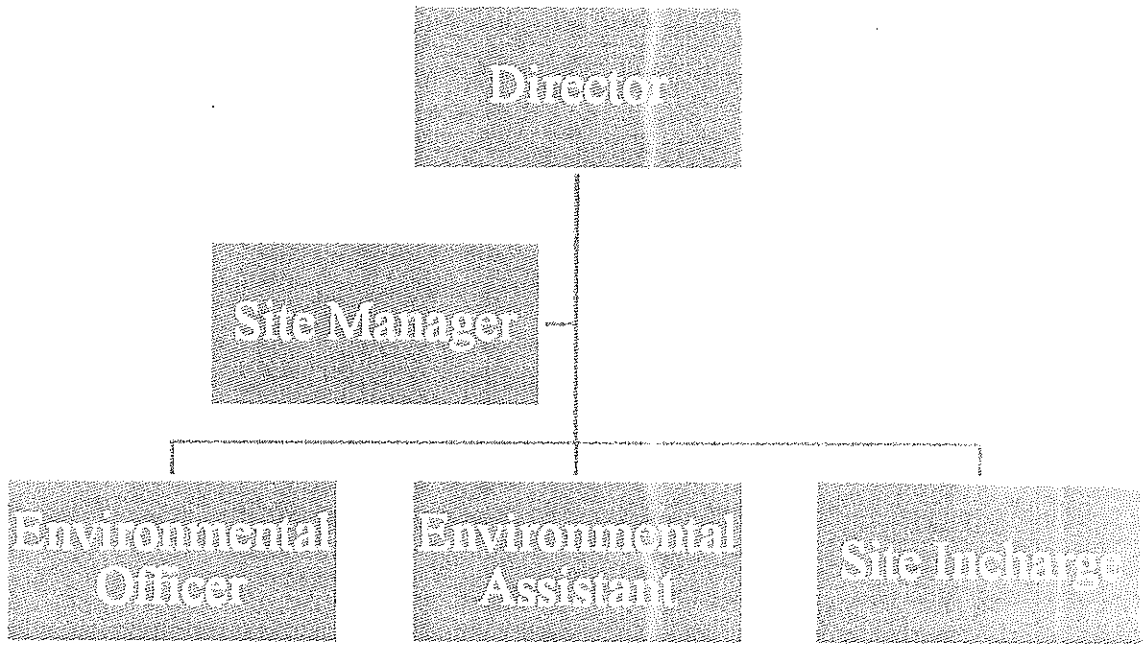
The EMP Cell objectives are:

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

**EMP Cell Structure**

The EMP Cell consists of three members:

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




EMP Cell structure

**Roles and Responsibilities**

**Environmental Officer (EO)**

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

**Environmental Assistant (EA)**

- Conduct field monitoring

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

**Administrative Assistant (AA)**

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

**Director/Top Management Responsibilities**

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

**EMP Process Flow**

The EMP process flow includes:

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

**Key Decision Points**

Key decision points include:

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

**Documentation**

Documentation includes:

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

**Implementation Timeline**

The implementation timeline consists of:

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

**Reporting**

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

**Conclusion**

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

**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 Peraidih Stone Deposit of M/s Kingstone Mining & Minerals (Partners : Smt. Sangita Kumari Agrawal & Shri Shammi Mittal), Village : Peraidih, Tehsil : Tamar, Distt. : Ranchi, Jharkhand (2.02 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

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

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

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

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

**********

5. **Peraidih Stone Deposit of M/s Maa Ambey Mining & Minerals (Partner : Smt. Sangita Kumari Agrawal), Village : Peraidih, Tehsil : Tamar, Distt. : Ranchi, Jharkhand (2.95 Ha).**

**(Proposal no.: SIA/JH/MIN/ 518607 /2025)**

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

This is a new project which has been taken for appraisal on 21.01.2025.

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

**Application for Environmental Clearance (EC).**

**EC Application for: Proposed Capacity** –3,58,684**Tonnes per year or** 1,28,100 **cum per year**

**Project and Location Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | ProjectName | : | Peraidih Stone Deposit | |
| 2 | Lessee: | : | M/s MaaAmbey Mining and Minerals<br>Partner: Smt. Sangita Kumari Agrawal | |
| 3 | LesseeAddress | : | FlatNo.201,Aravali Enclave,Pandra Road,Near V Mart, P.O. Hehal, Ranchi, Jharkhand-834005 | |
| 4 | LeaseArea | : | 2.95Ha. | 7.30Acre |
| 5 | TypeofLand | : | Non-Forest Raiyati Land | |
| 6 | ProjectCost | : | Capital:Rs. 12,25,400 | Recurring:Rs.1,19,77,500 peryear |
| 7 | EMPBudget | : | Capital:Rs. 5,25,400 | Recurring:Rs.5,72,400 peryear |

| | | | | |
|---|---|---|---|---|
| 8 | NeworExpansion | : | New | |
| 9 | Mineable Reserves | : | 7,97,272Cum | 22,32,362Tonnes |
| 10 | MineLife | : | 6.23Years | |
| 11 | Manpower | : | 35 | |
| 12 | Water Requirement | : | 17.80KLD | |
| 13 | WaterSource | : | Byauthorisedhiredwatertankers | |
| 14 | DG Set/power | : | - | |
| 15 | Crusher | : | Nocrusher | |
| 16 | NearestWater Body | : | KanchiRiver(2.88Km) | |
| 17 | Nearest Habitation | : | BinsaidihVillage(0.58Km) | |
| 18 | NearestRail Station | : | TiruldihRailwayStation(25.24Km) | |
| 19 | NearestAirPort | : | BirsaMundaAirport,Ranchi(42.80Km) | |
| 20 | NearestForest | : | None | |
| 21 | Road&Highways | : | NH-43(5.80km) | |

**CO-ORDINATES**

| BOUNDARY PILLARS | LATITUDE | LONGITUDE |
|---|---|---|
| 1 | N23°06'45.71" | E85°41'02.57" |
| 2 | N23°06'45.61" | E85°41'00.81" |
| 3 | N23°06'45.64" | E85°40'59.80" |
| 4 | N23°06'45.83" | E85°40'58.80" |
| 5 | N23°06'45.90" | E85°40'57.19" |
| 6 | N23°06'45.99" | E85°40'55.64" |
| 7 | N23°06'46.86" | E85°40'55.84" |
| 8 | N23°06'47.90" | E85°40'56.06" |
| 9 | N23°06'48.67" | E85°40'56.08" |
| 10 | N23°06'49.91" | E85°40'56.07" |
| 11 | N23°06'50.91" | E85°40'56.18" |
| 12 | N23°06'51.14" | E85°40'57.09" |
| 13 | N23°06'51.32" | E85°40'58.58" |
| 14 | N23°06'51.27" | E85°40'59.24" |
| 15 | N23°06'50.96" | E85°41'00.80" |
| 16 | N23°06'50.78" | E85°41'01.87" |
| 17 | N23°06'50.24" | E85°41'02.03" |
| 18 | N23°06'48.91" | E85°41'02.23" |
| 19 | N23°06'47.44" | E85°41'02.55" |
| 20 | N23°06'46.60" | E85°41'02.64" |

LAND DETAILS

| Khata no. | Plot no. |
|---|---|
| 122 | 1581 (P) |

STATUTORY CLEARANCES

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | The Letter of Intent (LoI) has been issued by District Mining Officer, Ranchi vide letter no. 269/M, dated 17.02.2024. |
| 2 | CO | : | The CO, Tamar, Ranchi vide letter no. 60 (ii), dated 06.02.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Ranchi vide memo no. 1336/M, dated 03.09.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Ranchi vide letter no. 852, dated 09.10.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Khunti Forest Division vide letter no. 27, dated 11.01.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Ranchi District (Sl. no. 08, Page no. 65). |
| 7 | Gram Sabha | : | BDO, Tamar, Ranchi vide letter no. 265, dated 13.02.2024 informed that Gram Sabha conducted on 25.01.2024. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Ranchi vide Memo No. 1905/M, dated 14.12.2024. |
| 9 | Qualified Person | : | Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him. |

WorkingDetails

| | | | | |
|---|---|---|---|---|
| 1 | MiningMethod | : | Semi-mechanized"OTFM"Method | |
| 2 | QuarryArea | : | 2.47Ha. | LifeofMine–6.23 years |
| 3 | WasteGeneration | : | 33664cum | |

| | | | |
|---|---|---|---|
| 4 | StrippingRatio | : | 1:0.14 |
| 5 | WorkingDays | : | 300 |
| 6 | Benches:size&No | : | 6mto6mand8innumbers |
| 7 | ElevationofMine | : | 292 m AMSL to 286 m AMSL |
| 8 | GroundLevel Elevation | : | 289 m AMSL |
| 9 | UltimateWorking Depth | : | 246 m AMSL |
| 10 | WaterTable | : | 242 m AMSL |
| 11 | Topographyof Mine | : | Arearepresentshillylandwithgentlysloping land. |
| 12 | Explosive Requirement | : | 220.5kg/day |
| 13 | Diesel/Fuel requirement | : | 363litre/day |

**ProductionDetails**

| Year | Productionof StoneinCum | Productionof Stone in Tonnes | Removalofgritty soil in cum | Removal of grittysoilin Tonnes | Intercalated wasteinCum |
|---|---|---|---|---|---|
| 1st | 1,28,905 | 3,58,670 | 7058 | 2898 | 6743 |
| 2nd | 1,27,529 | 3,57,082 | 000 | 000 | 6712 |
| 3rd | 1,27,857 | 3,57,998 | 000 | 000 | 6729 |
| 4th | 1,28,100 | 3,58,684 | 2784 | 3567 | 6743 |
| *5th* | 1,27,999 | 3,58,396 | 000 | 000 | 6737 |
| **Total** | **6,39,580** | **17,90,830** | **9842** | **6465** | 33,664 |

**LandUse**

| PatternofUtilization | ExistingLand Use (Ha) | AttheendofPlan period (Ha) | Conceptualstage(inHa) | | |
|---|---|---|---|---|---|
| | | | Public use | Water body | Plantation |
| Excavation | 0.0 | 2.47(including backfillingof0.73 Ha.) | 0.00 | 2.47 | 0.0 |
| Road | 0.06 | 0.0 | 0.0 | 0.0 | 0.0 |
| Crusher | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| SafetyZone | 0.0 | 0.48 | 0.0 | 0.0 | 0.48 |
| WasteDump | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **TotalAreainUse** | **0.06** | **2.95** | **0.00** | **2.47** | 0.48 |
| *Unused Area* | **2.89** | **0** | **0** | | |
| **TotalAppliedArea** | **2.95** | **2.95** | **2.95** | | |

ENVIRONMENTMANAGEMENT

GreenBeltDevelopment

| AreainSafety Zone (Ha.) | Approach RoadArea (Ha.) | TotalAreafor Plantation (Ha.) | No.ofPlants | Timeline |
|---|---|---|---|---|
| 0.48 | 0.0 | 0.48 | 768 | 1st Year |

- 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.

EnvironmentManagementBudget

| BUDGETARYPROVISIONFORENVIRONMENTMANAGEMENTPLAN(EMP) | | |
|---|---|---|
| 864TreePlantation @Rs.300perTreeforplanting&@Rs.50pertreefor maintenance | 259200 | 43200 |
| WaterTanker@Rs.500perTankerforDustSuppression (11.8 KLD) & Horticulture (4.6 KLD)<br>11.8+4.6=16.4 KLD<br>16.4 KLDX300Days=4920KLD<br>4929KLD/4KLD=1230 Tankers | 0 | 615000.00 |
| GarlandDrain&Parapetwall | 295000 | 29500 |
| EnvironmentMonitoring&Compliance | 0 | 50000 |
| Total | **554200** | **737700** |

Environment Monitoring Plan (post operation) Monitoring Parameter sand Frequency of Monitoring

| S.no | MonitoringParameters | No. of Locations | Frequency of Monitoring |
|---|---|---|---|
| 1 | AmbientAir:Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only. | 2Stations | Six Monthly |

| | | | |
|---|---|---|---|
| 2 | Water: Surface water sample in the vicinity of the Project area. | 2 Surface water 2 Ground water | Six Monthly |
| 3 | Noise: Day & NightlevelNoiseMonitoring. | 4 stations | Six Monthly |
| 4 | Soil: Soil Monitoring, Qualitative and quantitative testing/analysistocheckthesoilfertility,porosity, texture, water holding capacity, etc. | 2 station | Six Monthly |

**Undertaking submitted affirming:**

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

**SolidWasteManagement**

During first, second, third and fourth year gritty soil & intercalated waste will be removed (17909 $m^3$) this soiland waste willbe temporarily backfillwithin the exhausted quarry and in fifth year(3850$m^3$)removed gritty soil, inter calated

wasteand existing temporary back fill soil will be back filled within the lower bench of the exhausted quarry.

Water Quality Management

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

Air Quality Management

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

Mitigation measures:

Use of Sharp Drill Bits

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

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

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

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

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

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

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

RISK ASSESSMENT

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

**Hazard identification & Risk Analysis in Stone Mining operation**

| S.No. | Activity | Hazard | Probability | Severity | Score* |
|---|---|---|---|---|---|
| 1 | Temporary Storage of Explosives | Unintended Explosion | Very Unlikely | Catastrophic | 5 |
| 2 | Charging of Explosives | Unwanted Explosion | Very Unlikely | Catastrophic | 5 |

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

**NOTE**: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.
The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

**Preventive Measures:**

**Slope Failure**

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

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

**Drilling Operations**

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

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

**Falls from the edge of a bench**

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

the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

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

Dust generation during drilling

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

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

**Noise Generation during drilling**

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

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

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

Blasting Operations

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

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

**Handling of Explosives**

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

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

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

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

### Health Hazards

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

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

### Accident at Site

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

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

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

### Transportation

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

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

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

**Organizational Structure:**

**Introduction**

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

**Environmental Policy**

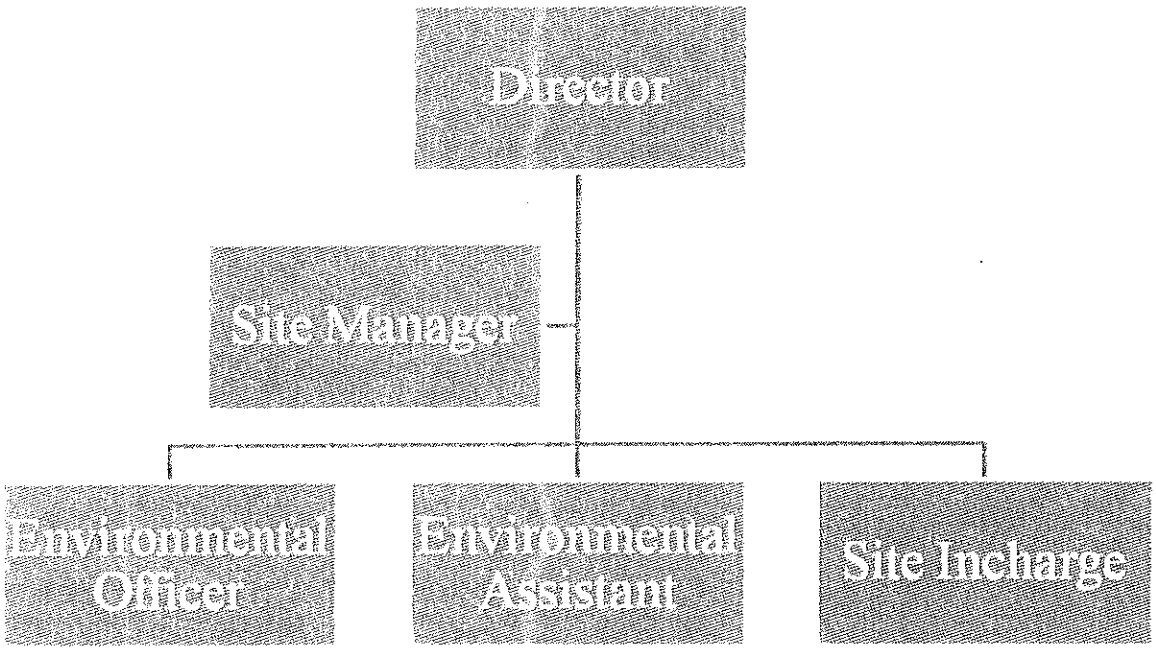
Our company is committed to:
- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

**EMP Cell Objectives**

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

**EMP Cell Structure**

The EMP Cell consists of three members:
- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks




EMP Cell structure

**Roles and Responsibilities**

**Environmental Officer (EO)**

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

**Environmental Assistant (EA)**

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

**Administrative Assistant (AA)**

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation

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

**Director/Top Management Responsibilities**

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

**EMP Process Flow**

The EMP process flow includes:

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

**Key Decision Points**

Key decision points include:

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

**Documentation**

Documentation includes:

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

**Implementation Timeline**

The implementation timeline consists of:

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

**Reporting**

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

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

**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 Peraidih Stone Deposit of M/s Maa Ambey Mining & Minerals (Partner : Smt. Sangita Kumari Agrawal), Village : Peraidih, Tehsil : Tamar, Distt. : Ranchi, Jharkhand (2.95 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"EkPed Ma KeNaam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

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

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

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

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

**********

6. Matauli Stone Deposit of M/s Viraaj Engicon Pvt. Ltd., Village : Matauli, Tehsil : Chainpur, Distt. : Palamau, Jharkhand (1.849 Ha).

(Proposal no.: SIA/JH/MIN/ 518816 /2025)

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

This is a new project which has been taken for appraisal on 21.01.2025.

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

**Application for Environmental Clearance (EC).**

**EC Application for: Proposed Capacity–162052 Tonnes per year or 540 Tonne per day.**

<u>Project and Location Details:</u>

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | ProjectName | : | Matauli Stone Deposit | |
| 2 | Lessee: | : | M/s Viraaj Engicon Pvt. Ltd.,<br>Director: Shri Ajit Kumar Singh, Shri Ravi Shankar Kumar & Shri Purshotam Sharan Prasant | |
| 3 | LesseeAddress | : | Mouza: Narodih,Thana: Chakai, District: Jamui, Bihar | |
| 4 | LeaseArea | : | 1.849 Ha. | 4.57Acre |
| 5 | TypeofLand | : | Non-Forest Raiyati Land | |
| 6 | ProjectCost | : | Capital:Rs.12,08,300 | Recurring:Rs.83,54,890peryear |
| 7 | EMP Budget | : | Capital:Rs.5,08,300 | Recurring:Rs.5,58,300peryear |
| 8 | Newor Expansion | : | New | |
| 9 | Mineable Reserves | : | 288935Cum | 780124 Tonnes |
| 10 | MineLife | : | 5Years | |
| 11 | Manpower | : | 18 | |
| 12 | Water Requirement | : | 14.58 KLD | |
| 13 | WaterSource | : | By authorised hired water tankers | |
| 14 | DGSet/power | : | NotProposed | |
| 15 | Crusher | : | Nocrusher | |
| 16 | NearestWater Body | : | Liibatwa Nadi(190m)&HathuNadi(2.60 Km) | |
| 17 | Nearest Habitation | : | Matauli Village(0.6Km) | |
| 18 | NearestRail Station | : | Garhwa Road Railway Station(24Km) | |
| 19 | NearestAirPort | : | BirsaMundaAirport,Ranchi(180Km) | |

| | | | |
|---|---|---|---|
| 20 | NearestForest | : | Morethan250masperDFO,Palamu |
| 21 | Road&Highways | : | NH–343Garhwa–RamanujganjRoad(7.5Km) |

CO-ORDINATES

| BOUNDARY PILLARS | LATITUDE | LONGITUDE |
|---|---|---|
| 1 | 23°57'19.10891" | 83°50'21.31220" |
| 2 | 23°57'20.24748" | 83°50'21.90577" |
| 3 | 23°57'20.43104" | 83°50'22.15954" |
| 4 | 23°57'20.50261" | 83°50'22.33226" |
| 5 | 23°57'20.46593" | 83°50'23.06105" |
| 6 | 23°57'20.23380" | 83°50'23.20188" |
| 7 | 23°57'19.95188" | 83°50'23.51692" |
| 8 | 23°57'19.72462" | 83°50'23.67470" |
| 9 | 23°57'19.22422" | 83°50'23.68057" |
| 10 | 23°57'19.14548" | 83°50'23.80848" |
| 11 | 23°57'19.09908" | 83°50'24.10912" |
| 12 | 23°57'18.90407" | 83°50'24.42757" |
| 13 | 23°57'18.64681" | 83°50'24.62536" |
| 14 | 23°57'18.47351" | 83°50'24.91015" |
| 15 | 23°57'17.18802" | 83°50'24.15016" |
| 16 | 23°57'15.55225" | 83°50'23.12743" |
| 17 | 23°57'15.41189" | 83°50'23.28148" |
| 18 | 23°57'14.49968" | 83°50'23.32388" |
| 19 | 23°57'13.21312" | 83°50'20.54836" |
| 20 | 23°57'13.72392" | 83°50'20.35140" |
| 21 | 23°57'14.26648" | 83°50'20.30626" |
| 22 | 23°57'13.98953" | 83°50'19.82548" |
| 23 | 23°57'14.24916" | 83°50'19.38451" |
| 24 | 23°57'14.26838" | 83°50'19.04122" |
| 25 | 23°57'14.50120" | 83°50'19.11880" |
| 26 | 23°57'15.44792" | 83°50'19.05767" |
| 27 | 23°57'16.13905" | 83°50'18.87173" |
| 28 | 23°57'16.34353" | 83°50'18.73824" |
| 29 | 23°57'16.41895" | 83°50'18.49434" |
| 30 | 23°57'16.55597" | 83°50'18.52307" |
| 31 | 23°57'16.60925" | 83°50'18.66268" |
| 32 | 23°57'16.72690" | 83°50'19.59173" |
| 33 | 23°57'16.63333" | 83°50'19.72439" |
| 34 | 23°57'15.81232" | 83°50'20.05436" |
| 35 | 23°57'15.97716" | 83°50'20.52938" |
| 36 | 23°57'16.21220" | 83°50'20.93417" |
| 37 | 23°57'16.61544" | 83°50'21.16190" |
| 38 | 23°57'17.28518" | 83°50'20.64620" |

| | | |
|---|---|---|
| 39 | 23°57'17.48455" | 83°50'20.41724" |
| 40 | 23°57'18.74268" | 83°50'21.08648" |
| 41 | 23°57'18.39013" | 83°50'21.70961" |
| 42 | 23°57'18.16456" | 83°50'21.84497" |
| 43 | 23°57'18.08060" | 83°50'22.20090" |
| 44 | 23°57'17.83944" | 83°50'22.16713" |
| 45 | 23°57'17.72017" | 83°50'22.34130" |
| 46 | 23°57'17.71992" | 83°50'22.49563" |
| 47 | 23°57'17.82565" | 83°50'22.77298" |
| 48 | 23°57'18.16639" | 83°50'22.75516" |
| 49 | 23°57'18.53654" | 83°50'22.27232" |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 13 | 905 (P) |
| 15 | 912 (P) |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | The Letter of Intent (LoI) has been issued by District Mining Officer, Palamau, Medininagar vide letter no. 2124/M, dated 14.10.2024. |
| 2 | CO | : | The CO, Chainpur, Palamau vide letter no. 94, dated 20.01.2025 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan. |
| 3 | DMO | : | DMO, Palamau, Medininagar vide memo no. 92/M, dated 15.01.2025 certified that 01 other mining lease area (4.11 Acre) exists within 500 meters radius from proposed project site and total area is 8.68 Acre. |
| 4 | DFO Wild Life | : | Deputy Director, Palamau Tiger Project, North Division, Medininagar vide letter no. 844, dated 27.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Project. |
| 5 | DFO Territorial | : | Division Forest Officer, Garhwa South Forest Division vide letter no. 1660, dated 14.01.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Palamau District (Sl. |

| | | | |
|---|---|---|---|
| | | | no. 30, Page no. 108). |
| 7 | Gram Sabha | : | BDO, Chainpur, Palamau vide letter no. 1311, dated 27.09.2024 informed that Gram Sabha conducted on 26.09.2024. |
| 8 | Mine Plan Approval | : | Approved by Assistant Director, Geology, District Geological Officer, Palamau, Jharkhand vide Letter No. 07/M, dated 16.01.2025. |
| 9 | Qualified Person | : | Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him. |

**WorkingDetails**

| | | | | |
|---|---|---|---|---|
| 1 | MiningMethod | : | Semi-mechanized"OTFM"Method | |
| 2 | QuarryArea | : | 1.849Ha. | LifeofMine–5 years |
| 3 | WasteGeneration | : | 30867cum | |
| 4 | StrippingRatio | : | 1:0.10 | |
| 5 | WorkingDays | : | 300 | |
| 6 | Benches:size&No | : | 6mby6mand4innumbers | |
| 7 | ElevationofMine | : | 318mAMSLto294m AMSL | |
| 8 | GroundLevel Elevation | : | 324mAMSL to 318 m AMSL | |
| 9 | UltimateWorking Depth | : | 294mAMSL | |
| 10 | WaterTable | : | 280mAMSL | |
| 11 | TopographyofMine | : | Arearepresentsgentlyslopingland. | |
| 12 | Explosive Requirement | : | 63kg/day | |
| 13 | Diesel/Fuel requirement | : | 400litre/day | |

**ProductionDetails**

| Year | Productionof StoneinCum | Production of Stone in Tonnes | Removalof grittysoilin cum | Intercalated wasteinCum | TotalWaste inCum |
|---|---|---|---|---|---|
| 1st | 55556 | 150001 | 4960 | 2924 | 7884 |
| 2nd | 57809 | 156085 | 5456 | 3043 | 8499 |
| 3rd | 60019 | 162052 | 0 | 3159 | 3159 |
| 4th | 57772 | 155985 | 5016 | 3041 | 8057 |
| *5th* | *57778* | *156001* | *228* | *3041* | *3296* |
| Total | **288935** | **780124** | **15660** | **15207** | **30867** |

Land Use

| Patternof Utilization | ExistingLand Use (Ha) | AttheendofPlan period(Ha) | Conceptualstage(inHa) | | |
|---|---|---|---|---|---|
| | | | Public use | Water body | Plantation |
| Excavation | 0.0 | 1.245 (0.167 Ha. area shallbebackfilled, 0.586 Ha. converted into water reservoir & 0.492Ha. shall be left as dead benches) | 0.0 | 1.245 | 0.0 |
| Road | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Crusher | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| SafetyZone | 0.0 | 0.604 | 0.0 | 0.0 | 0.604 |
| WasteDump | **0.0** | **0.0** | 0.0 | 0.0 | 0.0 |
| **TotalAreainUse** | **0.0** | **1.849** | **0.0** | **1.245** | **0.604** |
| UnusedArea | 1.849 | 0.0 | 0.0 | | |
| **TotalAppliedArea** | **1.849** | **1.849** | **1.849** | | |

ENVIRONMENTMANAGEMENT

Green Belt Development

| Area in Safety Zone (Ha.) | Approach Road Area (Ha.) | Total Area for Plantation (Ha.) | No.of Plants | Timeline | Species |
|---|---|---|---|---|---|
| 0.604 | 0.07 | 0.674 | 1078 | 1stYear | Mango, Jackfruits, Jamun, Babul, Gulmohar, Neem, Pipal, Arjun,etc. |

- 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.

EnvironmentManagementBudget

| BUDGETARY PROVISION FOR ENVIRONMENT MANAGEMENT PLAN (EMP) | | |
|---|---|---|
| 1078TreePlantation<br>@Rs.300perTree for planting & @ Rs.50 per tree for maintenance | 323400 | 53900 |
| WaterTanker@Rs.500 per Tanker for Dust Suppression<br>6.468KLD) & Horticulture (7.396KLD)<br>6.468 KLD+7.396KLD =13.864 KLD<br>13.864 KLD X 300Days=4159.2KL<br>4159.2KLD/4 KLD =1040 Tankers | 0 | 520000 |
| Garland Drain & Parapet wall | 184900 | 18490 |
| Environment Monitoring & Compliance | 0 | 50000 |
| Total | **508300** | **642390** |

Environment Monitoring Plan (post operation) Monitoring Parameters and Frequency of Monitoring

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

Undertaking submitted affirming:

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

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

**SolidWasteManagement**

During first, second, third and fourth year gritty soil & intercalated waste will be removed (30867$m^3$)thissoilandwastewillbetemporarilybackfill withintheexhaustedquarryandin fifth year removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

**Water Quality Management**

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

**Air Quality Management**

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

Mitigation measures:

Use of Sharp Drill Bits

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

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

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

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

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

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

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

RISK ASSESSMENT

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

**Hazard identification & Risk Analysis in Stone Mining operation**

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

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

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

Preventive Measures:

Slope Failure

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

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

**Drilling Operations**

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

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

**Falls from the edge of a bench**

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

**Control Measures**

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

Dust generation during drilling

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

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

**Noise Generation during drilling**

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

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

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

**Blasting Operations**

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

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

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

### Handling of Explosives

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

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

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

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

### Health Hazards

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

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

### Accident at Site

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

- Rough access roads
- Time pressure

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

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

**Transportation**

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

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

**Organizational Structure:**

**Introduction**

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

## Environmental Policy

Our company is committed to:

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

### EMP Cell Objectives

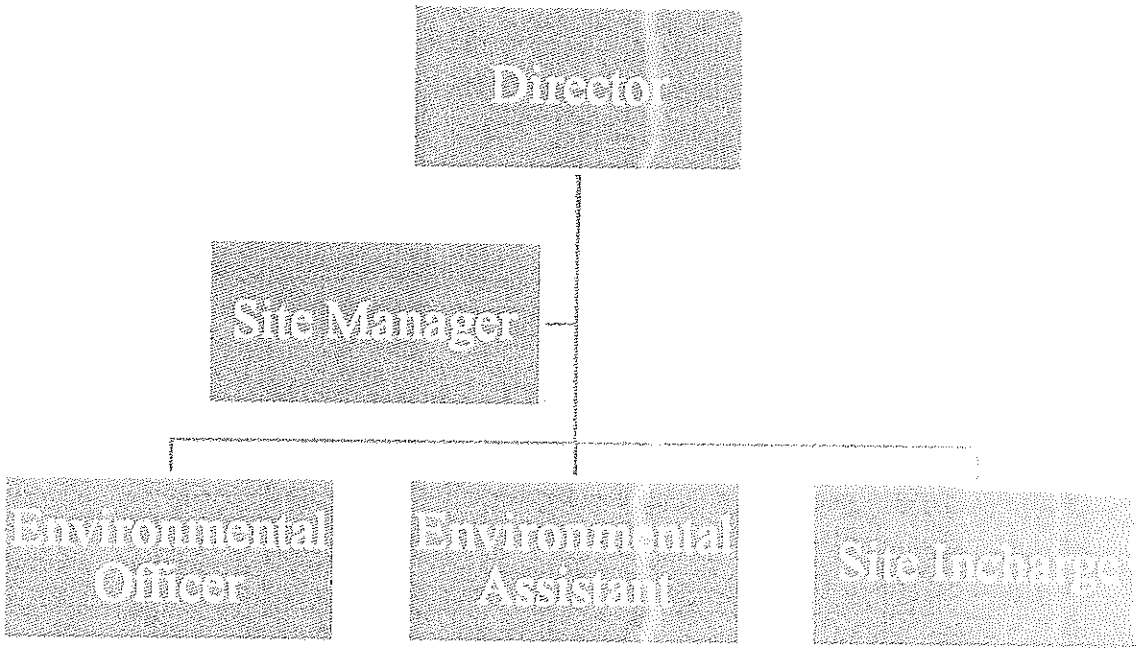
The EMP Cell objectives are:

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

### EMP Cell Structure

The EMP Cell consists of three members:

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




EMP Cell structure

### Roles and Responsibilities

#### Environmental Officer (EO)

- Associate in development of EIA & EMP with consultants
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Arrange environmental training
- Manage environmental data collection
- Develop environmental policies

- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

**Environmental Assistant (EA)**

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

**Administrative Assistant (AA)**

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

**Director/Top Management Responsibilities**

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

**EMP Process Flow**

The EMP process flow includes:

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

**Key Decision Points**

Key decision points include:

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

**Documentation**

Documentation includes:

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

**Implementation Timeline**

The implementation timeline consists of:

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

**Reporting**

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

**Conclusion**

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

**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 Matauli Stone Deposit of M/s Viraaj Engicon Pvt. Ltd., Village : Matauli, Tehsil : Chainpur, Distt. : Palamau, Jharkhand (1.849 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged

photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

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

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

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

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

**********

7. **Terom Stone Mine of Shri Shiv Kumar Sahu, Village : Terom, Tehsil + Thana : Khunti, Distt. : Khunti, Jharkhand (1.46 Ha).**

**(Proposal no.: SIA/JH/MIN/ 512462 /2025)**

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

This is a new project which has been taken for appraisal on 21.01.2025.

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

**EC Application for: Proposed Capacity–167 Tonnes/Day or 49795 Tonnes/Annum Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Khunti).**

The project has been granted EC by DEIAA, Khunti vide letter no. EC/DEIAA /2016-17/28 dated 18.03.2017.

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

This is re-appraisal of the EC issued by DEIAA, Khunti which has been taken up for consideration on 21.01.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

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

Production detail as per letter no. 833/M dated 04.10.2024 by DMO, Khunti is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 1620, dated 21.12.2024.

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

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

**Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.**

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

**Project and Location Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Terom Stone Mine | |
| 2 | Lessee: | : | M/s Shiv Kumar Sahu | |
| 3 | Lessee Address | : | Village –Belahati Road, P.O + P.S – Khunti, District – Khunti, Jharkhand | |
| 4 | Lease Area | : | 1.46 Ha | Acres- 3.61 Acre |
| 5 | Type of Land | : | Non-Forest Raiyati Land | |
| 6 | Project Cost | : | Capital: 3.90 Lakhs | Recurring: 85 lakhs / year |
| 7 | EMP Budget | : | Capital: 3.9 Lakhs | Recurring: 5.55 lakhs / year |
| 8 | New or Expansion | : | Re-appraisal of DEIAA EC | |
| 9 | Mineable Reserves | : | Tonnes: 303809 tonnes | |
| 10 | Mine Life | : | Up to the lease period i.e. 06.09.2017 to 05.09.2027. | |
| 11 | Man power | : | 18 | |
| 12 | Water | : | 10.595KLD (Drinking: 0.595KLD, Industrial:8.0 KLD, Plantation: | |

| | | | |
|---|---|---|---|
| | Requirement | | 2.0KLD) |
| 13 | Water Source | : | By authorised hired water tankers |
| 14 | DG Set / power | : | - |
| 15 | Crusher | : | No crusher |
| 16 | Nearest Water Body | : | Kanchi river is situated at a distance of 4.0 kmin East direction. |
| 17 | Nearest Habitation | : | Hutar, at a distance of 7.0 Km in South-west direction. |
| 18 | Nearest Rail Station | : | Bingaon Railway station, approx. 15km towards North direction |
| 19 | Nearest Air Port | : | Birsa Munda Airport, Ranchiat a distance of 40 km Northdirection |
| 20 | Nearest Forest | : | Open mixed forest at a distance of 1.7 km in North-East direction. |
| 21 | Road & Highways | : | NH –20, Approx. 6.5km. |

CO-ORDINATES

| S. No. | Latitude | Longitude |
|---|---|---|
| 1 | 23°08'31.16" N | 85°19'59.88"E |
| 2 | 23°08'30.20" N | 85°20'0.14"E |
| 3 | 23°08'30.42" N | 85°20'0.48"E |
| 4 | 23°08'29.76" N | 85°20'0.76"E |
| 5 | 23°08'30.00" N | 85°20'1.36"E |
| 6 | 23°08'28.61" N | 85°20'1.20"E |
| 7 | 23°08'28.61" N | 85°20'0.68"E |
| 8 | 23°08'27.50" N | 85°20'0.05"E |
| 9 | 23°08'26.23" N | 85°19'59.91"E |
| 10 | 23°08'25.49" N | 85°19'59.66"E |
| 11 | 23°08'25.62" N | 85°19'58.37"E |
| 12 | 23°08'26.32" N | 85°19'58.05"E |
| 13 | 23°08'26.66" N | 85°19'57.68"E |
| 14 | 23°08'26.62" N | 85°19'56.75"E |
| 15 | 23°08'26.81" N | 85°19'56.32"E |
| 16 | 23°08'27.87" N | 85°19'56.52"E |
| 17 | 23°08'28.82" N | 85°19'57.48"E |

| | | |
|---|---|---|
| 18 | 23°08'29.12" N | 85°19'57.00"E |
| 19 | 23°08'29.22" N | 85°19'56.41"E |
| 20 | 23°08'29.79" N | 85°19'56.63"E |
| 21 | 23°08'29.74" N | 85°19'57.06"E |
| 22 | 23°08'29.90" N | 85°19'57.89"E |
| 23 | 23°08'31.17" N | 85°19'58.78"E |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 36 | 436 (P) |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | i. The Letter of Intent (LoI) has been issued by District Mining Officer, Khunti vide letter no. 431/M, dated 20.08.2016.<br>ii. Lease deed : 06.09.2017 to 05.09.2027. |
| 2 | CO | : | The CO, Khunti vide letter no. 924, dated 21.10.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Khunti vide memo no. 844/M, dated 07.10.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Ranchi vide letter no. 850, dated 09.10.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Khunti Forest Division vide letter no. 1157, dated 15.07.2016 certified that the distance of forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Khunti District (Sl. no. 08, Page no. 31). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 03.08.2016. |
| 8 | Scheme / Mine Plan Approval | : | Mining plan scheme approved by DMO, Khunti vide Memo No. 936/Mining, dated 14.11.2024. |
| 9 | Previous | : | Previous EC granted by DEIAA, Khunti vide letter no. EC/DEIAA |

| | | | |
|---|---|---|---|
| | Environmental Clearance | | /2016-17/28 dated 18.03.2017. |
| 10 | Production Report | : | Production report issued by DMO, Khunti vide letter no. 833/M dated 04.10.2024 |
| 11 | Consent to Establish (CTE) | : | CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-1728907 /2017 /560, dated 16.10.2017. |
| 12 | Consent to Operate (CTO) | : | CTO issued by JSPCB/RO/RNC/CTO-11612183/2021/168, dated 25.11.2021. |
| 13 | Compliance report of previous EC | : | EC compliance report issued by JSPCB, Regional Office, Dhurwa vide letter no. 1620, dated 21.12.2024. |
| 14 | Qualified Person | : | Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him. |

Working Details

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast other than fully mechanized (OTFM) Method | |
| 2 | Quarry Area | : | 1.46 Ha / 3.61 Acres | Life of Mine – Up to the lease period i.e. 06.09.2017 to 05.09.2027. |
| 3 | Waste Generation | : | 2571 cum | |
| 4 | Stripping Ratio | : | 1:0.05 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 3m to 3m | |
| 7 | Elevation of Mine | : | 549 m AMSL to 543m AMSL | |
| 8 | Ground Level Elevation | : | 543m AMSLto 549m AMSL | |
| 9 | Ultimate Working Depth | : | 525m AMSL | |
| 10 | Water Table | : | 513m AMSL | |
| 11 | Topography of Mine | : | Area represents gently sloping land. | |
| 12 | Explosive Requirement | : | 10kg/day | |
| 13 | Diesel/Fuel requirement | : | 121 litre/day | |

Production Details

| Year | Production of Stone in Cum | Production of Stone in | Overburden in cum | Intercalated waste in Cum | Total Waste in Cum |
|---|---|---|---|---|---|

| | | Tonnes | | | |
|---|---|---|---|---|---|
| 1st | 5957 | 16678 | 0 | 314 | 314 |
| 2nd | 17784 | 49795 | 0 | 936 | 936 |
| 3rd | 17727 | 49636 | 0 | 933 | 933 |
| 4th | 7382 | 20668 | 0 | 389 | 389 |
| Total | 48849 | 136777 | 0 | 2571 | 2571 |

Land Use

| Pattern of Utilization | Existing Land Use (Ha) | At the end of Plan period (Ha) | Conceptual stage (Ha) (after life of mine) |
|---|---|---|---|
| Excavation | 0.988 | 1.050 | 1.050 Ha (0.070 Ha area shall be backfilled, 0.770Ha area shall be left as water reservoir and 0.210 Ha left as dead benches. |
| Waste Dump | 0.0 | Nil | Nil |
| Road | 0.012 | 0.00 | 0.0 |
| Infrastructure (Crusher) | 0.0 | Nil | Nil |
| Safety Zone | 0.410 | 0.410 | 0.410 |
| **Total** | **1.410** | **1.460** | **1.460** |
| **Unused Area** | **0.050** | **0.00** | **0.00** |
| **Total Applied Area** | **1.46** | **1.46** | **1.46** |

ENVIRONMENT MANAGEMENT

Green Belt Development

| Year | Place of Plantation | Spacing b/w plants | Total No. of Plants | Area Cover in Square Meters | Total Area in Ha. | Species |
|---|---|---|---|---|---|---|
| 1st | Safety Zone | 2.5 x 2.5 | 656 | 4100 | 0.41 | Gulmohar, Gular, Sagwan, Sakua Fruit Bearing Trees Mango, Jackfruit, Guava |
| | Haul Road | 3 x 3 | 160 | 100 | 0.01 | |
| 2nd | Care & Protection | --- | --- | --- | --- | |
| 3rd | Care & Protection | --- | --- | --- | --- | |
| 4th | Care & Protection | --- | --- | --- | --- | |
| 5th | Care & Protection | --- | --- | --- | --- | |
| **Total** | | | **816** | **4200** | **0.42** | |

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary)

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

Environment Management Budget

| PROPOSED FOR ENVIRONMENT MANAGEMENT COST | | | |
|---|---|---|---|
| S.NO. | Mitigative measures to protect Environment | Capital Cost (in Lakh) | Recurring cost (In Lakh) |
| 01. | Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) | 0 | 3.66 |
| 02. | Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 816 x 300Rs. | 2.44 | 0.40 |
| 03 | Garland Drain and Desiltation pond | 1.46 | 0.14 |
| 04. | Environment Monitoring (Air, Water, Noise & Soil Monitoring) | 00 | 0.50 |
| TOTAL | | **3.90** | **4.719** |

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

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

| | | | |
|---|---|---|---|
| | testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc. | | |

**Undertaking submitted affirming:**

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

**Solid Waste Management**

During first, second and third year gritty soil & intercalated waste will be removed (2183 $m^3$) this soil and waste will be temporarily backfill within the exhausted quarry and in fourth year (389$m^3$) removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

**Water Quality Management**

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

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

**Air Quality Management**

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

Mitigation measures:

**Use of Sharp Drill Bits**

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

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

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

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

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

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

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

**RISK ASSESSMENT**

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

**Hazard identification & Risk Analysis in Stone Mining operation**

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

| | | | | | |
|---|---|---|---|---|---|
| 6 | Loading/Unloading | Bodily injury by hitting by loading material, Exposure to Dust | Very Unlikely | Minor | 20 |
| 7 | Transportation | Vehicle Accident, Exposure to Dust | Remote | Minor | 16 |

**NOTE**: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.
The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

**Preventive Measures:**

**Slope Failure**

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

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

**Drilling Operations**

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

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

**Falls from the edge of a bench**

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

**Control Measures**

- It will be ensured that the drilling equipment is suitable for the job.

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

Dust generation during drilling

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

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

**Noise Generation during drilling**

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

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

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

**Blasting Operations**

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

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

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

### Handling of Explosives

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

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

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

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

### Health Hazards

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

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

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

**Accident at Site**

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

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

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

**Transportation**

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

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

Organizational Structure:

Introduction

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

**Environmental Policy**

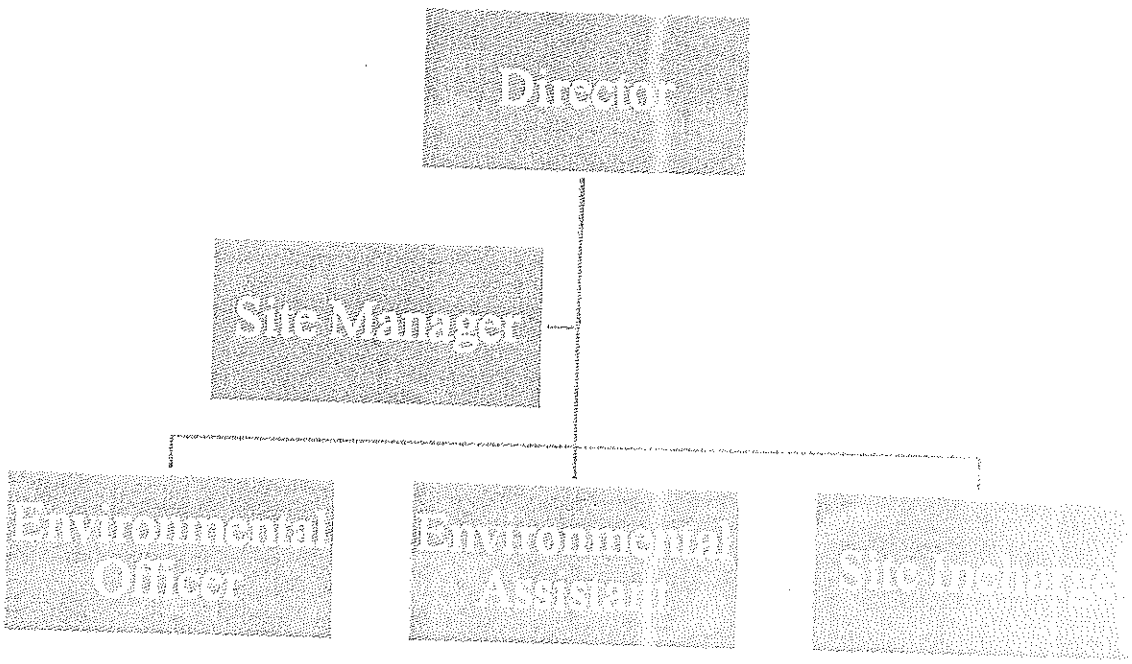
Our company is committed to:
- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

**EMP Cell Objectives**

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

**EMP Cell Structure**

The EMP Cell consists of three members:
- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



**Roles and Responsibilities**

**Environmental Officer (EO)**

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

**Environmental Assistant (EA)**

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

**Administrative Assistant (AA)**

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

- Provide general administrative support

**Director/Top Management Responsibilities**

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

**EMP Process Flow**

The EMP process flow includes:

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

**Key Decision Points**

Key decision points include:

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

**Documentation**

Documentation includes:

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

**Implementation Timeline**

The implementation timeline consists of:

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

**Reporting**

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

**Conclusion**

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and

responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

**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 Terom Stone Mine of Shri Shiv Kumar Sahu, Village : Terom, Tehsil + Thana : Khunti, Distt. : Khunti, Jharkhand (1.46 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.

II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

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

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

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

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

**********

8. **Dunduria Stone Deposit - 1 of Shri Durgesh Kumar Mishra, Village : Dunduria, Tehsil + Thana : Gumla, Distt. : Gumla, Jharkhand (1.805 Ha).**

**(Proposal no.: SIA/JH/MIN/ 504549 /2025)**

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

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

**EC Application for: Proposed Capacity–144.31Tonnes/Day or 43291.84Tonnes/Annum Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Gumla).**

The project has been granted EC by DEIAA, Gumla vide letter no. EC/DEIAA /2017-18/35/2017/31/GML dated 14.09.2017.

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

This is re-appraisal of the EC issued by DEIAA, Gumla which has been taken up for consideration on 21.01.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

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

Production detail as per memo no. 878/M dated 26.10.2024 by DMO, Gumla is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide memo no. 812, dated 11.07.2024.

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

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

**Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.**

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

Project and Location Details:

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Dunduria Stone Mine | |
| 2 | Lessee: | : | Sri Durgesh Kumar Mishra | |
| 3 | Lessee Address | : | S/o Krishna Kumar Mishra, Village : Dunduria, P.O. : Gumla, District: Gumla, Jharkhand | |
| 4 | Lease Area | : | 1.805 Ha. | Acres- 4.46 Acres |
| 5 | Type of Land | : | Non-Forest Raiyati Land | |
| 6 | Project Cost | : | Capital: Rs. 10,00,500 | Recurring: Rs. 53,62,550/ Year |
| 7 | EMP Budget | : | Capital: Rs. 3,00,500 | Recurring: Rs. 4,60,050/ Year |
| 8 | New or Expansion | : | Re-appraisal | |
| 9 | Mineable Reserves | : | cum.: 301822 | Tonnes: 875283 |
| 10 | Mine Life | : | Up to the lease period 03.01.2018 to 02.01.2028. | |
| 11 | Man power | : | 28 | |
| 12 | Water Requirement | : | 11.04KLD (including 1.12 KLD Domestic, 2.70 KLD for Horticulture &7.22 KLD Dust Suppression) | |
| 13 | Water Source | : | By authorised hired water tankers | |
| 14 | DG Set / power | : | - | |
| 15 | Crusher | : | No crusher | |
| 16 | Nearest Water Body | : | Khatwa river flows on the North side of the lease area at an aerial distance of 4 km. | |
| 17 | Nearest Habitation | : | Dunduria at a distance of 2km in west direction. | |
| 18 | Nearest Rail Station | : | Mine is situated near about 54 km away from Lohardaga Railway Station. | |
| 19 | Nearest Air Port | : | Nearest airport is Birsa Munda Airport, Ranchi about 135 km away from the applied area. | |
| 20 | Nearest Forest | : | Katasaru-Bansdih forest at a distance of approx. 5.00 Km in West direction. | |
| 21 | Road & Highways | : | The Gumla – Lohardaga Road (NH-23) is about 1.5 km away from the applied area in Western direction. | |

**CO-ORDINATES**

23°03'45.62" N to 23°03'50.34" N
84°33'10.49" E to 84°33'17.68" E

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 117 | 718 (P) |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | i. The Letter of Intent (LoI) has been issued by Deputy Commissioner, Gumla vide letter no. 1289/M, dated 29.12.2016.<br>ii. Lease deed : 03.01.2018 to 02.01.2028. |
| 2 | CO | : | The CO, Gumla vide letter no. 518 (ii), dated 29.04.2017 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan. |
| 3 | DMO | : | DMO, Gumla vide memo no. 811/M, dated 07.10.2024 certified that 01 other mining lease area (4.00 Acre) exists within 500 meters radius from proposed project site and total area is 8.46 Acre. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Ranchi vide letter no. 906, dated 11.11.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Gumla Forest Division vide letter no. 163, dated 24.01.2017 certified that the distance of forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Gumla District (Sl. no. 10, Page no. 41). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 16.12.2016. |
| 8 | Scheme / Mine Plan Approval | : | i. Mine plan approved by AMO, Gumla vide letter no. 385/M, dated 08.03.2017.<br>ii. Mining scheme approved by DMO, Gumla vide Letter No. 128/M, dated 31.01.2023. |
| 9 | Previous Environmental Clearance | : | Previous EC granted by DEIAA, Gumla vide letter no. EC/DEIAA /2017-18/35/2017/31/GML dated 14.09.2017. |
| 10 | Production Report | : | Production report issued by DMO, Gumla vide memo no. 878/M dated 26.10.2024. |
| 11 | Consent to Establish (CTE) | : | CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2548660 /2018 /943, dated 31.08.2018. |
| 12 | Consent to Operate (CTO) | : | CTO issued by JSPCB/RO/RNC/CTO-15660537/2023/39, dated 04.03.2023. |

| | | | |
|---|---|---|---|
| 13 | Compliance report of previous EC | : | EC compliance report issued by JSPCB, Regional Office, Dhurwa vide memo no. 812, dated 11.07.2024. |
| 14 | Qualified Person | : | Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast other than fully mechanized (OTFM) Method | |
| 2 | Quarry Area | : | 1.524 Ha. | Life of Mine – Up to the lease period 03.01.2018 to 02.01.2028. |
| 3 | Waste Generation | : | 4213.84 Cum | |
| 4 | Stripping Ratio | : | 1:0.01 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 3m to 3m | |
| 7 | Elevation of Mine | : | 648m AMSL to 635m AMSL | |
| 8 | Ground Level Elevation | : | 635m AMSL | |
| 9 | Ultimate Working Depth | : | 625m AMSL | |
| 10 | Water Table | : | 610m AMSL | |
| 11 | Topography of Mine | : | Area represents gently sloping land. | |
| 12 | Explosive Requirement | : | 20.3 kg/day | |
| 13 | Diesel/Fuel requirement | : | 121 litres/day | |

**Production Details**

| Year | Production of Stone in Tonnes | Overburden in Cum | Intercalated Waste in Cum | Total Waste in CUm |
|---|---|---|---|---|
| 6th | 43291.84 | 0.0 | 843.90 | 843.90 |
| 7th | 43068.92 | 0.0 | 839.55 | 839.55 |
| 8th | 43269.75 | 0.0 | 843.47 | 843.47 |
| 9th | 43269.75 | 0.0 | 843.47 | 843.47 |
| 10th | 43269.75 | 0.0 | 843.47 | 843.47 |
| **Total** | **216170.01** | **0.0** | **4213.86** | **4213.86** |

Land Use

| Pattern of Utilization | Existing Land Use (Ha) | At the end of Plan period (Ha) | At the end of life of Mine (Ha.) | Conceptual stage (Ha) (after life of mine) | | |
|---|---|---|---|---|---|---|
| | | | | Waterbody | Plantation | Public Use |
| Quarry | 0.977 | 1.43 | 1.524 (0.059 Ha. area shall be backfilled & 1.047 Ha. area shall be left as water reservoir) | 1.524 | 0 | 0 |
| Waste Dump | 0 | 0 | 0 | 0 | 0 | 0 |
| Road | 0.044 | 0.011 | 0 | 0 | 0 | 0 |
| Infrastructure (Crusher) | 0 | 0 | 0 | 0 | 0 | 0 |
| Safety Zone | 0 | 0.281 | 0.281 | 0 | 0.281 | 0 |
| **Total** | **1.021** | **1.731** | **1.805** | **1.524** | **0.281** | **0** |
| **Unused Area** | **0.784** | **0.074** | **0** | **0** | | |
| **Total Applied Area** | **1.805** | **1.805** | **1.805** | **1.805** | | |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

| Safety Zone (Ha.) | No. of Tree @ 1600 per Ha. | Actual Existing tree on site | Proposed to be done within 6 months |
|---|---|---|---|
| 0.281 | 450 | 50 | 400 |

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

**Environment Management Budget**

| BUDGETARY PROVISION FOR ENVIRONMENT MANAGEMENT PLAN (EMP) | | |
|---|---|---|
| 400 Tree Plantation @Rs.300 per Tree for planting & @Rs.50 per tree for maintenance | 120000 | 20000 |
| Water Tanker @Rs. 500 per Tanker for Dust Suppression (7.22 KLD) & Horticulture (2.70 KLD) | 0 | 372000 |

| | | |
|---|---|---|
| 7.22 KLD + 2.70 KLD = 9.92 KLD<br>9.92 KLD X 300 Days =2976 KL<br>2976 KLD / 4 KLD = 744 Tankers | | |
| Garland Drain & Parapet wall | 180500 | 18050 |
| Environment Monitoring & Compliance | 0 | 50000 |
| **Total** | **300500** | **460050** |

**Environment Monitoring Plan (post operation)**

**Monitoring Parameters and Frequency of Monitoring**

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

**Undertaking submitted affirming:**

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

h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

**Solid Waste Management**

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

**Water Quality Management**

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

**Air Quality Management**

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

Mitigation measures:

**Use of Sharp Drill Bits**

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

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

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

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

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

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

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

**RISK ASSESSMENT**

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

**Hazard identification & Risk Analysis in Stone Mining operation**

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

**NOTE**: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.
The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

**Preventive Measures:**

**Slope Failure**

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

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

- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

**Drilling Operations**

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

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

**Falls from the edge of a bench**

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

**Control Measures**

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

  Dust generation during drilling

  The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.
- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

**Noise Generation during drilling**

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

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

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

**Blasting Operations**

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

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

**Handling of Explosives**

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

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

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

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

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

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

**Health Hazards**

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

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

**Accident at Site**

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

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

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

**Transportation**

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

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

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

**Organizational Structure:**

**Introduction**

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

**Environmental Policy**

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

**EMP Cell Objectives**

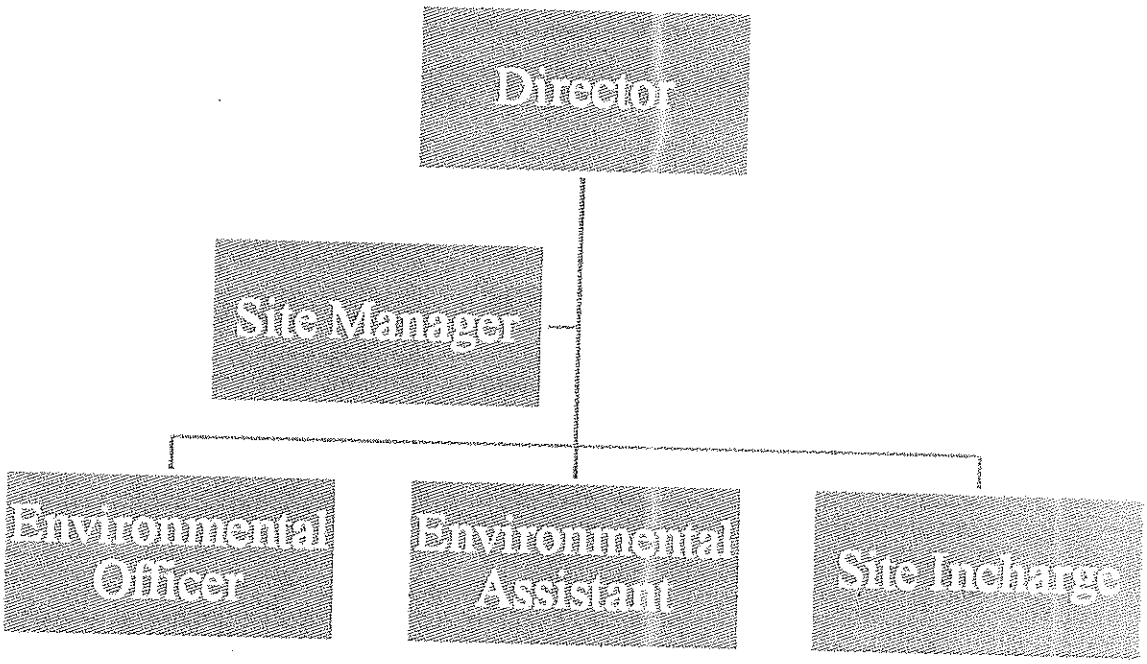
The EMP Cell objectives are:
- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization

- Enhance community engagement and transparency through regular updates

**EMP Cell Structure**

The EMP Cell consists of three members:

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




EMP Cell structure

**Roles and Responsibilities**

**Environmental Officer (EO)**

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

**Environmental Assistant (EA)**

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures

- Participate in training programs
- Provide support to EO

**Administrative Assistant (AA)**

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

**Director/Top Management Responsibilities**

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

**EMP Process Flow**

The EMP process flow includes:

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

**Key Decision Points**

Key decision points include:

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

**Documentation**

Documentation includes:

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

**Implementation Timeline**

The implementation timeline consists of:

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

**Reporting**

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

**Conclusion**

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

**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 Dunduria Stone Deposit - 1 of Shri Durgesh Kumar Mishra, Village : Dunduria, Tehsil + Thana : Gumla, Distt. : Gumla, Jharkhand (1.805 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.

II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"EkPed Ma KeNaam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

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

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

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

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

**********

9. **Basia Stone Mine of Shri Rajkumar Ohdar, Village : Basia, Tehsil + Thana : Basia, Distt. : Gumla, Jharkhand (3.035 Ha).**

**(Proposal no.: SIA/JH/MIN/ 518744 /2025)**

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

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

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

The project has been granted EC by DEIAA, Gumla vide letter no. EC/DEIAA /2017-18/29/2017/25/GML dated 14.09.2017.

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

This is re-appraisal of the EC issued by DEIAA, Gumla which has been taken up for consideration on 21.01.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$ PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

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

Production detail as per memo no. 1005/M dated 12.12.2024 by DMO, Gumla is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 58, dated 15.01.2025.

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

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

**Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.**

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

**EC Application for: Proposed Capacity–500.73 Tonnes/Day or 150385Tonnes/Annum**

**Project and Location Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Basia Stone Mine | |
| 2 | Lessee: | : | Sri. Rajkumar Ohdar | |
| 3 | Lessee Address | : | Village :Basia, P.O. : Basia, Thana : Basia, District : Gumla, Jharakhand | |
| 4 | Lease Area | : | 3.035 Ha. | 7.50 Acres |
| 5 | Type of Land | : | Non-Forest Raiyati Land | |
| 6 | Project Cost | : | Capital: 12,57,900.00 | Recurring:1,67,13,250 / year |
| 7 | EMP Budget | : | Capital: 5,57,900.00 | Recurring:7,68,750 / Year |
| 8 | New or Expansion | : | Re-appraisal | |
| 9 | Mineable Reserves | : | cum.: 555545.75 | Tonnes: 1499973.53 |
| 10 | Mine Life | : | Up to the lease period : 21.12.2017 to 20.12.2027. | |
| 11 | Man power | : | 56 including 19 Present &37 Proposed | |
| 12 | Water Requirement | : | 19.47KLD (Domestic: 2.24KLD, Dust Suppression:12.14KLD&Plantation: 5.088KLD) | |
| 13 | Water Source | : | By authorised hired water tankers | |
| 14 | DG Set / power | : | - | |
| 15 | Crusher | : | No crusher | |
| 16 | Nearest Water Body | : | South Koel River (2.20 Km) | |
| 17 | Nearest Habitation | : | 800 meter in North-West. | |
| 18 | Nearest Rail Station | : | Basia Stone Mine is situated near about 75 km away from Lohardaga Railway Station in North direction. | |

| | | | |
|---|---|---|---|
| 19 | Nearest Air Port | : | Nearest airport is Birsa Munda Airport, Ranchi about 120 km away from the applied area in North-East direction. |
| 20 | Nearest Forest | : | Jakjor-Gara forest at a distance of 2.0 km in North-East. |
| 21 | 249Road & Highways | : | Nearest National Highway, 143 D is about 300 meters away from the applied area in North direction. |

**CO-ORDINATES**

22°52'03.06"N to 22°52'11.06"N

84°49'58.79"N to 84°50'05.95"N

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 249 | 1816 (P) |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | i. The Letter of Intent (LoI) has been issued by Deputy Commissioner, Gumla vide letter no. 1226/M, dated 17.12.2016.<br>ii. Lease deed : 21.12.2017 to 20.12.2027. |
| 2 | CO | : | The CO, Basia vide letter no. 425 (ii), dated 09.12.2016 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan. |
| 3 | DMO | : | DMO, Gumla vide memo no. 1004/M, dated 12.12.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Ranchi vide letter no. 996, dated 16.12.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Gumla Forest Division vide letter no. 305, dated 07.02.2023 certified that the distance of forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Gumla District (Sl. no. 17, Page no. 42). |
| 7 | Gram Sabha | : | BDO, Basia vide letter no. 1210 (ii), dated 23.11.2016 informed that Gram Sabha conducted on 19.10.2016. |
| 8 | Mine Plan | : | i. Mining plan approved by AMO, Gumla vide Letter No. |

| | | | |
|---|---|---|---|
| | Approval | | 43/M, dated 04.01.2017.<br>ii. Mining scheme approved by DMO, Gumla vide letter no. 502/M, dated 02.06.2023. |
| 9 | Previous Environmental Clearance | : | Previous EC granted by DEIAA, Gumla vide letter no. EC/DEIAA /2017-18/29/2017/25/GML dated 14.09.2017. |
| 10 | Production Report | : | Production report issued by DMO, Gumla vide memo no. 1005/M dated 12.12.2024. |
| 11 | Consent to Establish (CTE) | : | CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-15601954 /2023 /240, dated 05.04.2023. |
| 12 | Consent to Operate (CTO) | : | CTO issued by JSPCB/RO/RNC/CTO-16452998/2024/75, dated 27.05.2024. |
| 13 | Compliance report of previous EC | : | EC compliance report issued by JSPCB, Regional Office, Dhurwa vide letter no. 58, dated 15.01.2025. |
| 14 | Qualified Person | : | Shri P.K. Sen was present in the meeting and affirmed that the mining scheme has been prepared by him. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast other than fully mechanized (OTFM) Method | |
| 2 | Quarry Area | : | 2.505 Ha. | Life of Mine – Up to the lease period : 21.12.2017 to 20.12.2027. |
| 3 | Waste Generation | : | 600903 Cum | |
| 4 | Stripping Ratio | : | 1:0.02 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 3m to 3m | |
| 7 | Elevation of Mine | : | 533m AMSL to 514m AMSL | |
| 8 | Ground Level Elevation | : | 514m AMSL | |
| 9 | Ultimate Working Depth | : | 491m AMSL | |
| 10 | Water Table | : | 479m AMSL | |
| 11 | Topography of Mine | : | Area represents gently sloping land. | |
| 12 | Explosive Requirement | : | 94.5 Kg per Day | |
| 13 | Diesel/Fuel requirement | : | 300 Litre per day | |

Production Details

| Year | Production of Stone in Cum | Production of Stone in Tonnes | Overburden in cum | Intercalated waste in Cum | Total Waste in Cum |
|---|---|---|---|---|---|
| 1st | **58565** | **150219** | **0** | **2929** | **2929** |
| 2nd | **58630** | **150385** | **0** | **2932** | **2932** |
| 3rd | **58536** | **150144** | **0** | **2927** | **2927** |
| 4th | 58536 | 150144 | 0 | 2927 | 2927 |
| 5th | 58540 | 150155 | 0 | 2928 | 2928 |
| Total | **2,92,807** | **7,51,047** | **0** | **14643** | **14643** |

Land Use

| Pattern of Utilization | Existing Land Use (Ha.) | At the end of Plan period (Ha.) | At the end of Mine (Ha.) | Conceptual stage (Ha) (after life of mine) | | |
|---|---|---|---|---|---|---|
| | | | | Waterbody | Plantation | Public Use |
| Quarry | 0.113 | 1.696 | 2.505 (including backfill 0.448 Ha. & 0.694 Ha. Deed Bench) | 2.505 | 0 | 0 |
| Greenbelt within Safety Barrier | 0 | 0.530 | 0.530 | 0 | 0.530 | 0 |
| Road | 0.116 | 0.034 | 0 | 0 | 0 | 0 |
| Dump | 0 | 0.291 | 0 | 0 | 0 | 0 |
| Parapet Wall | 0 | 0.081 | 0 | 0 | 0 | 0 |
| Garland Drain | 0 | 0.103 | 0 | 0 | 0 | 0 |
| **Total** | **0.229** | **2.735** | **3.035** | **2.505** | **0.530** | **0** |
| **Unused Area** | **2.806** | **0.300** | **0** | **3.035** | | |
| **Total Applied Area** | **3.035** | **3.035** | **3.035** | **3.035** | | |

ENVIRONMENT MANAGEMENT

Green Belt Development

| Safety Zone (Ha.) | No. of Tree @ 1600 per Ha. | Actual Existing tree on site | Proposed to be done within 6 months |
|---|---|---|---|
| 0.530 | 848 | 0 | 848 |

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

**Environment Management Budget**

| BUDGETARY PROVISION FOR ENVIRONMENT MANAGEMENT PLAN (EMP) | | |
|---|---|---|
| 848 Tree Plantation<br>@Rs.300 per Tree for planting & @Rs.50 per tree for maintenance | 254400 | 42400 |
| Water Tanker @Rs. 500 per Tanker for Dust Suppression (12.14 KLD) & Horticulture (5.088 KLD)<br>12.14 KLD + 5.088KLD = 17.228 KLD<br>17.228 KLD X 300 Days =5168.40 KL<br>5168.40 KLD / 4 KLD = 1065 Tankers | 0 | 532500 |
| Garland Drain & Parapet wall | 303500 | 30350 |
| Environment Monitoring & Compliance | 0 | 50000 |
| **Total** | **557900** | **655250** |

**Environment Monitoring Plan (post operation)**

**Monitoring Parameters and Frequency of Monitoring**

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

| | | | |
|---|---|---|---|
| | testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc. | | |

**Undertaking submitted affirming:**

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

**Solid Waste Management**

During first, second and third year gritty soil & intercalated waste will be removed, this soil and waste will be temporarily backfill within the exhausted quarry and in fourth yearremoved gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

**Water Quality Management**

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

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

**Air Quality Management**

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

Mitigation measures:

**Use of Sharp Drill Bits**

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

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

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

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

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

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

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

**RISK ASSESSMENT**

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

**Hazard identification & Risk Analysis in Stone Mining operation**

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

| | | | | | |
|---|---|---|---|---|---|
| 6 | Loading/Unloading | Bodily injury by hitting by loading material, Exposure to Dust | Very Unlikely | Minor | 20 |
| 7 | Transportation | Vehicle Accident, Exposure to Dust | Remote | Minor | 16 |

**NOTE**: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.
The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

**Preventive Measures:**

**Slope Failure**

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

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

**Drilling Operations**

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

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

**Falls from the edge of a bench**

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

**Control Measures**

- It will be ensured that the drilling equipment is suitable for the job.

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

Dust generation during drilling

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

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

**Noise Generation during drilling**

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

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

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

**Blasting Operations**

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

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

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

**Handling of Explosives**

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

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

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

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

**Health Hazards**

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

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

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

**Accident at Site**

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

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

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

**Transportation**

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

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

Organizational Structure:

Introduction

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

**Environmental Policy**

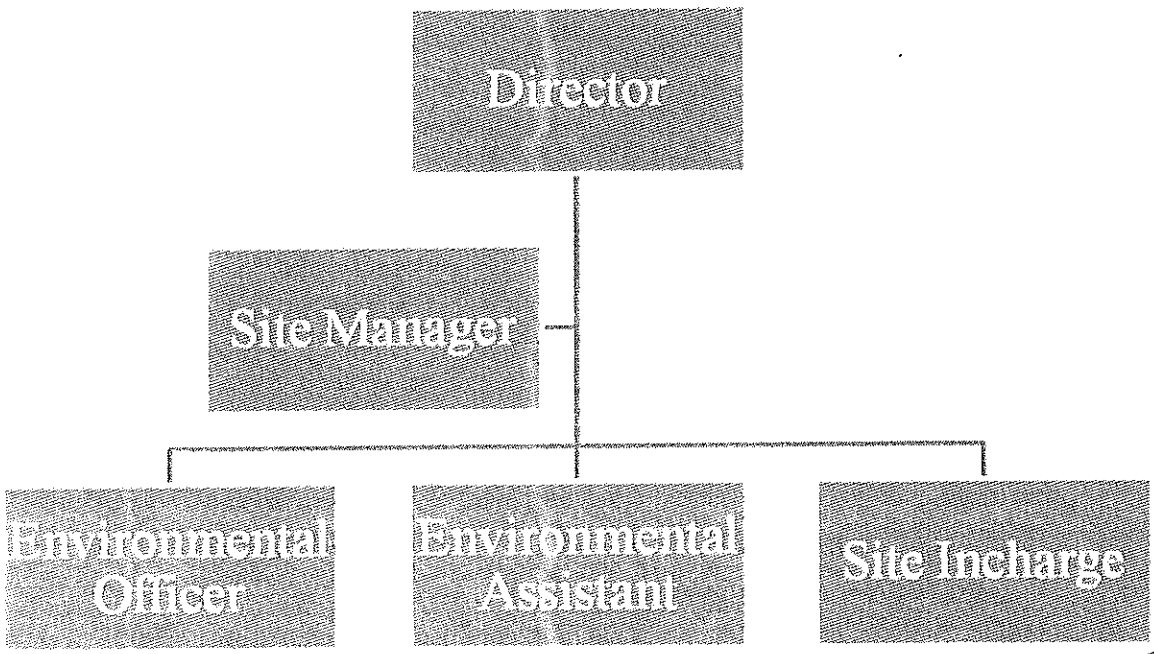
Our company is committed to:
- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

**EMP Cell Objectives**

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

**EMP Cell Structure**

The EMP Cell consists of three members:
- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



**Roles and Responsibilities**

**Environmental Officer (EO)**

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

**Environmental Assistant (EA)**

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

**Administrative Assistant (AA)**

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

**Director/Top Management Responsibilities**

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

- Ensure integration of environmental considerations

**EMP Process Flow**

The EMP process flow includes:

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

**Key Decision Points**

Key decision points include:

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

**Documentation**

Documentation includes:

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

**Implementation Timeline**

The implementation timeline consists of:

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

**Reporting**

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

**Conclusion**

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Basia Stone Mine of Shri Rajkumar Ohdar, Village : Basia, Tehsil + Thana : Basia, Distt. : Gumla, Jharkhand (3.035 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

I. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.

II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

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

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

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

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

**********

10. Sanga Stone Mine of Mr. Haquim Ansari, Village : Sanga, Tehsil : Kanke, Thana : Pithoria, Distt. : Ranchi, Jharkhand (2.42 Ha).

**(Proposal no.: SIA/JH/MIN/ 510237 /2025)**

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

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

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

The project has been granted EC by DEIAA, Ranchi vide letter no. EC/DEIAA /2015-16/02/87 dated 24.08.2017.

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

This is re-appraisal of the EC issued by DEIAA, Ranchi which has been taken up for consideration on 21.01.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

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

Production detail as per memo no. 1681/M, dated 29.10.2024 by DMO, Ranchi is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 1407, dated 14.11.2024.

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

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

**Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.**

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

EC Application for: Proposed Capacity–440Tonnes/Day or 131990Tonnes/Annum

Project and Location Details:

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Sanga Stone Mine | |
| 2 | Lessee: | : | Haquim Ansari | |
| 3 | Lessee Address | : | Village: Karkatta, P.O.: Malshiring, P.S.: Pithoria, Dirtrict : Ranchi, State : Jharkhand, Pincode- 835222 | |
| 4 | Lease Area | : | 2.42 Ha | Acres- 6.00 Acre |
| 5 | Type of Land | : | Non-Forest Raiyati Land | |
| 6 | Project Cost | : | Capital: 11,58,600.00 | Recurring: 1,65,88,800.00 / Year |
| 7 | EMP Budget | : | Capital: 4,58,600.00 | Recurring: 6,44,300.00 / Year |
| 8 | New or Expansion | : | Re-appraisal | |
| 9 | Mineable Reserves | : | cum.: 301822 | Tonnes: 875283 |
| 10 | Mine Life | : | Up to the lease period : 02.02.2018 to 01.02.2028. | |
| 11 | Man power | : | 56 (Presently: 19 + 37 Proposed) | |
| 12 | Water Requirement | : | 16.43KLD *(including 2.24KLD Domestic, 4.512 KLD for Horticulture & 9.68 KLD Dust Suppression)* | |
| 13 | Water Source | : | By authorised hired water tankers | |
| 14 | DG Set / power | : | - | |
| 15 | Crusher | : | No crusher | |
| 16 | Nearest Water Body | : | Jumar River (3.7 Km) | |
| 17 | Nearest Habitation | : | Sukurhutu at a distance of 5.0 km in South-West direction. | |
| 18 | Nearest Rail Station | : | Nearest National Highway, Ranchi Ring Road, is about 5.0 km away from the applied area in South -East direction. | |
| 19 | Nearest Air Port | : | Nearest airport is Birsa Munda Airport, Ranchi about 25 km away from the applied area in South-East direction. | |
| 20 | Nearest Forest | : | Uparkonki-Pusu forest at a distance of 7.0 km in North direction. | |
| 21 | Road & Highways | : | Sanga Stone Mine is situated near about 22 km away from Ranchi Railway Station in South-East direction. | |

**CO-ORDINATES**

23°28'02.86" N to 23°28'09.23" N

85°14'12.09" E to 85°14'39.03" E

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 267 | 394 (P) |

STATUTORY CLEARANCES

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | i. The Letter of Intent (LoI) has been issued by Assistant Mining Officer, Ranchi vide memo no. 1085/M, dated 12.10.2017.<br>ii. Lease deed : 02.02.2018 to 01.02.2028. |
| 2 | CO | : | The CO, Kanke (Ranchi) vide letter no. 730 (ii), dated 05.09.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan. |
| 3 | DMO | : | DMO, Ranchi vide memo no. 1680/M, dated 29.10.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Ranchi vide letter no. 410, dated 28.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Ranchi Forest Division vide letter no. 854, dated 17.04.2015 certified that the distance of forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Ranchi District (Sl. no. 05, Page no. 32). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 01.07.2012. |
| 8 | Mining scheme / Mine Plan Approval | : | Mining scheme approved by AMO, Ranchi vide memo no. 452/M, dated 27.03.2023. |
| 9 | Previous Environmental Clearance | : | Previous EC granted by DEIAA, Ranchi vide letter no. EC/DEIAA /2015-16/02/87 dated 24.08.2017. |
| 10 | Production Report | : | Production figure issued by DMO, Ranchi vide 1681/M, dated 29.10.2024. |
| 11 | Consent to Establish (CTE) | : | CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2208013 /2018 /378, dated 17.04.2018. |
| 12 | Consent to Operate (CTO) | : | CTO issued by JSPCB/RO/RNC/CTO-15715368/2023/68, dated 01.04.2023. |
| 13 | Compliance report of | : | EC compliance report issued by JSPCB, Regional Office, Dhurwa vide letter no. 1407, dated 14.11.2024. |

| | | | |
|---|---|---|---|
| | previous EC | | |
| 14 | Qualified Person | : | Shri P.K. Sen was present in the meeting and affirmed that the minining scheme has been prepared by him. |

Working Details

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast other than fully mechanized (OTFM) Method | |
| 2 | Quarry Area | : | 1.95 Ha. | Life of Mine – Up to the lease period : 02.02.2018 to 01.02.2028. |
| 3 | Waste Generation | : | 11954 | |
| 4 | Stripping Ratio | : | 1:03 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 3m to 3m | |
| 7 | Elevation of Mine | : | 724m AMSL to 613m AMSL | |
| 8 | Ground Level Elevation | : | 613 m AMSL | |
| 9 | Ultimate Working Depth | : | 664m AMSL | |
| 10 | Water Table | : | 654 m AMSL | |
| 11 | Topography of Mine | : | Area represents gently sloping land. | |
| 12 | Explosive Requirement | : | 44 Kg Per Day | |
| 13 | Diesel/Fuel requirement | : | 264 Litre Per Day | |

**Production Details**

| Year | Production of Stone in Tonnes | Proposed Production of Gritty Soil in tonnes |
|---|---|---|
| **6th** | **131489** | **210** |
| **7th** | **131990** | **000** |
| **8th** | **131880** | **1500** |
| **9th** | **131822** | **000** |
| **10th** | **131522** | **000** |
| **Total** | **658703** | **1710** |

Land Use

| Pattern of Utilization | Existing Land Use (Ha) | At the end of Plan period (Ha) | Conceptual stage (Ha) (after life of mine) | | |
|---|---|---|---|---|---|
| | | | Waterbody | Plantation | Public Use |
| Quarry | 1.73 | 1.95 including backfill 0.09 Ha.& 0.35 Ha. Deed Bench | 1.95 | 0 | 0 |
| Waste Dump | 0 | 0 | 0 | 0 | 0 |
| Road | 0.09 | 0 | 0 | 0 | 0 |
| Infrastructure (Crusher) | 0 | 0 | 0 | 0 | 0 |
| Safety Zone | 0 | 0.47 | 0 | 0.47 | 0 |
| **Total** | **1.82** | **2.42** | **1.95** | **0.47** | **0** |
| **Unused Area** | **0.60** | **0.00** | **0.00** | | |
| **Total Applied Area** | **2.42** | **2.42** | **2.42** | | |

## ENVIRONMENT MANAGEMENT

### Green Belt Development

| Safety Zone (Ha.) | Actual Existing tree on site | Proposed to be done within 6 months |
|---|---|---|
| 0.47 | 30 | 722 |

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

### Environment Management Budget

| BUDGETARY PROVISION FOR ENVIRONMENT MANAGEMENT PLAN (EMP) | | |
|---|---|---|
| 1075 Tree Plantation @Rs.300 per Tree for planting & @Rs.50 per tree for maintenance | 216600 | 36100 |
| Water Tanker @Rs. 500 per Tanker for Dust Suppression (9.68 KLD) & Horticulture (4.512 KLD) | 0 | 532500 |

| | | |
|---|---|---|
| 9.68 KLD + 4.512 KLD = 14.192 KLD<br>14.192 KLD X 300 Days =4257.60 KL<br>4257.60 KLD / 4 KLD = 1065 Tankers | | |
| Garland Drain & Parapet wall | 242000 | 24200 |
| Environment Monitoring & Compliance | 0 | 50000 |
| **Total** | **458600** | **642800** |

**Environment Monitoring Plan (post operation)**

**Monitoring Parameters and Frequency of Monitoring**

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

**Undertaking submitted affirming:**

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

h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

**Solid Waste Management**

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

**Water Quality Management**

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

**Air Quality Management**

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

Mitigation measures:

Use of Sharp Drill Bits

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

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

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

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

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

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

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

**RISK ASSESSMENT**

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

**Hazard identification & Risk Analysis in Stone Mining operation**

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

**NOTE**: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.
The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

**Preventive Measures:**

**Slope Failure**

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

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

- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

**Drilling Operations**

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

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

**Falls from the edge of a bench**

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

**Control Measures**

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

  Dust generation during drilling

  The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.
- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

**Noise Generation during drilling**

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

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

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

**Blasting Operations**

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

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

**Handling of Explosives**

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

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

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

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

**Health Hazards**

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

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

**Accident at Site**

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

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

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

**Transportation**

The usual method of transporting minerals from the working face is by trucks

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

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

**Organizational Structure:**

**Introduction**

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

**Environmental Policy**

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

**EMP Cell Objectives**

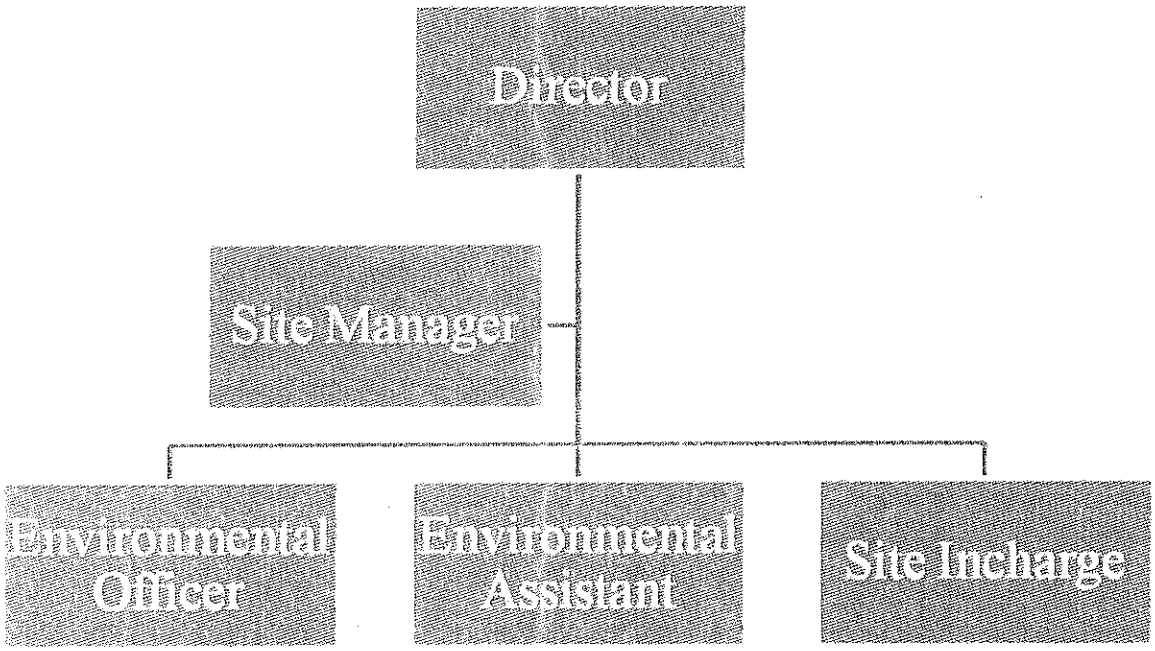
The EMP Cell objectives are:
- Minimize environmental impacts on air, water, soil, and biodiversity

- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

**EMP Cell Structure**

The EMP Cell consists of three members:

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




EMP Cell structure

**Roles and Responsibilities**

**Environmental Officer (EO)**

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

**Environmental Assistant (EA)**

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports

- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

**Administrative Assistant (AA)**

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

**Director/Top Management Responsibilities**

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

**EMP Process Flow**

The EMP process flow includes:

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

**Key Decision Points**

Key decision points include:

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

**Documentation**

Documentation includes:

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

**Implementation Timeline**

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP

2. Operational Phase (Ongoing): Implement EMP& comply to statutory compliance

3. Closure and Rehabilitation Phase (6 months): Restore mined land

**Reporting**

The EMP Cell will submit quarterly reports to:

- Company Director

- Regulatory authorities

**Conclusion**

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

**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 Sanga Stone Mine of Mr. Haquim Ansari, Village : Sanga, Tehsil : Kanke, Thana : Pithoria, Distt. : Ranchi, Jharkhand (2.42 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.

II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"EkPed Ma KeNaam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

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

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

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

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

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**11. Stone Mining Project of M/s Asit Kumar Mandal Stone Works, Village : Garga, Tehsil : Nirsa, Distt. : Dhanbad, Jharkhand (3.17 Ha).**

**(Proposal No. : SIA/JH/MIN/ 518189/2025).**

This is an expansion project under B1 category for which ToR has been issued vide letter no. EC/SEIAA/2022-23/2793/2023/84, dated 03.05.2023.

The application alongwith EIA / EMP report for consideration for grant of EC has been submitted on 16.01.2025.

The PAs have not submitted the Certified Compliance Report (CCR) of the conditions of the earlier EC as required vie Office Memorandum no. IA3-22/10/2022-IA.III [E 177258], dated 08.06.2022 of MoEF&CC, Govt. of India.

**The project will be taken up for consideration after submission of CCR as above.**

**********

12. Stone Mining Project of M/s Asit Kumar Mandal Stone Works (Prop. : Sri Asit Kumar Mandal), Village : Garga, Tehsil : Nirsa, Distt. : Dhanbad, Jharkhand (3.72 Ha).

(Proposal No. : SIA/JH/MIN/ 518274/2025).

This is an expansion project under B1 category for which ToR has been issued vide letter no. EC/SEIAA/2022-23/2794/2023/87, dated 03.05.2023.

The application alongwith EIA / EMP report for consideration for grant of EC has been submitted on 16.01.2025.

The PAs have not submitted the Certified Compliance Report (CCR) of the conditions of the earlier EC as required vie Office Memorandum no. IA3-22/10/2022-IA.III [E 177258], dated 08.06.2022 of MoEF&CC, Govt. of India.

**The project will be taken up for consideration after submission of CCR as above.**

**********

13. Stone Mining Project of M/s Asit Kumar Mandal Stone Works (Prop. : Sri Asit Kumar Mandal), Mouza : Tentuliya, Thana : Nirsa, Distt. : Dhanbad, Jharkhand (2.69 Ha).

(Proposal No. : SIA/JH/MIN/ 518784/2025).

Name of the consultant : AWS Envirotech (OPC) Pvt. Ltd, Lucknow, U.P.

This is a new project which has been taken for appraisal on 21.01.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Stone Boulders: Production Capacity from –1,32,312.96 Tonne per year (441.04 TPD).

Project and Location Details:

| Sl | Parameter | | Details |
|---|---|---|---|
| 1 | Project Name | : | Stone Mining Project |
| 2 | Lessee: | : | Lessee- Sri Asit Kumar Mandal,<br>S/oSudhan Chandra Mandal<br>Village- Asanbani, P.O.- Vitiya, P.S.- Govindpur,<br>District - Dhanbad, Jharkhand) |
| 3 | Lease Address | : | Mouza- Tentuliya, Thana- Nirsa, District- Dhanbad, Jharkhand |

| | | | | |
|---|---|---|---|---|
| 4 | Lease Area | : | 2.69 Hectares | Acres- 6.64 Acres |
| 5 | Type of Land | : | Non Forest (RayatiPrivate Land) | |
| 6 | Project Cost | : | Rs. 62.4 lakhs as capital cost | |
| 7 | EMP Budget | : | Capital: 8.5 Lakhs | Recurring: 5.24Lakh/year |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves | : | (1321693.20 T) 489516.00 $m^3$ | |
| 10 | Mine Life | : | 10 years | |
| 11 | Man power | : | 20 | |
| 12 | Water Requirement | : | 8.25 KLD (Drinking: 0.3 KLD, Dust Suppression: 1.6 KLD, Plantation: 6.35 KLD) | |
| 13 | Water Source | : | Water will be sourced from Abandoned mines through the water tanker for dust suppression and plantation<br>Water will be sourced from a bore well within the lease area for drinking and domestic consumptions. | |
| 14 | DG Set / power | : | NA | |
| 15 | Crusher | : | NA | |
| 16 | Nearest Water Body | : | Damodar river, at approx 4.0 km towards S direction of mine site. | |
| 17 | Nearest Habitation | : | Tentuliya, 0.55 km in S Direction | |
| 18 | Nearest Rail Station | : | Kalubathan Railway Station, approx. 7.0 km in NE direction | |
| 19 | Nearest Airport | : | Dhanbad Airport, approx. 23 km towards NW direction. | |
| 20 | Nearest Forest | : | Nil | |
| 21 | Road & Highways | : | NH-19, Approx. 10 km North direction | |

**Land Details:**

| Khata No. | Plot No. |
|---|---|
| 148, 104, 84, 46 & 105 | 270, 107, 242, 184, 188, 244, 100, 106, 249, 61, 192, 191, 261, 108, 95, 105,190, 256, 257, 253, 250, 194, 254, 195, 252, 251, 243, 262, 196, 258, 241, 260, 193, 189, 255, 98, 187, 103, 99, 259, 272, 271 & 104 |

**Coordinates as Latitude & Longitude**

**Latitude:** 23° 42'41.80" to 23°42'48.51" N
**Longitude:** 86° 36'44.92" to 86°36'54.86" E

Statutory Clearances:

| | | | |
|---|---|---|---|
| 1 | LOI/Lease docs | : | The Letter of Intent (LOI) has been issued by District Mining Officer, Dhanbad vide letter no. 1131/M, dated 31.07.2024. |
| 2 | CO | : | The CO, Kaliasol (Dhanbad) vide letter no. : 232, dated 25.06.2024 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Dhanbad vide memo no. 1537/M, dated 26.09.2024 certified that no other mining lease area exists within 500 m radius from proposed project site. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Hazaribagh vide letter no.: 771, dated 08.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary. |
| 5 | DFO Territorial | : | DFO, Dhanbad vide letter no.: 1127, dated 02.05.2024 certified that the distance of reserved / protected forest is 560 meters from proposed project site. |
| 6 | DSR | : | The project is mentioned in approved District Survey Report (DSR) of Dhanbad district (Sl. no. 22, Page no. 79). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 14.05.2024 |
| 8 | Mine Plan Approval | : | Mine Plan approved by DMO, Dhanbad vide memo no. 1750/M, dated 26.11.2024. |
| 9 | Qualified Person | : | Dr. Amarjeet Kumar Singh was present in the meeting and affirmed that the mine plan has been prepared by him. |

Working Details

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast. Semi mechanized Mining method, wagon drill with blasting | |
| 2 | Quarry Area | : | 2.69 ha | Life of Mine – 5.0 years |
| 3 | Waste Generation | : | Waste generation-almost nil; some weathered rock with mixed soil may be generated, which will be used for development of approach road | |
| 4 | Stripping Ratio | : | 1:0.02 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 6m x width not less than 10m | |
| 7 | Elevation of Mine | : | 160 m to 130m | |
| 8 | Ground Level Elevation | : | 197m AMSL | |

| | | | |
|---|---|---|---|
| 9 | Ultimate Working Depth | : | 124 mRL |
| 10 | Water Table | : | 110 AMSL |
| 11 | Topography of Mine | : | Area represents a small hillock |
| 12 | Explosive Requirement | : | 136 Kg/day |
| 13 | Diesel/Fuel requirement | : | 300 litre/day |

**Production Details**

**In first Year**

| Section | Bench RL | Sectional Area (m2) | Length of influence (m) | Volume | Section | Bench RL | Production in $m^3$ | Length of influence (m) |
|---|---|---|---|---|---|---|---|---|
| A-B | 160-154 | 355.00 | 136.00 | 48280.00 | 45866.00 | 2.7 | 123838.20 | 2414.00 |
| Total | | | | | | | 123838.20 | |

**In Second year**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| A-B | 160-154 | 498.00 | 90.00 | 44820.00 | 42579.00 | 2.7 | 114963.30 | 2241.00 |
| Total | | | | | | | 114963.30 | |

**In Third Year**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| A-B | 154-148 | 416.00 | 124.00 | 51584.00 | 49004.80 | 2.7 | 132312.96 | 2579.20 |
| Total | | | | | | | 132312.96 | |

**In Fourth year**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| A-B | 154-148 | 515.00 | 77.00 | 39655.00 | 37672.25 | 2.7 | 101715.08 | 2522.75 |
| A-B | 148-142 | 90.00 | 120.00 | 10800.00 | 10260.00 | 2.7 | 27702.00 | |
| Total | | | | | | | 129417.08 | |

**In Fifth Year**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| A-B | 148-142 | 744.00 | 65.00 | 48360.00 | 45942.00 | 2.7 | 124043.40 | 2418.00 |
| Total | | | | | | | 124043.40 | |

**Land Use**

| Type of land use | Existing (ha) | During Plan Period (ha) | During Conceptual Period |
|---|---|---|---|
| Quarry | 2.68 | 1.87 | 1.99 |
| Infrastructure | Nil | 0.02 | Nil |
| Approach roads | 0.01 | Nil | Nil |
| Garland drain | Nil | 0.09 | Nil |
| Green Belt | Nil | 0.70 | 0.70 |
| Settling Tank | Nil | 0.01 | Nil |
| **Total** | **2.69** | **2.69** | **2.69** |

**ENVIRONMENT MANAGEMENT PLAN**

**Green Belt Development**

| S. No. | LOCATION | | Area/Length | No of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | : | 0.70 Ha. | 1190 |
| 2 | Haul /Approach Road | : | 0.2 km | 80 |

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

**COST PROPOSED FOR EMP**

| Sl.No. | Particulars | Capital Cost in Rs. | Recurring Cost in (Rs. ) |
|---|---|---|---|
| 1 | Rain Water Harvesting | 3,00,000 | 1,50,000 |

| | | | |
|---|---|---|---|
| 2 | Plantation (@ Rs. 125 per plant) | 2,00,000 | 100,000 |
| 3 | Environmental Monitoring (One Day Monitoring)<br>• Ambient Air ( 3 points) 24 hrs – Rs. 5000<br>• Surface Water( Per Sample) - Rs. 1500<br>• Ground Water ( Per Sample) – Rs. 1500<br>• Noise ( 3 points) 24 hrs – Rs. 2000<br>• Stack Monitoring (D.G. Set) – Rs. 2000<br>Total - Rs. 12,000<br>Atleast two season in a Year - Rs. 12,000 x 2 = Rs. 24,000 | -- | 24,000 |
| 4 | Occupational Health (Providing Safety Appliance & Health Check-up) | 100,000 | 50,000 |
| 4 | Miscellaneous | 250,000 | 200,000 |
| **Grand Total** | | **8,50,000** | **5,24,000** |

**Environment Monitoring Programme**

| Sl. No | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |
| 2 | Soil | 2 Stations | 6 Monthly |
| 3 | Surface Water | 2 Stations | 6 Monthly |
| 4 | Ground Water | 2 Stations | 6 Monthly |
| 5 | Noise | 4 Stations | 6 Monthly |

**Solid Waste Management**

- Waste Generation is almost nil, however if generated will be used for maintenance of Haul/Approach Road.

**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.
- Garland drain will be made around the Waste dump and the rain water will becollected in garland drain and allowed to settle in a small pit for settling suspendedparticles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside

- For domestic waste water Septic Tank with Soak Pit shall be provided, dischargefrom Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and goodsanitation system shall be made available.

**Air Quality Management**

- Dust extractor or wet drilling will be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice

Ambient air pollution monitoring shall be carried out every six months

**RISK ASSESSMENT**

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

**Probability/Likelihood of Occurrence of Hazard**

| Likelihood Level | Probability | Description |
|---|---|---|
| L5 | Very Unlikely | Has not occurred/reported within last 5 years. |
| L4 | Remote / Moderate | May occur if conditions exist. Has occurred within last 3 years. |
| L3 | Occasional | Likely to occur if conditions exist. Has occurred within last 2 years. |
| L2 | Probable | Very likely to occur. Has occurred within last year. |
| L1 | Frequent | Almost certain to occur. Has occurred more than one within last year. |

**Severity/Impact Intensity**

| Severity Level | Severity | Description |
|---|---|---|
| C1 | Catastrophic | May commonly cause death or major system loss, 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 Stone Mining Project of M/s Asit Kumar Mandal Stone Works (Prop. : Sri Asit Kumar Mandal), Mouza : Tentuliya, Thana : Nirsa, Distt. : Dhanbad, Jharkhand (2.69 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"EkPed Ma KeNaam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

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

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

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

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

**********

14. **Marro Stone Block-C of Shri Roshan Kumar Hansda, Village : Marro, Tehsil : Govindpur, Distt. : Dhanbad, Jharkhand (1.41 Ha).**

**(Proposal No. : SIA/JH/MIN/ 518313/2025).**

**Name of the consultant : AWS Envirotech (OPC) Pvt. Ltd, Lucknow, U.P.**

This is a new project which has been taken for appraisal on 21.01.2025.

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

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

**Application for: Stone Boulders: Production Capacity 13,700.21 cu m or 41,100.63 Tonne (Max) per year.**

**Project and Location Details:**

| Sl | Parameter | | Details |
|---|---|---|---|
| 1 | Project Name | : | Stone Mining Project |

| | | | | |
|---|---|---|---|---|
| 2 | Lessee: | : | Lessee- Shri Roshan Kumar Hansda,<br>S/o Shri Motilal Hansda<br>R/o-Kushberia, PO & PS- ACC Sindri, District- Dhanbad, Jharkhand-828124 | |
| 3 | Lease Address | : | Marro Stone Block-C, Mouza- Marro, Thana- Govindpur, District-Dhanbad, Jharkhand | |
| 4 | Lease Area | : | 1.41 Hectares | Acres- 3.50 Acres |
| 5 | Type of Land | : | Government Land | |
| 6 | Project Cost | : | Rs. 48 Lakhs | |
| 7 | EMP Budget | : | Capital: 8.5 Lakhs | Recurring: 5.5 Lakh / year |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves | : | 131903.33 cu m | |
| 10 | Mine Life | : | 10.0 years | |
| 11 | Man power | : | 20 | |
| 12 | Water Requirement | : | 11.83 KLD(Drinking: 0.3 KLD, Dust Suppression: 6.64 KLD, Plantation: 4.89 KLD) | |
| 13 | Water Source | : | Water will be sourced fromAbandoned mines through the water tanker for dust suppression and plantation<br>Water will be sourced from a bore well within the lease area for drinking and domestic consumption. | |
| 14 | DG Set / power | : | NA | |
| 15 | Crusher | : | NA | |
| 16 | Nearest River | : | BarakarRiver, at approx. 30 km towards E direction of mine site. | |
| 17 | Nearest Habitation | : | Marro, 0.64 km in North-East Direction | |
| 18 | Nearest Rail Station | : | Dokra HaltRailway station, approx. 9.42 km in S direction | |
| 19 | Nearest Airport | : | Dhanbad Airport, approx. 7.7 km towards SW direction. | |
| 20 | Nearest Forest | : | Nil | |
| 21 | Road & Highways | : | NH-419, Approx. 1.3 km North direction<br>Nagarkiyari Road,Approx. 0.67 kmtowards SWdirection<br>NH 19 Approx.2.61 km towards SSWdirection<br>SH- 13Approx.3.08 kmtowards Edirection<br>NH 419 Approx. 3.52 kmtowards ESE direction | |

**CO-ORDINATES**

| Pillars | Latitudes | Longitudes |
|---|---|---|
| P 1 | 23°52'6.17"N | 86°29'27.75"E |
| P 2 | 23°52'6.17"N | 86°29'29.10"E |
| P 3 | 23°52'6.30"N | 86°29'30.46"E |

| | | |
|---|---|---|
| P 4 | 23°52'6.43"N | 86°29'31.18"E |
| P 5 | 23°52'5.15"N | 86°29'31.80"E |
| P 6 | 23°52'3.84"N | 86°29'32.43"E |
| P 7 | 23°52'2.45"N | 86°29'33.11"E |
| P 8 | 23°52'1.92"N | 86°29'31.82"E |
| P 9 | 23°52'1.13"N | 86°29'29.98"E |
| P 10 | 23°52'2.60"N | 86°29'29.33"E |
| P 11 | 23°52'4.64"N | 86°29'28.43"E |

**Land Details:**

| Khata No. | Plot No. |
|---|---|
| 20 | 386 (P) |

**Statutory Clearances:**

| | | | |
|---|---|---|---|
| 1 | LOI/Lease docs | : | The Letter of Intent (LOI) has been issued by Director, Mines, Department of Mines & Geology, Govt. of Jharkhand vide letter no. Kha. Ni (Nilami)-77/2022 / 1625, dated 29.07.2022. |
| 2 | CO | : | The CO, Govindpur vide letter no. : 2035, dated 27.12.2023 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Dhanbad vide memo no. 1153/M, dated 01.08.2024 certified that 03 other mining lease area (3.20 Acre, 3.15 Acre & 11.85 Acre) and 02 LoI (2.99 Acre & 4.991 Acre) exists within 500 m radius from proposed project site and total area is 29.68 Acre. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Hazaribagh vide letter no.: 1784, dated 10.09.2022 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary. |
| 5 | DFO Territorial | : | DFO, Dhanbad vide letter no.: 1973, dated 30.08.2022 certified that the distance of reserved / protected forest is 528 meters from proposed project site. |
| 6 | DSR | : | The project is mentioned in approved District Survey Report |

| | | | |
|---|---|---|---|
| | | | (DSR) of Dhanbad district (Sl. no. 03, Page no. 67). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 15.09.2023 |
| 8 | Mine Plan Approval | : | Mine Plan approved by DMO, Dhanbad vide memo no. 882/M, dated 25.06.2024. |
| 9 | Qualified Person | : | Dr. Amarjeet Kumar Singh was present in the meeting and affirmed that the mine plan has been prepared by him. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast. Semi mechanizedMining method, wagon drill with blasting | |
| 2 | Quarry Area | : | 1.41 ha | Life of Mine – 10.0 years |
| 3 | Waste Generation | : | Waste generation nil; weathered rock with mixed soil may be generated, which will be used for the development of approach road | |
| 4 | Stripping Ratio | : | 0: 1 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 6m x width not less than 10m | |
| 7 | Elevation of Mine | : | 320 AMSL to 235 AMSL | |
| 8 | Ground Level Elevation | : | 236.0 mRL | |
| 9 | Ultimate Working Depth | : | 240 mRL | |
| 10 | Water Table | : | 190 AMSL | |
| 11 | Topography of Mine | : | Area represents a hillock | |
| 12 | Explosive Requirement | : | 102 Kg/day | |
| 13 | Diesel/Fuel requirement | : | 186 litre/day | |

**Production Details**

**During First year**

| Section | Bench RL | Sectional Area ($m^2$) | Length of influence (m) | Volume ($m^3$) | 95% Recovery (Cu m) |
|---|---|---|---|---|---|
| A-B | 246-252 | 22.00 | 82.00 | 1804.00 | 1713.80 |
| A-B | 252-258 | 44.00 | 83.00 | 3652.00 | 3469.40 |
| A-B | 258-264 | 27.00 | 83.00 | 2241.00 | 2128.95 |
| A-B | 264-270 | 19.00 | 83.00 | 1577.00 | 1498.15 |

| | | | | | |
|---|---|---|---|---|---|
| A-B | 270-276 | 29.00 | 83.00 | 2407.00 | 2286.65 |
| A-B | 276-282 | 22.00 | 83.00 | 1826.00 | 1734.70 |
| | | | | Total Stone/Boulders | 12,831.65 |

**During Second Year**

| Section | Bench RL | Sectional Area ($m^2$) | Length of influence (m) | Volume ($m^3$) | 95% Recovery (Cu m) |
|---|---|---|---|---|---|
| A-B | 282-288 | 23.00 | 83.00 | 1909.00 | 1813.55 |
| A-B | 288-294 | 24.00 | 83.00 | 1992.00 | 1892.40 |
| A-B | 294-300 | 27.00 | 83.00 | 2241.00 | 2128.95 |
| A-B | 300-306 | 34.00 | 83.00 | 2822.00 | 2680.90 |
| A-B | 306-312 | 33.00 | 83.00 | 2739.00 | 2602.05 |
| A-B | 312-318 | 30.00 | 83.00 | 2490.00 | 2365.50 |
| | | | | Total Stone/Boulders | 13,483.35 |

**During Third Year**

| Section | Bench RL | Sectional Area ($m^2$) | Length of influence (m) | Volume ($m^3$) | 95% Recovery (Cu m) |
|---|---|---|---|---|---|
| A-B | 318-320 | 23.00 | 45.00 | 1035.00 | 983.25 |
| A-B | 318-312 | 43.00 | 56.00 | 2408.00 | 2287.60 |
| A-B | 312-306 | 67.00 | 74.00 | 4958.00 | 4710.10 |
| A-B | 306-300 | 71.67 | 84.00 | 6020.28 | 5719.27 |
| | | | | Total Stone/Boulders | 13,700.21 |

**During Fourth Year**

| Section | Bench RL | Sectional Area ($m^2$) | Length of influence (m) | Volume ($m^3$) | 95% Recovery (Cu m) |
|---|---|---|---|---|---|
| A-B | 306-300 | 29.00 | 84.00 | 2436.00 | 2314.20 |
| A-B | 300-294 | 118.00 | 101.00 | 11918.00 | 11322.10 |

| | |
|---|---|
| Total Stone/Boulders | **13,636.30** |

During Fifth Year

| Section | Bench RL | Sectional Area ($m^2$) | Length of influence (m) | Volume ($m^3$) | 95% Recovery (Cu m) |
|---|---|---|---|---|---|
| A-B | 294-288 | 141.00 | 102.00 | 14382.00 | 13662.90 |
| | | | | **Total Stone/Boulders** | **13,662.90** |

Land Use

| Pattern of Utilization | Existing Land Use (Ha) | At the end of Plan period (Ha) | Conceptual stage (Ha) (after life of mine) |
|---|---|---|---|
| Excavation | 0.30 | 1.08 | **1.08** |
| Road | 0.01 | - | - |
| Safety Zone (Plantation) | 0.33 | 0.33 | **0.33** |
| Total | 0.64 | 1.41 | **1.41** |
| Balance Area | 0.77 | - | - |
| Lease Hold Area | **1.41** | **1.41** | **1.41** |

ENVIRONMENT MANAGEMENT

Green Belt Development

| S. No. | LOCATION | | Area/Length | No of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | : | 0.33Ha. | 646 |
| 2 | Haul /Approach Road | : | 0.83 km | 332 |

- 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.

| Sl.No. | Particulars | Capital Cost in Rs. | Recurring Cost in Rs. per year |
|---|---|---|---|
| 1 | Rain Water Harvesting | 3,00,000 | 1,50,000 |
| 2 | Plantation (@ Rs. 125 per plant) | 1,50,000 | 75,000 |
| 3 | Environmental Monitoring (One Day Monitoring)<br>• Ambient Air ( 3 points) 24 hrs – Rs. 5000<br>• Surface Water( Per Sample) - Rs. 1500<br>• Ground Water ( Per Sample) – Rs. 1500<br>• Noise ( 3 points) 24 hrs – Rs. 2000<br>• Stack Monitoring (D.G. Set) – Rs. 2000<br>Total - Rs. 12,000<br>Atleast two season in a Year - Rs. 12,000 x 2 = Rs. 24,000 | -- | 24,000 |
| 4 | Occupational Health (Providing Safety Appliance & Health Check-up) | 100,000 | 50,000 |
| 4 | Miscellaneous | 300,000 | 200,000 |
| Grand Total | | 8,50,000 | 4,99,000 |

**Environment Monitoring Programme**

| Sl. No | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |
| 2 | Soil | 2 Stations | 6 Monthly |
| 3 | Surface Water | 2 Stations | 6 Monthly |
| 4 | Ground Water | 2 Stations | 6 Monthly |
| 5 | Noise | 4 Stations | 6 Monthly |

**Solid Waste Management**

- Waste Generation is almost nil, however if generated will be used for maintenance of Haul/Approach Road.

**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 will be made around the Waste dump and the rain water will 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 will be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice

Ambient air pollution monitoring shall be carried out every six months

**RISK ASSESSMENT**

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

**Probability/Likelihood of Occurrence of Hazard**

| Likelihood Level | Probability | Description |
|---|---|---|
| L5 | Very Unlikely | Has not occurred/reported within last 5 years. |
| L4 | Remote / Moderate | May occur if conditions exist. Has occurred within last 3 years. |
| L3 | Occasional | Likely to occur if conditions exist. Has occurred within last 2 years. |
| L2 | Probable | Very likely to occur. Has occurred within last year. |
| L1 | Frequent | Almost certain to occur. Has occurred more than |

| | | |
|---|---|---|
| | | one within last year. |

Severity/Impact Intensity

| Severity Level | Severity | Description |
|---|---|---|
| C1 | Catastrophic | May commonly cause death or major system loss, 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 | Unintended | Very | Catastrophic | 5 |

| | | | | | |
|---|---|---|---|---|---|
| | of Explosives | Explosion | Unlikely | | |
| 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 20, 21, 22, 23 & 24.01.2025, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure II alongwith following specific condition :-**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"EkPed Ma KeNaam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

**********

Day 3 : January 22nd, 2025 [Wednesday]

## Consideration of proposals :

1. **Residential Project "Ashiana Amaya" of M/s Ashiana Housing Limited, Village : Rugri, Thana no. : 330, Anchal + P.S. : Chandil, Distt. : Seraikela-Kharsawan, Jharkhand.**

   **(Proposal no.: SIA/JH/INFRA2/ 513387 /2024)**

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

   This is a new project which has been taken for appraisal on 22.01.2025.

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

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

   **EC Application for: Proposed Residential Project "Ashiana Amaya" at Plot No.- 127, 128, 138, Khata No.- 102, Village- Rugri, Halka no.- 2, Thana No.- 330, Anchal- Chandil, P.S- Chandil, District - Seraikela-Kharswan, Jharkhand by M/s Ashiana Housing Limited.**
   **Total built-up area is 60632.89 sq m.**

   **PROJECT and LOCATION Details:**

| Parameters | Description |
|---|---|
| Total Plot Area | 15620.87 sq. m (1.562 ha/3.86 acres) |
| Project Cost | INR 196.36 Crores |
| EMP Budget | INR 124 Lakhs |
| Built-up Area | 60632.89 sq. m. |
| Green Area (@ 51.05% of net plot area) | 7976 sq m (which includes 2440 sq m of green area on ground) |
| Population | 1802 nos. |
| Total Domestic Water Requirement | 159 KLD (112 KLD Fresh Water and 47 KLD Treated Water) |
| Fresh Water Requirement | 122 KLD |
| Wastewater Generation | 137 KLD |
| Treatment facility if waste water | STP of 240 KLD (MBBR Technology) |
| Total Municipal Waste | 810 kg/day |

| | |
|---|---|
| Power Requirement | Maximum power demand for the project during operational phase is estimated to be 868 KW respectively. Source of power will be Jharkhand State Electricity Board. |
| DG Sets | DG set of 2 Nos (1*320 KVA+1*200 KVA) cumulative capacity 520 kVA |
| RWH Pits | 4 nos. |
| Parking Number | 641 Nos. (Car and Two-wheeler) |
| Nearest Road | Kanderbera Road (approx 0.26 km, SSW)<br>NH 118 (approx. 2.79 km, S) |
| Nearest Railway Station | Gamharia Junction Railway station (approx. 9.39 km, SW) |
| Nearest Airport | Birsa Munda Airport (Ranchi), (approx. 99.75 km, NW)<br>Jamshedpur Airport, (approx. 4.93 km, S) from site |
| Nearest Hospitals | Brahmananda Narayana Multispecialty Hospital, Jamshedpur (approx. 3.20km, ESE)<br>TMH - Tata Main Hospital (approx. 6.75 km, South) |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 102 | 127, 128 & 138 |

**CO-ORDINATES**

| Point | Latitude | Longitude |
|---|---|---|
| 1. | 22°51'28.43"N | 86°09'46.54"E |
| 2. | 22°51'31.43"N | 86°09'47.79"E |
| 3. | 22°51'32.64"N | 86°09'48.13"E |
| 4. | 22°51'33.65"N | 86°09'48.30"E |
| 5. | 22°51'34.79"N | 86°09'48.33"E |
| 6. | 22°51'27.76"N | 86°09'48.51"E |
| 7. | 22°51'29.72"N | 86°09'49.03"E |
| 8. | 22°51'29.85"N | 86°09'49.03"E |
| 9. | 22°51'36.84"N | 86°09'49.16"E |

| | | |
|---|---|---|
| 10. | 22°51'29.55"N | 86°09'49.27"E |
| 11. | 22°51'31.61"N | 86°09'49.65"E |
| 12. | 22°51'31.74"N | 86°09'49.89"E |
| 13. | 22°51'31.80"N | 86°09'49.89"E |
| 14. | 22°51'34.28"N | 86°09'50.65"E |
| 15. | 22°51'36.13"N | 86°09'51.23"E |
| Centre | 22°51'31.88"N | 86°09'48.99"E |

**AREA STATEMENT**

| S. No. | Description | Area (sq m) |
|---|---|---|
| **1.** | **Plot Area** | **15620.87** |
| 2. | Ground Coverage Permissible@35 % | 5467.30 |
| 3. | Proposed Ground Coverage | 3936.98 |
| 4. | Permissible FAR (@ 3.0 of plot area) | 46862.61 |
| **5.** | **FAR achieved** | **40065.53** |
| 6. | Proposed Non-FAR area | 20567.36 |
| **7.** | **Built-up Area** | **60632.89** |
| 8. | Paved area/ open area | 2596 |
| 9. | Green Area (@ 51.05% of net plot area) | 7976 |
| a. | Green Belt Area on Ground | 2440 |
| b. | Green Area on Basement | 5536 |
| 10. | Total Parking Provided | 641 No. |
| 11. | Nos. of Dwelling units | 230 no. |
| 12. | Maximum Height (m) | 44.9 m up to Terrace level |

**Statutory Clearances :**

| | | | |
|---|---|---|---|
| 1 | Land Docs | : | Land developer agreement made. |
| 2 | DFO Territorial | | DFO, Saraikela Forest Division vide letter no. 1829, dated 03.12.2024 certified that the distance of reserved / protected forest is less than 250 meters from project site. |
| 3 | DFO Wildlife | : | DFO, Dalma Elephant Project vide letter no. 2582, dated 24.08.2024 certified that proposed project site is out side Eco Sensitive Zone of Dalma Wildlife Sanctuary. |
| 4 | CO certificate | : | The CO, Chandil vide letter no. 1093, dated 29.10.2024 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. JAMS /EAST /B/ 080724/1162158, dated 16.08.2024 valid up to 15.08.2032. |
| 6 | Building Plan approval | : | Conceptual plan submitted. |
| 7 | Fire Department | : | Fire Advisory has been issued by Fire Department, Jharkhand, Ranchi, vide memo no. 6745/Tech./2024, dated 30.09.2024. |
| 8 | Affidavit project area & No construction | : | An affidavit submitted stating that no construction activity has been yet started at proposed site. |

**WATER REQUIREMENT DETAILS**

| Category | Population/Area (sq m)/Capacity | Standard (LPCD) | Water Requirement-KLD | Fresh Water Requirement-KLD | Recycled Water requirement-KLD |
|---|---|---|---|---|---|
| **Domestic** | | | | | |
| Residents | 1442 | 100 | 145 | 102 | 43 |
| Staff | 72 | 45 | 4 | 3 | 1 |
| Visitors | 144 | 15 | 3 | 2 | 1 |
| Club | 144 | 45 | 7 | 5 | 2 |
| **Total Domestic Water Demand** | | | **159** | **112** | **47** |
| Landscape | 7976 sq m | 6l/sq m | 48 | - | 48 |
| Road Washing | -- | -- | 1 | - | 1 |
| Pool top-up | -- | -- | 10 | 10 | - |
| **Total** | -- | -- | **218** | **122** | **96** |

**(D.G. sets operation period is 8 hrs.)**

**WASTEWATER CALCULATIONS**

| Category | Total Quantity (KLD) |
|---|---|
| Domestic (Fresh water) water Req. | 112 |
| Flushing water Req. | 47 |
| Sewage generation (@80% of the freshwater consumption + 100% flushing water) | 137 |

| | |
|---|---|
| Capacity of STP | 240 |
| Recovered water from STP (90% of Wastewater)<br>1. Flushing<br>2. Landscaping<br>3. Road Washing<br>4. Excess treated water (Given to Farmers for Agricultural & Plantation needs) | 123<br>47<br>48<br>1<br>27 |

**SOLID WASTE REQUIREMENT**

| S. No | Description | Occupancy /Area | kg/capita/day | Total Solid Waste Generation (kg/day) | Non-Recyclable (Kg/day) | Recyclable (kg/day) |
|---|---|---|---|---|---|---|
| 1. | Residents | 1442 | 0.5 | 721 | 577 | 144 |
| 2. | Staff | 72 | 0.25 | 18 | 14 | 4 |
| 3. | Visitors | 144 | 0.15 | 22 | 18 | 4 |
| 4. | Club | 144 | 0.25 | 36 | 29 | 7 |
| 4. | Landscape waste | 1.97 acres | 1 kg/acres | 2 | 2 | - |
| 7. | STP sludge | 137 KLD Sewage | -- | 11 | 11 | - |
| **Total Waste Generated** | | | | **810** | **651** | 159 |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

- Combination of local trees and shrubs are planned within the project site.
- Total green area provided at the site is 7976 sq m (51.05 % of net plot area) which will enhance the beauty of the site and help combat air and noise pollution.
- Total required no. of Trees is 195 against that 217 No. is proposed to be planted in Green Belt area inside and along the boundary of the project.
- The plant species will be selected on the basis of Guidelines for Developing Green Belts, CPCB March 2000.

**Solid Waste Management**

**During Construction Phase**

- Construction yards are proposed for storage of construction material.
- Excavated top soil will be stored in temporary constructed soil bank and will be reused for landscaping of the project.
- Remaining soil will be utilized for refilling/road work/raising of site level at locations.

- There will be "Refuse Containers" at site for the management of domestic waste generated by the construction labourers and these containers will be emptied at least once daily.
- Cement bags, waste paper and packing material (cardboard) will be sold off to recyclers.

**During Operation Phase**

- The solid waste will be segregated at source & collected.
- Adequate number of coloured bins separate for bio-degradable and non-biodegradable are proposed to be provided at the strategic location within site.
- Bio-degradable waste will be composted through organic waste converter during the operational phase of the project.
- Recyclable wastes will be disposed through govt. or SPCB approved third party vendors.
- Dewatered sludge can be buried underground in a sanitary landfill. It also may be spread on agricultural land to make use of its value as a soil conditioner and fertilizer.
- The Hazardous waste generated will be managed as per the Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016.
- Horticultural Waste is composted and used for gardening purposes.

**Water Quality Management**

**During Construction Phase**

- The site drainage will be planned in such a way that there is no accumulation of water/wastewater within the project premises or in the vicinity of the site.
- Mobile toilets to be provided for construction Labourers.
- The waste water generated waste shall disposed through septic tank/portable STP for treatment.

**During Operation Phase**

- STP of capacity i.e. 240KLD (MBBR)is proposed for treatment of wastewater generated from the project.
- Treated waste water would be reused for Flushing, Landscaping, road washing, sprinkling&Misc.
- Use of water efficient plumbing fixtures to conserve water.
- Approx. 122 KLD of fresh water (Domestic and Swimming Pool topup) is required during operational phase of the project.

**Air Quality Management**

- Warehouse/stock yard will be provided for storage of construction material.
- Covering of stored construction materials with tarpaulin covers which will be resold to authorized construction material handling agency for reuse.
- Covering of trucks carrying construction materials.
- Dust suppression by water sprinkling.
- Adequate maintenance of construction equipment & vehicles.
- Wheel wash facility at the entry/exit of the site to prevent dust emissions.
- Periodical Ambient Air Quality Monitoring.
- PUC Certified vehicles shall be allowed at site.

- Glow signs Speed Limits to 20 kmph to reduce emissions on site will be displayed at the important junctions.

**Energy conservation**

- Energy will be conserved by using solar power & LED uses.
- Approx. 2% of the total power requirement will me met through Solar Power generation or solar lightings in the common area and street lights etc.

**Undertaking**

- An affidavit stating that no ligation is pending, and no construction work is done at site.
- An Affidavit stating the following:
  - That, the proposal for Environmental Clearance was on the basis of Conceptual Plan however the Building Plan was approved vide Memo No. 0110, Date 19.12.2024 before the final appraisal of Environmental Clearance. There is no change in conceptual plan and approved plan.
  - That, the uses of STP treated water will be preferred up to maximum extent in construction work during construction phase. The same shall be procured from nearby legal sources as per availability.
  - That, use of ground water in construction phase as well as operation phase shall be done only after prior permission from CGWA for the same.
  - That, approx. 2% energy saving shall be done by solar power generation or solar lighting in common area.
  - That, EV charging provision upto 20% of parking for residential usages shall be provided.
  - That, we agree to maintain a buffer zone of 7.5 m from the forest boundary of nearby forest area and noted that no construction activities other than landscape and green development shall be executed.

**Based on the presentation made and information provided, the Committee decided that the proposal for Residential Project "Ashiana Amaya" of M/s Ashiana Housing Limited, Village : Rugri, Thana no. : 330, Anchal + P.S. : Chandil, Distt. : Seraikela-Kharsawan, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure –III alongwith the following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"EkPed Ma KeNaam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. During construction phase use of STP treated water will be preferred to maximum extend possible. If ground water is used it will be done with due permission of CGWA.

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

IV. Buffer zone of 7.5 meters shall be maintained from the boundary of nearest forest area and no construction other than land scape and green belt development shall be done in the buffer area.

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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2. **Residential and Commercial Building "Aaradhya Estate" of M/s Aaradhya Infrastructure and Developers India Pvt. Ltd., Village : Chas, Thana : Chas, Thana no. : 20, Distt. : Bokaro, Jharkhand.**

**(Proposal no.: SIA/JH/INFRA2/ 507971 /2024)**

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

This is a new project which has been taken for appraisal on 22.01.2025.

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

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

**EC Application for: Proposed Residential and Commercial Building "Aaradhya Estate" at Plot No 721, 722, 730, 731, 796, Khata No 172, Village-Chas, Thana-Chas, Thana no-20, District-Bokaro, Jharkhand by M/s Aaradhya Infrastructure and Developers India Pvt. Ltd:Total built-up area 32821.01 Sqm.**

**PROJECT and LOCATION Details:**

| Parameters | Description |
|---|---|
| Total Plot Area | 8687.14 sq m (0.86 ha/2.14 acres) |
| Road Widening Area | 175.14sqm |
| Net Plot Area | 8512.0sq.m |
| Project Cost | INR 55.13 Crores |
| Built-up Area | 32821.01 sq. m. |
| Green Area (@20% of net plot area) | 1737.0 sq m |
| Population | 1560 nos. |
| Domestic Water Requirement | 127 KLD |
| Fresh Water Requirement | 89 KLD |
| Wastewater Generation | 109 KLD |
| Treatment facility if waste water | STP of 150 KLD |
| Total Municipal Waste | 668 kg/day |
| Power Requirement | Maximum power demand for the project during construction and operation phase is estimated to be 550 KVA respectively. Source of power will be Jharkhand State Electricity Board. |
| DG Sets | DG set (1*150KVA) Total 150 kVA |
| RWH Pits | 6 nos. |

| | |
|---|---|
| Parking Number | 642 Nos. |
| Nearest Road | NH 18(approx 2.40 km, East) |
| Nearest Railway Station | Bokaro Steel City Railway station (approx 9.50 km, WSW) |
| Nearest Airport | Birsa Munda Airport (Ranchi), (approx 94.76 km, SW) |
| Nearest Hospitals | Sadar Hospital Bokaro (approx 2.66 km , NE) |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 172 | 721, 722, 730 (P), 731 (P) & 796 (P) |

**CO-ORDINATES**

| Point in Image | Latitude | Longitude |
|---|---|---|
| 1. | 23° 39' 31.45986" N | 86° 10' 35.05732" E |
| 2. | 23° 39' 27.92236" N | 86° 10' 33.64605" E |
| 3. | 23° 39' 26.68245" N | 86° 10' 36.74958" E |
| 4. | 23° 39' 27.84834" N | 86° 10' 37.73878" E |
| 5. | 23° 39' 28.47945" N | 86° 10' 36.05328" E |
| 6. | 23° 39' 29.99407" N | 86° 10' 36.41744" E |
| 7. | 23° 39' 30.05880" N | 86° 10' 36.12222" E |
| 8. | 23° 39' 31.26969" N | 86° 10' 36.22876" E |
| Centre | 23°39'29.01"N | 86°10'35.40"E |

**AREA STATEMENT**

| S. NO. | DESCRIPTION | Area sqm/nos./meter |
|---|---|---|
| A. | **Total plot area** | **8687.14** |
| B. | Road Widening area | 175.14 |
| **C.** | **Net plot area** | **8512.0** |
| D. | Proposed Ground Coverage (@34.67 % of net plotarea) | 2292.78 |
| E. | Proposed FAR | 21416.53 |
| F. | Proposed Non-FAR | 11404.48 |
| G. | Buildup area | 32821.01 |
| H. | Paved Area | 400 |
| I. | Height(m) | 29.17 |

| | | |
|---|---|---|
| J. | Noof Dwelling Units | 197 |
| K. | No. of Shops | 2 |

**Statutory Clearances :**

| | | | |
|---|---|---|---|
| 1 | Land Docs | : | Land development agreement made. |
| 2 | DFO Territorial | | DFO, Bokaro Forest Division, Bokaro vide letter no. 2404, dated 18.11.2024 certified that the distance of reserved / protected forest is more than 250 meters from project site. |
| 3 | DFO Wildlife | : | DFO, Wildlife Hazaribagh vide letter no. 1963, dated 06.09.2024 certified that proposed project site is out side Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary. |
| 4 | CO certificate | : | The CO, Chas (Bokaro) vide letter no. 1973, dated 27.09.2024 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. BOKA /EAST /B/ 111924/1360620, dated 26.11.2024 valid up to 25.11.2032. |
| 6 | Building Plan approval | : | Conceptual plan submitted. The same has been submitted to Chas Municipal Corporation for approval vide application no. CMC/BP/0258/W03 /2023 /REV1, dated 04.07.2024. |
| 7 | Fire Department | : | Fire Advisory has been issued by Fire Department, Jharkhand, Ranchi, vide memo no. 6034/Tech./2024, dated 25.10.2023. |
| 8 | Affidavit project area & No construction | : | An affidavit submitted stating that no construction activity has been yet started at proposed site. |

**Water Requirement Details**

| Category | Population/Area (sq m)/Capacity | Standard (LPCD) | Water Requirement-KLD | Fresh Water Requirement-KLD | Recycled Water requirement-KLD |
|---|---|---|---|---|---|
| **Domestic** | | | | | |
| Residents | 1182 | 100 | 118 | 83 | 35 |
| Staff | 87 | 45 | 4 | 3 | 1 |
| Visitors | 291 | 15 | 5 | 3 | 2 |
| **Total Domestic Water Demand** | | | **127** | **89** | 38 |
| Landscape | 1737.00 sq m | 6 l/sq m | 11 | - | 11 |

| | | | | | |
|---|---|---|---|---|---|
| Fire Fighting | -- | -- | 1 | - | 1 |
| DG Cooling | 150 KVA | 0.9l/KVA/hr | 1 | - | 1 |
| **Total** | -- | - | **140** | **89** | **51** |

**(D.G. sets operation period is 8 hrs.)**

**Wastewater Calculations**

| Category | Total Quantity (KLD) |
|---|---|
| Domestic (Fresh water) water Req. | 89 |
| Flushing water Req. | 38 |
| Sewage generation (@80% of the fresh water consumption + 100% flushing water) | 109 |
| Capacity of STP | 150 |
| Recovered water from STP (90% of Waste water) | 98 |
| • Flushing | 38 |
| • Landscaping | 11 |
| • DG Cooling | 1 |
| • Fire Fighting | 1 |
| • Discharge to Sewer | 47 |

**Solid Waste Requirement**

| S. No | Description | Occupancy/Area | kg/capita/day | Total Solid Waste Generation (kg/day) | Recyclable (Kg/day) | Non Recyclable (kg/day) |
|---|---|---|---|---|---|---|
| 1. | Residents | 1182 | 0.5 | 591 | 473 | 118 |
| 2. | Staff | 87 | 0.25 | 21 | 17 | 4 |
| 3. | Visitors | 291 | 0.15 | 44 | 35 | 9 |
| 4. | Landscape waste | 0.42 acres | 1 kg/acres | 0.4 | 0.4 | - |
| 5. | STP sludge | 98 KLD Sewage | -- | 12 | 12 | - |
| **Total Waste Generated** | | | | **668.4~668** | 538 | 130 |

## ENVIRONMENT MANAGEMENT

### Green Belt Development

- Combination of local trees and shrubs are planned within the project site.
- Total green area provided at the site is 1737.0 sq m (20% of net plot area)which will enhance the beauty of the site and help combat air and noise pollution.
- The plant species will be selected on the basis of Guidelines for Developing Green Belts, CPCB March 2000.

### Solid Waste Management

### During Construction Phase

- Construction yards are proposed for storage of construction material.
- Excavated top soil will be stored in temporary constructed soil bank and will be reused for landscaping of the project.
- Remaining soil will be utilized for refilling/road work/raising of site level at locations.
- There will be "Refuse Containers" at site for the management of domestic waste generated by the construction labourers and these containers will be emptied at least once daily.
- Cement bags, waste paper and packing material (cardboard) will be sold off to recyclers.

### During Operation Phase

- The solid waste will be segregated at source & collected.
- Adequate number of colored bins (green, white & Black) separate for bio-degradable, non-biodegradable and Hazardous waste are proposed to be provided at the strategic location within site.
- Bio-degradable (will be composted through organic waste converter).
- Recyclable wastes will be disposed to govt. or SPCB approved third party vendors.
- Dewatered sludge can be buried underground in a sanitary landfill. It also may be spread on agricultural land in order to make use of its value as a soil conditioner and fertilizer.
- The Hazardous waste generated will be managed as per the Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016.
- Horticultural Waste is composted and used for gardening purposes.

### Water Quality Management

### During Construction Phase

- The site drainage will be planned in such a way that there is no accumulation of water/wastewater within the project premises or in the vicinity of the site.
- Mobile toilets to be provided for construction Laborers.
- Generated waste water will be collected through tankers and dispose to septic tank for treatment.

### During Operation Phase

- STP of capacity i.e. 150KLD is proposed for treatment of wastewater.
- Treated waste water would be reused for Flushing, Landscaping, Road Washing &Misc
- Use of water efficient plumbing fixtures to conserve water.
- Approx. 89 KLD of fresh water is required during operational phase of the project.

Air Quality Management

- Warehouse/stock yard will be provided for storage of construction material
- Covering of stored construction materials with tarpaulin covers which will be resold to authorized construction material handling agency for reuse.
- Covering of trucks carrying construction materials.
- Dust suppression by water sprinkling.
- Adequate maintenance of construction equipment & vehicles.
- Wheel wash facility at the entry/exit of the site to prevent dust emissions.
- Periodical Ambient Air Quality Monitoring.
- PUC Certified vehicles.
- Glow signs Speed Limits to 20 kmph to reduce emissions on site will be displayed at the important junctions.

**Energy conservation**

- Energy will be conserved via solar power & LED of at least10% of the total power requirement.

**Undertaking**

- An affidavit stating that no construction works.
- An undertaking that 98 KLD recycles waste water generated at Proposed Residential and Commercial Building "Aaradhya Estate" at Plot No 721, 722, 730, 731, 796, Khata No 172, Village-Chas, Thana Chas, Thana no-20, District Bokaro, Jharkhand by M/s Aaradhya Infrastructure and developers India Pvt. Ltd.
- An undertaking that 550 kVA Power requirement in Proposed Residential and Commercial Building "Aaradhya Estate" at Plot No 721, 722, 730, 731, 796, Khata No 172, Village-Chas, Thana Chas, Thana no-20, District Bokaro, Jharkhand by M/s Aaradhya Infrastructure and developers India Pvt. Ltd.

**Based on the presentation made and information provided, the Committee decided that the proposal for Residential and Commercial Building "Aaradhya Estate" of M/s Aaradhya Infrastructure and Developers India Pvt. Ltd., Village : Chas, Thana : Chas, Thana no. : 20, Distt. : Bokaro, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure –III alongwith the following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"EkPed Ma KeNaam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

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

III. Environment management system including organization structure to be drawn to ensure compliance of EC conditions stipulated based on principles of Continual Improvement and periodical management review.

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

V. PAs to offset (upto20%) consumption of conventional energy sources by promoting use of solar energy, passive energy utilization, optimum fenestration, shading effect and heat islands.

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

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

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

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

X. Developers/Company to install Rain water harvesting structures such that all the roof top water runoff is collected and harvested including reuse on 100% basis.

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

XII. Water runoff originating from open non constructed areas of project premises to be harvested /guided in such a way that it does not create water logging condition outside.

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

XIV. MSW Collection centre should be located in isolated and preferably unmanned area. Movement of the vehicle carrying waste should be under tarpaulin covered condition only. Route of vehicle should be such that it avoids residential areas as far as practical.

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

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

**********

3. Nari Brick Clay Mine of M/s Moti Bricks (Prop. : Shri Uday Kumar Gupta), Village : Nari, Thana : Kisko, Distt. : Lohardaga, Jharkhand (0.76 Ha).

(Proposal no.: SIA/JH/MIN/ 518827 /2025)

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

This is a new project which has been taken for appraisal on 22.01.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 1500 cum soil/Season or 600000 Bricks/season.

Project and location details:

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1. | Project Name | : | Nari Brick Clay Deposit | |
| 2. | Lessee: | : | M/S Moti Bricks<br>Prop. -Sri Uday Kumar Gupta<br>S/O- Sri Ramkishore Prasad Gupta | |
| 3. | Lease Address | : | Village– Nari, Thana– Kisko, District- Lohardaga, State- Jharkhand | |
| 4. | Lease Area | : | 0.76 ha | Acres-1.88 Acres |
| 5. | Type of Land | : | Non Forest – Raiyati Land | |
| 6. | Project Cost | : | Rs. 30 Lakhs | |
| 7. | EMP Budget | : | Capital: 7.10 Lakh | Recurring: 4.87 Lakh / year |
| 8. | New or Expansion | : | New | |
| 9. | Mineable Reserves | : | Cum.10586.00 Cum | Tonnes: 13761.8 tonnes |
| 10. | Mine Life | : | 7.05 seasons | |
| 11. | Man power | : | 50 | |
| 12. | Water Requirement | : | 4.70~5.0 KLD (Drinking: 0.50 KLD, Dust Suppression: 2.16 KLD, Plantation: 2.04 KLD) | |
| 13. | Water Source | : | From Nearby villages by tankers | |
| 14. | DG Set /power | : | - | |
| 15. | Crusher | : | No crusher | |
| 16. | Nearest Water Body | : | Shankh NadiApprox 1.15 Km towards ENE direction. | |
| 17. | Nearest Habitation | : | Approx. 0.38 km towards SSW direction. | |
| 18. | Nearest Rail Station | : | Barkichanpi Railway Station at a distance of 5.22 km towards East direction from site | |
| 19. | Nearest Airport | : | Birsa Munda Airport, Ranchi at a distance of 70km in ESE direction from mine site. | |
| 20. | Nearest Forest | : | Salaiya RF Approx 3.15km towards NW direction | |

| | | | |
|---|---|---|---|
| | | | Protected forest, Approx 3.10 km towards NEdirection \ |
| 21. | Road & Highways | : | NH-143 A, approx, 7.91 km towards ESE direction |

**CO-ORDINATES**

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | | From 23° 32' 25.32"N | To 23° 19' 04.90" N |
| 2 | Longitude | | From 84° 40' 49.63" E | To 84° 40' 52.95" E |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 83 | 1163 & 1164 |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | Land agreement made. |
| 2 | CO | : | The CO, Kisko (Lohardaga) vide letter no. 618, dated 18.11.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Lohardaga vide memo no. 40/M, dated 16.01.2025 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. 961, dated 05.12.2024 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. 1961, dated 13.12.2024 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved District Survey Report (DSR) of Lohardaga District (Sl. no. 48, Page no. 31). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 08.10.2024. |
| 8 | Mine Plan Approval | : | Approved by DMO, Lohardaga vide Memo No. 41/M, dated 16.01.2025 |
| 9 | Qualified Person | : | Shri Tapan Kumar Chakravarty was present in the meeting and |

| | | | |
|---|---|---|---|
| | | | affirmed that the mine plan has been prepared by him. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Manual Mining method | |
| 2 | Quarry Area | : | 0.76 ha | Life of Mine – 7.05 Seasons |
| 3 | Waste Generation | : | 0.0 Cu.m | |
| 4 | Stripping Ratio | : | 01:00 | |
| 5 | Working Days | : | 150 | |
| 6 | Benches: size & No | : | -- | |
| 7 | Elevation of Mine | : | 669 AMSL to 670 AMSL | |
| 8 | Ground Level Elevation | : | 669 AMSL | |
| 9 | Ultimate Working Depth | : | 668 AMSL (2 mbgl) | |
| 10 | Water Table | : | 655 - 657 AMSL (12 - 14 mbgl) | |
| 11 | Topography of Mine | : | Area represents flat topography | |
| 12 | Explosive Requirement | : | -- | |
| 13 | Diesel/Fuel requirement | : | -- | |

**Production Details**

| Total excavation of brick earth in cum/season | Number of bricks/season |
|---|---|
| 1500.00 | 600000 |
| 1500.00 | 600000 |
| 1500.00 | 600000 |
| 1500.00 | 600000 |
| 1500.00 | 600000 |

**Land Use**

| Pattern of Utilization | Existing (ha.) | At the end of Plan Period (ha.) |
|---|---|---|
| Quarrying | Nil | 0.37 |
| Storage of casted bricks | Nil | comes under excavation |
| Safety Zone | Nil | 0.24 (Plantation) |

| | | |
|---|---|---|
| Road | Nil | comes under excavation |
| Balanced Area | 0.76 | 0.15 |
| **Total Applied Area** | **0.76** | **0.76** |

ENVIRONMENT MANAGEMENT

**Green Belt Development**

| S.No. | LOCATION | Area/Length | No of Trees |
|---|---|---|---|
| 1 | Safety Zone | 0.24ha | 600 |
| 2 | Haul /Approach Road | 160m | 320 |
| 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<br>i) Air<br>ii) Water<br>iii) Soil<br>iv) Noise | -- | <br>14,000<br>8,000<br>8,000<br>7,000 |
| 3 | Plantation | 5,10,000 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 2,00,000 | 1,50,000 |
| **TOTAL** | | **7.10,000** | **4,87,000** |

***Note: *1020plants * 500 Rs (for each plants including hedges) = 5.10 lakhs***

***Salary of Labor for haul road maintenance 2 labor*150 =300 per day***

*300* 300 = 90,000/- or 1,50,000/- (including maintenance)*

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 Nari Brick Clay Mine of M/s Moti Bricks (Prop. : Shri Uday Kumar Gupta), Village : Nari, Thana : Kisko, Distt. : Lohardaga, Jharkhand (0.76 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

**********

4. **Teram Stone Deposit of Shri Rajkumar Kashyap, Village : Teram, Anchal : Sadar Khunti, Distt. : Khunti, Jharkhand (1.072 Ha).**

**(Proposal no.: SIA/JH/MIN/ 517436 /2025)**

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

This is a new project which has been taken for appraisal on 22.01.2025.

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

**Application for Environmental Clearance (EC).**

**EC Application for: Proposed Capacity- 36868.00 cum/annum or 99543.00 TPA**

**Project and Location Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Teram Stone Deposit | |
| 2 | Lessee: | : | Sri Rajkumar Kashyap S/o Sri Bandi Ram Kashyap<br>Gram-Birhu, P.O.-Birhu, Dist.-Khunti, Jharkhand. | |
| 3 | Lease Address | : | Village – Teram, Anchal- Sadar Khunti, District – Khunti, State - Jharkhand | |
| 4 | Lease Area | : | 1.072 ha. | Acres- 2.65 Acres |
| 5 | Type of Land | : | Non-Forest (Raiyati Barren Land) | |
| 6 | Project Cost | : | Rs. 80.0 Lakhs | |

| | | | | |
|---|---|---|---|---|
| 7 | EMP Budget | : | Capital: Rs. 9.14 Lakhs | Recurring: 4.87 Lakhs / year |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves | : | 98,220.37cum | 265195.00 tonnes |
| 10 | Mine Life | : | 5 years | |
| 11 | Man power | : | 15 | |
| 12 | Water Requirement | : | 5.89 ~ 6.0 KLD (Drinking: 0.15 KLD, Dust Suppression: 2.89 KLD, Plantation: 2.85 KLD) | |
| 13 | Water Source | : | Water will be taken from nearby village | |
| 14 | DG Set / power | : | 200 KVA | |
| 15 | Crusher | : | No Crusher | |
| 16 | Nearest Water Body | : | Kanchi Nadi, Approx. 2.50 km towards NE direction of mine site. | |
| 17 | Nearest Habitation | : | Teram village approx. 271 meters NE direction of mine site | |
| 18 | Nearest Railway Station | : | Lodhma Railway station, approx. 15.62 km towards NW direction. | |
| 19 | Nearest Airport | : | Birsa munda Airport, approx. 19.27 km towards North direction. | |
| 20 | Nearest Forest | : | Open Jungle Mainly Sal, Approx. 3.00 km towards ENE direction of mine site.<br>Open Jungle Mainly Sal, Approx. 2.50 km towards NE direction of mine site.<br>Open Jungle Mainly Sal, Approx. 3.00 km towards North direction of mine site. | |
| 21 | Road & Highways | : | NH - 20, Approx. 8.60 km towards SW direction. | |

**CO-ORDINATES**

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | : | From 23°08' 32.1296"N | To 23°08' 36.3244"N |
| 2 | Longitude | : | From 85°19' 32.1472"E | To 85°19' 38.4453"E |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 13 | 49 |
| 16 | 50 |
| 10 | 57 |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | The Letter of Intent (LoI) has been issued by District Mining Officer, Khunti vide letter no. 784/M, dated 09.09.2024. |
| 2 | CO | : | The CO, Sadar, Khunti vide letter no. 630, dated 24.07.2024 has mentioned the plot no. of the project is not recorded as "Jungle- |

| | | | |
|---|---|---|---|
| | | | Jhari" in R.S. Khatiyan. |
| 3 | DMO | : | DMO, Khunti vide memo no. 985/M, dated 10.12.2024 certified that 01 other mining lease area (3.76 Acre) exists within 500 meters radius from proposed project site and total area is 6.41 Acre. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Ranchi vide letter no. 994, dated 16.12.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Khunti Forest Division vide letter no. 1467, dated 23.08.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Khunti District (Sl. no. 06, Page no. 51 & 52). |
| 7 | Gram Sabha | : | BDO, Khunti vide letter no. 1152 (ii), dated 25.07.2024 informed that Gram Sabha conducted on 18.07.2024. |
| 8 | Mine Plan Approval | : | Mining plan approved by DMO, Khunti vide Memo No. 937/M, dated 14.11.2024. |
| 9 | Qualified Person | : | Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Semi Mechanized Method | |
| 2 | Quarry Area | : | 1.072 Ha. or 2.65 Acre | Life of Mine – 5 Years |
| 3 | Waste Generation | : | Total 12828 cum in-situ waste shall be generated during this plan period. | |
| 4 | Stripping Ratio | : | 1: 0.12 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 6m x 6m | |
| 7 | Elevation of Mine | : | 556 AMSL to 557 AMSL | |
| 8 | Ground Level Elevation | : | 556 AMSL | |
| 9 | Ultimate Working Depth | : | 526 AMSL (30 mbgl) | |
| 10 | Water Table | : | 510-512 AMSL (44-46 mbgl) | |
| 11 | Topography of Mine | : | Area represents a a small hillock. | |
| 12 | Explosive Requirement | : | 110 kg/day | |
| 13 | Diesel/Fuel requirement | : | 150 litre/day | |

Production Details

| Year | Production of stone in Cum | Production of stone in Tonnes | Overburden in cum | Intercalated waste in Cum | Total Waste in Cum | Bench AMSL |
|---|---|---|---|---|---|---|
| 1st Year | 6444 | 17398 | 2244 | 339 | 2583 | 544-550 |
| 2nd Year | 9378 | 25322 | 832 | 494 | 1326 | 544-550 |
| 3rd Year | 11491 | 31026 | 1292 | 605 | 1897 | 544-550 |
| 4th Year | 33782 | 91211 | 3304 | 1778 | 5082 | 544-550 |
| 5th Year | 36868 | 99543 | 0 | 1940 | 1940 | 526-544 |
| **Total** | **97963** | **264500** | **7672** | **5156** | **12828** | |

Land Use

| Land Utilization | Existing Land use (Ha.) | At the end of plan period (Ha) | At Conceptual period (Ha) |
|---|---|---|---|
| Excavation | 0.0 | 0.637 | 0.637 (0.097 Ha area shall be backfilled and after backfilling entire area will be converted into water reservoir.) |
| Waste Dump | 0.0 | 0.00 (waste dump to be removed and backfilled) | 0.00 (waste dump to be removed and backfilled) |
| Road | 0.0 | 0.0 (comes under mining) | 0.0 (comes under mining) |
| Infrastructure (Crusher) | 0.0 | 0.0 | 0.0 |
| Safety Zone | 0.0 | 0.435 (Plantation) | 0.435 (Plantation) |
| Total | 0.0 | 1.072 | 1.072 |
| Unused Area | 1.072 | 0.00 | 0.00 |
| **Total Lease Area** | **1.072** | | |

ENVIRONMENT MANAGEMENT

Green Belt Development

| S. No. | Location | | Area/Length | No. of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | : | 0.435 ha | 1088 |

| | | | | |
|---|---|---|---|---|
| 2 | Along Approach Road | : | 120 m | 240 |
| 3 | No. of plants distributed with consultation local authorities /village Panchayat | : | -- | 100 |

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

**COST PROPOSED FOR EMP**

| Sl. No | Description | Capital Cost (Rs) | Recurring Cost (Rs) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | Nil | 2,00,000 |
| 2 | Baseline Monitoring<br>i) Air<br>I) Water<br>Ii) Soil<br>iv) Noise | -- | <br>14,000<br>8,000<br>8,000<br>7,000 |
| 3 | Plantation | 7,14,000 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 2,00,000 | 1,50,000 |
| **TOTAL** | | **9,14,000** | 4,87,000 |

***Note: * 1428 plants*500 Rs (for each plants including hedges and fences) = Rs. 7.14 lakhs***

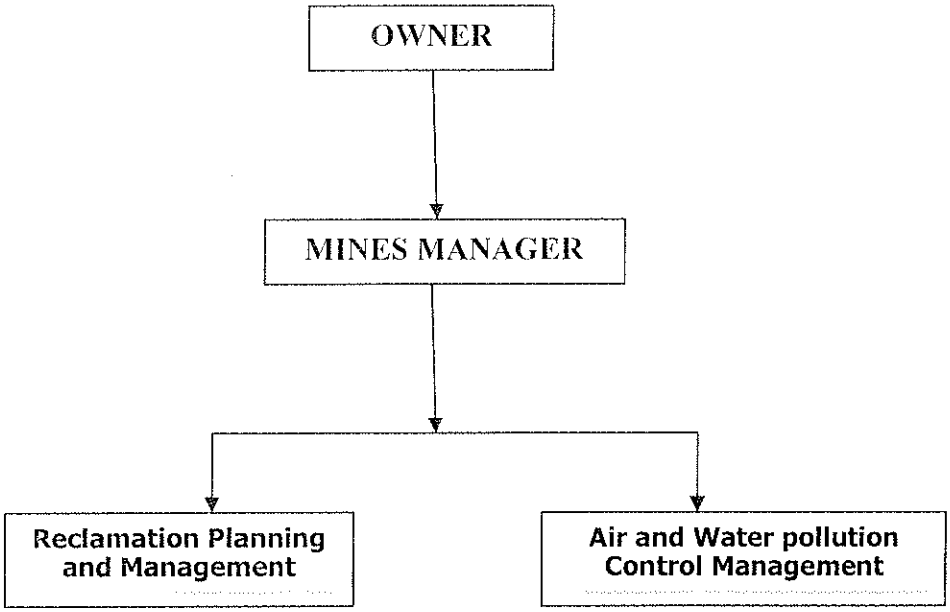
***Salary of Labor for haul road maintenance 1 labor*300 =300 per day***

***300* 300 = 90000/- or 150000/- (including maintenance)***

**Environment Monitoring Programme**

| Sl. No | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |
| 2 | Soil | 2 Stations | 6 Monthly |
| 3 | Surface Water | 2 Stations | 6 Monthly |
| 4 | Ground Water | 2 Stations | 6 Monthly |

| | | | |
|---|---|---|---|
| 5 | Noise | 4 Stations | 6 Monthly |




***Organization Structure***

**Solid Waste Management**

In this applied lease area, the stone deposit is covered with 1 m layer of intermixed soil which considered as over burden. The recovery of stone is about 95%, thus intercalated waste of only 5% shall be generate from this mine. It has been calculated that total 12828 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 6414 cum (Insitu) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 6414 cum insitu 8017.47 cum loose & 6814.85 cum compact waste shall be temporary dumped in eastern part during first to third year and during fourth & fifth year the generated waste and waste materials of temporary dump shall be removed and used for backfilling of exhausted part of quarry in western part and it will cover 0.097ha.

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

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

**Preventive Measures:**

**Face Stability**

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

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

**Drilling Operations**

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

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

**Falls from the edge of a bench**

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

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

**Control Measures**

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

**Dust generation during drilling**

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

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

**Noise Generation during drilling**

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

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

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

**Blasting Operations**

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

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

**Handling of Explosives**

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

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

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

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

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

**Health Hazards**

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

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

**Accident at Site**

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

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

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

**Transportation**

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

- Mine road shall be made smooth regularly with a road roller.

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

**Undertaking submitted affirming:**

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

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

**Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Teram Stone Deposit of Shri Rajkumar Kashyap, Village : Teram, Anchal : Sadar Khunti, Distt. : Khunti, Jharkhand (1.072 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

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

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

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

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

**********

5. **Lodhma Stone Block of M/s Satyendra Kumar Singh (Prop. : Shri Satyendra Kumar Singh ), Mouza : Lodhma, Thana : Ramgarh, Thana no. : 117, Distt. : Ramgarh, Jharkhand (1.01 Ha).**

**(Proposal no.: SIA/JH/MIN/ 495190 /2025)**
**Name of the consultant : P & M Solution, Noida, U.P.**

This is a new project which has been taken for appraisal on 22.01.2025.

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

**Application for Environmental Clearance (EC).**

**EC Application for: Proposed Capacity- 12,379 cum/annum or 33,422 TPA**

**Project and Location Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Lodhma Stone Block | |
| 2 | Lessee: | : | M/s Satendra Kumar Singh<br>Proprietor- Satyendra Kumar Singh | |
| 3 | Lease Address | : | Mouza - Lodhma, Thana - Ramgarh, Thana No.-117,<br>District – Ramgarh, State- Jharkhand | |
| 4 | Lease Area | : | 1.01 ha. | Acres- 2.50 Acres |
| 5 | Type of Land | : | Non-Forest (Raiyati Land) | |
| 6 | Project Cost | : | Rs. 90.0 Lakhs | |
| 7 | EMP Budget | : | Capital: Rs. 14.15 Lakhs | Recurring: 4.87 Lakhs / year |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves | : | 123654 Cum | 333865 tons |
| 10 | Mine Life | : | 10 years | |
| 11 | Man power | : | 32 | |
| 12 | Water Requirement | : | 4.82 KLD (Drinking: 0.32 KLD, Dust Suppression: 2.28 KLD, Plantation: 2.22 KLD) | |
| 13 | Water Source | : | Water will be taken from nearby village | |
| 14 | DG Set / power | : | 200 KVA | |
| 15 | Crusher | : | No Crusher | |
| 16 | Nearest Water Body | : | Damodar River, Approx. 4.4 km towards South direction of mine site. | |
| 17 | Nearest Habitation | : | Lodhma village, Approx. 820 meters towards W direction. | |
| 18 | Nearest Railway Station | : | Ramgarh Cantonment Railway station, approx. 8.30 km towards West direction. | |
| 19 | Nearest Airport | : | Birsa Munda Airport, Ranchi approx. 44.10 km towards SW direction. | |
| 20 | Nearest Forest | : | Open Mixed Jungle, Approx. 1.0 km towards North direction of mine site.<br>PF, Approx. 3.80 km towards WNW direction of mine site.<br>Open Jungle Mainly Sal, Approx. 4.3 km towards NW direction of mine site. | |

| | | | |
|---|---|---|---|
| | | | Open Scrub, Approx. 4.0 km towards East direction of mine site.<br>Open Scrub, Approx. 4.4 km towards South direction of mine site. |
| 21 | Road & Highways | : | NH-20, Approx. 4.56 km in West direction. |

**CO-ORDINATES**

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | : | From N 23º 37'30.69685" | To N 23º 37' 35.63562" |
| 2 | Longitude | : | From E 85º 35'57.27304" | To E 85º 36' 00.53755" |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 111 | 1719 (P) |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | The Letter of Intent has been issued through auction by Director, Mines, Deptt. of Mines & Geology, Govt. of Jharkhand vide letter no. Kha. Ni. (Nilami)-80/2022-850, dated 24.04.2023. |
| 2 | CO | : | The CO, Ramgarh vide letter no. 2328, dated 23.12.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Ramgarh vide memo no. 715/Khanan, dated 10.06.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Hazaribagh vide letter no. 1304, dated 04.07.2023 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribagh Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Ramgarh Forest Division vide letter no. 958, dated 26.05.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Ramgarh District (Sl. no. 08, Page no. 52). |
| 7 | Gram Sabha | : | BDO, Ramgarh vide letter no. 372, dated 24.04.2024 informed that Gram Sabha conducted on 12.05.2023. |
| 8 | Mine Plan Approval | : | Mining plan approved by DMO, Ramgarh vide Letter No. 970/M, dated 20.08.2024. |

| | | | |
|---|---|---|---|
| 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 | : | 1.01Ha/2.50 Acre | Life of Mine – 10 Years |
| 3 | Waste Generation | : | Total 3256 cum of Intercalated waste and 2365 cum of Gritty soil shall be generated | |
| 4 | Stripping Ratio | : | 1:0.05 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 6m | |
| 7 | Elevation of Mine | : | 330 ASML to 324 ASML | |
| 8 | Ground Level Elevation | : | 324 ASML | |
| 9 | Ultimate Working Depth | : | 300 ASML | |
| 10 | Water Table | : | 295 AMSL to 281 AMSL | |
| 11 | Topography of Mine | : | Area represents moderately sloping land with rock mass of Granite- Gneiss. | |
| 12 | Explosive Requirement | : | 90kg/day | |
| 13 | Diesel/Fuel requirement | : | 90litre/day | |

**Production Details**

| Year | Removal of Gritty Soil | | Intercalated waste in cum | Production of Stone | | Bench Section |
|---|---|---|---|---|---|---|
| | in cum | in tones | | in cum | in tones | |
| 1st | 784 | 1176 | 650 | 12342 | 33324 | 330-324 |
| 2nd | 000 | 000 | 651 | 12360 | 33371 | 324-318 |
| 3rd | 000 | 000 | 652 | 12379 | 33422 | 324-312 |
| 4th | 714 | 1071 | 651 | 12360 | 33371 | 330-312 |
| 5th | 867 | 1301 | 652 | 12379 | 33422 | 330-318 |
| **Total** | **2365** | **3548** | **3256** | **61820** | **166910** | |

**Land Use**

| Pattern of Utilization | Existing (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 | 0.343 (including water logged) | 0.71 (including backfill 0.036 ha. & Stone pitching wall 0.006ha) | 0.71 (including backfill 0.036 ha) | --- | 0.70 | 0.01 (Dead Bench Plantation) |
| Safety Barrier | Nil | 0.30 (Plantation) | 0.30 (Plantation) | --- | --- | 0.30 |
| Road | 0.011 | Nil | Nil | --- | --- | --- |
| **Total area** | **0.354** | **1.01** | **1.01** | **---** | **0.70** | **0.31** |

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| | | | | | | |
|---|---|---|---|---|---|---|
| in use | | | | | | |
| Balance Unused Area | 0.656 | Nil | Nil | --- | --- | --- |
| **Total Applied Area** | **1.010** | **1.01** | **1.01** | **1.01** | | |

## ENVIRONMENT MANAGEMENT

### Green Belt Development

| S. No. | Location | | Area/Length | No. of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | : | 0.30 ha | 750 |
| 2 | Along Approach Road | : | 130 m | 260 |
| 3 | No. of plants distributed with consultation local authorities /village Panchayat | : | -- | 100 |

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

### COST PROPOSED FOR EMP

| Sl. No | Description | Capital Cost (Rs.) | Recurring Cost (Rs.) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | -- | 2,00,000 |
| 2 | Baseline Monitoring<br>i) Air<br>ii) Water<br>iii) Soil<br>iv) Noise | -- | <br>14,000<br>8,000<br>8,000<br>7,000 |
| 3 | Plantation | 5,55,000 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 2,00,000 | 1,50,000 |
| **TOTAL** | | **7,55,000** | **4,87,000** |

*Note:* *1110 plants * 500 Rs (for each plants including hedges and fences) = Rs. 5.55 lakhs
Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- or 150000/- (including maintenance)

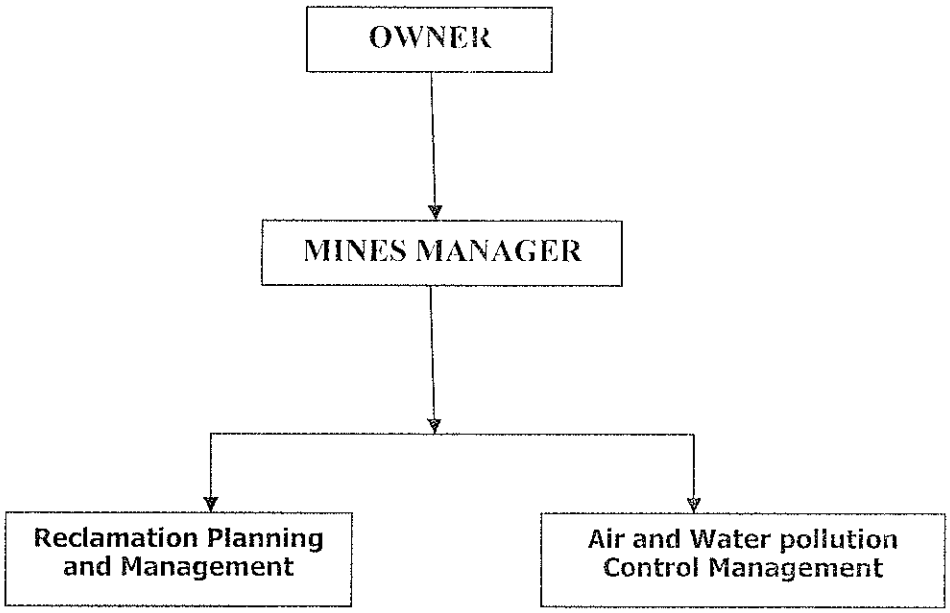
Environment Monitoring Programme

| Sl. No | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |
| 2 | Soil | 2 Stations | 6 Monthly |
| 3 | Surface Water | 2 Stations | 6 Monthly |
| 4 | Ground Water | 2 Stations | 6 Monthly |
| 5 | Noise | 4 Stations | 6 Monthly |

**Solid Waste Management**

Total 6670 cum of Gritty Soil & 7071 cum of Intercalated Waste will be generated during the plan period.

During quarry development in 1st, 2nd & 3rd year removed gritty soil & intercalated waste will be temporarily dumped at the north west part of the area with suitable precautions like parapet wall, garland drain & in 4th year removed gritty soil, intercalated waste & existing temporarily dumped material will be backfill within the exhausted quarry at south-east part & in 5th year removed gritty soil & intercalated waste will be backfill within the exhausted quarry. In conceptual period removed total intercalated waste will be backfill on lower bench of the exhausted quarry.




*Organization Structure*

**Water Quality Management**

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.

- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

| Likelihood Level | Probability | Description |
|---|---|---|
| L5 | Very Unlikely | Has not occurred/reported within last 5 years. |
| L4 | Remote / Moderate | May occur if conditions exist. Has occurred within last 3 years. |
| L3 | Occasional | Likely to occur if conditions exist. Has occurred within last 2 years. |
| L2 | Probable | Very likely to occur. Has occurred within last year. |
| 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* |

| 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 Block of M/s Satyendra Kumar Singh (Prop. : Shri Satyendra Kumar Singh ), Mouza : Lodhma, Thana : Ramgarh, Thana no. : 117, Distt. : Ramgarh, Jharkhand (1.01 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

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

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

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

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

**********

6. Rampur Stone Deposit of M/s Universal Mining Management, Village : Rampur, Thana : Narayanpur, Distt. : Jamtara, Jharkhand (1.80 Ha).

(Proposal no.: SIA/JH/MIN/ 518732 /2025)

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

This is a new project which has been taken for appraisal on 22.01.2025.

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

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 42837.40 cum/annum or 115661.00 TPA

Project and Location Details:

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Rampur Stone Deposit | |
| 2 | Lessee: | : | M/s Universal Mining Management<br>Partner: 1) Sri Niyaz Ahmad, 2) Sri Farhan Nadim Khan, 3) Sri Manas, 4) Sri Murlidhar Singh & 5) Smt. Shakri Devi | |
| 3 | Lease Address | : | Village – Rampur, Thana - Narayanpur,<br>District – Jamtara, State – Jharkhand | |
| 4 | Lease Area | : | 1.80 ha. | Acres- 4.45 Acres |
| 5 | Type of Land | : | Non-Forest (Raiyati Land) | |
| 6 | Project Cost | : | Rs. 80.0 Lakhs | |
| 7 | EMP Budget | : | Capital: Rs. 11.475 Lakhs | Recurring: 4.87 Lakhs / year |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves | : | 333307.5 cum | 899930.25 tonnes |
| 10 | Mine Life | : | 7.8 or say 8 years | |
| 11 | Man power | : | 17 | |
| 12 | Water Requirement | : | 8.15 ~ 9.00 KLD (Drinking: 0.17 KLD, Dust Suppression: 4.19 KLD, Plantation: 3.79 KLD) | |
| 13 | Water Source | : | Water will be taken from nearby village | |
| 14 | DG Set / power | : | 200 KVA | |
| 15 | Crusher | : | No Crusher | |
| 16 | Nearest Water Body | : | Bansjoria Nadi , Approx. 4.70 km towards NW direction of mine site.<br>Rajoya Nadi , Approx. 3.50 km towards SW direction of mine site. | |
| 17 | Nearest Habitation | : | Loknia village approx. 320 meters WNW direction of mine site | |
| 18 | Nearest Railway Station | : | Jamtara Railway station, approx. 9.90 km towards East direction. | |
| 19 | Nearest Airport | : | Deoghar Airport, approx. 52.40 km towards North direction. | |
| 20 | Nearest Forest | : | Dense Mixed Jungle, Approx. 6.47 km towards NW direction of mine site.<br>Dense Mixed Jungle, Approx. 5.10 km towards SW direction of mine site. | |
| 21 | Road & Highways | : | NH – 419, Approx. 2.62 km in South direction. | |

**CO-ORDINATES**

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | : | From 23°58'23.5994"N | To 23°58'29.428"N |
| 2 | Longitude | : | From 86°42'32.6251"E | To 86°42' 39.0544"E |

**LAND DETAILS**

| Khata No. | Plot No. |
|---|---|
| 16 | 642, 643, 647, 666, 667 |
| 12 | 668 |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | The Letter of Intent (LoI) has been issued by District Mining Officer, Jamtara vide letter no. 213/M, dated 02.03.2024. |
| 2 | CO | : | The CO, Narayanpur vide letter no. 800/Ra., dated 18.12.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Jamtara vide memo no. 408, dated 08.06.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Hazaribag vide letter no. 408, dated 05.03.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Jamtara Forest Division vide letter no. 151, dated 01.02.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Jamtara District (Sl. no. 07, Page no. 114 B). |
| 7 | Gram Sabha | : | BDO, Narayanpur vide letter no. 309/Vi., dated 28.02.2024 informed that Gram Sabha conducted on 19.02.2024. |
| 8 | Mine Plan Approval | : | Approved by DMO, Jamtara vide Memo No. 18/M, dated 09.01.2025. |
| 9 | Qualified Person | : | Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him. |

Working Details

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Semi - Mechanized Method | |
| 2 | Quarry Area | : | 1.80 Ha. or 4.45 Acres | Life of Mine – 7.8 or say 8 years. |
| 3 | Waste Generation | : | Total 25972 cum in-situ waste shall be generated during this plan period. | |
| 4 | Stripping Ratio | : | 1: 0.13 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 6m x 6m | |
| 7 | Elevation of Mine | : | 182 AMSL to 186.5 AMSL | |
| 8 | Ground Level Elevation | : | 145 AMSL | |
| 9 | Ultimate Working Depth | : | 150 AMSL (32 m bgl) | |
| 10 | Water Table | : | 142-140 AMSL (40-42 m bgl) | |
| 11 | Topography of Mine | : | Area represents a small hillock. | |
| 12 | Explosive Requirement | : | 90 kg/day | |
| 13 | Diesel/Fuel requirement | : | 120 litre/day | |

Production Details

| Year | Production of stone in Cum | Production of stone in Tonnes | Overburden in cum | Intercalated waste in Cum | Total Waste in Cum | Bench AMSL |
|---|---|---|---|---|---|---|
| 1st Year | 41040.00 | 110808 | 11790 | 2160 | 13950 | 180-174 |
| 2nd Year | 41495.92 | 112039 | 0 | 2184 | 2184 | 174-168 |
| 3rd Year | 41798.14 | 112855 | 0 | 2200 | 2200 | 168-162 |
| 4th Year | 41114.07 | 111008 | 0 | 2164 | 2164 | 162-156 |
| 5th Year | 42837.40 | 115661 | 3219 | 2255 | 5474 | 156-150 |
| **Total** | **208285.53** | **562371** | **15009** | **10963** | **25972** | |

Land Use

| Land Utilization | Existing Land use (Ha.) | At the end of plan period (Ha) | At Conceptual period (Ha) |
|---|---|---|---|
| Excavation | 0.0 | 1.322 (0.069 ha shall be backfilled) | 1.322 (1.237 ha area shall be left as water reservoir, 0.085 ha area shall be backfilled) |

| | | | |
|---|---|---|---|
| **Waste Dump** | 0.0 | Nil (waste dump to be removed and backfilled) | Nil (waste dump to be removed and backfilled) |
| **Road** | 0.0 | 0.00 (Comes under quarry) | 0.0 |
| **Safety Zone** | 0.0 | 0.478 (Plantation) | 0.478 (Plantation) |
| **Total** | **0.0** | 1.80 | **1.80** |
| **Unused Area** | **1.800** | **0.00** | **0.00** |
| **Total Lease Area** | **1.80** | | |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

| S. No. | Location | | Area/Length | No. of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | : | 0.478 ha | 1195 |
| 2 | Along Approach Road | : | 300 m | 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.

**COST PROPOSED FOR EMP**

| Sl. No | Description | Capital Cost (Rs) | Recurring Cost (Rs) |
|---|---|---|---|
| 1 | **Pollution Control & Dust Suppression** | Nil | 2,00,000 |

| | | | |
|---|---|---|---|
| 2 | Baseline Monitoring<br>i) Air<br>I) Water<br>Ii) Soil<br>iv) Noise | -- | 14,000<br>8,000<br>8,000<br>7,000 |
| 3 | Plantation | 9,47,500 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 2,00,000 | 1,50,000 |
| TOTAL | | **11,47,500** | **4,87,000** |

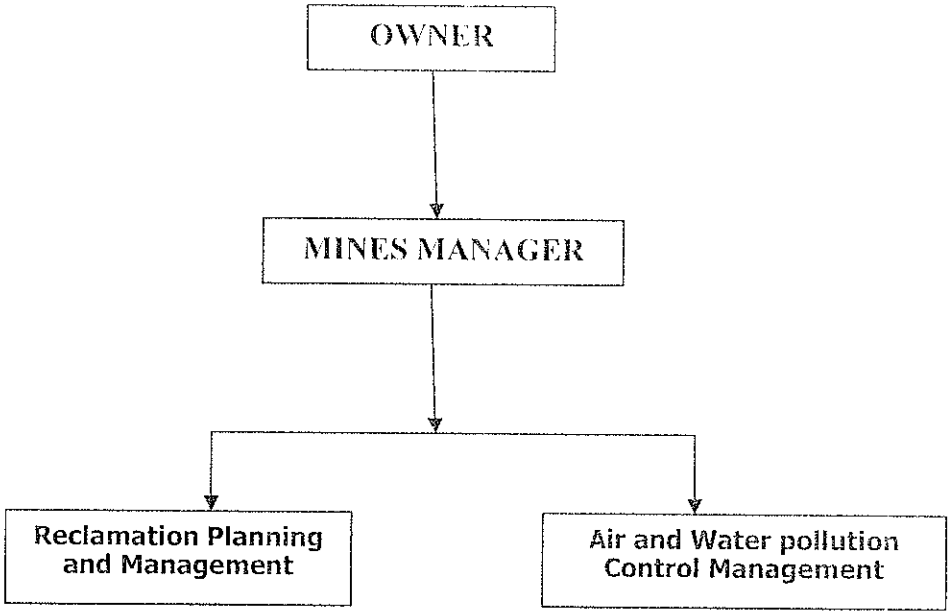
*Note: *1895 plants * 500 Rs (for each plants including hedges and fences) = Rs. 9,47,500/-*
*Salary of Labor for haul road maintenance 1 labor*300 =300 per day*
*300* 300 = 90000/- ~ 1,50,000/-*

Environment Monitoring Programme

| Sl. No | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |
| 2 | Soil | 2 Stations | 6 Monthly |
| 3 | Surface Water | 2 Stations | 6 Monthly |
| 4 | Ground Water | 2 Stations | 6 Monthly |
| 5 | Noise | 4 Stations | 6 Monthly |

Solid Waste Management

In this applied lease area, the stone deposit is covered with 1m layer of intermixed soil which considered as over burden. The recovery of stone is about 95%, thus intercalated waste of only 5% shall be generate from this mine. It has been calculated that total 25971cum in-situ 32464.25cum loose & 27594.61 cum compact waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 13797 cum (compact) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 13797 cum waste shall be temporary dumped in northern part of the area and it will cover 0.176 ha area. The Garland Drain & Retaining wall shall be constructed all around the waste dump. The dimension of the dump shall be 44m X 41m X 9.6m. For safety of dump, a terrace of 3m width shall left over the first-year dump, then second year to fourth year dumping shall be continued. During the fifth year the generated waste and waste materials of past dumping shall be removed and used for backfilling of exhausted part of the quarry in south western part.




*Organization Structure*

**Water Quality Management**

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

**Air Quality Management**

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission

- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

**RISK ASSESSMENT**

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

**Probability/Likelihood of Occurrence of Hazard**

| Likelihood Level | Probability | Description |
|---|---|---|
| L5 | Very Unlikely | Has not occurred/reported within last 5 years. |
| L4 | Remote / Moderate | May occur if conditions exist. Has occurred within last 3 years. |
| L3 | Occasional | Likely to occur if conditions exist. Has occurred within last 2 years. |
| L2 | Probable | Very likely to occur. Has occurred within last year. |
| L1 | Frequent | Almost certain to occur. Has occurred more than one within last year. |

**Severity/Impact Intensity**

| Severity Level | Severity | Description |
|---|---|---|
| C1 | Catastrophic | May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation. |
| C2 | Major | May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action. |
| C3 | Moderate | Minor injury to personnel or environment |
| C4 | Minor | Minor damage but does not cause injury to personnel |
| C5 | Insignificant | May result in no, or less minor, illness, injuryor system damage |

**Risk Assessment Chart (Qualitative Method)**

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

Risk Rating Scale

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

**Hazard identification & Risk Analysis in Stone mining operation**

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

| | | | | | |
|---|---|---|---|---|---|
| 7 | Transportation | Vehicle Accident, Exposure to Dust | Remote | Minor | 16 |

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

Preventive Measures:

**Face Stability**

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

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

**Drilling Operations**

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

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

**Falls from the edge of a bench**

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

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

**Control Measures**

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

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

**Dust generation during drilling**

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

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

**Noise Generation during drilling**

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

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

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

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

**Blasting Operations**

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

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

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

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

**Handling of Explosives**

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

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

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

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

**Health Hazards**

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

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

**Accident at Site**

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

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

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

**Transportation**

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

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

**Undertaking submitted affirming:**

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

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

**Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Rampur Stone Deposit of M/s Universal Mining Management, Village : Rampur, Thana : Narayanpur, Distt. : Jamtara, Jharkhand (1.80 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

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

zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

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

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

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

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

**********

7. **Benagaria Stone Deposit of M/s Mahalaxmi Enterprises (Prop. : Shri Digvijay Singh), Mouza : Benagaria, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.189 Ha).**

**(Proposal no.: SIA/JH/MIN/ 518467 /2025)**

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

This is a new project which has been taken for appraisal on 22.01.2025.

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

**Application for Environmental Clearance (EC).**

**EC Application for: Proposed Capacity- 37231 cum/annum or 111692 TPA**

**Project and Location Details:**

| Sl | Parameter | | Details |
|---|---|---|---|
| 1 | Project Name | : | Benagaria Stone Deposit |
| 2 | Lessee: | : | M/s Mahalaxmi Enterprises<br>Proprietor: Sri Digvijay Singh |
| 3 | Lease Address | : | Mouza – Benagaria, Thana - Shikaripara,<br>Thana No - 17, District - Dumka, State – Jharkhand |

| | | | | |
|---|---|---|---|---|
| 4 | Lease Area | : | 2.189 ha. | Acres-5.41 Acres |
| 5 | Type of Land | : | Non-Forest (Raiyati Land) | |
| 6 | Project Cost | : | Rs. 120.0 Lakhs | |
| 7 | EMP Budget | : | Capital: Rs. 14.065 Lakhs | Recurring: 4.87 Lakhs / year |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves | : | 384746.89 cum | 1115766 tonnes |
| 10 | Mine Life | : | 10 years | |
| 11 | Man power | : | 32 | |
| 12 | Water Requirement | : | 10.531 ~ 11.0 KLD (Drinking: 0.32 KLD, Dust Suppression: 5.425 KLD, Plantation: 4.786 KLD) | |
| 13 | Water Source | : | Water will be taken from nearby village | |
| 14 | DG Set / power | : | 500 KVA | |
| 15 | Crusher | : | No Crusher | |
| 16 | Nearest Water Body | : | Kanoor River, approx. 1.90 km towards South direction of mine site | |
| 17 | Nearest Habitation | : | Benagaria village approx. 110 meters West direction of mine site | |
| 18 | Nearest Railway Station | : | Pinargaria Railway station, approx 4.00 km in NNE direction | |
| 19 | Nearest Airport | : | Deoghar Airport, approx. 96.67 km towards West direction | |
| 20 | Nearest Forest | : | Protected Forest - Approx. 2.7 km. in NNW direction of mine site.<br>Protected Forest - Approx. 4.00 km. in NW direction of mine site. | |
| 21 | Road & Highways | : | NH-114 A , Approx. 3.0 km in NNE direction | |

**CO-ORDINATES**

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | : | From 24°10'55.780" N | To 24°11'02.838" N |
| 2 | Longitude | : | From 87°36'53.218" N | To 87°36'59.200" E |

**LAND DETAILS**

| J. B. no. | Plot no. |
|---|---|
| 41 | 222, 223, 236, 237, 272, 273 (P) & 274 (P) |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 1435/M, dated 24.12.2024. |
| 2 | CO | : | The CO, Shikaripara vide letter no. 1124/Ra., dated 21.12.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Dumka vide memo no. 1436/M, dated 24.12.2024 certified that 01 other mining lease area (6.84 Acre) exists within 500 |

| | | | |
|---|---|---|---|
| | | | meters radius from proposed project site and total area is 12.25 Acre. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Hazaribag vide letter no. 2318, dated 14.11.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Dumka Forest Division vide letter no. 2406, dated 06.11.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | The DMO, Dumka has been certified vide memo no. 44/M, dated 09.01.2025 that this project is mentioned in approved DSR of Dumka District as a potential area (Sl. no. 94, Page no. 319). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 07.10.2024. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Dumka vide Memo No. 66/M, dated 13.01.2025. |
| 9 | Qualified Person | : | Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Mechanized Method | |
| 2 | Quarry Area | : | 2.189 Ha or 5.41 Acres | Life of Mine – 10 Years |
| 3 | Waste Generation | : | Total 16857 cum of Gritty Soil and 9789 cum of Intercalated Waste will be generated during the plan period. | |
| 4 | Stripping Ratio | : | 1: 0.7 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 6m x 6m | |
| 7 | Elevation of Mine | : | 85 AMSL to 87 AMSL | |
| 8 | Ground Level Elevation | : | 85 AMSL | |
| 9 | Ultimate Working Depth | : | 45 AMSL (40 m bgl) | |
| 10 | Water Table | : | 27-39 AMSL (46-58 m bgl) | |
| 11 | Topography of Mine | : | Area represents a small hillock. | |
| 12 | Explosive Requirement | : | 110 kg/day | |
| 13 | Diesel/Fuel requirement | : | 150 litre/day | |

Production Details

| Year | Removal of Gritty soil in cum | Removal of Gritty soil in tonnes | Intercalated Waste in cum | Production of stone in Cum | Production of stone in Tonnes | Bench AMSL |
|---|---|---|---|---|---|---|
| 1st | 6317 | 9476 | 1955 | 37160 | 111478 | 87-69 |
| 2nd | 10540 | 15810 | 1957 | 37177 | 111532 | 87-81 |
| 3rd | 000 | 000 | 1958 | 37199 | 111598 | 81-75 |
| 4th | 000 | 000 | 1960 | 37231 | 111692 | 81-75 |
| 5th | 000 | 000 | 1959 | 37229 | 111686 | 75-69 |
| **Total** | **16857** | **25286** | **9789** | **185996** | **557986** | |

Land Use

| Type of Land | Present Land Use (In Ha) | At the End of the Five year Plan Period (In Ha) | At the End of Mine (In Ha.) | Conceptual Period (In Ha) | | |
|---|---|---|---|---|---|---|
| | | | | Public Use | Water Body | Plantation |
| Quarry | Nil | 1.608 (including dump 0.532 Ha) | 1.608 (including dump 0.546 Ha) | - | 1.608 | - |
| Safety Barrier | Nil | 0.581 (Plantation) | 0.581 (Plantation) | - | - | 0.581 |
| Road | 0.009 | Nil | Nil | - | - | - |
| Total area in Use | 0.009 | **2.189** | **2.189** | - | **1.608** | **0.581** |
| Balanced unused Area | **2.180** | **Nil** | **Nil** | - | - | - |
| Total Applied Area | **2.189** | **2.189** | **2.189** | **2.189** | | |

ENVIRONMENT MANAGEMENT

Green Belt Development

| S. No. | Location | | Area/Length | No. of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | : | 0.581 ha | 1453 |
| 2 | Along Approach Road | : | 420 m | 840 |
| 3 | No. of plants distributed with consultation local authorities /village Panchayat | : | -- | 100 |

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

**COST PROPOSED FOR EMP**

| Sl. No | Description | Capital Cost (Rs.) | Recurring Cost (Rs.) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | -- | 2,00,000 |
| 2 | Baseline Monitoring<br>i) Air<br>ii) Water<br>iii) Soil<br>iv) Noise | -- | <br>14,000<br>8,000<br>8,000<br>7,000 |
| 3 | Plantation | 11,96,500 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 2,10,000 | 1,50,000 |
| **TOTAL** | | **14,06,500** | **4,87,000** |

***Note: *2393 plants * 500 Rs (for each plants including hedges and fences) = 11.965 lakhs***
***Salary of Labor for haul road maintenance 1 labor*300 =300 per day***
***300*300 = 90,000/- or 1,50,000/-***
**** 5.0 lakh per kilometer (500000 * 0.420 km haul road = 2,10,000/-)***

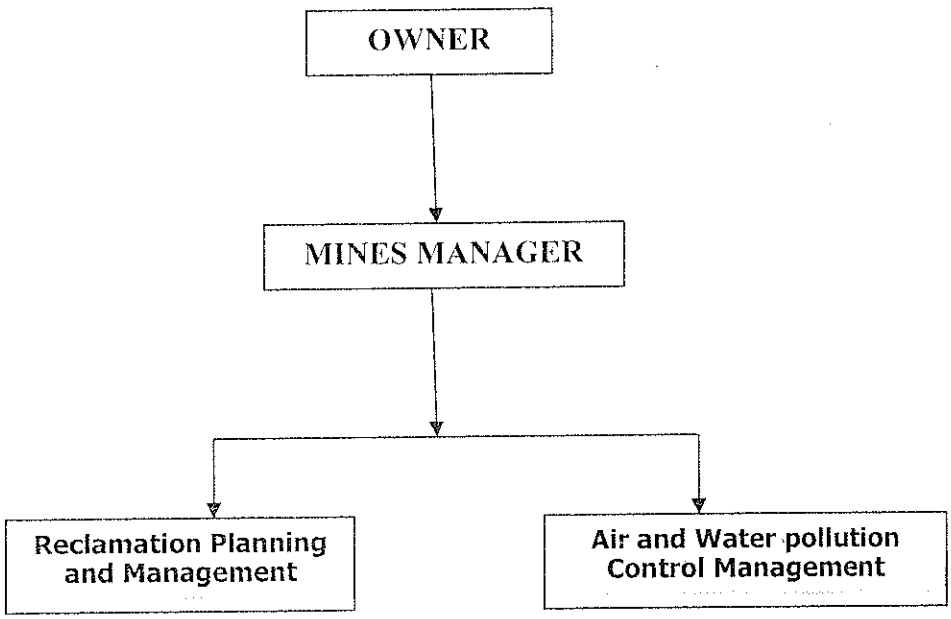
Environment Monitoring Programme

| Sl. No | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |

| | | | |
|---|---|---|---|
| 2 | Soil | 2 Stations | 6 Monthly |
| 3 | Surface Water | 2 Stations | 6 Monthly |
| 4 | Ground Water | 2 Stations | 6 Monthly |
| 5 | Noise | 4 Stations | 6 Monthly |

**Solid Waste Management**

Total 16857 cum of Gritty Soil and 9789 cum of Intercalated Waste will be generated during the plan period. The area is covered with a layer of gritty soil. During quarry development in 1st year gritly soil and inlercalated waste will be removed and this soil & waste will be temporari ly dumped [Area - 0.165 Ha. (L x W x H = 41m x 40m x 5m)] at the south part of the area with suitable precaution like constructing parapet wall, garland drain & in 2nd year gritty soil & intercalated waste will be removed and this soil, waste & existing temporarily dumped materials will be temporarily dumped [Area - 0.416 Ha. (L x W x H = 91m x 46m x 5m)] Within the quarry & in 3rd year removed intercalated waste & existing temporarily dumped materials will be temporarily dumped [Area - 0.455 Ha. (L x W x H = 73m x 62m x Sm)] within the quarry, in 4th year removed intercalated waste will be temporarily dumped (Area - 0.039 Ha, (L x W x H = 28m x14m x 5m)] within the quarry. 4th year removed intercalated wasle & existing temporarily dumped materials will be temporarily dumped [Area - 0.532 Ha, (L x W x H = 105m x 51m x 5m)] within the quarry. In conceptual period total removed intercalated waste & plan period temporarily dumped material together will be backfill within the exhausted quarry.




*Organization Structure*

**Water Quality Management**

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.

- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

**Air Quality Management**

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

**RISK ASSESSMENT**

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

**Probability/Likelihood of Occurrence of Hazard**

| Likelihood Level | Probability | Description |
|---|---|---|
| L5 | Very Unlikely | Has not occurred/reported within last 5 years. |
| L4 | Remote / Moderate | May occur if conditions exist. Has occurred within last 3 years. |
| L3 | Occasional | Likely to occur if conditions exist. Has occurred within last 2 years. |
| L2 | Probable | Very likely to occur. Has occurred within last year. |
| L1 | Frequent | Almost certain to occur. Has occurred more than one |

| | | |
|---|---|---|
| | | within last year. |

Severity/Impact Intensity

| Severity Level | Severity | Description |
|---|---|---|
| C1 | Catastrophic | May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation. |
| C2 | Major | May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action. |
| C3 | Moderate | Minor injury to personnel or environment |
| C4 | Minor | Minor damage but does not cause injury to personnel |
| C5 | Insignificant | May result in no, or less minor, illness, injuryor system damage |

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

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

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

**Preventive Measures:**

**Face Stability**

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

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

### Drilling Operations

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

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

### Falls from the edge of a bench

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

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

### Control Measures

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

### Dust generation during drilling

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

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

### Noise Generation during drilling

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

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

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

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

**Blasting Operations**

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

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

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

**Handling of Explosives**

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

**Health Hazards**

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

**Accident at Site**

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

**Transportation**

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge

of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

**Undertaking submitted affirming:**

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.

k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

**Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Benagaria Stone Deposit of M/s Mahalaxmi Enterprises (Prop. : Shri Digvijay Singh), Mouza : Benagaria, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.189 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"EkPed Ma KeNaam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

**********

8. Chandipur Stone Deposit of M/s PMS Enterprises, Mouza : Chandipur, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.982 Ha).

(Proposal no.: SIA/JH/MIN/ 518810 /2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 22.01.2025.

**Project Sector: 1(a) Mining of Minerals, Category: B2.**

**Application for Environmental Clearance (EC).**

EC Application for: Proposed Capacity- 63897 cum/annum or 172522 TPA

Project and Location Details:

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Chandipur Stone Deposit | |
| 2 | Lessee: | : | M/S PMS Enterprises<br>Partner – 1) Sri Harish Mandal,<br>2) Sri Shiv Kumar Gopal Krishna Menan,<br>3) Sri Gulam Mustafa | |
| 3 | Lease Address | : | Mauza – Chandipur, Thana - Sikaripara,<br>District – Dumka, State - Jharkhand | |
| 4 | Lease Area | : | 2.982 ha. | Acres-7.37 Acres |
| 5 | Type of Land | : | Non-Forest (Raiyati Land) | |
| 6 | Project Cost | : | Rs. 90.0 Lakhs | |
| 7 | EMP Budget | : | Capital: Rs. 35.20 Lakhs | Recurring: 4.87 Lakhs / year |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves | : | 631816.29cum | 1705904 tonnes |
| 10 | Mine Life | : | 10 years | |
| 11 | Man power | : | 17 | |
| 12 | Water Requirement | : | 12.65 ~ 13.0 KLD (Drinking: 0.17 KLD, Dust Suppression: 2.0 KLD, Plantation: 10.48 KLD) | |
| 13 | Water Source | : | Water will be taken from nearby village | |
| 14 | DG Set / power | : | 500 KVA | |
| 15 | Crusher | : | No Crusher | |
| 16 | Nearest Water Body | : | Kanoor River, approx. 1.87 km towards SSW direction of mine site | |
| 17 | Nearest Habitation | : | Ghatakpur village approx. 300 meters ESE direction of mine site | |
| 18 | Nearest Railway Station | : | Pinargaria Railway station, approx. 5.07 km towards NW direction. | |
| 19 | Nearest Airport | : | Deoghar Airport, approx. 102.36 km towards NW direction. | |
| 20 | Nearest Forest | : | Lori Pahari, Approx. 2.5 km towards North direction of mine site.<br>Chhora PF, Approx. 4.85 km towards NE direction of mine site.<br>Radipur RF, Approx. 3.00 km towards East direction of mine site. | |
| 21 | Road & Highways | : | NH – 114A, Approx. 2.32 km towards North direction. | |

CO-ORDINATES

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | : | From 24°10' 22.2344"N | To 24°10' 29.8802"N |
| 2 | Longitude | : | From 87°40' 14.8257"E | To 87°40' 23.9403"E |

LAND DETAILS

| Khata no. | Plot no. |
|---|---|
| 05 & 14 | 52 (P), 53, 54, 55, 56, 57, 63 (P), 64 & 66 |

STATUTORY CLEARANCES

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 1103/M, dated 26.09.2024. |
| 2 | CO | : | The CO, Shikaripara vide letter no. 781/Ra., dated 30.08.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Dumka vide memo no. 1020/M, dated 31.08.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Hazaribag vide letter no. 2127, dated 01.10.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Dumka Forest Division vide letter no. 2173, dated 23.09.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Dumka District (Sl. no. 75). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 10.08.2024. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Dumka vide Letter No. 23/M, dated 04.01.2025. |
| 9 | Qualified Person | : | Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him. |

Working Details

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Semi - Mechanized Method | |
| 2 | Quarry Area | : | 2.982Ha. Or 7.37 Acre | Life of Mine – 10 Years |

| | | | |
|---|---|---|---|
| 3 | Waste Generation | : | Total 47662 cum in-situ waste shall be generated during this plan period. |
| 4 | Stripping Ratio | : | 1: 0.7 |
| 5 | Working Days | : | 300 |
| 6 | Benches: size & No | : | 6m x 6m |
| 7 | Elevation of Mine | : | 72 AMSL to 73 AMSL |
| 8 | Ground Level Elevation | : | 72 AMSL |
| 9 | Ultimate Working Depth | : | 25 AMSL (47 m bgl) |
| 10 | Water Table | : | 15-18 AMSL (54-57 m bgl) |
| 11 | Topography of Mine | : | Area represents a small hillock. |
| 12 | Explosive Requirement | : | 110 kg/day |
| 13 | Diesel/Fuel requirement | : | 150 litre/day |

**Production Details**

| Year | Production of stone in Cum | Production of stone in Tonnes | Overburden in cum | Intercalated waste in Cum | Total Waste in Cum | Bench AMSL |
|---|---|---|---|---|---|---|
| 1st Year | 61731 | 166674 | 31160 | 3249 | 34409 | 73-67 |
| 2nd Year | 62092 | 167648 | 0 | 3269 | 268 | 67-61 |
| 3rd Year | 62634 | 169110 | 0 | 3297 | 3297 | 61-55 |
| 4th Year | 63175 | 170573 | 0 | 3325 | 3325 | 55-49 |
| 5th Year | 63897 | 172522 | 0 | 3363 | 3363 | 49-43 |
| **Total** | **313529** | **846527** | **31160** | **16503** | 47662 | |

**Land Use**

| Land Utilization | Existing Land use (Ha.) | At the end of plan period (Ha) | At Conceptual period (Ha) |
|---|---|---|---|
| Excavation | 0.0 | 1.244 | 2.366 (0.393 ha area shall be Backfilled, entire area converted in to water reservoir.) |
| Waste Dump | 0.0 | 0.551 | nil (waste dump to be removed and backfilled) |
| Road | 0.0 | 0.021 | 0.0 (comes under mining) |
| Infrastructure (Crusher) | 0.0 | 0.0 | 0.0 |

| | | | |
|---|---|---|---|
| Safety Zone | 0.0 | 0.616 (Plantation) | 0.616 (Plantation) |
| Total | 0.0 | 2.432 | 2.982 |
| Unused Area | 2.982 | 0.550 | 0.00 |
| **Total Lease Area** | **2.982** | | |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

| S. No. | Location | | Area/Length | No. of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | : | 0.616 ha | 1540 |
| 2 | Along Approach Road | : | 1800 m | 3600 |
| 3 | No. of plants distributed with consultation local authorities /village Panchayat | : | -- | 100 |

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

**COST PROPOSED FOR EMP**

| Sl. No | Description | Capital Cost (Rs.) | Recurring Cost (Rs.) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | -- | 2,00,000 |
| 2 | Baseline Monitoring<br>i) Air<br>ii) Water<br>iii) Soil<br>iv) Noise | -- | 14,000<br>8,000<br>8,000<br>7,000 |
| 3 | Plantation | 26,20,000 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 9,00,000 | 1,50,000 |
| **TOTAL** | | **35,20,000** | **4,87,000** |

*Note: * 5240 plants * 500 Rs (for each plants including hedges and fences) = Rs. 26,20,000/-*
*Salary of Labor for haul road maintenance 1 labor*300 =300 per day*

*300* 300 = 90000/- or 1,50,000/-( including maintenance)*

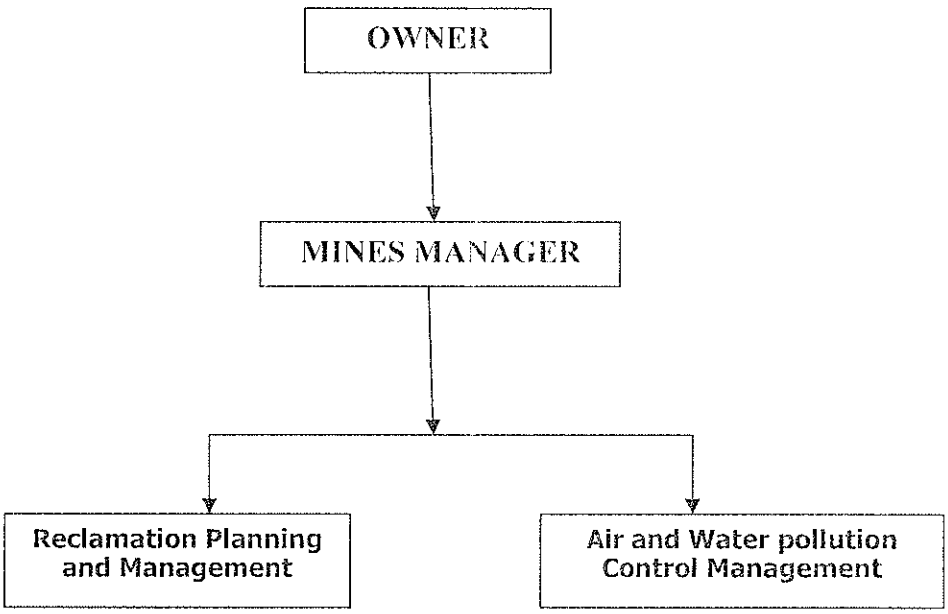
** 5.0 lakh per kilometer (500000 * 1.80 km haul road = 9,00,000/-)*

Environment Monitoring Programme

| Sl. No | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |
| 2 | Soil | 2 Stations | 6 Monthly |
| 3 | Surface Water | 2 Stations | 6 Monthly |
| 4 | Ground Water | 2 Stations | 6 Monthly |
| 5 | Noise | 4 Stations | 6 Monthly |

**Solid Waste Management**

In this applied lease area, the stone deposit is covered with 2m layer of intermixed soil which considered as over burden. The recovery of stone is about 95%, thus intercalated waste of only 5% shall be generate from this mine. It has been calculated that total 47662 cum in-situ waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 23831 cum (Insitu) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 23831 cum insitu 29788.44 cum loose & 25320.17 cum compact waste shall be temporary dumped in southern part of applied area and it will cover 0.551ha.




*Organization Structure*

**Water Quality Management**

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.

- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

**Air Quality Management**

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

**RISK ASSESSMENT**

The hazard identification and risk analysis is done using qualitative method:

**Probability/Likelihood of Occurrence of Hazard**

| Likelihood Level | Probability | Description |
|---|---|---|
| L5 | Very Unlikely | Has not occurred/reported within last 5 years. |
| L4 | Remote / Moderate | May occur if conditions exist. Has occurred within last 3 years. |
| L3 | Occasional | Likely to occur if conditions exist. Has occurred within last 2 years. |
| L2 | Probable | Very likely to occur. Has occurred within last year. |
| L1 | Frequent | Almost certain to occur. Has occurred more than one |

| | | |
|---|---|---|
| | | within last year. |

Severity/Impact Intensity

| Severity Level | Severity | Description |
|---|---|---|
| C1 | Catastrophic | May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation. |
| C2 | Major | May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action. |
| C3 | Moderate | Minor injury to personnel or environment |
| C4 | Minor | Minor damage but does not cause injury to personnel |
| C5 | Insignificant | May result in no, or less minor, illness, injuryor system damage |

**Risk Assessment Chart (Qualitative Method)**

| Risk Rank (Likelihood x Consequence) | L5 (Very Unlikely) | L4 (Remote) | L3 (Occasional) | L2 (Probable) | L1 (Frequent) |
|---|---|---|---|---|---|
| C1 (Catastrophic) | 5 | 4 | 3 | 2 | 1 |
| C2 (Major) | 10 | 8 | 6 | 4 | 2 |
| C3 (Moderate) | *15* | 12 | 9 | 6 | 3 |
| C4 (Minor) | *20* | *16* | 12 | 8 | 4 |
| C5 (Insignificant) | *25* | *20* | *15* | 10 | 5 |

**Risk Rating Scale**

| S. No. | Rating | Scale |
|---|---|---|
| 1 | **High Risk** | **1-4** |
| 2 | Medium Risk | 5-12 |
| 3 | *Low Risk* | *13-25* |

| S. No. | Activity | Hazard | Probability | Severity | Score |
|---|---|---|---|---|---|
| 1 | Temporary Storage of Explosives | Unintended Explosion | Very Unlikely | Catastrophic | 5 |
| 2 | Charging of Explosives | Unwanted Explosion | Very Unlikely | Catastrophic | 5 |
| 3 | Blasting | Hit by fly rock (Bodily Injury) | Occasional | Major | 6 |
| 4 | Drilling | Exposure to Dust | Frequent | Insignificant | 5 |
| 5 | Bench Formation | Fall/Slide/Tripping (Bodily Injury) | Probable | Moderate | 6 |
| 6 | Loading/Unloading | Bodily injury by hitting by loading material, Exposure to Dust | Very Unlikely | Minor | 20 |
| 7 | Transportation | Vehicle Accident, Exposure to Dust | Remote | Minor | 16 |

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

**Preventive Measures:**

**Face Stability**

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

## Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

### Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

### Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

### Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

### Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

**Blasting Operations**

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

**Handling of Explosives**

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

**Health Hazards**

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

**Accident at Site**

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

**Transportation**

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge

of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

**Undertaking submitted affirming:**

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.

k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

**Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Chandipur Stone Deposit of M/s PMS Enterprises, Mouza : Chandipur, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.982 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

**********

9. Joddiha Stone Mine of Md. Mustafa Ansari, Village : Joddiha, Thana : Saraikela, Distt. : Saraikela-Kharsawan, Jharkhand (3.328 Ha).

(Proposal no.: SIA/JH/MIN/ 516765 /2025)

During appraisal the PAs were unable to provide the compliance status of the conditions as stipulated in the previous EC issued by then DEIAA.

The PAs are required to submit Certified Compliance Report (CCR) from State Pollution Control Board.

**The project will be taken up for consideration after submission of the same.**

**********

10. Kalupara Stone Deposit of M/s Hill Top Stone Works (Partners : (i) Shri Vedant Mandhyan (ii) Shri Vidya Niwas Bharatpuri (iii) Shri Ranjit Kumar Tiwary), Village : Kalupara, Thana : Maheshpur, Distt. : Pakur, Jharkhand (2.428 Ha).

(Proposal No : SIA/JH/MIN/ 518631/2025)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 22.01.2025.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Environmental Clearance (EC) after ToR.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 113th meeting held on 30.05.2024 - 03.06.2024 and SEIAA, Jharkhand has approved the ToRs in 113th meeting held on 07th & 08th June, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3127/2024/124, dated 14.06.2024. The final EIA / EMP submitted by PP to SEAC on 17.01.2025.

EC Application for: Proposed Capacity- 80247 cum/annum or 240740 TPA.

Project and Location Details:

| Sl | Parameter | | Details |
|---|---|---|---|
| 1 | Project Name | : | Kalupara Stone Deposit (Area- 2.428 Ha or 6.0 Acres) |
| 2 | Lessee: | : | M/s Hill Top Stone Works,<br>(Partners: 1. Sri Vedant Mandhyan, 2. Sri Ranjit Kumar Tiwary) |
| 3 | Lease Address | : | Near Mouza– Kalupara, Thana - Maheshpur, District – Pakur, State- |

| | | | | |
|---|---|---|---|---|
| | | | Jharkhand. | |
| 4 | Lease Area | : | 2.428 Ha | Acres- 6.0 Acre |
| 5 | Type of Land | : | Non- Forest (Raiyati Barren Land) | |
| 6 | Project Cost | : | Rs. 75 Lakhs | |
| 7 | EMP Budget | : | Capital: Rs. 16.625 Lakhs | Recurring: Rs. 10.85 Lakhs/year |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves | : | 1203304 tonnes | |
| 10 | Mine Life | : | 5 years | |
| 11 | Man power | : | 48 | |
| 12 | Water Requirement | : | 7.02 ~ 7.50 KLD, (Drinking: 0.48 KLD, Dust Suppression: 3.29 KLD, Plantation: 3.25 KLD) | |
| 13 | Water Source | : | From Nearby villages by tankers | |
| 14 | DG Set / power | : | 500 KVA | |
| 15 | Crusher | : | No Crusher | |
| 16 | Nearest Water Body | : | Bansloi River, Approx. 7.79 Km in South direction of mine site. | |
| 17 | Nearest Habitation | : | Kalidaspur, Approx. 330 meters towards SE direction. | |
| 18 | Nearest Railway Station | : | Nagarnabi Railway station, approx. 14.10 km toward ENE direction. | |
| 19 | Nearest Air Port | : | Deoghar Airport approx. 104.50 km towards West direction. | |
| 20 | Nearest Forest | : | Protected Forest Approx. 2.50 km. in NE direction of mine site.<br>Protected Forest Approx. 5.0 km. in North direction of mine site.<br>Protected Forest Approx. 5.0 km. in NW direction of mine site.<br>Protected Forest Approx. 3.0 km. in WNW direction of mine site.<br>Protected Forest Approx. 4.9 km. in SW direction of mine site.<br>Protected Forest Approx. 3.6 km. in SW direction of mine site. | |
| 21 | Road & Highways | : | NH-133A, approx. 10.51 km in NNE direction | |

**CO-ORDINATES**

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | | From 24°33'39.49960" N | To 24°33'45.86738" N |
| 2 | Longitude | | From 87°43'49.07784" E | To 87°43'57.29545" E |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 06 | 130 (P) |
| 19 | 134 (P) & 143 (P) |
| 20 | 142 & 144 (P) |

STATUTORY CLEARANCES

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 373/M, dated 19.03.2024. |
| 2 | CO | : | The CO, Maheshpur vide letter no. 1045/Ra., dated 10.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Pakur vide memo no. 518/M, dated 18.04.2024 certified that 03 other mining lease area (5.41 Acre, 6.00 Acre & 5.78 Acre) exists within 500 m radius from proposed project site and total area is 23.19 Acre (9.38 Ha). |
| 4 | DFO Wild Life | : | DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2025, dated 09.10.2023 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 letter no. 1255, dated 29.09.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | The DMO, Pakur has been certified vide memo no. 517/M, dated 18.04.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 157, Page no. 131). |
| 7 | Gram Sabha | : | BDO, Maheshpur (Pakur) vide letter no. 1935/Vi., dated 18.09.2023 informed that Gram Sabha conducted on 13.09.2023. |
| 8 | Mine Plan Approval | : | Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Letter No. 58/DDM, dated 25.04.2024. |
| 9 | Qualified Person | : | Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him. |
| 10 | Public Hearing | : | Public Hearing conducted on 07.01.2025. |
| 11 | Baseline Monitoring period | : | 19th March, 2024 to 18th June, 2024. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Semi-Mechanized Mining method | |
| 2 | Quarry Area | : | 2.428 Ha / 6.00 Acre | Life of Mine – 5 Years |
| 3 | Waste Generation | : | 21,110 Cum intercalated waste | |

| | | | | |
|---|---|---|---|---|
| | | | and 10,038 Cum gritty soil shall be 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 | : | 104mRL to 110mRL | |
| 8 | Ground Level Elevation | : | 104mRL | |
| 9 | Ultimate Working Depth | : | 56mRL | |
| 10 | Water Table | : | 48mRL -43mRL | |
| 11 | Topography of Mine | : | Area represents a moderately sloping land. | |
| 12 | Explosive Requirement | : | 110kg/day | |
| 13 | Diesel/Fuel requirement | : | 110 litre/day | |

**Production Details**

| Year | Removal of Gritty Soil | | Intercalated Waste | Production of Stone | | Bench in AMSL |
|---|---|---|---|---|---|---|
| | in cum | in tonnes | in (cum) | in (cum) | in tonnes | |
| 1st | 6174 | 9261 | 4224 | 80247 | 240740 | 110 – 98 |
| 2nd | 000 | 000 | 4221 | 80209 | 240625 | 104 – 86 |
| 3rd | 3213 | 4820 | 4224 | 80247 | 240740 | 110 – 80 |
| 4th | 651 | 977 | 4221 | 80209 | 240625 | 104 – 86 |
| 5th | 000 | 000 | 4220 | 80181 | 240541 | 92 – 56 |
| **Total** | **10038** | **15058** | **21110** | **401093** | **1203271** | |

**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) |
|---|---|---|---|
| Quarry | Nil | 1.914 (including backfill 0.290 Ha) | 1.914 (including backfill 0.290 Ha) |
| Safety Barrier Zone | Nil | 0.514 | 0.514 |
| Road | 0.040 | Nil | Nil |
| **Total Area in Use** | **0.040** | **2.428** | **2.428** |
| Balanced unused Area | 2.388 | Nil | Nil |
| **Total Applied Area** | **2.428** | **2.428** | **2.428** |

**Public Hearing:**

Public hearing was successfully executed on date 07.01.2025.

| S. No. | Name and Address | Issues raised by Locals/Public | Replied by Project Proponent (Response /Action Plan) | Action Plan with Budgetary Allocation & Timeline |
|---|---|---|---|---|
| 1. | Shri Sanjay Paharia, Village-Kalupara | He said that, drinking water facility should be provided to the villagers. | Project proponent replied that the arrangements for drinking water facility will be made in the nearby villages, under Regular Social Responsibility (CSR). | For the Drinking Water Facility two hand pumps will be installed in villages for which Capital cost of Rs. 1.0 lakhs & Rs. 30,000 as Recurring cost will be invested. |
| 2. | Shri Sujeet Paharia, Village-Kalupara | He said that, villagers should be given soap and washing powder for bathing and washing clothes every week. | Project proponent assured that the arrangements will be made for soap and washing powder for bathing and washing clothes every week. | For soap and washing powder distribution Rs. 1.50 lakhs will be spent every year by each proponent. |
| 3. | Shri Mohan Paharia, Village-Kalupara | He demanded the employment for 40-50 local people. | Project proponent assured that the employment will be provided as per the requirement and qualification of the local villagers. | -- |
| 4. | Shri Katga Paharia, Village-Kalupara | He said, the literate local people should be given employment and proper arrangements should be made to provide water and prevent pollution. | It was assured by the project proponent that the villagers will be given employment as per need and qualification and under Regular Social Responsibility (CSR), arrangements will be made for drinking water will be made in the nearby villages, as well as water sprinkling in the transport routes and mine project premises to prevent pollution. | For the Drinking Water Facility two hand pumps will be installed in villages for which Capital cost of Rs. 1.0 lakhs & Rs. 30,000 as Recurring cost will be invested.<br>Water Sprinkling will be carried out on the regular basis for which budget of Rs. 4.0 lakhs will be spent by each proponent every year. |
| 5. | Smt. Subri Paharin, Village- | She said that the arrangements for warm clothes and drinking | It was assured by the project proponent that under regular social responsibility (CSR), | Clothes will be given to the needy villagers for whom Rs. 50,000 will be |

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|---|---|---|---|---|
| | Kalupara | water should be made for the villagers during worship, festivals and winter season. | clothes will be given to the needy villagers during puja, festivals and winter season and drinking water will also be arranged. | spent every year by each proponent.<br>For the Drinking Water Facility two hand pumps will be installed in villages for which Capital cost of Rs. 1.0 lakhs & Rs. 30,000 as Recurring cost will be invested. |
| 6. | Smt. Dharmi Paharin, Village-Kalupara | She said that the arrangements for drinking water should be made for the villagers & cattle and clothes should also be provided during puja and festivals. | The project proponent will arrange for drinking water in the nearby villages and will also provide clothes to the needy villagers during pujas and festivals under Regular Social Responsibility (CSR). | Clothes will be given to the needy villagers for whom Rs. 50,000 will be spent every year by each proponent.<br>For the Drinking Water Facility two hand pumps will be installed in villages for which Capital cost of Rs. 1.0 lakhs & Rs. 30,000 as Recurring cost will be invested. |
| 7. | Shri Vijay Madaiya, Village-Kalupara | He said that, all the commitment mentioned by the proponent should be completed. | The project proponent informed that all the assured work will be completed. | -- |
| 8. | Shri Mistri Soren, Village-Kalidaspur | He said that, my agricultural land is next to the proposed project, my crops may get damaged due to dust pollution/particles, what measures will be taken to prevent this, along with this, and local people should also be given priority in employment. | The Project proponent replied that, the intensive tree plantation and regular water sprinkling will be done to prevent dust pollution so that there is no any kind of crop damage. Besides, the villagers will be given employment as per need and qualification. | Total 3090 plants will be planted by both the proponents for whom the total budget of Rs. 15.45 lakhs is proposed as Capital cost & Rs. 2.0 lakhs has been invested every year for care & maintenance of plants.<br>Water Sprinkling will be carried out on the regular basis for which budget of Rs. 4.0 lakhs will be spent by each proponent every year. |

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| 9. | Smt. Kamli Paharin, Village- Kalupara | She said that, drinking water facility should be provided to the villagers. | The project proponent will make arrangements for drinking water in the nearby villages under Regular Social Responsibility (CSR). | For the Drinking Water Facility two hand pumps will be installed in villages for which Capital cost of Rs. 1.0 lakhs & Rs. 30,000 as Recurring cost will be invested. |
| 10. | Shri Durga Paharia- (Village Sarpanch) Village- Kalupara | He said that, drinking water facility should be provided to the villagers. | The project proponent will make arrangements for drinking water in the nearby villages under Regular Social Responsibility (CSR). | For the Drinking Water Facility two hand pumps will be installed in villages for which Capital cost of Rs. 1.0 lakhs & Rs. 30,000 as Recurring cost will be invested. |
| 11. | Smt. Duli Paharin, Village- Kalupara | She said that the fencing should be done around the mine area, so that any cattle can be saved from falling in. Besides, blankets should also be distributed to old people in cold weather. | The project proponent replied that the fencing work will be done around the mining area so that there is no loss of life or property. Also, old people will be given blankets during winters. | Fencing work will be done around the mining area for which budget of Rs. 1.0 lakh is proposed by each proponent.<br>Clothes will be given to the needy villagers for whom Rs. 50,000 will be spent every year by each proponent. |
| 12. | Shri Prabhu Nath Thakur, Village- Amlagachhi | He Said that the local people should be given priority in employment, and fencing should be done around the mining area. | The project proponent replied that the villagers will be given employment as per need and qualification. Also, fencing work will be done around the mining so that there is no loss of life or property. | Fencing work will be done around the mining area for which budget of Rs. 1.0 lakh is proposed by each proponent. |
| 13. | Shri Basu Paharia, Village- Kalupara | He Said that, a temple should be constructed at the place of worship and drinking water should be arranged for the villagers. | It was assured by the project proponent that the temple will be constructed after the unit becomes operational at the place of worship. Under Regular Social Responsibility (CSR), arrangements for drinking water will be made in nearby villages. | For the development of temple Rs. 5.0 lakhs is proposed by each proponent as Capital cost & Rs. 1.0 lakhs has been invested as Recurring cost.<br>For the Drinking Water Facility two hand |

| | | | | |
|---|---|---|---|---|
| | | | | pumps will be installed in villages for which Capital cost of Rs. 1.0 lakhs & Rs. 30,000 as Recurring cost will be invested. |
| 14. | Shri Chiranjit Paharia, Village-Kalupara | He said that, drinking water facility should be provided to the villagers and local people should also be given priority in employment. | It was assured by the project proponent that under Regular Social Responsibility (CSR), arrangements for drinking water will be made in the nearby villages and employment will be given as per merit. | For the Drinking Water Facility two hand pumps will be installed in villages for which Capital cost of Rs. 1.0 lakhs & Rs. 30,000 as Recurring cost will be invested. |
| 15. | Shri Ashok Kumar Saha, Village-Sahergram | He said that, local people should also be given priority in employment and a temple should be constructed at the place of worship. | It was assured by the project proponent that after the unit becomes operational at the place of worship, a temple will be constructed and employment will be given as per merit. | For the development of temple Rs. 5.0 lakhs is proposed by each proponent as Capital cost & Rs. 1.0 lakhs has been invested as Recurring cost. |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

| S. No. | Location | | Area/Length | No. of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | | 0.514 ha. | 1285 |
| 2 | Along Approach Road | | 120 m | 240 |
| 3 | No. of plants distributed with consultation local authorities /village Panchayat | | -- | 100 |

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

**COST PROPOSED FOR EMP**

| Sl. No | Description | Capital Cost (Rs.) | Recurring Cost (Rs.) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | -- | 4,00,000 |
| 2 | Baseline Monitoring<br>i) Air<br>ii) Water<br>iii) Soil<br>iv) Noise | -- | <br>50,000<br>40,000<br>20,000<br>10,000 |
| 3 | Plantation | 8,12,500 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 2,00,000 | 1,50,000 |
| As per Demand in Public Hearing | | | |
| 5 | Installation of Hand pump in Amlagacchi village for drinking water facility | 50,000 | 15,000 |
| 6 | Provision of Arrangements for distribution of soap and washing powder for villagers | - | 1,50,000 |
| 7 | Distribution of clothes to the needy villagers during puja, festivals and winter season | - | 50,000 |
| 8 | Fencing work around the mining area | 1,00,000 | - |
| 9 | Construction & Development of Temple at the place of Worship | 5,00,000 | 1,00,000 |
| TOTAL | | **16,62,500** | **10,85,000** |

*Note: *1625 plants * 500 Rs (for each plants including hedges and fences)= 8.125 lakh*

*Salary of Labor for haul road maintenance 1 labor*300 =300 per day*

*300* 300 = 90000/- or 150000/- (including maintenance)*

**Environment Monitoring Programme**

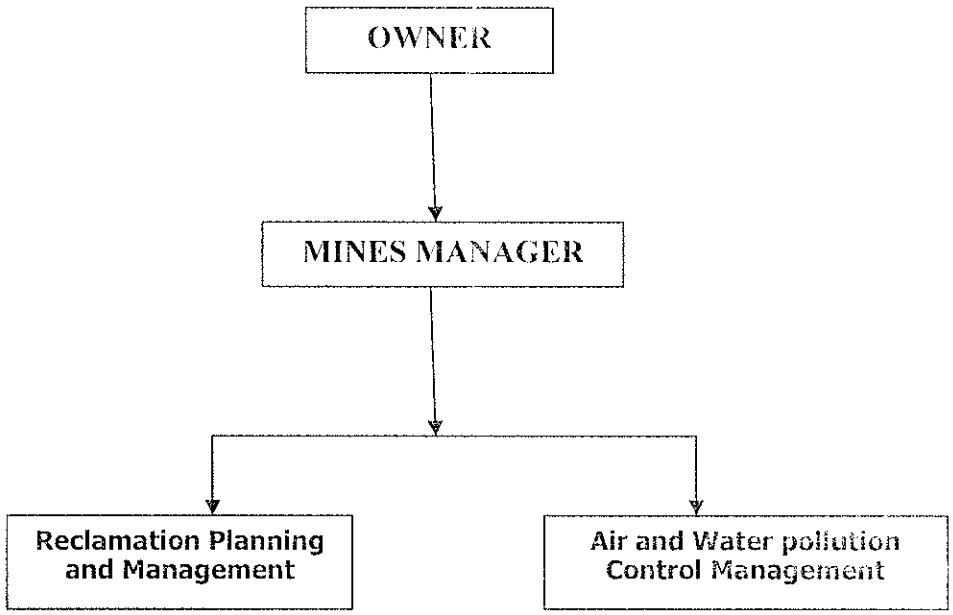
| Sl. No | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |
| 2 | Soil | 2 Stations | 6 Monthly |
| 3 | Surface Water | 2 Stations | 6 Monthly |
| 4 | Ground Water | 2 Stations | 6 Monthly |
| 5 | Noise | 4 Stations | 6 Monthly |

**Solid Waste Management**

Removal of 10038 cum Gritty Soil & 21110 cum Intercalated Waste shall be generated during this plan period.

Selection of Dump Site: The area is covered with a layer of gritty soil. During quarry development in 1st & 2nd year gritty soil and intercalated waste will be removed and this soil & waste will be temporarily dumped at the north- west part of the area with suitable precautions like parapet wall, garland drain & in 3rd year removed gritty soil, intercalated waste & existing temporarily dumped soil will be temporarily backfilled within the exhausted

quarry & in 4th year removed gritty soil, intercalated will be temporarily backfilled within the exhausted quarry & in 5th year removed intercalated waste & temporarily backfill soil will be backfill within the lower three bench of the exhausted quarry.




***Organization Structure***

**Water Quality Management**

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

**Air Quality Management**

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.

- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

**RISK ASSESSMENT**

The hazard identification and risk analysis is done using qualitative method:

**Probability/Likelihood of Occurrence of Hazard**

| Likelihood Level | Probability | Description |
|---|---|---|
| L5 | Very Unlikely | Has not occurred/reported within last 5 years. |
| L4 | Remote / Moderate | May occur if conditions exist. Has occurred within last 3 years. |
| L3 | Occasional | Likely to occur if conditions exist. Has occurred within last 2 years. |
| L2 | Probable | Very likely to occur. Has occurred within last year. |
| 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 | Very | Minor | 20 |

| | | | | | |
|---|---|---|---|---|---|
| | | hitting by loading material, Exposure to Dust | Unlikely | | |
| 7 | Transportation | Vehicle Accident, Exposure to Dust | Remote | Minor | 16 |

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.

- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

**Dust generation during drilling**

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

**Noise Generation during drilling**

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

**Blasting Operations**

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.

- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

**Handling of Explosives**

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

**Health Hazards**

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an

interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

**Accident at Site**

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

**Transportation**

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

**Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Kalupara Stone Deposit of M/s Hill Top Stone Works (Partners : (i) Shri Vedant Mandhyan (ii) Shri Vidya Niwas Bharatpuri (iii) Shri Ranjit Kumar Tiwary), Village : Kalupara, Thana : Maheshpur, Distt. : Pakur, Jharkhand (2.428 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a

time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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**11. Kalupara Stone Deposit of M/s H L Aggregates (Partners : (i) Shri Shiv Kumar (ii) Shri Bikram Kumar (iii) Shri Prasanna Shankar Mishra), Village : Kalupara, Thana : Maheshpur, Distt. : Pakur, Jharkhand (2.19 Ha).**

**(Proposal No : SIA/JH/MIN/ 518723/2025)**

**Name of the consultant : P & M Solution, Noida, U.P.**

This is a new project which has been taken for appraisal on 22.01.2025.

**Project Sector: 1(a) Mining of Minerals, Category: B1.**

**Application for Environmental Clearance (EC) after ToR.**

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 113th meeting held on 30.05.2024 - 03.06.2024 and SEIAA, Jharkhand has approved the ToRs in 113th meeting held on 07th & 08th June, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3126/2024/121, dated 14.06.2024. The final EIA / EMP submitted by PP to SEAC on 17.01.2025.

Project and Location Details:

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Kalupara Stone Deposit (Area- 2.19 Ha or 5.41 Acres) | |
| 2 | Lessee: | : | M/s H L Aggregates<br>(Partners: 1. Shri Shiv Kumar, 2. Shri Bikram Kumar, 3. Shri Prasanna Shankar Mishra) | |
| 3 | Lease Address | : | Village – Kalupara, Thana – Maheshpur, District – Pakur, State – Jharkhand | |
| 4 | Lease Area | : | 2.19 Ha | Acres- 5.41 Acre |
| 5 | Type of Land | : | Non- Forest (Raiyati Barren Land) | |
| 6 | Project Cost | : | Rs. 70 Lakhs | |
| 7 | EMP Budget | : | Capital: 15.825 Lakhs | Recurring: 10.85 Lakhs/year |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves | : | 1104198 tonnes | |
| 10 | Mine Life | : | 5 years | |
| 11 | Man power | : | 43 | |
| 12 | Water Requirement | : | 6.28 ~ 6.50 KLD, (Drinking: 0.43 KLD, Dust Suppression: 2.92 KLD, Plantation: 2.93 KLD) | |
| 13 | Water Source | : | From Nearby villages by tankers | |
| 14 | DG Set / power | : | 500 KVA | |
| 15 | Crusher | : | No Crusher | |
| 16 | Nearest Water Body | : | Bansloi River, Approx. 7.79 Km in South direction of mine site. | |
| 17 | Nearest Habitation | : | Kalidaspur, Approx. 420 meters towards SE direction. | |
| 18 | Nearest Railway Station | : | Nagarnabi Railway station, approx. 14.10 km toward ENE direction. | |
| 19 | Nearest Air Port | : | Deoghar Airport approx. 104.50 km towards West direction. | |
| 20 | Nearest Forest | : | PF, Approx. 2.50 km. in NE direction of mine site.<br>PF, Approx. 5.0 km. in NE direction of mine site.<br>PF, Approx. 5.0 km. in North direction of mine site.<br>PF, Approx. 5.0 km. in NW direction of mine site.<br>PF, Approx. 3.0 km. in WNW direction of mine site.<br>PF, Approx. 4.9 km. in SW direction of mine site.<br>PF, Approx. 3.6 km. in SW direction of mine site.<br>PF, Approx. 7.0 km. in NW direction of mine site. | |
| 21 | Road & Highways | : | NH-133A, Approx. 10.51 km in NNE direction. | |

**CO-ORDINATES**

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | | From 24°33'43.85315" N | To 24°33'50.15732" N |
| 2 | Longitude | | From 87°43'51.28399" E | To 87°43'58.47042" E |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 06 | 130 (P) |
| 19 | 143 (P) |
| 20 | 131 (P) & 144 (P) |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 376/M, dated 19.03.2024. |
| 2 | CO | : | The CO, Maheshpur vide letter no. 1198/Ra., dated 14.12.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Pakur vide memo no. 520/M, dated 18.04.2024 certified that 03 other mining lease area (6.00 Acre, 6.00 Acre & 5.78 Acre) exists within 500 m radius from proposed project site and total area is 23.19 Acre (9.38 Ha). |
| 4 | DFO Wild Life | : | DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2024, dated 09.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary. |
| 5 | DFO Forest Distance | : | Division Forest Officer, Pakur Forest Division vide letter no. 1254, dated 29.09.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | The DMO, Pakur has been certified vide memo no. 519/M, dated 18.04.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 157, Page no. 131). |
| 7 | Gram Sabha | : | BDO, Maheshpur (Pakur) vide letter no. 2323/Vi., dated 08.11.2023 informed that Gram Sabha conducted on 08.11.2023. |
| 8 | Mine Plan Approval | : | Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Letter No. 57/DDM, dated 25.04.2024. |

| | | | |
|---|---|---|---|
| 9 | Qualified Person | : | Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him. |
| 10 | Public Hearing | : | Public Hearing conducted on 07.01.2025. |
| 11 | Baseline Monitoring period | : | 19th March, 2024 to 18th June, 2024. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Mechanized Method | |
| 2 | Quarry Area | : | 2.19 Ha or 5.41 Acre | Life of Mine – 5 Years |
| 3 | Waste Generation | : | 19375 Cum intercalated waste and 8988 Cum gritty soil shall be generated during the plan period. | |
| 4 | Stripping Ratio | : | 1:0.02 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 6m x 6m | |
| 7 | Elevation of Mine | : | 108 mRL to 114 mRL | |
| 8 | Ground Level Elevation | : | 108 mRL | |
| 9 | Ultimate Working Depth | : | 60 mRL | |
| 10 | Water Table | : | 48mRL - 43mRL | |
| 11 | Topography of Mine | : | Area represents a moderately sloping land. | |
| 12 | Explosive Requirement | : | 110kg/day | |
| 13 | Diesel/Fuel requirement | : | 110 litre/day | |

**Production Details**

| Year | Removal of Gritty Soil | | Intercalated Waste | Production of Stone | | Bench RL in Meters |
|---|---|---|---|---|---|---|
| | in cum | in tonnes | in (cum) | in (cum) | in tonnes | |
| 1st | 6603 | 9905 | 3875 | 73617 | 220852 | 114mRL -102mRL |
| 2nd | 000 | 000 | 3876 | 73623 | 220871 | 108mRL – 96mRL |
| 3rd | 2385 | 3578 | 3875 | 73617 | 220852 | 114mRL – 90mRL |
| 4th | 000 | 000 | 3876 | 73623 | 220871 | 108mRL – 84mRL |
| 5th | 000 | 000 | 3873 | 73583 | 220745 | 90mRL – 60mRL |
| **Total** | **8988** | **13483** | **19375** | **368063** | **1104191** | |

Land Use

| Pattern of Utilization | Existing (Ha) | At the End of Plan Period (in Ha) | Conceptual stage (Ha) |
|---|---|---|---|
| Quarry | Nil | 1.72 (including backfill 0.41ha) | 1.72 (1.41 ha area shall be left as water reservoir) |
| Safety Barrier Zone | Nil | 0.47 (Plantation) | 0.47 (Plantation) |
| Road | 0.010 | Nil | Nil |
| **Total** | **0.010** | **2.19** | **2.19** |
| **Unused Area** | 2.09 | Nil | Nil |
| **Lease hold area** | **2.19** | **2.19** | **2.19** |

**Public Hearing:**

Public hearing was successfully executed on date 07.01.2025.

| S. No. | Name and Address | Issues raised by Locals/Public | Replied by Project Proponent (Response /Action Plan) | Action Plan with Budgetary Allocation & Timeline |
|---|---|---|---|---|
| 1. | Shri Sanjay Paharia, Village-Kalupara | He said that, drinking water facility should be provided to the villagers. | Project proponent replied that the arrangements for drinking water facility will be made in the nearby villages, under Regular Social Responsibility (CSR). | For the Drinking Water Facility two hand pumps will be installed in villages for which Capital cost of Rs. 1.0 lakhs & Rs. 30,000 as Recurring cost will be invested. |
| 2. | Shri Sujeet Paharia, Village-Kalupara | He said that, villagers should be given soap and washing powder for bathing and washing clothes every week. | Project proponent assured that the arrangements will be made for soap and washing powder for bathing and washing clothes every week. | For soap and washing powder distribution Rs. 1.50 lakhs will be spent every year by each proponent. |
| 3. | Shri Mohan Paharia, Village-Kalupara | He demanded the employment for 40-50 local people. | Project proponent assured that the employment will be provided as per the requirement and qualification of the local villagers. | -- |

| | | | | |
|---|---|---|---|---|
| 4. | Shri Katga Paharia, Village-Kalupara | He said, the literate local people should be given employment and proper arrangements should be made to provide water and prevent pollution. | It was assured by the project proponent that the villagers will be given employment as per need and qualification and under Regular Social Responsibility (CSR), arrangements will be made for drinking water will be made in the nearby villages, as well as water sprinkling in the transport routes and mine project premises to prevent pollution. | For the Drinking Water Facility two hand pumps will be installed in villages for which Capital cost of Rs. 1.0 lakhs & Rs. 30,000 as Recurring cost will be invested.<br>Water Sprinkling will be carried out on the regular basis for which budget of Rs. 4.0 lakhs will be spent by each proponent every year. |
| 5. | Smt. Subri Paharin, Village-Kalupara | She said that the arrangements for warm clothes and drinking water should be made for the villagers during worship, festivals and winter season. | It was assured by the project proponent that under regular social responsibility (CSR), clothes will be given to the needy villagers during puja, festivals and winter season and drinking water will also be arranged. | Clothes will be given to the needy villagers for whom Rs. 50,000 will be spent every year by each proponent.<br>For the Drinking Water Facility two hand pumps will be installed in villages for which Capital cost of Rs. 1.0 lakhs & Rs. 30,000 as Recurring cost will be invested. |
| 6. | Smt. Dharmi Paharin, Village-Kalupara | She said that the arrangements for drinking water should be made for the villagers & cattle and clothes should also be provided during puja and festivals. | The project proponent will arrange for drinking water in the nearby villages and will also provide clothes to the needy villagers during pujas and festivals under Regular Social Responsibility (CSR). | Clothes will be given to the needy villagers for whom Rs. 50,000 will be spent every year by each proponent.<br>For the Drinking Water Facility two hand pumps will be installed in villages for which Capital cost of Rs. 1.0 lakhs & Rs. 30,000 as Recurring cost will be invested. |
| 7. | Shri Vijay Madaiya, Village- | He said that, all the commitment mentioned by the | The project proponent informed that all the assured work will be completed. | -- |

| | | | | |
|---|---|---|---|---|
| | Kalupara | proponent should be completed. | | |
| 8. | Shri Mistri Soren, Village-Kalidaspur | He said that, my agricultural land is next to the proposed project, my crops may get damaged due to dust pollution/particles, what measures will be taken to prevent this, along with this, and local people should also be given priority in employment. | The Project proponent replied that, the intensive tree plantation and regular water sprinkling will be done to prevent dust pollution so that there is no any kind of crop damage. Besides, the villagers will be given employment as per need and qualification. | Total 3090 plants will be planted by both the proponents for whom the total budget of Rs. 15.45 lakhs is proposed as Capital cost & Rs. 2.0 lakhs has been invested every year for care & maintenance of plants. Water Sprinkling will be carried out on the regular basis for which budget of Rs. 4.0 lakhs will be spent by each proponent every year. |
| 9. | Smt. Kamli Paharin, Village-Kalupara | She said that, drinking water facility should be provided to the villagers. | The project proponent will make arrangements for drinking water in the nearby villages under Regular Social Responsibility (CSR). | For the Drinking Water Facility two hand pumps will be installed in villages for which Capital cost of Rs. 1.0 lakhs & Rs. 30,000 as Recurring cost will be invested. |
| 10. | Shri Durga Paharia-(Village Sarpanch) Village-Kalupara | He said that, drinking water facility should be provided to the villagers. | The project proponent will make arrangements for drinking water in the nearby villages under Regular Social Responsibility (CSR). | For the Drinking Water Facility two hand pumps will be installed in villages for which Capital cost of Rs. 1.0 lakhs & Rs. 30,000 as Recurring cost will be invested. |
| 11. | Smt. Duli Paharin, Village-Kalupara | She said that the fencing should be done around the mine area, so that any cattle can be saved from falling in. Besides, blankets should also be distributed to old people in cold weather. | The project proponent replied that the fencing work will be done around the mining area so that there is no loss of life or property. Also, old people will be given blankets during winters. | Fencing work will be done around the mining area for which budget of Rs. 1.0 lakh is proposed by each proponent. Clothes will be given to the needy villagers for whom Rs. 50,000 will be spent every year by |

| | | | | |
|---|---|---|---|---|
| | | | | each proponent. |
| 12. | Shri Prabhu Nath Thakur, Village-Amlagachhi | He Said that the local people should be given priority in employment, and fencing should be done around the mining area. | The project proponent replied that the villagers will be given employment as per need and qualification. Also, fencing work will be done around the mining so that there is no loss of life or property. | Fencing work will be done around the mining area for which budget of Rs. 1.0 lakh is proposed by each proponent. |
| 13. | Shri Basu Paharia, Village-Kalupara | He Said that, a temple should be constructed at the place of worship and drinking water should be arranged for the villagers. | It was assured by the project proponent that the temple will be constructed after the unit becomes operational at the place of worship. Under Regular Social Responsibility (CSR), arrangements for drinking water will be made in nearby villages. | For the development of temple Rs. 5.0 lakhs is proposed by each proponent as Capital cost & Rs. 1.0 lakhs has been invested as Recurring cost.<br>For the Drinking Water Facility two hand pumps will be installed in villages for which Capital cost of Rs. 1.0 lakhs & Rs. 30,000 as Recurring cost will be invested. |
| 14. | Shri Chiranjit Paharia, Village-Kalupara | He said that, drinking water facility should be provided to the villagers and local people should also be given priority in employment. | It was assured by the project proponent that under Regular Social Responsibility (CSR), arrangements for drinking water will be made in the nearby villages and employment will be given as per merit. | For the Drinking Water Facility two hand pumps will be installed in villages for which Capital cost of Rs. 1.0 lakhs & Rs. 30,000 as Recurring cost will be invested. |
| 15. | Shri Ashok Kumar Saha, Village-Sahergram | He said that, local people should also be given priority in employment and a temple should be constructed at the place of worship. | It was assured by the project proponent that after the unit becomes operational at the place of worship, a temple will be constructed and employment will be given as per merit. | For the development of temple Rs. 5.0 lakhs is proposed by each proponent as Capital cost & Rs. 1.0 lakhs has been invested as Recurring cost. |

ENVIRONMENT MANAGEMENT

Green Belt Development

| S. No. | Location | | Area/Length | No. of Trees |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 1 | Safety Zone | | 0.47 | 1175 |
| 2 | Along Approach Road | | 95 m | 190 |
| 3 | No. of plants distributed with consultation local authorities /village Panchayat | | -- | 100 |

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

**COST PROPOSED FOR EMP**

| Sl. No | Description | Capital Cost (Rs.) | Recurring Cost (Rs.) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | -- | 4,00,000 |
| 2 | Baseline Monitoring<br>i) Air<br>ii) Water<br>iii) Soil<br>iv) Noise | -- | <br>50,000<br>40,000<br>20,000<br>10,000 |
| 3 | Plantation | 7,32,500 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 2,00,000 | 1,50,000 |
| **As per Demand in Public Hearing** | | | |
| 5 | Installation of Hand pump in Kalupara village for drinking water facility | 50,000 | 15,000 |
| 6 | Provision of Arrangements for distribution of soap and washing powder for villagers | - | 1,50,000 |
| 7 | Distribution of clothes to the needy villagers during puja, festivals and winter season | - | 50,000 |
| 8 | Fencing work around the mining area | 1,00,000 | - |
| 9 | Construction & Development of Temple at the place of Worship | 5,00,000 | 1,00,000 |
| **TOTAL** | | **15,82,500** | **10,85,000** |

***Note: *1465 plants * 500 Rs. (for each plants including hedges and fences)= 7.325 lakh***

***Salary of Labor for haul road maintenance 1 labor*300 =300 per day***

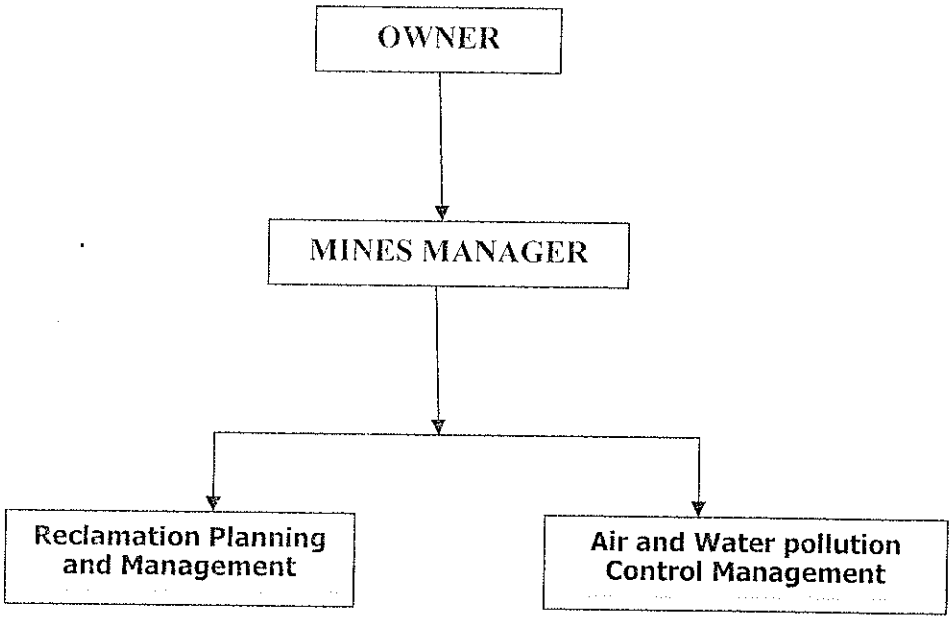
***300* 300 = 90000/- or 150000/- (including maintenance)***

Environment Monitoring Programme

| Sl. No | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |
| 2 | Soil | 2 Stations | 6 Monthly |
| 3 | Surface Water | 2 Stations | 6 Monthly |
| 4 | Ground Water | 2 Stations | 6 Monthly |
| 5 | Noise | 4 Stations | 6 Monthly |

**Solid Waste Management**

Removal of Gritty Soil 8988 cum & Intercalated Waste 19375 cum waste shall be generated during this plan period. During quarry development in 1st & 2nd year gritty soil and intercalated waste will be removed and this soil & waste will be temporarily dumped at the south part of the area with suitable precautions like parapet wall, garland drain & in 3rd year removed gritty soil, intercalated waste & existing temporarily dumped soil will be temporarily backfilled within the exhausted quarry & in 4th year removed intercalated will be temporarily backfilled within the exhausted quarry & in 5th year removed intercalated waste & temporarily backfill soil will be backfill within the lower four bench of the exhausted quarry.




*Organization Structure*

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after

settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.

- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

**Air Quality Management**

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

**RISK ASSESSMENT**

The hazard identification and risk analysis is done using qualitative method:

**Probability/Likelihood of Occurrence of Hazard**

| Likelihood Level | Probability | Description |
|---|---|---|
| L5 | Very Unlikely | Has not occurred/reported within last 5 years. |
| L4 | Remote / Moderate | May occur if conditions exist. Has occurred within last 3 years. |
| L3 | Occasional | Likely to occur if conditions exist. Has occurred within last 2 years. |
| L2 | Probable | Very likely to occur. Has occurred within last year. |
| L1 | Frequent | Almost certain to occur. Has occurred more than one within last year. |

Severity/Impact Intensity

| Severity Level | Severity | Description |
|---|---|---|
| C1 | Catastrophic | May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation. |
| C2 | Major | May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action. |
| C3 | Moderate | Minor injury to personnel or environment |
| C4 | Minor | Minor damage but does not cause injury to personnel |
| C5 | Insignificant | May result in no, or less minor, illness, injuryor system damage |

Risk Assessment Chart (Qualitative Method)

| Risk Rank (Likelihood x Consequence) | L5 (Very Unlikely) | L4 (Remote) | L3 (Occasional) | L2 (Probable) | L1 (Frequent) |
|---|---|---|---|---|---|
| C1 (Catastrophic) | 5 | 4 | 3 | 2 | 1 |
| C2 (Major) | 10 | 8 | 6 | 4 | 2 |
| C3 (Moderate) | 15 | 12 | 9 | 6 | 3 |
| C4 (Minor) | 20 | 16 | 12 | 8 | 4 |
| C5 (Insignificant) | 25 | 20 | 15 | 10 | 5 |

Risk Rating Scale

| S. No. | Rating | Scale |
|---|---|---|
| 1 | High Risk | 1-4 |
| 2 | Medium Risk | 5-12 |
| 3 | Low Risk | 13-25 |

Hazard identification & Risk Analysis in Stone mining operation

| S. No. | Activity | Hazard | Probability | Severity | Score |
|---|---|---|---|---|---|
| 1 | Temporary Storage of Explosives | Unintended Explosion | Very Unlikely | Catastrophic | 5 |

| | | | | | |
|---|---|---|---|---|---|
| 2 | Charging of Explosives | Unwanted Explosion | Very Unlikely | Catastrophic | 5 |
| 3 | Blasting | Hit by fly rock (Bodily Injury) | Occasional | Major | 6 |
| 4 | Drilling | Exposure to Dust | Frequent | Insignificant | 5 |
| 5 | Bench Formation | Fall/Slide/Tripping (Bodily Injury) | Probable | Moderate | 6 |
| 6 | Loading/Unloading | Bodily injury by hitting by loading material, Exposure to Dust | Very Unlikely | Minor | 20 |
| 7 | Transportation | Vehicle Accident, Exposure to Dust | Remote | Minor | 16 |

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

**Preventive Measures:**

**Face Stability**

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

**Drilling Operations**

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench

- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

**Falls from the edge of a bench**

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.
While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

**Control Measures**

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

**Dust generation during drilling**

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

**Noise Generation during drilling**

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

**Blasting Operations**

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

**Handling of Explosives**

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

**Health Hazards**

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

**Accident at Site**

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

**Transportation**

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge

of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

**Undertaking submitted affirming:**

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.

k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

**Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Kalupara Stone Deposit of M/s H L Aggregates (Partners : (i) Shri Shiv Kumar (ii) Shri Bikram Kumar (iii) Shri Prasanna Shankar Mishra), Village : Kalupara, Thana : Maheshpur, Distt. : Pakur, Jharkhand (2.19 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

**********

12. Korgain, Mukhapi & Ranadih Sand Deposit (in the River Bed of North Koel ) of M/s Jharkhand State Mineral Development Corporation Ltd., Village : Korgain, Mukhapi & Ranadih, Distt. : Garhwa, Jharkhand (15.30 Ha).

(Proposal No. SIA/JH/MIN/ 518485/2025).

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 22.01.2025.

**Project Sector: 1(a) Mining of Minerals, Category: B1.**

**Application for Environmental Clearance (EC) after ToR.**

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 110th meeting held on 17 - 21.10.2023 and SEIAA, Jharkhand has approved the ToRs in 110th meeting held on 27th, 28th & 29th October, 2023. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2023-24/3071/2023/467, dated 02.11.2023. The final EIA / EMP submitted by PP to SEAC on 16.01.2025.

**Application for:** **Proposed Capacity - 306000 cum per annum or 489600 TPA**

**Project and Location Details :**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Korgain, Mukhapi & Ranadih Sand Deposit | |
| 2 | Lessee: | : | M/s Jharkhand State Mineral Development Corporation Limited | |
| 3 | Lease Address | : | Khanij Nigam Bhawan,<br>Doranda, Ranchi - 834002. | |
| 4 | Lease Area | : | 15.30 ha | Acres- 37.80 Acre |
| 5 | Type of Land | : | Govt. non forest (river) land | |
| 6 | Project Cost | : | Rs. 70 Lakhs | |
| 7 | EMP Budget | : | Capital: 26.265Lakh | Recurring: 6.20 Lakh / year |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity | : | cum.: - 306000 cum per annum | Tonnes: 489600 TPA |
| 10 | Mine Life | : | Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy. | |
| 11 | Man power | : | 12 | |
| 12 | Water Requirement | : | 17.42 ~ 18.00 KLD (Drinking: 0.12 KLD, Dust Suppression: 10.20 KLD, Plantation: 7.10KLD) | |

| | | | |
|---|---|---|---|
| 13 | Water Source | : | From Nearby villages by tankers |
| 14 | DG Set / power | : | NA |
| 15 | Crusher | : | NA |
| 16 | Nearest Water Body | : | Project lies on North Koel River. |
| 17 | Nearest Habitation | : | Korgain village, at 1.10 Km towards west direction |
| 18 | Nearest Rail Station | : | Mohammad Ganj Railway station, approx. 3.76 km towards SSE direction. |
| 19 | Nearest Air Port | : | Birsa Munda Airport, approx. 196 km towards SE direction. |
| 20 | Nearest Forest | : | Mohammad Ganj Protected Forest, Approx. 3.76 km towards SSE direction of mine site.<br>Chaurati Protected Forest, Approx. 9.55 km towards WSW direction of mine site. |
| 21 | Road & Highways | : | NH-119, Approx. 14 km in NNW direction. |

**CO-ORDINATES**

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | | From 24° 27' 19.886" N | To 83° 51' 0.534" E |
| 2 | Longitude | | From 24° 27' 49.784" N | To 83° 51' 07.688" E |

**LAND DETAILS:**

| Korgain | Mukhapi | Ranadih |
|---|---|---|
| Plot no.- 1978<br>Khata no.- 145 | Plot no.- 1425<br>Khata no.-116 | Plot no.- 128<br>Khata no.-259 |

**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.<br>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, Kandi vide letter no. : 390, dated 14.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in Khatiyan. |

| | | | |
|---|---|---|---|
| 3 | DMO | : | DMO, Garhwa vide memo no. 1319/M, dated 12.10.2023 certified that the no other mining lease area exists within 500 m radius from proposed project site. |
| 4 | DFO Wild Life | : | Deputy Director, Palamau Tiger Project, North Division, Medininagar vide letter no. : 1071, dated 07.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve. |
| 5 | DFO Forest Distance | : | DFO, Garhwa North Division vide letter no. : 592, letter no. : 593 & letter no. : 594, dated 28.03.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site. |
| 6 | DSR | : | This project is part of District Survey Report (DSR) of Garhwa District (Sl. No. 10). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 07.08.2023. |
| 8 | Mine Plan Approval | : | Approved by Assistant Mining Officer, Garhwa vide memo no. 700, dated 30.05.2023. |
| 9 | Qualified Person | : | Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him. |
| 10 | Public Hearing | : | Public Hearing conducted on 30.07.2024. |
| 11 | Baseline Monitoring period | : | October, 2023 to December, 2023. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Mannual Mining method | |
| 2 | Quarry Area | : | 15.30 ha or 37.80 Acre | Life of Mine – Upto15/08/2025 as per provisions of Jharkhand State Sand Mining Policy 2017 & its amendment. |
| 3 | Waste Generation | : | NA, as it is sand mining project | |
| 4 | Stripping Ratio | : | 0:0 | |
| 5 | Working Days | : | 200 | |
| 6 | Benches: size & No | : | Bench height – 2.0 m & Bench width - 20.0 m. | |
| 7 | Elevation of Mine | : | 132 AMSL to 136 AMSL | |
| 8 | Ground Level Elevation | : | 132 AMSL | |
| 9 | Ultimate Working | : | 130 AMSL | |

| | | | |
|---|---|---|---|
| | Depth | | |
| 10 | Water Table | : | 115 AMSL (15 mbgl) |
| 11 | Topography of Mine | : | Area lying in river plain. |
| 12 | Explosive Requirement | : | NA |
| 13 | Diesel/Fuel requirement | : | NA |

Production Details

| Year | Thickness (m) | Average Replenishment Rate | Production of sand (Cum) | Production of sand –MT |
|---|---|---|---|---|
| 1st Year | 2 | 60% | 306000 | 489600 |

The Development Plan submitted along with the mine plan relates to mining operation during the first year.

Land Use

| Type of Land | Area in (ha) |
|---|---|
| Forest Land | Nil |
| Govt. waste land (River) | 15.30 |
| Residential area | Nil |
| Company land | Nil |
| Private Land | Nil |
| **Total** | **15.30** |

Public Hearing:

Public hearing was successfully executed on date 30.07.2024 at 11:30 AM.

| S. No. | Name and Address | Issues raised by Locals/Public | Replied by Project Proponent | Action Plan |
|---|---|---|---|---|
| 1. | Shri Dinesh Prasad- Jila Parishad | He said that the local people should get employment and pollution control measures should must be followed. | It was stated by Shri Karun Kumar Chandan sand incharge that the mining operation of Sand Ghat will be done by the workers only, in which more than 50 workers will be required and all the workers will be local. | Employment will be given as per the merit. |

| | | | | |
|---|---|---|---|---|
| 2. | Shri Rajendra Pandey, Village-Korgain | He said that the sand price within 2 km radius of the sand ghat should be less than the market price. There should be water sprinkling on the road. | Shri Karun Kumar Chandan replied that the government rate of sand is Rs 7/CFT which is quite low. Villagers will get sand at concessional rates and the sand ghat of category-1 is operated by the Panchayat itself, which is free. Regular water sprinkling also will be done on road. | Water Sprinkling will be carried out on regular basis from the first year of mining for which the budget of Rs. 2.00 lakh will be spent every year. The Budget for Water Sprinkling has been incorporated in EMP. |
| 3. | Shri Satyendra Chaubey, Village-Ranadih | He said, that there should be a solution for the land near the river ghat. | LRDC'Sir, said that the problem will be resolved by conducting a land survey. | -- |
| 4. | Shri Lalit Baitha-Sarpanch, Village-Sohganda | How much area will be taken under the mining, what will be the mining method, to what depth of mining. Villagers should get sand at concessional rates. There should be a measure to control pollution, water sprinkling should be done on the road. There should be cooperation in the development of Panchayat. | Shri Karun Kumar Chandan told that the mining method will be manual, and the depth of mining will be maximum 2 meters. To control dust pollution, water sprinkling will be undertaken daily and sand will be transported in tractors covered with tarpaulin and trees will be planted on both sides of the road. Panchayat area will be developed through DMF of Royalty. | Water Sprinkling will be carried out on regular basis from the first year of mining for which the budget of Rs. 2.00 lakh will be spent every year. The Budget for Water Sprinkling has been incorporated in EMP. |
| 5. | Shri Parekha Paswan-Sarpanch, Village-Karaunda | He said that the local people should get employment. | Shri Karun Kumar Chandan told that more than 50 workers and supervisors will be given employment. | Employment will be given as per the merit. |
| 6. | Smt. Neha Kumari- Jila Parishad Ranadih | She said that the villagers should be given priority in employment and other works. | Shri Karun Kumar Chandan told that Govt. rate of Sand is Rs 7/CFT, and the sand will be sold at this rate. | Employment will be given as per the merit. |

| | | | | |
|---|---|---|---|---|
| | | Information should be given about what will be the selling price of sand. | | |
| 7. | Shri Rajendra Kumar, Village-Mokhapi | He said that the sand ghat should be demarcated. | Shri Karun Kumar Chandan told that the delimitation of the sand ghat will be done by the surveyor. | -- |
| 8. | Shri Rajendra Pandey, Village-Korgain | He said that the plantation details should be provided to us. | According to Shri Karun Kumar Chandan, about 1760 trees will be planted around the sand ghat and along the road. | Total 3553 plants will be planted/distributed in the first year of mining for which Rs. 17.765 lakh has been invested as capital cost and Rs. 1.0 lakh will be spent as recurring cost every year. The budget has been incorporated in EMP. |
| 9. | Shri Dinesh Prasad- Jila Parishad | He asked to provide facility of first aid station. | Shri Karun Kumar Chandan told that there will be a first aid station in the stock yard outside the ghat and in the office. | First aid station for the villagers will be provided for which Rs 0.50 lakh will be spent as recurring cost. This budget has been included in the EMP. |

ENVIRONMENT MANAGEMENT

Green Belt Development

| S. No. | Location | | Area/Length | No. of Trees |
|---|---|---|---|---|
| 1 | Plantation along both sides of approach road | | 1700 m | 3400 |
| 2 | No. of Plants distributed with consultation local authorities/ village Panchayat | | -- | 153 |

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

**Environment Management Plan**

| Sl. No | Description | Capital Cost (Rs.) | Recurring Cost (Rs.) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | -- | 2,00,000 |
| 2 | Pollution Monitoring<br>i) Air<br>ii) Water<br>iii) Soil<br>iv) Noise | -- | <br>50,000<br>40,000<br>20,000<br>10,000 |
| 3 | Plantation | 17,76,500 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 8,50,000 | 1,50,000 |
| As suggested during Public Hearing | | | |
| 5 | For first aid station | - | 50,000 |
| TOTAL | | 26,26,500 | 6,20,000 |

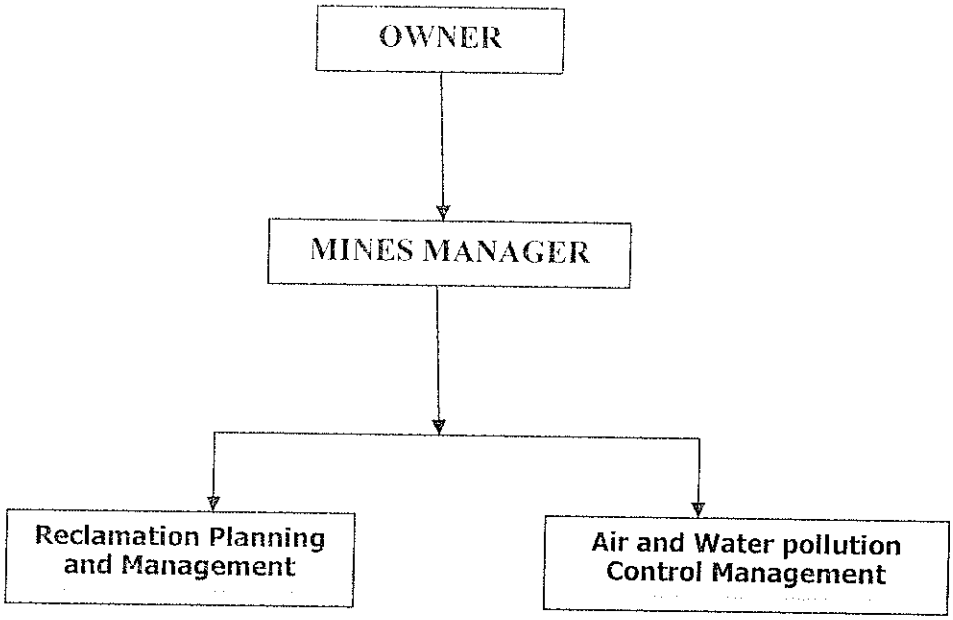
Note: *3553plants * 500Rs (for each plants including hedges and fences)= 17.765 lakhs
Salary of Labour for haul road maintenance 1 labor*300 =300 per day
300* 200 = 60000/- ~ 1,50,000/-(including maintenance)
* 5.00 lakh per kilometer (500000 * 1.7 km haul road) = 8,50,000/-

**Environment Monitoring Programme**

| S. No. | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |
| 2 | Soil | 2 Stations | 6 Monthly |
| 3 | Surface Water | 2 Stations | 6 Monthly |
| 4 | Ground Water | 2 Stations | 6 Monthly |
| 5 | Noise | 4 Stations | 6 Monthly |

**Solid Waste Management**

- No solid waste is generated during the course of mining.




*Organization Structure*

Water Quality Management

A. Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.

B. Sewage from rest shelter would be treated in Septic Tank soak pit.

C. There is no other source for generation or discharge of trade effluent.

Air Quality Management

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

I. **Operation of Diesel Equipment's** – They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

II. **Loading of Product on tippers** – Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

III. **Movement of tippers on Road** – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Haul road by using water tankers.
- Regular repair of Haul road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED BELOW:

Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

1. Ensure speed limit for the haulage vehicle for 40 KMPH.
2. Regular maintenance of haulage road

3. Appropriate navigational signs informing sensitive area like school and habitation
4. Regular maintenance of the vehicles.

**Dust generation**

- No drilling involved
- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

**Noise Generation**

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

**Preventive measures**

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

**Health Hazards**

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

**Measures**

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

**Accident at Site**

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

**Preventive measures**

Following mitigation measures would be taken to minimize risk of road accident:

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

**Transportation**

The usual method of transporting minerals from the working face is by tractor. Large earth moving equipment's are not used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap

between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road/approach road shall be made smooth regularly with a road roller.
- Mine road/approach road will be cleaned daily for smooth transportation.
- Mine road/approach road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

**Undertaking submitted affirming:**

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.

k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
m. Transportation from the river bed to the NH-39 will be done using the existing road.
n. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
o. Wet sand will not be transported.

**Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Korgain, Mukhapi & Ranadih Sand Deposit (in the River Bed of North Koel ) of M/s Jharkhand State Mineral Development Corporation Ltd., Village : Korgain, Mukhapi & Ranadih, Distt. : Garhwa, Jharkhand (15.30 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
III. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.
V. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
VI. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VII. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance.

VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.

IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

XI. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.

XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XIII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.

XIV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.

XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

XVI. Extraction of sand beyond annual production capacity is not permitted.

XVII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

XIX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.

XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XXI. No labour camp shall be allowed in riverbed.

XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

XXIII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.

XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.

XXV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXXI. Mining depth should be restricted to 3 meters and distance from the band should be $1/4^{th}$ of river width and should not be less than 7.5 meters.

XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.

XXXIII. River bed sand mining shall be restricted within the central $3/4^{th}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.

**********

13. Deobahargindra & Bagdega Sand Ghat (in the River Bed of Sankh) of M/s Jharkhand State Mineral Development Corporation Ltd., Village : Deobahargindra & Bagdega, Thana : Thethaitangar & Kurdeg, Distt. : Simdega, Jharkhand (4.32 Ha).

(Proposal No. SIA/JH/MIN/ 517714/2025).

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 22.01.2025.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 7257 Cum/Annum or 19086 TPA

Project and Location Details:

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Deobahargindra & Bagdega Sand Ghat (River Bed of Sankh) of area 4.32 Ha or 10.674 Acres. | |
| 2 | Lessee: | : | M/s Jharkhand State Mineral Development Corporation Limited | |
| 3 | Lessee Address | : | Khanij Nigam Bhawan, Doranda, Ranchi – 834002, Jharkhand. | |
| 4 | Lease Area | : | 4.32 ha. | Acres- 10.674 Acres |
| 5 | Type of Land | : | Govt. non forest (river) land | |
| 6 | Project Cost | : | Rs. 120 Lakhs | |
| 7 | EMP Budget | : | Capital: 9.22 Lakhs | Recurring: 4.86Lakhs / year |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity | : | 7257 Cum per year or 19086 Tonnes per year (Dry basis). | |
| 10 | Mine Life | : | Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy. | |
| 11 | Man power | : | 28 | |
| 12 | Water Requirement | : | 10.1 ~ 10.0 KLD (Drinking: 0.28 KLD, Dust Suppression: 3.60 KLD, Plantation: 6.22 KLD) | |
| 13 | Water Source | : | From Nearby villages by tankers | |
| 14 | DG Set / power | : | NA | |
| 15 | Crusher | : | NA | |
| 16 | Nearest Water Body | : | Project lies on Sankh River. | |

| | | | |
|---|---|---|---|
| 17 | Nearest Habitation | : | Deobahargindra village, Approx. 0.43 km towards ESE direction. |
| 18 | Nearest Railway Station | : | Kanaroan Railway Station, approx. 61.30 Km in East direction. |
| 19 | Nearest Air Port | : | Birsa Munda Airport approx. 136.50 km towards NE direction. |
| 20 | Nearest Forest | : | Protected Forest Approx. 4.70 Km in NW direction from mining lease.<br>Protected Forest Approx. 4.90 Km in SE direction from mining lease |
| 21 | Road & Highways | : | NH-143, Approx. 22.70 Km in East direction from mining lease. |

**CO-ORDINATES**

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | | From 22° 32' 54.79"N | To 22° 33' 08.71" N |
| 2 | Longitude | | From 84° 16'56.90" E | To 84° 17' 09.21"E |

**LAND DETAILS:**

| Deobahargindra | Bagdega |
|---|---|
| Plot no.- 5457 (P) | Plot no.- 5461 (P) & 5462 (P) |

**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.<br><br>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, Tethaitangar vide letter no. : 110 (ii), dated 27.01.2023 and CO, Kersai vide letter no. 61 (ii), dated 27.01.2023 have mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Simdega vide memo no. 790/M, dated 19.10.2024 certified that the no other Balughat exists within 500 m radius from proposed project site. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Ranchi vide letter no. : 509, dated 26.06.2024 and letter no. 1011, dated 27.12.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary. |
| 5 | DFO Forest Distance | : | DFO, Simdega Division vide letter dated 10.03.2023 and 15.03.2023 certified that the distance of reserved / protected forest is more than |

| | | | |
|---|---|---|---|
| | | | 250 meter from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved District Survey Report (DSR) of Simdega (Sl. No. SR3, Page no. 77). |
| 7 | Gram Sabha | : | BDO, Thetaitangar vide letter no. 711 (ii), dated 19.07.2024 informed that Gram Sabha conducted on 06.06.2024 and BDO, Kersai vide letter no. 578, dated 10.12.2024 informed that Gram Sabha conducted on 13.06.2024. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Simdega vide memo no. 567/Mining, dated 07.08.2024. |
| 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 Manual Method | |
| 2 | Quarry Area | : | 4.32 ha. or 10.674 Acres | 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 | : | NA, as it is sand mining project. | |
| 4 | Stripping Ratio | : | 0:0 | |
| 5 | Working Days | : | 200 Days | |
| 6 | Benches: size & No | : | Bench height – 0.28 m &Bench width - 20.0 m. | |
| 7 | Elevation of Mine | : | 352 mRL to 351.72 mRL | |
| 8 | Ground Level Elevation | : | 351 mRL | |
| 9 | Ultimate Working Depth | : | 0.28 m | |
| 10 | Water Table | : | NA | |
| 11 | Topography of Mine | : | Area lying in river plain. | |
| 12 | Explosive Requirement | : | NA | |
| 13 | Diesel/Fuel requirement | : | NA | |

Production Details

| Year | Thickness (m) | Average Replenishment | Production ofsand | Production of sand –MT |
|---|---|---|---|---|

| | | Rate | (Cum) | |
|---|---|---|---|---|
| 1st | 0.28 | 60% | 7725 | 19086 |

The Development Plan submitted along with the mine plan relates to mining operation during the first year.

Land Use

| Type of Land | Area in (ha) |
|---|---|
| Forest Land | Nil |
| G.M land (River) | 4.32 |
| Residential area | Nil |
| Company land | Nil |
| Private Land | Nil |
| **Total** | **4.32** |

ENVIRONMENT MANAGEMENT

Green Belt Development

| S. No. | Location | | Area/Length | No. of Trees |
|---|---|---|---|---|
| 1 | Plantation along both sides of approach road | | 600 m | 1200 |
| 2 | No. of Plants distributed with consultation local authorities/ village Panchayat | | -- | 44 |

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Plan

| Sl. No | Description | Capital Cost (Rs.) | Recurring Cost (Rs.) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | Nil | 2,00,000 |

| | | | |
|---|---|---|---|
| 2 | Baseline Monitoring<br>i) Air<br>ii) Water<br>iii) Soil<br>iv) Noise | -- | <br>14,000<br>8,000<br>7,000<br>7,000 |
| 3 | Plantation | 6,22,000 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 3,00,000 | 1,50,000 |
| **Total** | | **9,22,000** | **4,86,000** |

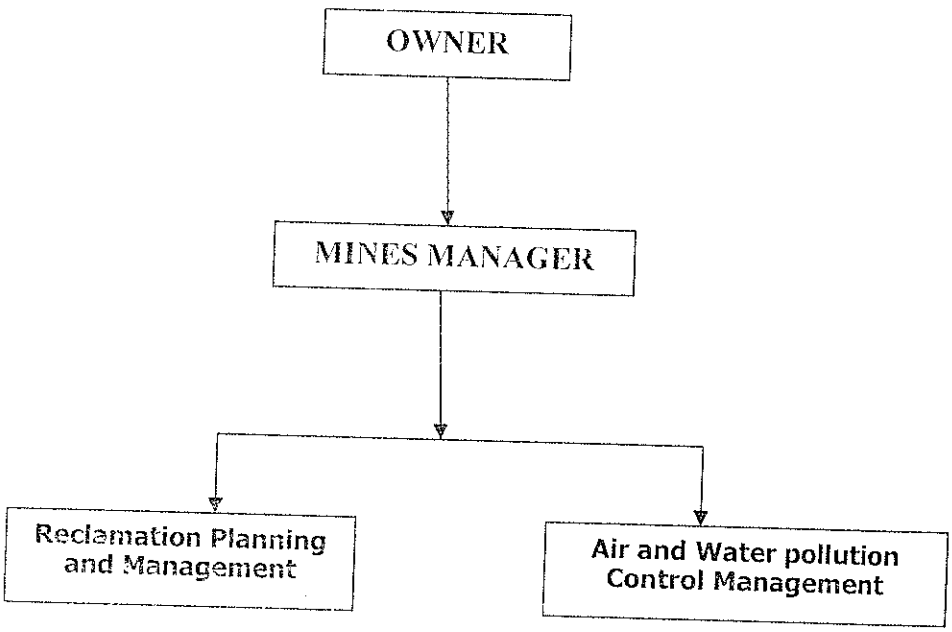
Note: *1244 plants *500 Rs (for each plants including hedges and fences) = Rs. 6,22,000/-
Salary of Labor for haul road maintenance 1 labor*300 = 300 per day
300* 200 = 60,000/- ~ 1,50,000/- (including Maintenance)
* 5 lakh per kilometer (500000 * 0.60 km haul road = 3,00,000/-)

Environment Monitoring Programme

| S. No. | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |
| 2 | Soil | 2 Stations | 6 Monthly |
| 3 | Surface Water | 2 Stations | 6 Monthly |
| 4 | Ground Water | 2 Stations | 6 Monthly |
| 5 | Noise | 4 Stations | 6 Monthly |

Solid Waste Management

No solid waste is generated during the course of mining.




*Organization Structure*

Water Quality Management

A. Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.

B. Sewage from rest shelter would be treated in Septic Tank soak pit.

C. There is no other source for generation or discharge of trade effluent.

Air Quality Management

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

I. **Operation of Diesel Equipment's** – They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

II. **Loading of Product on tippers** – Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

III. **Movement of tippers on Road** – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Haul road by using water tankers.
- Regular repair of Haul road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

**RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED BELOW:**

**Road accidents**

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

1. Ensure speed limit for the haulage vehicle for 40 KMPH.
2. Regular maintenance of haulage road
3. Appropriate navigational signs informing sensitive area like school and habitation
4. Regular maintenance of the vehicles.

**Dust generation**

- No drilling involved
- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

**Noise Generation**

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

**Preventive measures**

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

**Health Hazards**

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

Measures

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimize risk of road accident:

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

Transportation

The usual method of transporting minerals from the working face is by tractor. Large earth moving equipment's are not used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road/approach road shall be made smooth regularly with a road roller.
- Mine road/approach road will be cleaned daily for smooth transportation.
- Mine road/approach road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.

- Only trained drivers will be hired.

**Undertaking submitted affirming:**

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
m. Transportation from the river bed to the SH-1 will be done using the existing road.
n. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
o. Wet sand will not be transported.

**Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Deobahargindra & Bagdega Sand Ghat (in the River Bed of Sankh) of M/s Jharkhand State Mineral Development Corporation Ltd., Village : Deobahargindra & Bagdega, Thana : Thethaitangar & Kurdeg, Distt. : Simdega, Jharkhand (4.32 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.

IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.

V. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

VI. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VII. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance.

VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.

IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

XI. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.

XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XIII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.

XIV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.

XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

XVI. Extraction of sand beyond annual production capacity is not permitted.

XVII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

XIX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.

XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XXI. No labour camp shall be allowed in riverbed.

XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

XXIII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.

XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.

XXV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXXI. Mining depth should be restricted to 3 meters and distance from the band should be $1/4^{th}$ of river width and should not be less than 7.5 meters.

XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.

XXXIII. River bed sand mining shall be restricted within the central $3/4^{th}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.

**********

14. **Budhiroma Sand Deposit (in the River Bed of Karo) of M/s Jharkhand State Mineral Development Corporation Ltd., Village : Budhiroma, Block : Karra, Distt. : Khunti, Jharkhand (1.74 Ha).**

**(Proposal No. SIA/JH/MIN/ 518733/2025).**

**Name of the consultant : P & M Solution, Noida, U.P.**

This is a new project which has been taken for appraisal on 22.01.2025.

**Project Sector: 1(a) Mining of Minerals, Category: B2.**

**Application for Environmental Clearance (EC).**

EC Application for: **Proposed Capacity- 26,000 Cum/Annum or 42,900 TPA**

**Project and Location Details:**

| Sl | Parameter | | Details |
|---|---|---|---|
| 1 | Project Name | : | Budhiroma Sand Deposit (River Bed of Karo) of area 1.74 Ha. |

| | | | | |
|---|---|---|---|---|
| 2 | Lessee: | : | M/s Jharkhand State Mineral Development Corporation Limited | |
| 3 | Lessee Address | : | Khanij Nigam Bhawan, Doranda, Ranchi – 834002, Jharkhand. | |
| 4 | Lease Area | : | 1.74 ha. | Acres- 4.299 Acres |
| 5 | Type of Land | : | Govt. non forest (river) land | |
| 6 | Project Cost | : | Rs. 70 Lakhs | |
| 7 | EMP Budget | : | Capital: 6.40 Lakhs | Recurring: 4.86Lakhs / year |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity | : | 26,000 Cum/Annum or 42,900 TPA (Dry basis) | |
| 10 | Mine Life | : | Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy. | |
| 11 | Man power | : | 20 | |
| 12 | Water Requirement | : | 6.94 ~ 7.0 KLD (Drinking: 0.20 KLD, Dust Suppression: 2.34 KLD, Plantation: 4.40 KLD) | |
| 13 | Water Source | : | From Nearby villages by tankers | |
| 14 | DG Set / power | : | NA | |
| 15 | Crusher | : | NA | |
| 16 | Nearest Water Body | : | Project lies on Karo River. | |
| 17 | Nearest Habitation | : | Budhiroma village, Approx. 0.45 km towards NE direction. | |
| 18 | Nearest Railway Station | : | Karra Railway Station, approx. 9.55 Km in ESE direction. | |
| 19 | Nearest Air Port | : | Birsa Munda Airport, Ranchi, approx. 31.30 km towards NE direction. | |
| 20 | Nearest Forest | : | Open Mix Jungle, Approx. 1.10 Km in SSE direction from mining lease. | |
| 21 | Road & Highways | : | NH-143 AG, Approx. 0.90 Km in ENE direction from mining lease. | |

**CO-ORDINATES**

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | | From 23° 10'03.71"N | To 23° 10' 14.25" N |
| 2 | Longitude | | From 85° 03'13.27" E | To 85° 03' 21.15"E |

LAND DETAILS:

| Khata no. | Plot no. |
|---|---|
| 52 | 221 (P) |

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.<br><br>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, Karra (Khunti) vide letter no. 45, dated 21.01.2025 and letter no. 17, dated 09.01.2025 have mentioned the plot no. of the project is not recorded as "Jungel-Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Khunti vide memo no. 738/M, dated 24.08.2024 certified that the no other Balughat exists within 500 m radius from proposed project site. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Ranchi vide letter no. : 198, dated 04.03.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary. |
| 5 | DFO Forest Distance | : | DFO, Khunti Division vide letter no. 125, dated 19.01.2023 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 Khunti (Sl. no. KKA01, Page no. 73). |
| 7 | Gram Sabha | : | BDO, Karra vide letter no. 711 (ii), dated 26.07.2024 informed that Gram Sabha conducted on 25.04.2024. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Khunti vide memo no. 33/M, dated 13.01.2025. |
| 9 | Qualified Person | : | Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him. |

Working Details

| | | | |
|---|---|---|---|
| 1 | Mining Method | : | Opencast Manual Method |

| | | | | |
|---|---|---|---|---|
| 2 | Quarry Area | : | 1.74 ha. or 4.299 Acres | Life of Mine – 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 | : | NA, as it is sand mining project. | |
| 4 | Stripping Ratio | : | 0:0 | |
| 5 | Working Days | : | 200 Days | |
| 6 | Benches: size & No | : | Bench height – 2.5 m &Bench width - 20.0 m. | |
| 7 | Elevation of Mine | : | 593 AMSL to 595 AMSL | |
| 8 | Ground Level Elevation | : | 593 AMSL | |
| 9 | Ultimate Working Depth | : | 590.5 AMSL | |
| 10 | Water Table | : | NA | |
| 11 | Topography of Mine | : | Area lying in river plain. | |
| 12 | Explosive Requirement | : | NA | |
| 13 | Diesel/Fuel requirement | : | NA | |

**Production Details**

| Year | Thickness (m) | Average Replenishment Rate | Production ofsand (Cum) | Production of sand –MT |
|---|---|---|---|---|
| 1st | 2.5 | 60% | 26,000 | 42900 |

**The Development Plan submitted along with the mine plan relates to mining operation during the first year.**

**Land Use**

| Type of Land | Area in (ha) |
|---|---|
| Forest Land | Nil |
| G.M land (River) | 1.74 |
| Residential area | Nil |
| Company land | Nil |
| Private Land | Nil |
| **Total** | **1.74** |

## ENVIRONMENT MANAGEMENT

### Green Belt Development

| S. No. | Location | Area/Length | No. of Trees |
|---|---|---|---|
| 1 | Plantation along both sides of approach road | 390 m | 780 |
| 2 | 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.

### Environment Management Plan

| Sl. No | Description | Capital Cost (Rs.) | Recurring Cost (Rs.) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | Nil | 2,00,000 |
| 2 | Baseline Monitoring<br>i) Air<br>ii) Water<br>iii) Soil<br>iv) Noise | -- | <br>14,000<br>8,000<br>7,000<br>7,000 |
| 3 | Plantation | 4,40,000 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 2,00,000 | 1,50,000 |
| **Total** | | **6,40,000** | **4,86,000** |

Note: *880 plants *500 Rs (for each plants including hedges and fences) = Rs. 4,40,000/-

Salary of Labor for haul road maintenance 1 labor*300 = 300 per day

300* 200 = 60,000/-~ 1,50,000/- (including Maintenance)

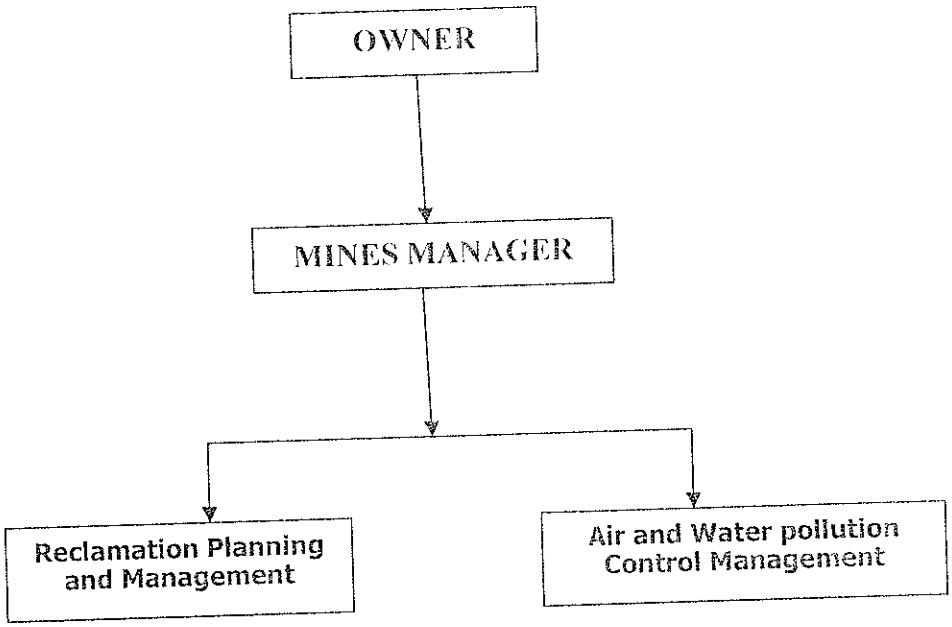
* 5 lakh per kilometer (500000 * 0.39 km haul road = 1,95,000 ~ 2,00,000/-)

Environment Monitoring Programme

| S. No. | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |
| 2 | Soil | 2 Stations | 6 Monthly |
| 3 | Surface Water | 2 Stations | 6 Monthly |
| 4 | Ground Water | 2 Stations | 6 Monthly |
| 5 | Noise | 4 Stations | 6 Monthly |

**Solid Waste Management**

No solid waste is generated during the course of mining.




*Organization Structure*

**Water Quality Management**

A. Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.

B. Sewage from rest shelter would be treated in Septic Tank soak pit.

C. There is no other source for generation or discharge of trade effluent.

**Air Quality Management**

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

I. **Operation of Diesel Equipment's** – They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

II. Loading of Product on tippers – Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

III. Movement of tippers on Road – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Haul road by using water tankers.
- Regular repair of Haul road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

**RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED BELOW:**

**Road accidents**

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

1. Ensure speed limit for the haulage vehicle for 40 KMPH.
2. Regular maintenance of haulage road
3. Appropriate navigational signs informing sensitive area like school and habitation
4. Regular maintenance of the vehicles.

**Dust generation**

- No drilling involved
- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

**Noise Generation**

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

**Preventive measures**

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

**Health Hazards**

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

**Measures**

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

**Accident at Site**

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimize risk of road accident:

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

Transportation

The usual method of transporting minerals from the working face is by tractor. Large earth moving equipment's are not used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road/approach road shall be made smooth regularly with a road roller.
- Mine road/approach road will be cleaned daily for smooth transportation.
- Mine road/approach road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

**Undertaking submitted affirming:**

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard

d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
m. Transportation from the river bed to the SH-1 will be done using the existing road.
n. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
o. Wet sand will not be transported.

**Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Budhiroma Sand Deposit (in the River Bed of Karo) of M/s Jharkhand State Mineral Development Corporation Ltd., Village : Budhiroma, Block : Karra, Distt. : Khunti, Jharkhand (1.74 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.

IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.

V. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

VI. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VII. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance.

VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.

IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

XI. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.

XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XIII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.

XIV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.

XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the

mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

XVI. Extraction of sand beyond annual production capacity is not permitted.

XVII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

XIX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.

XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XXI. No labour camp shall be allowed in riverbed.

XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

XXIII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.

XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.

XXV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXXI. Mining depth should be restricted to 3 meters and distance from the band should be 1/4th of river width and should not be less than 7.5 meters.

XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.

XXXIII. River bed sand mining shall be restricted within the central 3/4th 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.

**********

**15. Jogna & Medho Sand Deposit (in the River Bed of Koel) of M/s Jharkhand State Mineral Development Corporation Ltd., Village : Jogna & Medho, Block : Senha, Distt. : Lohardaga, Jharkhand (3.59 Ha).**

**(Proposal No. SIA/JH/MIN/ 518800/2025).**

**Name of the consultant : P & M Solution, Noida, U.P.**

This is a new project which has been taken for appraisal on 22.01.2025.

**Project Sector: 1(a) Mining of Minerals, Category: B2.**

**Application for Environmental Clearance (EC).**

**EC Application for: Proposed Capacity- 69425 Cum/Annum or 118023 TPA**

**Project and Location Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Jogna & Medho Sand Deposit (River Bed of Koel) of area 3.59 Ha. | |
| 2 | Lessee: | : | M/s Jharkhand State Mineral Development Corporation Limited | |
| 3 | Lessee Address | : | Khanij Nigam Bhawan, Doranda, Ranchi – 834002, Jharkhand. | |
| 4 | Lease Area | : | 3.59 Ha | |
| 5 | Type of Land | : | Govt. non forest (river) land | |
| 6 | Project Cost | : | Rs. 50 Lakhs | |
| 7 | EMP Budget | : | Capital: 7.38 Lakhs | Recurring: 4.86Lakhs / year |

| | | | |
|---|---|---|---|
| 8 | New or Expansion | : | New |
| 9 | Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity | : | **69425 Cum/Annum or 118023 TPA (Dry basis)** |
| 10 | Mine Life | : | Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy. |
| 11 | Man power | : | 30 |
| 12 | Water Requirement | : | 8.16 ~8.50KLD(Drinking: 0.30 KLD, Dust Suppression: 2.88 KLD, Plantation: 4.98 KLD) |
| 13 | Water Source | : | From Nearby villages by tankers |
| 14 | DG Set / power | : | NA |
| 15 | Crusher | : | NA |
| 16 | Nearest Water Body | : | Project lies on KoelRiver. |
| 17 | Nearest Habitation | : | Jogna village, Approx. 0.66 Km towardsSW direction. |
| 18 | Nearest Railway Station | : | Lohardaga Railway Station, approx. 10.30 Km in NNE direction. |
| 19 | Nearest Air Port | : | Birsa Munda Airport approx. 68.10 km towards East direction |
| 20 | Nearest Forest | : | Protected Forest Approx. 3.50 Km in South direction from mining lease.<br>Protected Forest Approx. 4.00 Km in SSW direction from mining lease.<br>Protected Forest Approx. 4.00 Km in North direction from mining lease. |
| 21 | Road & Highways | : | NH-143 Approx. 2.20 Km in West direction from mining lease. |

**CO-ORDINATES**

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | | From 23 º21'40.2741" N | To 23º21'51.92" N |
| 2 | Longitude | | From 84º39'39.0882" E | 84º39'47.8540" E |

**LAND DETAILS:**

| Village | Plot no. |
|---|---|
| Jogna | 1283 (P) |
| Medho | 1372 (P) |

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.<br><br>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, Senha (Lohardaga) vide letter no. 945, dated 30.12.2022 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Lohardaga vide memo no. 367/M, dated 28.05.2024 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. 23, dated 17.01.2025 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary. |
| 5 | DFO Forest Distance | : | Division Forest Officer, Lohardaga Forest Division vide letter no. 04, dated 02.01.2023 certified that the distance of forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Lohardaga district (Page No. – 75, Sl. No. - LK11) |
| 7 | Gram Sabha | : | Gram Sabha conducted on 14.10.2024. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Lohardaga vide Memo No. 346/M, dated 16.05.2024. |
| 9 | Qualified Person | : | Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Manual Method | |
| 2 | Quarry Area | : | 3.59 Ha | Life of Mine – 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 | : | NA, as it is sand mining project. | |
| 4 | Stripping Ratio | : | 0:0 | |
| 5 | Working Days | : | 200 Days | |
| 6 | Benches: size & No | : | Bench height – 1.0 m &Bench width - 20.0 m. | |
| 7 | Elevation of Mine | : | 614AMSL to 619AMSL | |
| 8 | Ground Level Elevation | : | 614AMSL | |
| 9 | Ultimate Working Depth | : | 2.5 m | |
| 10 | Water Table | : | NA | |
| 11 | Topography of Mine | : | Area lying in river plain. | |
| 12 | Explosive Requirement | : | NA | |
| 13 | Diesel/Fuel requirement | : | NA | |

Production Details

| Year | Thickness (m) | Average Replenishment Rate | Production ofSand (Cum) | Production of Sand –MT |
|---|---|---|---|---|
| 1st | 2.50 | 60% | 69425 | 118023 |

The Development Plan submitted along with the mine plan relates to mining operation during the first year.

Land Use

| Type of Land | Area in (ha) |
|---|---|
| Forest Land | Nil |
| Govt. waste land (River) | 3.59 |
| Residential area | Nil |
| Company land | Nil |
| Private Land | Nil |
| **Total** | **3.59** |

ENVIRONMENT MANAGEMENT

Green Belt Development

| S. No. | Location | | Area/Length | No. of Trees |
|---|---|---|---|---|
| 1 | Plantation along both sides of approach road | | 480m | 960 |
| 2 | No. of Plants distributed with consultation local authorities/ village Panchayat | | -- | 36 |

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Plan

| Sl. No | Description | Capital Cost (Rs.) | Recurring Cost (Rs.) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | Nil | 2,00,000 |
| 2 | Baseline Monitoring<br>i) Air<br>ii) Water<br>iii) Soil<br>iv) Noise | -- | <br>14,000<br>8,000<br>7,000<br>7,000 |
| 3 | Plantation | 4,98,000 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 2,40,000 | 1,50,000 |
| TOTAL | | 7,38,000 | 4,86,000 |

Note: *996 plants *500 Rs (for each plants including hedges and fences) = Rs. 4,98,000/-

Salary of Labor for haul road maintenance 1 labor*300 = 300 per day

300* 200 = 60,000/- ~ 1,50,000/- (including Maintenance)

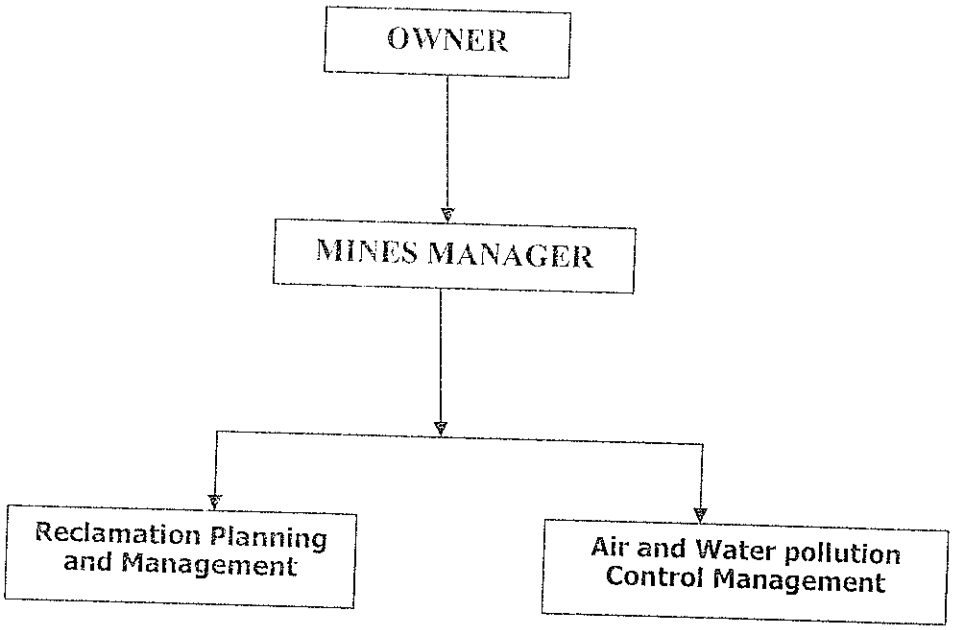
* 5 lakh per kilometer (500000 * 0.48 km haul road = 2,40,000/-)

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 |

**Solid Waste Management**

No solid waste is generated during the course of mining.




*Organization Structure*

**Water Quality Management**

A. Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.

B. Sewage from rest shelter would be treated in Septic Tank soak pit.

C. There is no other source for generation or discharge of trade effluent.

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Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

I. **Operation of Diesel Equipment's** – They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

II. Loading of Product on tippers – Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

III. Movement of tippers on Road – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

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- All Trucks carrying Sand outside lease area will have PUC certificate.
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**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.

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- No drilling involved
- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

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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.

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- Transportation activities would be confined during day time only.
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- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

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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

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This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

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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.
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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.
m. Transportation from the river bed to the SH-1 will be done using the existing road.
n. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
o. Wet sand will not be transported.

**Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Jogna & Medho Sand Deposit (in the River Bed of Koel) of M/s Jharkhand State Mineral Development Corporation Ltd., Village : Jogna & Medho, Block : Senha, Distt. : Lohardaga, Jharkhand (3.59 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*Ek Ped Ma Ke Naam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.

IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.

V. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

VI. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VII. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance.

VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.

IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

XI. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.

XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XIII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.

XIV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.

XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the

mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

XVI. Extraction of sand beyond annual production capacity is not permitted.

XVII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

XIX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.

XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XXI. No labour camp shall be allowed in riverbed.

XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

XXIII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.

XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.

XXV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXXI. Mining depth should be restricted to 3 meters and distance from the band should be 1/4$^{th}$ of river width and should not be less than 7.5 meters.

XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.

XXXIII. River bed sand mining shall be restricted within the central 3/4$^{th}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.

**********

16. **Misir Patra Sand Deposit (in the River Bed of Amanat) of M/s Jharkhand State Mineral Development Corporation Ltd., Village : Misir Patra, Distt. : Palamau, Jharkhand (29.64 Ha).**

**(Proposal No. SIA/JH/MIN/ 518023/2025).**

**Name of the consultant : P & M Solution, Noida, U.P.**

This is a new project which has been taken for appraisal on 22.01.2025.

**Project Sector: 1(a) Mining of Minerals, Category: B1.**

**Application for Terms of Reference (ToR) as per EIA Notification, 2006.**

**ToR Application for: Proposed Capacity- 438750 cum/Annum 706388 TPA.**

**Project and Location Details:**

| Sl | Parameter | | Details |
|---|---|---|---|
| 1 | Project Name | : | Misir Patra Sand Deposit (River Bed of Amanat) of area 29.64 Ha. |
| 2 | Lessee: | : | M/s Jharkhand State MineralDevelopment Corporation Limited |
| 3 | Lessee Address | : | Khanij Nigam Bhawan, Doranda, Ranchi – 834002, Jharkhand. |
| 4 | Lease Area | : | 29.64 Ha |
| 5 | Type of Land | : | Govt. non forest (river) land |
| 6 | Project Cost | : | Rs. 2.0 Crores. |

| | | | | |
|---|---|---|---|---|
| 7 | EMP Budget | : | Capital: 9.485 Lakhs | Recurring: 5.70Lakhs / year |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity | : | 438750 cum/Annum 706388 TPA (Dry basis) | |
| 10 | Mine Life | : | Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy. | |
| 11 | Man power | : | 50 | |
| 12 | Water Requirement | : | 10.54 ~11.00KLD(Drinking: 0.50 KLD, Dust Suppression: 3.21 KLD, Plantation: 6.83 KLD) | |
| 13 | Water Source | : | From Nearby villages by tankers | |
| 14 | DG Set / power | : | NA | |
| 15 | Crusher | : | NA | |
| 16 | Nearest Water Body | : | Project lies on AmanatRiver. | |
| 17 | Nearest Habitation | : | Misir Patravillage, Approx. 0.44 Km towardsNE direction. | |
| 18 | Nearest Railway Station | : | Chianki Railway Station approx. 20.53 Km in WSW direction. | |
| 19 | Nearest Air Port | : | Gaya International Airport approx. 100 km towards NE direction. | |
| 20 | Nearest Forest | : | Kundri RF Approx. 3.26 Km in SW direction from mining lease.<br>Open Mixed Jungle at 6.60 Km in SE direction from mining lease. | |
| 21 | Road & Highways | : | SH-10 Approx. 0.48 Km in South direction from mining lease. | |

CO-ORDINATES

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | | From 24°04'06.645"N | To 24°04'33.761"N |
| 2 | Longitude | | From 84°17'00.531"E | To 84°17'24.429"E |

LAND DETAILS:

| Plot no. |
|---|
| 190 & 191 |

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.<br><br>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, Tarhasi vide letter no. 438, dated 12.12.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan. |
| 3 | DMO | : | DMO, Palamau, Medininagar vide memo no. 18/M, dated 02.01.2025 certified that no other Balughat exists within 500 m radius from proposed project site. |
| 4 | DFO Wild Life | : | Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 1040, dated 28.12.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve. |
| 5 | DFO Forest Distance | : | Division Forest Officer, Medininagar Forest Division vide letter no. 1303, dated 19.04.2023 certified that the distance of forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Palamau district (Page No. – 83, Sl. No. – PA_S6_AMA_21) |
| 7 | Gram Sabha | : | BDO, Tarhasi vide letter no. 780, dated 18.12.2024 informed that Gram Sabha conducted on 17.12.2024. |
| 8 | Mine Plan Approval | : | Approved by Assistant Director, Geology, Palamau vide Memo No. 214/M, dated 20.11.2024. |
| 9 | Qualified Person | : | Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him. |

Working Details

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Manual Method | |
| 2 | Quarry Area | : | 29.64 Ha | Life of Mine – 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 | : | NA, as it is sand mining project. | |
| 4 | Stripping Ratio | : | 0:0 | |
| 5 | Working Days | : | 200 Days | |
| 6 | Benches: size & No | : | Bench height – 1.0 m &Bench width - 20.0 m. | |
| 7 | Elevation of Mine | : | 228AMSL to 234AMSL | |
| 8 | Ground Level Elevation | : | 228AMSL | |
| 9 | Ultimate Working Depth | : | 2.5 m | |
| 10 | Water Table | : | NA | |
| 11 | Topography of Mine | : | Area lying in river plain. | |
| 12 | Explosive Requirement | : | NA | |
| 13 | Diesel/Fuel requirement | : | NA | |

**Production Details**

| Year | Thickness (m) | Average Replenishment Rate | Production ofSand (Cum) | Production of Sand –MT |
|---|---|---|---|---|
| 1st | 2.50 | 60% | 438750 | 706388 |

**The Development Plan submitted along with the mine plan relates to mining operation during the first year.**

**Land Use**

| Type of Land | Area in (ha) |
|---|---|
| Forest Land | Nil |
| Govt. waste land (River) | 29.64 |
| Residential area | Nil |
| Company land | Nil |
| Private Land | Nil |
| **Total** | **29.64** |

ENVIRONMENT MANAGEMENT

Green Belt Development

| S. No. | Location | | Area/Length | No. of Trees |
|---|---|---|---|---|
| 1 | Plantation along both sides of approach road | | 530m | 1070 |
| 2 | No. of Plants distributed with consultation local authorities/ village Panchayat | | -- | 297 |

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

**Environment Management Plan**

| Sl. No | Description | Capital Cost (lakh) | Recurring Cost (lakh) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | Nil | 2,00,000 |
| 2 | Baseline Monitoring<br>i) Air<br>ii) Water<br>iii) Soil<br>iv) Noise | -- | <br>50,000<br>40,000<br>20,000<br>10,000 |
| 3 | Plantation | 6,83,500 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 2,65,000 | 1,50,000 |
| **TOTAL** | | **9,48,500** | **5,70,000** |

Note: *1367 plants *500 Rs (for each plants including hedges and fences) = Rs. 6,83,500 /-
Salary of Labor for haul road maintenance 1 labor*300 = 300 per day
300*200 = 60,000/-~ 1,50,000/- (including Maintenance)
* 5 lakh per kilometer (500000 * 0.53 km haul road = 2,65,000 /-)

**Environment Monitoring Programme**

| S. No. | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |
| 2 | Soil | 2 Stations | 6 Monthly |
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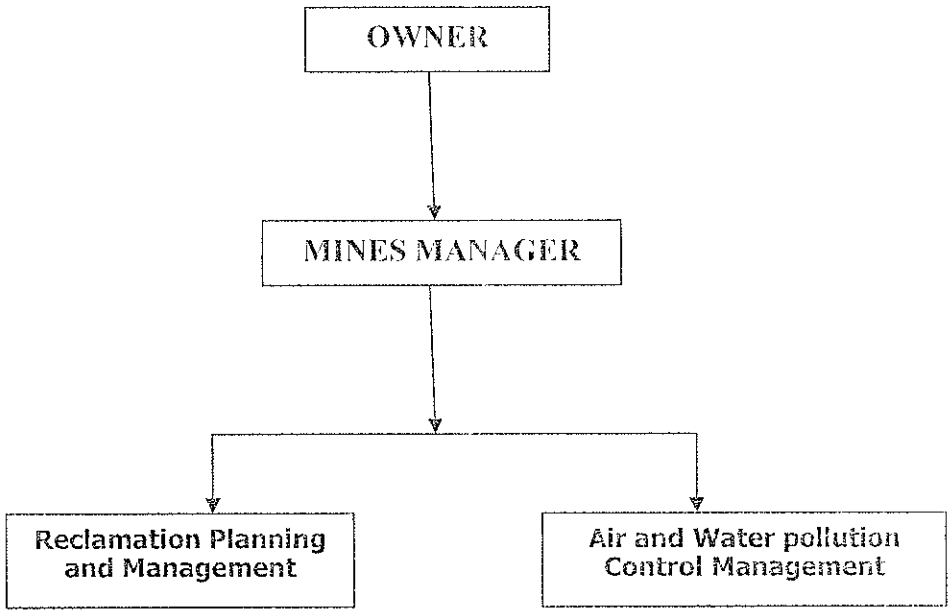


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n. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
o. Wet sand will not be transported.

**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 20, 21, 22, 23 & 24.01.2025, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure II alongwith following specific condition :-**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*Ek Ped Ma Ke Naam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
II. Pre-monsoon data of current year is to be included in final EIA report.
III. Satellite imagery with Geo-Cordinates of pre-monsoon (current year) to be included in the final EIA report.

**********

17. Sode Sand Deposit (in the River Bed of Koel) of M/s Jharkhand State Mineral Development Corporation Ltd., Village : Sode, Distt. : Khunti, Jharkhand (7.10 Ha).

(Proposal No. SIA/JH/MIN/ 472125/2024).

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 22.01.2025.

**Project Sector: 1(a) Mining of Minerals, Category: B1.**
**Application for Terms of Reference (ToR) as per EIA Notification, 2006.**

**ToR Application for: Proposed Capacity- 76250 Cum/Annum or 125813 TPA**

**Project and Location Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Sode Sand Deposit (In River Bed of Koel) of area 7.10 Ha | |
| 2 | Lessee: | : | M/s Jharkhand State MineralDevelopment Corporation Limited | |
| 3 | Lessee Address | : | Khanij Nigam Bhawan, Doranda, Ranchi – 834002, Jharkhand. | |
| 4 | Lease Area | : | 7.10 Ha | |
| 5 | Type of Land | : | Govt. non forest (river) land | |
| 6 | Project Cost | : | Rs. 90 Lakhs | |
| 7 | EMP Budget | : | Capital: 8.305 Lakhs | Recurring: 5.70Lakhs / year |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity | : | **76250 Cum/Annum or 125813 TPA (Dry basis)** | |
| 10 | Mine Life | : | Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy. | |
| 11 | Man power | : | 28 | |
| 12 | Water Requirement | : | 5.72 ~ 6.00 KLD(Drinking: 0.28 KLD, Dust Suppression: 3.18 KLD, Plantation: 2.26 KLD) | |
| 13 | Water Source | : | From Nearby villages by tankers | |
| 14 | DG Set / power | : | NA | |
| 15 | Crusher | : | NA | |
| 16 | Nearest Water Body | : | Project lies on Koel River. | |
| 17 | Nearest Habitation | : | Sodevillage, Approx. 0.44 Km towardsEast direction. | |

| | | | |
|---|---|---|---|
| 18 | Nearest Railway Station | : | Mahabuang Railway Station, approx. 10.95 Km in WNW direction. |
| 19 | Nearest Air Port | : | Birsa Munda Airport approx. 76 km towards NNE direction. |
| 20 | Nearest Forest | : | Protected Forest Approx. 3.46 Km in East direction from mining lease.<br>Protected Forest Approx. 4.28 Km in West direction from mining lease. |
| 21 | Road & Highways | : | NH-320G, Approx. 0.70 Km in South direction from mining lease. |

**CO-ORDINATES**

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | | From 22°40'48.6929"N | To 22°41'15.9100"N |
| 2 | Longitude | | From 85°02'22.7297"E | To 85°02'40.8300"E |

**LAND DETAILS:**

| Khata no. | Plot no. |
|---|---|
| 179 | 01 (P) |

**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.<br><br>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, Raniyan vide letter no. 35 (ii), dated 17.01.2023 and letter no. 17, dated 09.01.2025 have mentioned the plot no. of the project is recorded as "Nadi" in R.S. Khatiyan. |
| 3 | DMO | : | DMO, Khunti vide memo no. 353/M, dated 27.04.2024 certified that the no other Balughat exists within 500 m radius from proposed project site. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Ranchi vide letter no. : 769, dated 12.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary. |
| 5 | DFO Forest Distance | : | DFO, Khunti Division vide letter no. 1645, dated 20.09.2024 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site. |

| | | | |
|---|---|---|---|
| 6 | DSR | : | This project is mentioned in approved District Survey Report (DSR) of Khunti (Sl. no. KKO01, Page no. 75). |
| 7 | Gram Sabha | : | BDO, Raniyan vide letter no. 455 (ii), dated 12.05.2024 informed that Gram Sabha conducted on 12.05.2024. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Khunti vide memo no. 274/M, dated 05.04.2024. |
| 9 | Qualified Person | : | Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Manual Method | |
| 2 | Quarry Area | : | 7.10 Ha | Life of Mine – 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 | : | NA, as it is sand mining project. | |
| 4 | Stripping Ratio | : | 0:0 | |
| 5 | Working Days | : | 200 Days | |
| 6 | Benches: size & No | : | Bench height –2.5m &Bench width - 20.0 m. | |
| 7 | Elevation of Mine | : | 258AMSL to 272AMSL | |
| 8 | Ground Level Elevation | : | 258AMSL | |
| 9 | Ultimate Working Depth | : | 255.5 AMSL | |
| 10 | Water Table | : | NA | |
| 11 | Topography of Mine | : | Area lying in river plain. | |
| 12 | Explosive Requirement | : | NA | |
| 13 | Diesel/Fuel requirement | : | NA | |

**Production Details**

| Year | Thickness (m) | Average Replenishment Rate | Production ofSand (Cum) | Production of Sand –MT |
|---|---|---|---|---|
| 1st | 2.50 | 60% | 76250 | 125813 |

The Development Plan submitted along with the mine plan relates to mining operation during the first year.

Land Use

| Type of Land | Area in (ha) |
|---|---|
| Forest Land | Nil |
| Govt. waste land (River) | 7.10 |
| Residential area | Nil |
| Company land | Nil |
| Private Land | Nil |
| **Total** | **7.10** |

ENVIRONMENT MANAGEMENT

Green Belt Development

| S. No. | Location | | Area/Length | No. of Trees |
|---|---|---|---|---|
| 1 | Plantation along both sides of approach road | | 530m | 1060 |
| 2 | No. of Plants distributed with consultation local authorities/ village Panchayat | | -- | 71 |

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Plan

| Sl. No | Description | Capital Cost (lakh) | Recurring Cost (lakh) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | Nil | 2,00,000 |

| | | | |
|---|---|---|---|
| 2 | Baseline Monitoring<br>i) Air<br>ii) Water<br>iii) Soil<br>iv) Noise | -- | <br>50,000<br>40,000<br>20,000<br>10,000 |
| 3 | Plantation | 5,65,500 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 2,65,000 | 1,50,000 |
| **TOTAL** | | **8,30,500** | **5,70,000** |

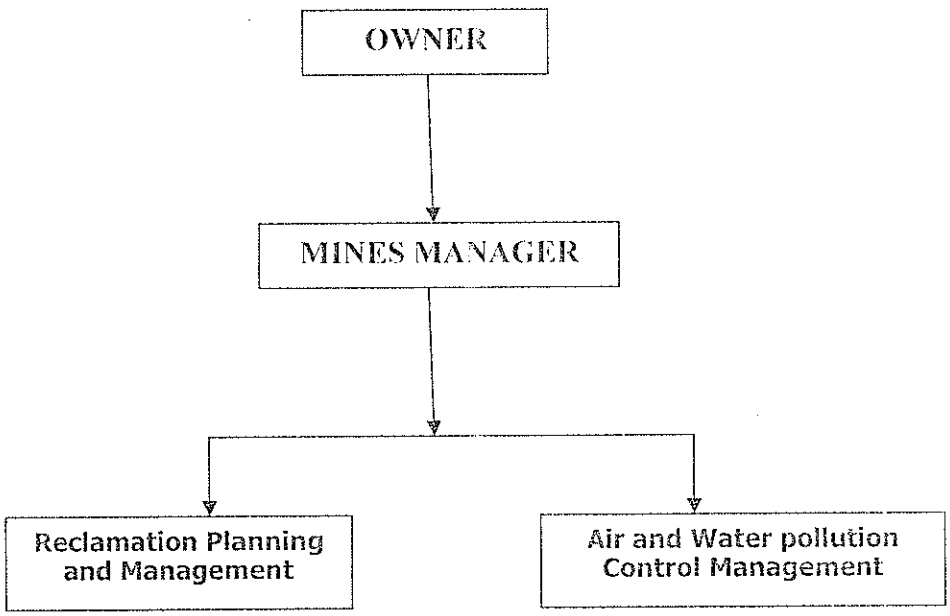
*Note: *1131 plants *500 Rs (for each plants including hedges and fences) = Rs. 5,65,500 /-*
*Salary of Labor for haul road maintenance 1 labor*300 = 300 per day*
*300*200 = 60,000/-~ 1,50,000/- (including Maintenance)*
** 5 lakh per kilometer (500000 * 0.53 km haul road = 2,65,000 /-)*

**Environment Monitoring Programme**

| S. No. | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |
| 2 | Soil | 2 Stations | 6 Monthly |
| 3 | Surface Water | 2 Stations | 6 Monthly |
| 4 | Ground Water | 2 Stations | 6 Monthly |
| 5 | Noise | 4 Stations | 6 Monthly |

**Solid Waste Management**

No solid waste is generated during the course of mining.



Water Quality Management

A. Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.

B. Sewage from rest shelter would be treated in Septic Tank soak pit.

C. There is no other source for generation or discharge of trade effluent.

Air Quality Management

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

I. **Operation of Diesel Equipment's** – They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

II. **Loading of Product on tippers** – Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

III. **Movement of tippers on Road** – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Haul road by using water tankers.
- Regular repair of Haul road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

**RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED BELOW:**

Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

1. Ensure speed limit for the haulage vehicle for 40 KMPH.
2. Regular maintenance of haulage road
3. Appropriate navigational signs informing sensitive area like school and habitation
4. Regular maintenance of the vehicles.

Dust generation

- No drilling involved
- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

**Health Hazards**

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

**Measures**

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

**Accident at Site**

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

**Preventive measures**

Following mitigation measures would be taken to minimize risk of road accident:

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

**Transportation**

The usual method of transporting minerals from the working face is by tractor. Large earth moving equipment's are not used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road/approach road shall be made smooth regularly with a road roller.
- Mine road/approach road will be cleaned daily for smooth transportation.
- Mine road/approach road will be made sufficiently wide to keep two-way traffic.

- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

**Undertaking submitted affirming:**

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

m. Transportation from the river bed to the NH-320G will be done using the existing road.
n. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
o. Wet sand will not be transported.

**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 20, 21, 22, 23 & 24.01.2025, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure II alongwith following specific condition :-**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*Ek Ped Ma Ke Naam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
II. Pre-monsoon data of current year is to be included in final EIA report.
III. Satellite imagery with Geo-Cordinates of pre-monsoon (current year) to be included in the final EIA report.

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18. **Gulda & Karuazor Sand Deposit (in the River Bed of Girma) of M/s Jharkhand State Mineral Development Corporation Ltd., Village : Gulda & Karuazor, Circle : Simdega & Kersai, Distt. : Simdega, Jharkhand (9.27 Ha).**

**(Proposal No. SIA/JH/MIN/ 518736/2025).**

**Name of the consultant : P & M Solution, Noida, U.P.**

This is a new project which has been taken for appraisal on 22.01.2025.

**Project Sector: 1(a) Mining of Minerals, Category: B1.**
**Application for Terms of Reference (ToR) as per EIA Notification, 2006.**

**ToR Application for: Proposed Capacity- 20572 cum per annum or 53899 TPA.**

**Project and Location Details:**

| Sl | Parameter | | Details |
|---|---|---|---|
| 1 | Project Name | : | Gulda & Karuazor Sand Deposit [in the river bed of Girma] |

| | | | | |
|---|---|---|---|---|
| | | | (Area 9.27 Ha.) | |
| 2 | Lessee: | : | M/s Jharkhand State MineralDevelopment Corporation Limited | |
| 3 | Lessee Address | : | Khanij Nigam Bhawan, Doranda, Ranchi – 834002, Jharkhand. | |
| 4 | Lease Area | : | 9.27 Ha | |
| 5 | Type of Land | : | Govt. non forest (river) land | |
| 6 | Project Cost | : | Rs. 70.00 Lakhs | |
| 7 | EMP Budget | : | Capital: 10.25 Lakhs | Recurring: 5.70Lakhs / year |
| 8 | New or Expansion | : | New | |
| 9 | Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity | : | **20572 cum per annum or 53899 TPA (Dry basis)** | |
| 10 | Mine Life | : | Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy. | |
| 11 | Man power | : | 45 | |
| 12 | Water Requirement | : | 7.15 ~7.20KLD(Drinking: 0.45 KLD, Dust Suppression: 3.90 KLD, Plantation: 2.80 KLD) | |
| 13 | Water Source | : | From Nearby villages by tankers | |
| 14 | DG Set / power | : | NA | |
| 15 | Crusher | : | NA | |
| 16 | Nearest Water Body | : | Project lies on GirmaRiver. | |
| 17 | Nearest Habitation | : | Jhuratolivillage, Approx. 0.10 Km towardsSW direction. | |
| 18 | Nearest Railway Station | : | Kanaroan Railway Station approx. 58.90 Km in East direction. | |
| 19 | Nearest Air Port | : | Birsa Munda Airport Ranchi approx. 130.0 km towards NE direction. | |
| 20 | Nearest Forest | : | PF Approx. 6.43 Km in NW direction from mining lease.<br>Open Mixed Jungle at 2.00 Km in SWdirection from mining lease. | |
| 21 | Road & Highways | : | NH-143 Approx. 20.0 Km in East direction from mining lease. | |

**CO-ORDINATES**

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | | From 22°36'39.93"N | To 22°36'57.29"N |
| 2 | Longitude | | From 84°18'14.03"E | To 84°18'20.93"E |

**LAND DETAILS:**

| Village | Khata no. | Plot no. |
|---|---|---|
| Gulda | 99 | 1065 (P) |
| Karuazor | - | 4624 (P) |

**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.<br><br>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, Simdega vide letter no. : 75 (ii) / Ra., dated 31.01.2023 and CO, Kersai vide letter no. 62 (ii), dated 27.01.2023 have mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Simdega vide memo no. 736/M, dated 30.09.2024 certified that the no other Balughat exists within 500 m radius from proposed project site. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Ranchi vide letter no. 1012, dated 27.12.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary. |
| 5 | DFO Forest Distance | : | DFO, Simdega Division vide memo no. 672, dated 10.03.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved District Survey Report (DSR) of Simdega (Sl. No. SR5, Page no. 63). |
| 7 | Gram Sabha | : | BDO, Simdega vide letter no. 49, dated 10.08.2024 informed that Gram Sabha conducted on 04.07.2024 & 13.06.2024. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Simdega vide memo no. 735/Mining, dated 30.09.2024. |
| 9 | Qualified Person | : | Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him. |

Working Details

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Manual Method | |
| 2 | Quarry Area | : | 9.27 Ha | Life of Mine – 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 | : | NA, as it is sand mining project. | |
| 4 | Stripping Ratio | : | 0:0 | |
| 5 | Working Days | : | 200 Days | |
| 6 | Benches: size & No | : | Bench height – 1.0 m &Bench width - 20.0 m. | |
| 7 | Elevation of Mine | : | 397AMSL to 400AMSL | |
| 8 | Ground Level Elevation | : | 397 AMSL | |
| 9 | Ultimate Working Depth | : | 0.37 m | |
| 10 | Water Table | : | NA | |
| 11 | Topography of Mine | : | Area lying in river plain. | |
| 12 | Explosive Requirement | : | NA | |
| 13 | Diesel/Fuel requirement | : | NA | |

Production Details

| Year | Thickness (m) | Average Replenishment Rate | Production ofSand (Cum) | Production of Sand –MT |
|---|---|---|---|---|
| 1st | 0.37 | 60% | 20572 | 53899 |

The Development Plan submitted along with the mine plan relates to mining operation during the first year.

Land Use

| Type of Land | Area in (ha) |
|---|---|
| Forest Land | Nil |

| | |
|---|---|
| Govt. waste land (River) | 9.27 |
| Residential area | Nil |
| Company land | Nil |
| Private Land | Nil |
| **Total** | **9.27** |

## ENVIRONMENT MANAGEMENT

### Green Belt Development

| S. No. | Location | | Area/Length | No. of Trees |
|---|---|---|---|---|
| 1 | Plantation along both sides of approach road | | 650m | 1300 |
| 2 | No. of Plants distributed with consultation local authorities/ village Panchayat | | -- | 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.

### Environment Management Plan

| Sl. No | Description | Capital Cost (lakh) | Recurring Cost (lakh) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | Nil | 2,00,000 |
| 2 | Baseline Monitoring<br>i) Air<br>ii) Water<br>iii) Soil<br>iv) Noise | -- | <br>50,000<br>40,000<br>20,000<br>10,000 |
| 3 | Plantation | 7,00,000 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 3,25,000 | 1,50,000 |
| **Total** | | **10,25,000** | **5,70,000** |

Note: *1400 plants * 500 Rs (for each plants including hedges and fences) = 7.0 lakh

Salary of Labor for haul road maintenance 1 labor*300 = 300 per day

300* 200 = 60,000/- or 1,50,000/-

* 5 lakh per kilometer (500000 * 0.65 km haul road = 3,25,000/-)

**Environment Monitoring Programme**

| S. No. | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |
| 2 | Soil | 2 Stations | 6 Monthly |
| 3 | Surface Water | 2 Stations | 6 Monthly |
| 4 | Ground Water | 2 Stations | 6 Monthly |
| 5 | Noise | 4 Stations | 6 Monthly |

**Solid Waste Management**

No solid waste is generated during the course of mining.

**Undertaking submitted affirming:**

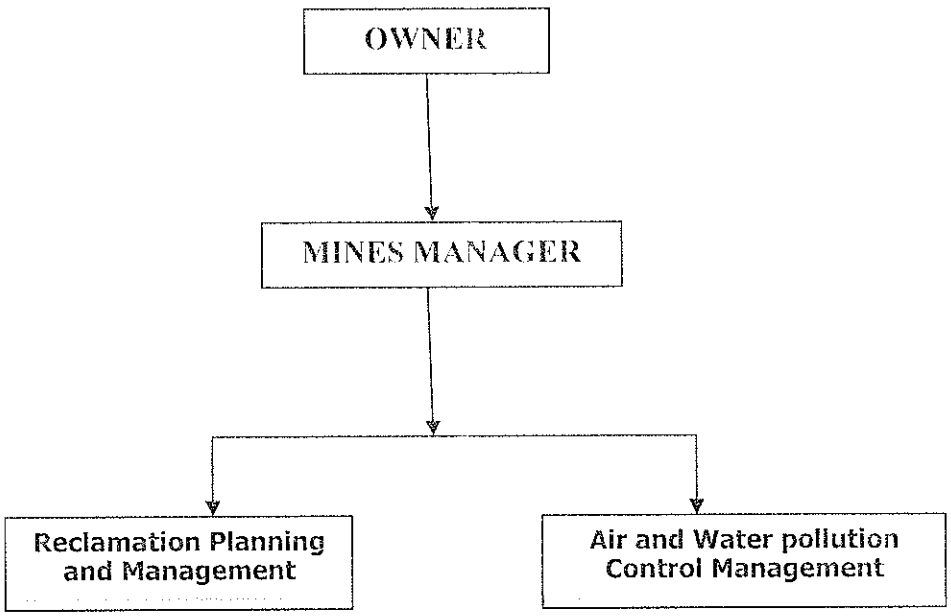
a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed 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.

m. Transportation from the river bed to the SH-1 will be done using the existing road.

n. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.

o. Wet sand will not be transported.




***Organization Structure***

**Water Quality Management**

A. Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.

B. Sewage from rest shelter would be treated in Septic Tank soak pit.

C. There is no other source for generation or discharge of trade effluent.

**Air Quality Management**

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

I. **Operation of Diesel Equipment's –** They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

II. **Loading of Product on tippers –** Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

III. **Movement of tippers on Road –** Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Haul road by using water tankers.
- Regular repair of Haul road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

**RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED BELOW:**

**Road accidents**

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

1. Ensure speed limit for the haulage vehicle for 40 KMPH.
2. Regular maintenance of haulage road
3. Appropriate navigational signs informing sensitive area like school and habitation
4. Regular maintenance of the vehicles.

**Dust generation**

- No drilling involved
- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

**Noise Generation**

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

**Preventive measures**

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

**Health Hazards**

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

**Measures**

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

**Accident at Site**

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

**Preventive measures**

Following mitigation measures would be taken to minimize risk of road accident:

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

**Transportation**

The usual method of transporting minerals from the working face is by tractor. Large earth moving equipment's are not used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road/approach road shall be made smooth regularly with a road roller.
- Mine road/approach road will be cleaned daily for smooth transportation.
- Mine road/approach road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

**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 20, 21, 22, 23 & 24.01.2025, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure II alongwith following specific condition :-**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. Pre-monsoon data of current year is to be included in final EIA report.

III. Satellite imagery with Geo-Cordinates of pre-monsoon (current year) to be included in the final EIA report.

**********

19. Jario Stone Deposit of Shri Manohar Pathak, Village : Jario, Thana : Ramgarh, Distt. : Ramgarh, Jharkhand (2.75 Ha).

(Proposal No. SIA/JH/MIN/ 506594/2025).

Name of the consultant : P & M Solution, Noida, U.P.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Ramgarh).

The project has been granted EC by DEIAA, Ramgarh vide letter no. EC/DEIAA/ 2016-17/ 08, dated 12.08.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Ramgarh which has been taken up for consideration on 22.01.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 31/Khanan dated 11.01.2025 by DMO, Ramgarh is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Hazaribagh vide memo no. 2009, dated 23.11.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

**Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.**

**The self certified compliance report has been submitted and also presented before the Committee.**

EC Application for: Proposed Capacity- 27775.92 cum/annum or 74995 TPA.

**Project and Location Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Jario Stone Deposit | |
| 2 | Lessee: | : | Shri Manohar Pathak,<br>S/o Shri Satya Narayan Pathak, | |
| 3 | Lease Address | : | Village – Jario, P.S. – Ramgarh, District – Ramgarh, State- Jharkhand | |
| 4 | Lease Area | : | 2.75 ha | Acres- 6.80 Acres |
| 5 | Type of Land | : | Non-Forest (Raiyati Land) | |
| 6 | Project Cost | : | Rs. 1.30 cr. | |
| 7 | EMP Budget | : | Capital: Rs. 11.50 Lakhs | Recurring: 4.87 Lakhs / year |
| 8 | New or Expansion | : | New (Re-appraisal of DEIAA EC) | |
| 9 | Mineable Reserves | : | 744823 tons | 27586.03cum |
| 10 | Mine Life | : | Up to the lease period : 22.11.2017 to 21.11.2027. | |
| 11 | Man power | : | 20 | |
| 12 | Water Requirement | : | 12.70~ 13.00 KLD (Drinking: 0.20KLD, Dust Suppression: 8.90 KLD, Plantation: 3.60 KLD) | |
| 13 | Water Source | : | Water will be taken from nearby village | |
| 14 | DG Set / power | : | 500 KVA | |
| 15 | Crusher | : | No Crusher | |
| 16 | Nearest Water Body | : | Damodar River, Approx. 6.04 km towards NE direction of mine site. | |
| 17 | Nearest Habitation | : | Jario, Approx. 0.56 km in WSW direction | |
| 18 | Nearest Railway Station | : | Meal Railway station, approx. 3.10 km towards East direction. | |
| 19 | Nearest Air Port | : | Birsa Munda Airport, Ranchi approx. 39.70 km towards North direction. | |
| 20 | Nearest Forest | : | Protected Forest, Approx. 2.40 km towards NNE direction of mine site.<br>Protected Forest, Approx. 4.80 km towards SE direction of mine site.<br>Protected Forest, Approx. 4.85 km towards SW direction of mine site. | |
| 21 | Road & Highways | : | NH-20, Approx. 6.15 km. in West direction.. | |

**CO-ORDINATES**

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | : | From 23°34'23.97"N | To 23°34'31.67"N |
| 2 | Longitude | : | From 85°35'40.53"E | To 85°35'48.84"E |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 86 | 717 (P) & 1451 (P) |

STATUTORY CLEARANCES

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | Lease Deed- 22.11.2017 to 21.11.2027. |
| 2 | CO | : | The CO, Dulmi vide letter no. 1156, dated 30.09.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Ramgarh vide memo no. 1016/M, dated 04.09.2024 certified that 01 other mining lease area (5.00 Acre) exists within 500 m radius from proposed project site and total area is 11.80 Acre. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Hazaribagh vide letter no. 2089, dated 26.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribagh Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Ramgarh Forest Divisioin vide letter no. 2673, dated 03.11.2016 certified that the distance of notified forest land is more than 250 meter from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Ramgarh District (Sl. no. 03, Page no. 29). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 17.11.2016. |
| 8 | Mining scheme / Mining Plan Approval | : | i. Approved by Dy. Director, Mines, North Chhotanagpur Circle, Hazaribagh vide letter no. 96, dated 07.03.2017.<br>ii. Mining scheme approved by Additional Director, Geology, Hazaribag vide letter no. G/2022-23/185, dated 20.08.2022. |
| 9 | Previous Environmental Clearance (EC) | : | Previous EC granted by DEIAA, Ramgarh vide letter no. EC/DEIAA/ 2016-17/ 08, dated 12.08.2017. |
| 10 | Compliance report of EC | : | EC compliance report issued by JSPCB, Regional Office, Hazaribagh vide memo no. 2009, dated 23.11.2024. |
| 11 | Consent to Establish (CTE) | : | CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2017290 /2018 /174, dated 14.02.2018. |
| 12 | Consent to Operate (CTO) | : | CTO issued by JSPCB vide ref. no. JSPCB/RO/RNC/CTO-15115573 /2023/1168, dated 30.06.2023. |
| 13 | Production Report | : | Production report issued by DMO, Ramgarh vide memo no. 31/Khanan dated 11.01.2025. |

| | | | |
|---|---|---|---|
| 14 | Qualified Person | : | The mining scheme has been prepared by B. Tirkey. As he has since deceased, he was not present in the meeting. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Semi - Mechanized mining method | |
| 2 | Quarry Area | : | 2.75 ha or 6.80 Acres | Life of Mine – Up to the lease period : 22.11.2017 to 21.11.2027. |
| 3 | Waste Generation | : | 7826 Cum or 11740 tons | |
| 4 | Stripping Ratio | : | 1:0.02 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 6m x 6m | |
| 7 | Elevation of Mine | : | 368 AMSL to 383 AMSL | |
| 8 | Ground Level Elevation | : | 368 AMSL | |
| 9 | Ultimate Working Depth | : | 365 AMSL (2 mbgl) | |
| 10 | Water Table | : | 338 AMSL (30 mbgl) | |
| 11 | Topography of Mine | : | Area represents a gently sloping land with rock mass of Granite-gneiss. | |
| 12 | Explosive Requirement | : | 90 kg/day | |
| 13 | Diesel/Fuel requirement | : | 120 litre/day | |

**Production Details**

| Year | Production of Stone in tons as per EC | Production of Stone in Cum | Production of Stone in Tonnes | Bench Section |
|---|---|---|---|---|
| 1st | 74579 | 27,621.85 | 74579 | 383-377 |
| 2nd | 74941 | 27,755.92 | 74941 | 383-371 |
| 3rd | 74485 | 27,587.03 | 74485 | 377-371 |
| 4th | 74995 | 27,775.92 | 74995 | 377-371 |
| 5th | 74396 | 27,554.07 | 74396 | 371-365 |
| **Total** | **373,396** | **138,294.79** | **373,396** | |

**As per approved mine plan production: - 27775.92 cum/annum or 74995 TPA.**
**As per EC letter production: - 27775.92 cum/annum or 74995 TPA.**
**Land Use**

| Type of Land | Existing Land Use (In Ha) | At the End of the Five year Plan Period (In Ha) | At the End of Mine (In Ha.) |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Quarry | Nil | 1.47 | 1.99 |
| Road | | 0.003 | |
| Green belt (Plantation) | 0.76 (Plantation) | 0.76 (Plantation) | 0.76 (Plantation) |
| Dump | | 0.13 | |
| Parapet Wall | | 0.001 | |
| Garland Drain | | 0.001 | |
| **Total area in Use** | --- | **2.365** | **2.75** |
| Balanced unused Area | 1.99 | 0.385 | -- |
| **Total Lease area** | **2.75** | **2.75** | **2.75** |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

| S. No. | Location | | Area/Length | No. of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | : | 0.76 ha | 1900 (Already done during previous year of mining) |
| 2 | Along Approach Road | : | 850 m | 1700 |
| 3 | No. of plants distributed with consultation local authorities /village Panchayat | : | -- | 100 |

Note: A total of 3700 saplings were proposed to be planted. Out of which 1900 plant in Safety Zone area have been planted during previous year of mining.
(1700 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1800 Plants)

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

**COST PROPOSED FOR EMP**

| Sl. No | Description | Capital Cost | Recurring Cost |
|---|---|---|---|

| | | (Rs.) | (Rs.) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | -- | 2,00,000 |
| 2 | Baseline Monitoring<br>i) Air<br>ii) Water<br>iii) Soil<br>iv) Noise | -- | <br>14,000<br>8,000<br>8,000<br>7,000 |
| 3 | Plantation | 7,00,000 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 4,50,000 | 1,50,000 |
| **TOTAL** | | **11,50,000** | **4,87,000** |

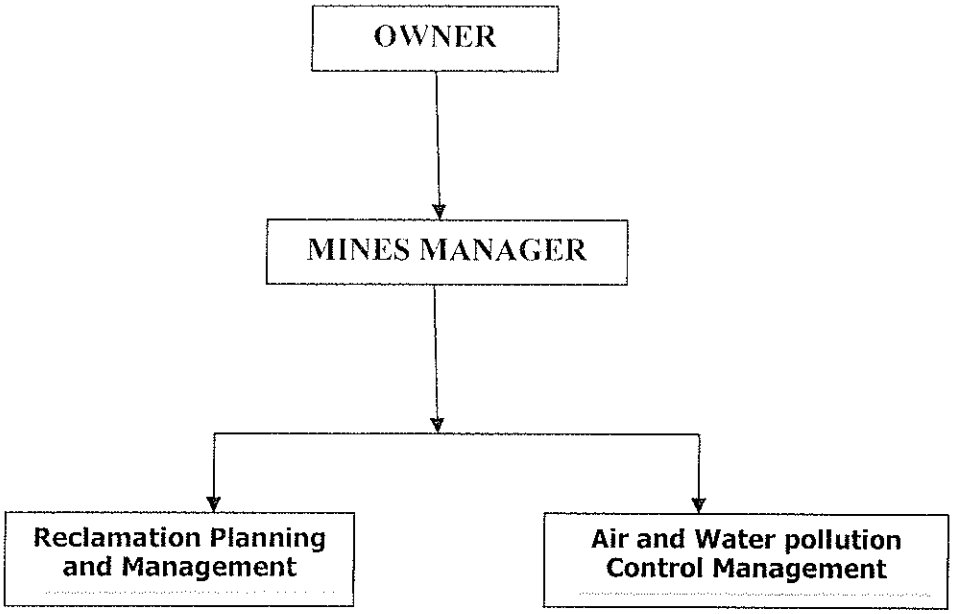
***Note: *1800 plants * 500 Rs (for each plants including hedges and fences) = 7.0 Lakh***
***A total of 3700 saplings were proposed to be planted. Out of which 1900 plant in Safety Zone area have been planted during previous year of mining.***
***(1700 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1800 Plants)***
***Salary of Labor for haul road maintenance 1 labor*300 =300 per day***
***300* 300 = 90000/- or 1,50,000/-( including maintenance)***
**** 5.0 lakh per kilometer (500000 * 0.85 km haul road = 4,25,000/- or 4,50,000/-)***

**Environment Monitoring Programme**

| Sl. No | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |
| 2 | Soil | 2 Stations | 6 Monthly |
| 3 | Surface Water | 2 Stations | 6 Monthly |
| 4 | Ground Water | 2 Stations | 6 Monthly |
| 5 | Noise | 4 Stations | 6 Monthly |

**Solid Waste Management**

In Stone deposit of Jario; From the development plan, it is clear that the development of the mining activity will lead to the generation of 11740.00 tonnes OB intermixed with soil will be generated as waste which is proposed to be dumped in the south-eastern of the lease with a proper parapet wall constructed from the southern corner of the lease.




***Organization Structure***

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.

- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

**RISK ASSESSMENT**

The hazard identification and risk analysis is done using qualitative method:

**Probability/Likelihood of Occurrence of Hazard**

| Likelihood Level | Probability | Description |
|---|---|---|
| L5 | Very Unlikely | Has not occurred/reported within last 5 years. |
| L4 | Remote / Moderate | May occur if conditions exist. Has occurred within last 3 years. |
| L3 | Occasional | Likely to occur if conditions exist. Has occurred within last 2 years. |
| L2 | Probable | Very likely to occur. Has occurred within last year. |
| L1 | Frequent | Almost certain to occur. Has occurred more than one within last year. |

**Severity/Impact Intensity**

| Severity Level | Severity | Description |
|---|---|---|
| C1 | Catastrophic | May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation. |
| C2 | Major | May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action. |
| C3 | Moderate | Minor injury to personnel or environment |
| C4 | Minor | Minor damage but does not cause injury to personnel |
| C5 | Insignificant | May result in no, or less minor, illness, injuryor system damage |

**Risk Assessment Chart (Qualitative Method)**

| Risk Rank (Likelihood x | L5 (Very Unlikely) | L4 (Remote) | L3 (Occasional) | L2 (Probable) | L1 (Frequent) |
|---|---|---|---|---|---|

| Consequence) | | | | | |
|---|---|---|---|---|---|
| C1 (Catastrophic) | 5 | 4 | 3 | 2 | 1 |
| C2 (Major) | 10 | 8 | 6 | 4 | 2 |
| C3 (Moderate) | 15 | 12 | 9 | 6 | 3 |
| C4 (Minor) | 20 | 16 | 12 | 8 | 4 |
| C5 (Insignificant) | 25 | 20 | 15 | 10 | 5 |

**Risk Rating Scale**

| S. No. | Rating | Scale |
|---|---|---|
| 1 | **High Risk** | **1-4** |
| 2 | Medium Risk | 5-12 |
| 3 | *Low Risk* | *13-25* |

**Hazard identification & Risk Analysis in Stone mining operation**

| S. No. | Activity | Hazard | Probability | Severity | Score |
|---|---|---|---|---|---|
| 1 | Temporary Storage of Explosives | Unintended Explosion | Very Unlikely | Catastrophic | 5 |
| 2 | Charging of Explosives | Unwanted Explosion | Very Unlikely | Catastrophic | 5 |
| 3 | Blasting | Hit by fly rock (Bodily Injury) | Occasional | Major | 6 |
| 4 | Drilling | Exposure to Dust | Frequent | Insignificant | 5 |
| 5 | Bench Formation | Fall/Slide/Tripping (Bodily Injury) | Probable | Moderate | 6 |
| 6 | Loading/Unloading | Bodily injury by hitting by loading material, Exposure to Dust | Very Unlikely | Minor | 20 |
| 7 | Transportation | Vehicle Accident, Exposure to Dust | Remote | Minor | 16 |

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

**Preventive Measures:**

**Face Stability**

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

**Drilling Operations**

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

**Falls from the edge of a bench**

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

**Control Measures**

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench

- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- 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 Jario Stone Deposit of Shri Manohar Pathak, Village : Jario, Thana : Ramgarh, Distt. : Ramgarh, Jharkhand (2.75 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.
II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"EkPed Ma KeNaam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

**********

20. **Munkeri Stone Mine of Mr. Mumtaz Ahmad Khan, Mauza : Munkeri, Thana : Chhatarpur, Distt. : Palamau, Jharkhand (3.12 Ha).**

**(Proposal no.: SIA/JH/MIN/ 508396 /2025)**

**Name of the consultant : P & M Solution, Noida, U.P.**

**Project Sector: 1(a) Mining of Minerals, Category: B2.**

**Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Palamau).**

The project has been granted EC by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/56, dated 17.08.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Palamau which has been taken up for consideration on 22.01.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ . All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 2635/M, dated 27.11.2024 by DMO, Palamau is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 108, dated 22.01.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

**Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.**

**The self certified compliance report has been submitted and also presented before the Committee.**

**EC Application for: Proposed Capacity- 98800 cum/annum or 296400 TPA.**

**Project and Location Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Munkeri Stone Mine | |
| 2 | Lessee: | : | Mumtaz Ahmad Khan | |
| 3 | Lease Address | : | Mauza – Munkeri, Thana – Chhatarpur, District – Palamu, State- Jharkhand. | |
| 4 | Lease Area | : | 3.12 ha | Acres- 7.71 Acres |
| 5 | Type of Land | : | Non-Forest (Raiyati Land) | |
| 6 | Project Cost | : | Rs. 1.40 cr. | |
| 7 | EMP Budget | : | Capital: Rs. 13.25 Lakhs | Recurring: 4.87 Lakhs / year |
| 8 | New or Expansion | : | New (Re-appraisal of DEIAA EC) | |
| 9 | Mineable Reserves | : | 1199826 tons | 399942 cum |
| 10 | Mine Life | : | Up to the lease period : 14.11.2017 to 13.11.2027. | |
| 11 | Man power | : | 39 | |
| 12 | Water Requirement | : | 13.69~ 14.00 KLD (Drinking: 0.39KLD, Dust Suppression: 9.70 KLD, Plantation: 3.60 KLD) | |

| | | | |
|---|---|---|---|
| 13 | Water Source | : | Water will be taken from nearby village |
| 14 | DG Set / power | : | 500 KVA |
| 15 | Crusher | : | No Crusher |
| 16 | Nearest Water Body | : | Batane Nadi, Approx. 3.50 km. in East direction |
| 17 | Nearest Habitation | : | Munkeri , Approx. 0.43 km in East direction |
| 18 | Nearest Railway Station | : | Japla Railway Station, approx. 30.00 km towards NW direction. |
| 19 | Nearest Air Port | : | Gaya International Airport, approx. 83.20 km towards ENE direction. |
| 20 | Nearest Forest | : | Protected Forest, Approx. 1.00 km. in East direction<br>Protected Forest , Approx. 2.00 km. in South direction<br>Protected Forest , Approx. 4.0 km. in SE direction |
| 21 | Road & Highways | : | NH-139, Approx. 3.60 km. in west direction. |

**CO-ORDINATES**

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | : | From 24°22'12.06"N | To 24°22'22.40"N |
| 2 | Longitude | : | From 84°14'01.22"E | To 84°14'12.26"E |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 47 | 34, & 01/1160 |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | Lease deed : 14.11.2017 to 13.11.2027. |
| 2 | CO | : | The CO, Chhatarpur, Palamau vide letter no. 545, dated 16.11.2016 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan. |
| 3 | DMO | : | DMO, Palamau vide memo no. 1638/M, dated 02.08.2024 certified that no other mining lease area exists within 500 m radius from proposed project site. |
| 4 | DFO Wild Life | : | Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 938, dated 14.11.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve. |
| 5 | DFO Forest Distance | : | Division Forest Officer, Medininagar Forest Divisioin vide letter no. 4907, dated 09.12.2016 certified that the distance of forest land is |

| | | | |
|---|---|---|---|
| | | | more than 250 meter from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Palamau District (Sl. no. 30, Page no. 228). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 21.10.2016. |
| 8 | Scheme / Mine Plan Approval | : | Mining scheme approved by Assistant Mining Officer, Garhwa vide Memo No. 646/M0, dated 18.05.2023. |
| 9 | Previous Environmental Clearance (EC) | : | Previous EC granted by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/56, dated 17.08.2017. |
| 10 | Compliance report of EC | : | The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 108, dated 22.01.2025. |
| 11 | Consent to Establish (CTE) | : | CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-22145600 /2018 /618, dated 08.06.2018. |
| 12 | Consent to Operate (CTO) | : | CTO issued by JSPCB vide ref. no. : JSPCB/RO/RNC/CTO-17448557 /2023/204, dated 18.10.2023. |
| 13 | Production Report | : | Production report issued by DMO, Palamau vide memo no. 2635/M, dated 27.11.2024 |
| 14 | Qualified Person | : | Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast mechanized mining method | |
| 2 | Quarry Area | : | 3.12 ha or 7.71 Acres | Life of Mine – Up to the lease period : 14.11.2017 to 13.11.2027. |
| 3 | Waste Generation | : | 24593 Cum | |
| 4 | Stripping Ratio | : | 1:0.2 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 6m x 6m | |
| 7 | Elevation of Mine | : | 249 AMSL to 252 AMSL | |
| 8 | Ground Level Elevation | : | 249 AMSL | |
| 9 | Ultimate Working Depth | : | 226 AMSL (23 mbgl) | |
| 10 | Water Table | : | 213-210 AMSL (39-36 mbgl) | |
| 11 | Topography of Mine | : | Area represents a gently sloping land with rock mass of Granite-gneiss. | |

| | | | |
|---|---|---|---|
| 12 | Explosive Requirement | : | 90 kg/day |
| 13 | Diesel/Fuel requirement | : | 120 litre/day |

Production Details

| Year | Proposed Production of EC in Tons | Proposed Production of Stone in Cum | Proposed Production of Stone in Tons | Gritty Soil in tons | Bench Section |
|---|---|---|---|---|---|
| 1st | 296400 | 79988 | 239965 | 9366 | 256-238 |
| 2nd | 296400 | 79987 | 239961 | 15227 | 256-232 |
| 3rd | 296400 | 79988 | 239965 | 000 | 250-238 |
| 4th | 296400 | 79987 | 239961 | 000 | 244-232 |
| 5th | 296400 | 79991 | 239974 | 000 | 238-226 |
| **Total** | **1482000** | **399942** | **1199826** | **24593** | |

**As per approved mine plan production: - 79991cum/annum or 239974 TPA**
**As per EC letter production: - 98800 cum/annum or 296400 TPA**
**Land Use**

| Category | Present Land Use (in Ha) | At the End of Plan Period (in Ha.) | At the End of mine (in Ha.) | Conceptual period (in Ha.) | | | |
|---|---|---|---|---|---|---|---|
| | | | | Public use | backfill | Water body | plantation |
| Quarry | 0.69 | 2.20 ( including backfill 0.16Ha) | 2.20 ( including backfill 0.16Ha) | -- | 0.16 | 2.04 | -- |
| Safety Zone | 0.92 (Plantation) | 0.92 (Plantation) | 0.92 (Plantation) | -- | -- | -- | 0.92 |
| Road | 0.02 | Nil | Nil | -- | -- | -- | -- |
| **Total area in use** | **1.63** | **3.12** | **3.12** | **--** | **0.16** | **2.04** | **0.92** |
| Balanced Unused Area | 1.49 | Nil | Nil | -- | -- | -- | -- |
| **Total Lease area** | **3.12** | **3.12** | **3.12** | **--** | **3.12** | | |

ENVIRONMENT MANAGEMENT
Green Belt Development

| S. No. | Location | | Area/Length | No. of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | : | 0.92 ha | 2300 |

| | | | | |
|---|---|---|---|---|
| | | | | (Already done during previous year of mining) |
| 2 | Along Approach Road | : | 850 m | 1700 |
| 3 | No. of plants distributed with consultation local authorities /village Panchayat | : | -- | 100 |

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

**COST PROPOSED FOR EMP**

| Sl. No | Description | Capital Cost (Rs.) | Recurring Cost (Rs.) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | -- | 2,00,000 |
| 2 | Baseline Monitoring<br>i) Air<br>ii) Water<br>iii) Soil<br>iv) Noise | -- | <br>14,000<br>8,000<br>8,000<br>7,000 |
| 3 | Plantation | 9,00,000 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 4,25,000 | 1,50,000 |
| **TOTAL** | | **13,25,000** | **4,87,000** |

***Note: * 1800 plants * 500 Rs (for each plants including hedges and fences) = 9.0 Lakh***
***A total of 4100 saplings were proposed to be planted. Out of which 2300 plant in Safety Zone area have been planted during previous year of mining.***
***(1700 plant along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1800 Plants)***
***Salary of Labor for haul road maintenance 1 labor*300 =300 per day***
***300* 300 = 90000/- or 1,50,000/- ( including maintenance material)***
**** 5.0 lakh per kilometer (500000 * 0.85 km haul road = 4,25,000/- )***

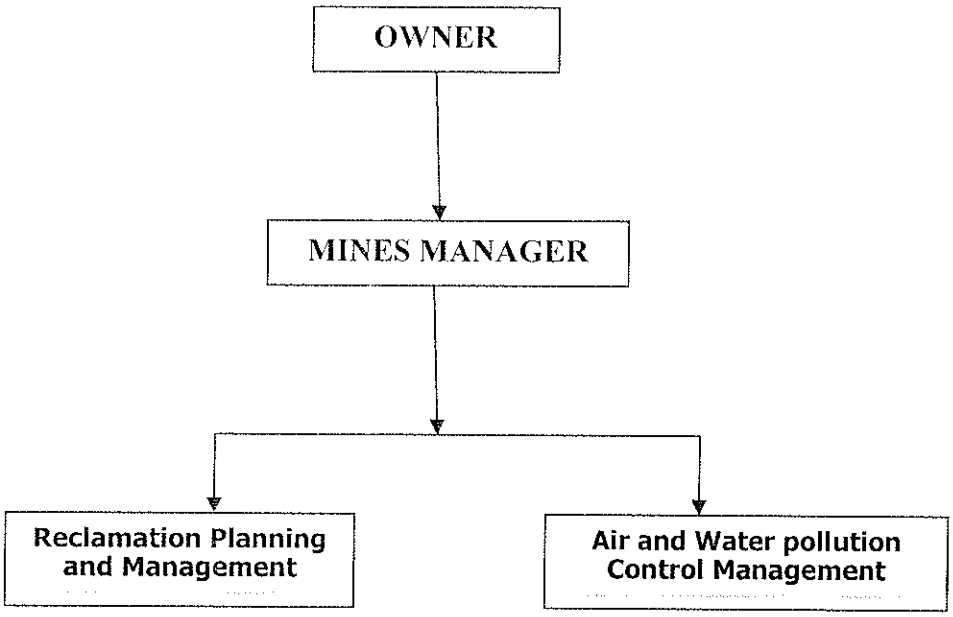
Environment Monitoring Programme

| Sl. No | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |

| | | | |
|---|---|---|---|
| 2 | Soil | 2 Stations | 6 Monthly |
| 3 | Surface Water | 2 Stations | 6 Monthly |
| 4 | Ground Water | 2 Stations | 6 Monthly |
| 5 | Noise | 4 Stations | 6 Monthly |

**Solid Waste Management**

Total 24593 tonnes gritty soil will be generated during the plan period. The area is covered with a layer of gritty soil. During quarry development gritty soil will be removed and this will be temporary dumped at south eastern part of the lease area with suitable precaution & during plan period total removal soil & existing dump soil will be backfill within the exhausted quarry.




***Organization Structure***

**Water Quality Management**

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be

constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside

- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

**Air Quality Management**

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

**RISK ASSESSMENT**

The hazard identification and risk analysis is done using qualitative method:

**Probability/Likelihood of Occurrence of Hazard**

| Likelihood Level | Probability | Description |
|---|---|---|
| L5 | Very Unlikely | Has not occurred/reported within last 5 years. |
| L4 | Remote / Moderate | May occur if conditions exist. Has occurred within last 3 years. |
| L3 | Occasional | Likely to occur if conditions exist. Has occurred within last 2 years. |
| L2 | Probable | Very likely to occur. Has occurred within last year. |
| L1 | Frequent | Almost certain to occur. Has occurred more than one within last year. |

**Severity/Impact Intensity**

| Severity Level | Severity | Description |
|---|---|---|
| C1 | Catastrophic | May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe |

| | | |
|---|---|---|
| | | activity or operation. |
| C2 | Major | May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action. |
| C3 | Moderate | Minor injury to personnel or environment |
| C4 | Minor | Minor damage but does not cause injury to personnel |
| C5 | Insignificant | May result in no, or less minor, illness, injuryor system damage |

**Risk Assessment Chart (Qualitative Method)**

| Risk Rank (Likelihood x Consequence) | L5 (Very Unlikely) | L4 (Remote) | L3 (Occasional) | L2 (Probable) | L1 (Frequent) |
|---|---|---|---|---|---|
| C1 (Catastrophic) | 5 | 4 | 3 | 2 | 1 |
| C2 (Major) | 10 | 8 | 6 | 4 | 2 |
| C3 (Moderate) | 15 | 12 | 9 | 6 | 3 |
| C4 (Minor) | 20 | 16 | 12 | 8 | 4 |
| C5 (Insignificant) | 25 | 20 | 15 | 10 | 5 |

**Risk Rating Scale**

| S. No. | Rating | Scale |
|---|---|---|
| 1 | **High Risk** | **1-4** |
| 2 | Medium Risk | 5-12 |
| 3 | *Low Risk* | *13-25* |

**Hazard identification & Risk Analysis in Stone mining operation**

| S. No. | Activity | Hazard | Probability | Severity | Score |
|---|---|---|---|---|---|
| 1 | Temporary Storage of Explosives | Unintended Explosion | Very Unlikely | Catastrophic | 5 |
| 2 | Charging of Explosives | Unwanted Explosion | Very Unlikely | Catastrophic | 5 |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Blasting | Hit by fly rock (Bodily Injury) | Occasional | Major | 6 |
| 4 | Drilling | Exposure to Dust | Frequent | Insignificant | 5 |
| 5 | Bench Formation | Fall/Slide/Tripping (Bodily Injury) | Probable | Moderate | 6 |
| 6 | Loading/Unloading | Bodily injury by hitting by loading material, Exposure to Dust | Very Unlikely | Minor | 20 |
| **7** | Transportation | Vehicle Accident, Exposure to Dust | Remote | Minor | 16 |

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

**Preventive Measures:**

**Face Stability**

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

**Drilling Operations**

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

**Falls from the edge of a bench**

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.
While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

**Dust generation during drilling**

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

**Noise Generation during drilling**

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.
The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.
The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

**Blasting Operations**

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

**Handling of Explosives**

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container

- The holes which have been charged with explosives will not be left unattended till blasting is completed.

**Health Hazards**

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

**Accident at Site**

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

**Transportation**

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.

- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

**Undertaking submitted affirming:**

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal Munkeri Stone Mine of Mr. Mumtaz Ahmad Khan, Mauza : Munkeri, Thana : Chhatarpur, Distt. : Palamau, Jharkhand (3.12 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

I. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.

II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"EkPed Ma KeNaam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

**********

21. Stone Mine of M/s Jai Baba Bholenath Stone Works (Partners : Shri Vikas Kumar Pathak & Others), Mouza : Pahaldeva, Thana : Pipra, Distt. : Palamau, Jharkhand (3.23 Ha).

**(Proposal No. SIA/JH/MIN/ 518315/2025).**

**Name of the consultant : P & M Solution, Noida, U.P.**

**Project Sector: 1(a) Mining of Minerals, Category: B1.**

**Application for Terms of Reference (ToR) (re-appraisal of Environment Clearance issued by DEIAA, Palamau).**

The project has been granted EC by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/05, dated 21.02.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Palamau which has been taken up for consideration on 22.01.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B1.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ . All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 2669/M, dated 30.11.2024 by DMO, Palamau is within the permissible limit of EC.

The self certified compliance report has been submitted.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

**Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.**

**The self certified compliance report has been submitted and also presented before the Committee.**

**TOR Application for: Proposed Capacity- 81,000 cum/annum or 2,43,000 TPA**

Project and Location Details:

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Jai Baba Bholenath Stone Works | |
| 2 | Lessee: | : | M/s Jai Baba Bholenath Stone Works<br>(Partner - Sri Vikas Kumar Pathak & Others) | |
| 3 | Lease Address | : | Village – Pahaldeva, Thana -Pipra, District –Palamu, State – Jharkhand | |
| 4 | Lease Area | : | 3.23 ha | Acres- 8.00 Acres |
| 5 | Type of Land | : | Non-Forest (Raiyati Land) | |
| 6 | Project Cost | : | Rs. 1.10 cr. | |
| 7 | EMP Budget | : | Capital: Rs. 9.475 Lakhs | Recurring: 7.70 Lakhs/year |
| 8 | New or Expansion | : | New (Re-appraisal of DEIAA EC) | |
| 9 | Mineable Reserves | : | 12,25,158.00 tons | 4,08,386 cum |
| 10 | Mine Life | : | Up to the lease period i.e. 18.10.2017 to 17.10.2027. | |
| 11 | Man power | : | 31 | |
| 12 | Water Requirement | : | 7.77 ~ 8.0 KLD (Drinking: 0.31 KLD, Dust Suppression: 4.47 KLD, Plantation: 2.99 KLD) | |
| 13 | Water Source | : | Water will be taken from nearby village | |
| 14 | DG Set / power | : | 500 KVA | |
| 15 | Crusher | : | No Crusher | |
| 16 | Nearest Water Body | : | -- | |
| 17 | Nearest Habitation | : | Pahaldeva, Approx. 0.35 km in South direction | |
| 18 | Nearest Railway Station | : | Jalpa Railway station, Approx. 17.19 km towards NW direction. | |
| 19 | Nearest Air Port | : | Gaya International Airport, Approx. 85.27 km towards ENE direction. | |
| 20 | Nearest Forest | : | Protected Forest, Approx. 1.5 km towards NW direction of mine site.<br>Open mixed jungle, Approx. 3.0 km towards NW direction of mine site. | |
| 21 | Road & Highways | : | NH-139, Approx. 7.19 km in ESE direction. | |

**CO-ORDINATES**

| | | | |
|---|---|---|---|
| Latitude | : | From 24°28'28.31" N | To 24°28'36.37" N |
| Longitude | : | From 84°09'23.57" E | To 84°09'32.09" E |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 01 | 34 (P) |

STATUTORY CLEARANCES

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | Lease deed : 18.10.2017 to 17.10.2027. |
| 2 | CO | : | The CO, Pipra, Palamau vide letter no. 46, dated 28.04.2016 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan. |
| 3 | DMO | : | DMO, Palamau, Medininagar vide memo no. 1451/M, dated 08.07.2024 certified that 02 other mining lease area (10.00 Acre & 6.00 Acre) exists within 500 m radius from proposed project site and total area is 24.00 Acre (9.71 Ha.). |
| 4 | DFO Wild Life | : | Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 311, dated 03.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve. |
| 5 | DFO Forest Distance | : | Division Forest Officer, Medininagar Forest Divisioin vide letter no. 2147, dated 23.06.2016 certified that the distance of forest land is more than 250 meter from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Palamau District (Sl. no. 47, Page no. 231). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 17.05.2016. |
| 8 | Scheme / Mine Plan Approval | : | Mining scheme approved by Additional Director, Geology, Hazaribagh vide Letter No. 659/G, dated 27.08.2021. |
| 9 | Previous Environmental Clearance (EC) | : | Previous EC granted by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/05, dated 21.02.2017. |
| 10 | Compliance report of EC | : | Self certified compliance report. |
| 11 | Consent to Establish (CTE) | : | CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-1984558 /2018 /172, dated 14.02.2018. |
| 12 | Consent to Operate (CTO) | : | CTO issued by JSPCB vide ref. no. : JSPCB/RO/RNC/CTO-17601293 /2023/232, dated 30.10.2023. |
| 13 | Production Report | : | Production report issued by DMO, Palamau vide memo no. 2669/M, dated 30.11.2024 |
| 14 | Qualified Person | : | Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him. |

Working Details

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Semi - mechanized mining method | |
| 2 | Quarry Area | : | 3.23 ha or 8.00 Acres | Life of Mine – Up to the lease period i.e. 18.10.2017 to 17.10.2027. |
| 3 | Waste Generation | : | Total 21312.76cum intercalated waste and 18400cum overburden. | |
| 4 | Stripping Ratio | : | 01:0.9 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 6m x 6m | |
| 7 | Elevation of Mine | : | 216 AMSL to 236 AMSL | |
| 8 | Ground Level Elevation | : | 216 AMSL | |
| 9 | Ultimate Working Depth | : | 207 AMSL (9 mbgl) | |
| 10 | Water Table | : | 194 AMSL (22 mbgl) | |
| 11 | Topography of Mine | : | The lease area represents a small hillock. | |
| 12 | Explosive Requirement | : | 110 kg/day | |
| 13 | Diesel/Fuel requirement | : | 120 litre/day | |

Production Details

| Year | Production of Stone in Tons As per EC Letter | Production of Stone in Tons | Production of Stone in Cum | Overburden in cum | Intercalated waste in cum | Total waste in cum | Bench section |
|---|---|---|---|---|---|---|---|
| 1st | 243000 | 242905.50 | 80,968.5 | 2880.00 | 4261.50 | 7141.50 | 213-207 |
| 2nd | 243000 | 242962.50 | 80,987.5 | 8320.00 | 4262.50 | 12582.50 | 231-207 |
| 3rd | 243000 | 242979.60 | 80,993.2 | 5280.00 | 4262.80 | 9542.80 | 225-213 |
| 4th | 243000 | 243000.12 | 81000.04 | 1920.00 | 4263.16 | 6183.16 | 213-207 |
| 5th | 243000 | 242979.60 | 80,993.2 | 0.00 | 4262.80 | 4262.80 | 207-207 |
| Total | **1215000** | **1214827.32** | **4,04,942.44** | **18400.00** | **21312.76** | **39712.76** | |

**As per approved mine plan production: - 81000.04 cum/annum or 243000.12 TPA**
**As per EC letter production: - 81000 cum/annum or 243000 TPA**

Land Use

| Pattern of Utilization | Present Land Use (in Ha) | After End of scheme period (in Ha) | After life of Mine (in Ha) |
|---|---|---|---|
| Quarry | 1.244 | 2.744 (0.277 ha. area shall be backfilled) | 2.744 (Entire area shall be left as water reservoir) |
| Road | 0.301 | 0.060 | 0.060 |

| | | | |
|---|---|---|---|
| Waste dump | Nil | Nil (waste dump to be removed and backfilled) | Nil |
| Safety Zone | 0.426 (Plantation) | 0.426 (Plantation) | 0.426 (Plantation) |
| Crusher | Nil | Nil | Nil |
| Total | 1.971 | 3.230 | 3.23 |
| Unused area | **1.259** | **0.000** | **0.00** |
| Leasehold area | 3.23 | 3.23 | 3.23 |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

| S. No. | Location | | Area/Length | No. of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | : | 0.426 ha | 1065 (450 Plants have already planted during previous year of mining & 615 plants will be planted in the first year of operation) |
| 2 | Along Approach Road | : | 390 m | 780 |
| 3 | No. of plants distributed with consultation local authorities /village Panchayat | : | -- | 100 |

**Note:** A total of 1945 saplings were proposed to be planted. Out of which 450 plant in Safety Zone area have been planted during previous year of mining.
(615 plants will be planted in 7.5m Safety Zone Area, 780 plant along approach road & 100 plants with consultation from local authorities/village Panchayat) will be done in the first year of operation. (Total 1495 Plants)

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

**COST PROPOSED FOR EMP**

| Sl. No | Description | Capital Cost (Rs.) | Recurring Cost (Rs.) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | -- | 4,00,000 |

| | | | |
|---|---|---|---|
| 2 | Baseline Monitoring<br>i) Air<br>ii) Water<br>iii) Soil<br>iv) Noise | -- | <br>50,000<br>40,000<br>20,000<br>10,000 |
| 3 | Plantation | 7,47,500 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 2,00,000 | 1,50,000 |
| **TOTAL** | | **9,47,500** | **7,70,000** |

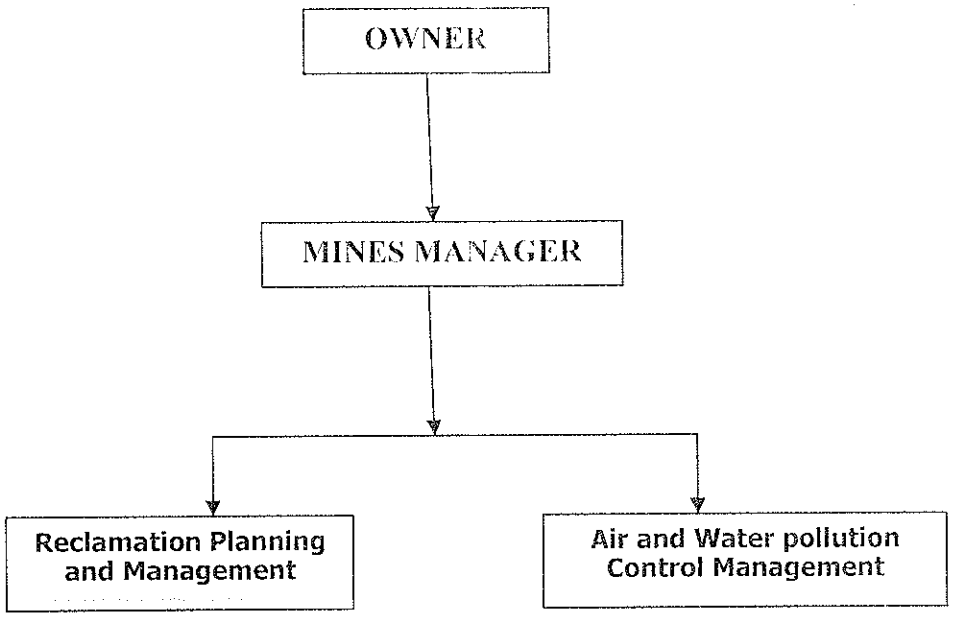
**Note:** *1495 plants * 500 Rs (for each plants including hedges and fences) = 7.475 Lakhs
A total of 1945 saplings were proposed to be planted. Out of which 450 plant in Safety Zone area have been planted during previous year of mining.
(615 plants will be planted in 7.5m Safety Zone Area, 780 plant along approach road & 100 plants with consultation from local authorities/village Panchayat) will be done in the first year of operation. (Total 1495 Plants)
*Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/- or 1,50,000/-( including maintenance)
* 5.0 lakh per kilometer (500000 * 0.39 km haul road = 1,95,000/- ~ 2,00,000/-)

**Environment Monitoring Programme**

| Sl. No | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |
| 2 | Soil | 2 Stations | 6 Monthly |
| 3 | Surface Water | 2 Stations | 6 Monthly |
| 4 | Ground Water | 2 Stations | 6 Monthly |
| 5 | Noise | 4 Stations | 6 Monthly |

**Solid Waste Management**

Total 21312.76cum intercalated waste and 18400cum overburden will be generated during plan period. It has been calculated that total 39712.76cum waste shall be generated during this scheme period. The waste generated during the first and second year of scheme period shall be dumped in the south eastern part of the lease area with maximum height of 6m &7m and the total waste generated during third year and waste of first and second year shall be used for backfilling of southern part of exhausted quarry with 11m height. The waste generated during the fourth and fifth year shall be used for backfilling of exhausted quarry with 11m height.




*Organization Structure*

**Water Quality Management**

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

**Air Quality Management**

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.

- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

**RISK ASSESSMENT**

The hazard identification and risk analysis is done using qualitative method:

**Probability/Likelihood of Occurrence of Hazard**

| Likelihood Level | Probability | Description |
|---|---|---|
| L5 | Very Unlikely | Has not occurred/reported within last 5 years. |
| L4 | Remote / Moderate | May occur if conditions exist. Has occurred within last 3 years. |
| L3 | Occasional | Likely to occur if conditions exist. Has occurred within last 2 years. |
| L2 | Probable | Very likely to occur. Has occurred within last year. |
| L1 | Frequent | Almost certain to occur. Has occurred more than one within last year. |

**Severity/Impact Intensity**

| Severity Level | Severity | Description |
|---|---|---|
| C1 | Catastrophic | May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation. |
| C2 | Major | May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action. |
| C3 | Moderate | Minor injury to personnel or environment |
| C4 | Minor | Minor damage but does not cause injury to personnel |
| C5 | Insignificant | May result in no, or less minor, illness, injuryor system damage |

**Risk Assessment Chart (Qualitative Method)**

| Risk Rank (Likelihood x | L5 (Very Unlikely) | L4 (Remote) | L3 (Occasional) | L2 (Probable) | L1 (Frequent) |
|---|---|---|---|---|---|

| Consequence) | | | | | |
|---|---|---|---|---|---|
| C1 (Catastrophic) | 5 | 4 | 3 | 2 | 1 |
| C2 (Major) | 10 | 8 | 6 | 4 | 2 |
| C3 (Moderate) | *15* | 12 | 9 | 6 | 3 |
| C4 (Minor) | *20* | *16* | 12 | 8 | 4 |
| C5 (Insignificant) | *25* | *20* | *15* | 10 | 5 |

**Risk Rating Scale**

| S. No. | Rating | Scale |
|---|---|---|
| 1 | **High Risk** | 1-4 |
| 2 | Medium Risk | 5-12 |
| 3 | *Low Risk* | *13-25* |

**Hazard identification & Risk Analysis in Stone mining operation**

| S. No. | Activity | Hazard | Probability | Severity | Score |
|---|---|---|---|---|---|
| 1 | Temporary Storage of Explosives | Unintended Explosion | Very Unlikely | Catastrophic | 5 |
| 2 | Charging of Explosives | Unwanted Explosion | Very Unlikely | Catastrophic | 5 |
| 3 | Blasting | Hit by fly rock (Bodily Injury) | Occasional | Major | 6 |
| 4 | Drilling | Exposure to Dust | Frequent | Insignificant | 5 |
| 5 | Bench Formation | Fall/Slide/Tripping (Bodily Injury) | Probable | Moderate | 6 |
| 6 | Loading/Unloading | Bodily injury by hitting by loading material, Exposure to Dust | Very Unlikely | Minor | 20 |
| 7 | Transportation | Vehicle Accident, Exposure to Dust | Remote | Minor | 16 |

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

**Preventive Measures:**

**Face Stability**

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in

loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

**Drilling Operations**

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

**Falls from the edge of a bench**

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

**Control Measures**

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- 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 20, 21, 22, 23 & 24.01.2025, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure II alongwith following specific condition :-**

I. Certified compliance report of the conditions of previous EC shall be obtained from JSPCB and enclosed with final EIA / EMP.
II. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.
III. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
IV. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

**********

22. Kumhra Stone Mine of M/s Kumhra Stone Mine (Prop. : Shri Shailendra Kumar), Village : Kumhra, Thana : Pipra, Distt. : Palamau, Jharkhand (2.43 Ha).

(Proposal No. SIA/JH/MIN/ 518174/2025).

Name of the consultant : P & M Solution, Noida, U.P.

Project Sector: 1(a) Mining of Minerals, Category: B1.

**Application for Terms of Reference (ToR) (re-appraisal of Environment Clearance issued by DEIAA, Palamau).**

The project has been granted EC by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/53, dated 17.08.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Palamau which has been taken up for consideration on 22.01.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B1.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ · All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 2564/M, dated 05.11.2024 by DMO, Palamau is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 1561, dated 11.12.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

**Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.**

**The self certified compliance report has been submitted and also presented before the Committee.**

**TOR Application for: Proposed Capacity- 55625.92 cum/annum or 150190 TPA.**

Project and Location Details:

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Kumhra Stone Mine | |
| 2 | Lessee: | : | M/s Kumhra Stone Mine<br>(Prop. – Shri Shailendra Kumar) | |
| 3 | Lease Address | : | Village – Kumhra, Thana -Pipra, District – Palamu, State – Jharkhand | |
| 4 | Lease Area | : | 2.43 ha. | Acres- 6.00 Acres |
| 5 | Type of Land | : | Non-Forest (Raiyati Land) | |
| 6 | Project Cost | : | Rs. 1.40 cr. | |
| 7 | EMP Budget | : | Capital: Rs. 3.20 Lakhs | Recurring: 5.70 Lakhs/year |
| 8 | New or Expansion | : | New (Re-appraisal of DEIAA EC) | |
| 9 | Mineable Reserves | : | 17,68,775 tons | 6,55,101.85 cum |
| 10 | Mine Life | : | Up to the lease period i.e. 24.10.2017 to 23.10.2027. | |
| 11 | Man power | : | 32 | |
| 12 | Water Requirement | : | 3.82 ~ 4.0 KLD (Drinking: 0.32 KLD, Dust Suppression: 3.02 KLD, Plantation: 0.48 KLD) | |
| 13 | Water Source | : | Water will be taken from nearby village | |
| 14 | DG Set / power | : | 500 KVA | |
| 15 | Crusher | : | No Crusher | |
| 16 | Nearest Water Body | : | Sukhnadia Nadi, Approx. 0.05 km towards West direction. | |
| 17 | Nearest Habitation | : | Kumhra, Approx. 0.51 km in SW direction | |
| 18 | Nearest Railway Station | : | Japla Railway Station, approx. 15.30 km towards WNW direction. | |
| 19 | Nearest Air Port | : | Gaya International Airport, approx. 84.90 km towards ENE direction. | |
| 20 | Nearest Forest | : | Bansdohar Protected forest, Approx. 0.40 Km in East direction.<br>Protected forest, Approx. 1.61 Km in North direction<br>Protected forest, Approx. 2.40 km in West direction<br>Protected forest, Approx. 4.30 km in SSW direction | |
| 21 | Road & Highways | : | NH-139, Approx. 8.85 km in East direction. | |

CO-ORDINATES

| | | | |
|---|---|---|---|
| Latitude | : | From 24°28'48.5" N | To 24°28'52.9" N |
| Longitude | : | From 84°08'38.1" E | To 84°08'42.0" E |

LAND DETAILS

| Khata no. | Plot no. |
|---|---|
| 38 | 06 (P) |

## STATUTORY CLEARANCES

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | Lease deed : 24.10.2017 to 23.10.2027. |
| 2 | CO | : | The CO, Pipra, Palamau vide letter no. 78, dated 15.07.2016 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan. |
| 3 | DMO | : | DMO, Palamau, Medininagar vide memo no. 1455/M, dated 08.07.2024 certified that 01 other mining lease area (7.00 Acre) exists within 500 m radius from proposed project site and total area is 13.00 Acre (5.26 Ha.). |
| 4 | DFO Wild Life | : | Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 364, dated 25.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve. |
| 5 | DFO Forest Distance | : | Division Forest Officer, Medininagar Forest Divisioin vide letter no. 3383, dated 03.09.2016 certified that the distance of forest land is more than 250 meter from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Palamau District (Sl. no. 32, Page no. 229). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 24.10.2016. |
| 8 | Scheme / Mine Plan Approval | : | Mining scheme approved by Additional Director, Geology, Hazaribagh vide Memo No. 22/G, dated 21.04.2022. |
| 9 | Previous Environmental Clearance (EC) | : | Previous EC granted by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/53, dated 17.08.2017. |
| 10 | Compliance report of EC | : | Compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 1561, dated 11.12.2024. |
| 11 | Consent to Establish (CTE) | : | CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2038063 /2018 /182, dated 14.02.2018. |
| 12 | Consent to Operate (CTO) | : | CTO issued by JSPCB vide ref. no. : JSPCB/RO/RNC/CTO-20207582 /2024/1928, dated 18.12.2024. |
| 13 | Production Report | : | Production report issued by DMO, Palamau vide memo no. 2564/M, dated 05.11.2024 |
| 14 | Qualified Person | : | Shri J.P. Bhattacharya vide letter dated 22.01.2025 affirmed that the mine plan has been prepared by him. |

Working Details

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast mechanized mining method | |
| 2 | Quarry Area | : | 2.43 ha or 6.00 Acres | Life of Mine – 12 Years |
| 3 | Waste Generation | : | 26382 cum | |
| 4 | Stripping Ratio | : | 01:0.9 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 6m x 6m | |
| 7 | Elevation of Mine | : | 179 AMSL to 199 AMSL | |
| 8 | Ground Level Elevation | : | 179 AMSL | |
| 9 | Ultimate Working Depth | : | 137 AMSL (42 mbgl) | |
| 10 | Water Table | : | 127-125 AMSL (54- 52 mbgl) | |
| 11 | Topography of Mine | : | The lease area represents a small hillock. | |
| 12 | Explosive Requirement | : | 110 kg/day | |
| 13 | Diesel/Fuel requirement | : | 120 litre/day | |

Production Details

| Year | Production as per EC Letter in Tons | Production of Stone | | Overburden & Waste (cum) | Bench section |
|---|---|---|---|---|---|
| | | cum | tons | | |
| 1st year | 150109 | 55595.92 | 150109 | 26382 | 197-185 |
| 2nd year | 150044 | 55571.85 | 150044 | - | 185-179 |
| 3rd year | 150109 | 55595.92 | 150109 | - | 179-173 |
| 4th year | 150190 | 55625.92 | 150190 | - | 179-167 |
| 5th year | 150044 | 55571.85 | 150044 | - | 173-161 |
| **Total** | **750496** | **277961.46** | **750496** | **26382** | |

**As per approved mine plan production: - 55625.92 cum/annum or 150190 TPA**
**As per EC letter production: - 55625.92 cum/annum or 150190 TPA**

Land Use

| Category | Present Land Use (in Ha) | At the End of Plan Period (in Ha) | At the End of mine (in Ha) |
|---|---|---|---|
| Quarry | 0.819 | 1.764 | 1.910 (Entire area shall be converted into water reservoir) |
| Road | 0.030 | 0.050 | - |

| | | | |
|---|---|---|---|
| Safety Zone | 0.520 (Plantation) | 0.520 (Plantation) | 0.520 (Plantation) |
| Dump | 0.225 | - | - |
| Rest shelter, office etc. | 0.020 | - | - |
| Area unutilized (Periphery, Safety beams etc.) | - | - | - |
| **Total area in use** | **1.614** | **2.334** | **2.43** |
| Balanced land | 0.816 | 0.096 | - |
| **Total Lease area** | **2.43** | **2.43** | **2.43** |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

| S. No. | Location | | Area/Length | No. of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | : | 0.520 ha | 1300 (Already done during previous year of mining) |
| 2 | Along Approach Road | : | 70 m | 140 |
| 3 | No. of plants distributed with consultation local authorities /village Panchayat | : | -- | 100 |

**Note:** A total of 1540 saplings were proposed to be planted. Out of which 1300 plant in Safety Zone area have been planted during previous year of mining.
(140 plants along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 240 Plants)

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

**COST PROPOSED FOR EMP**

| Sl. No | Description | Capital Cost (Rs.) | Recurring Cost (Rs.) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | -- | 2,00,000 |

| | | | |
|---|---|---|---|
| 2 | Baseline Monitoring<br>i) Air<br>ii) Water<br>iii) Soil<br>iv) Noise | -- | 50,000<br>40,000<br>20,000<br>10,000 |
| 3 | Plantation | 1,20,000 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 2,00,000 | 1,50,000 |
| **TOTAL** | | **3,20,000** | **5,70,000** |

**Note:** *240 plants * 500 Rs (for each plants including hedges and fences) = 1.20 Lakhs

A total of 1540 saplings were proposed to be planted. Out of which 1300 plant in Safety Zone area have been planted during previous year of mining.

(140 plants along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 240 Plants)

Salary of Labor for haul road maintenance 1 labor*300 = 300 per day

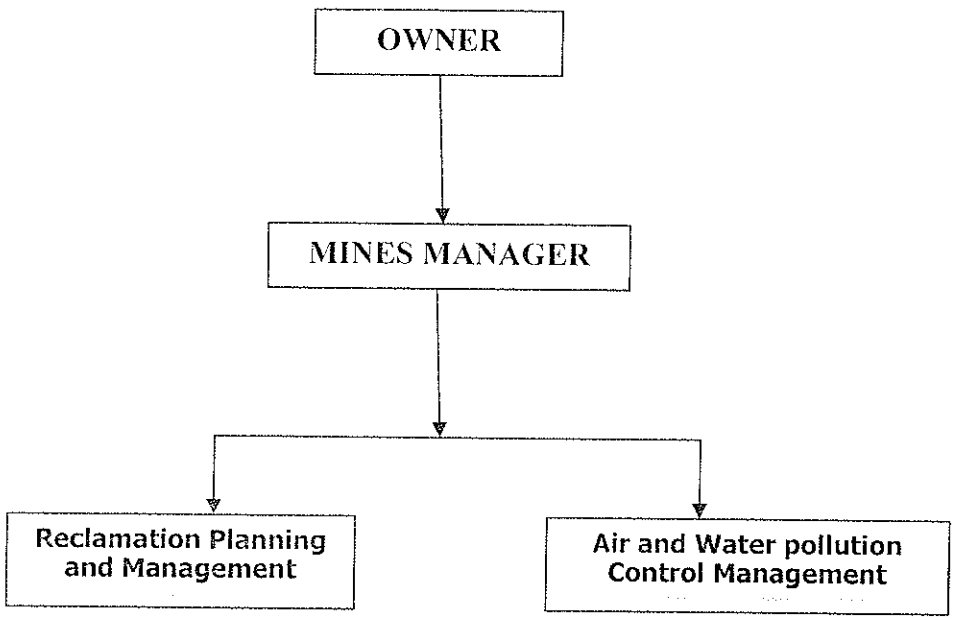
300* 300 = 90000/- or 1,50,000/- (including maintenance material)

**Environment Monitoring Programme**

| Sl. No | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |
| 2 | Soil | 2 Stations | 6 Monthly |
| 3 | Surface Water | 2 Stations | 6 Monthly |
| 4 | Ground Water | 2 Stations | 6 Monthly |
| 5 | Noise | 4 Stations | 6 Monthly |

**Solid Waste Management**

Total 26382 cum of total waste will be generated during the plan period. For disposal of overburden and waste materials, dump has been planned towards the west and south side boundaries junction as a temporary measure.



**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)

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- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

**Drilling Operations**

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

**Falls from the edge of a bench**

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

**Control Measures**

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

**Dust generation during drilling**

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

**Noise Generation during drilling**

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

**Blasting Operations**

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

**Handling of Explosives**

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

**Health Hazards**

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

**Accident at Site**

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

**Transportation**

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

**Undertaking submitted affirming:**

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.

g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
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 20, 21, 22, 23 & 24.01.2025, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure II alongwith following specific condition :-**

I. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.
II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

**********

23. Kumhra Stone Mine of M/s Kumhra Stone Mine (Prop. : Shri Nitin Gupta), Village : Kumhra, Thana : Pipra, Distt. : Palamau, Jharkhand (2.83 Ha).

(Proposal No. SIA/JH/MIN/ 518095/2025).

Name of the consultant : P & M Solution, Noida, U.P.

Project Sector: 1(a) Mining of Minerals, Category: B1.

**Application for Terms of Reference (ToR) (re-appraisal of Environment Clearance issued by DEIAA, Palamau).**

The project has been granted EC by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/28, dated 29.05.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Palamau which has been taken up for consideration on 22.01.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B1.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 2668/M, dated 30.11.2024 by DMO, Palamau is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 51, dated 13.01.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

**Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.**

**The self certified compliance report has been submitted and also presented before the Committee.**

**TOR Application for: Proposed Capacity- 88924.07 cum/annum or 240095 TPA.**

Project and Location Details:

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Kumhra Stone Mine | |
| 2 | Lessee: | : | M/s Kumhra Stone Mine,<br>(Prop. – Shri Nitin Gupta) | |
| 3 | Lease Address | : | Village – Kumhra, Thana - Pipra, District – Palamu, State – Jharkhand | |
| 4 | Lease Area | : | 2.83 ha | Acres- 7.00 Acres |
| 5 | Type of Land | : | Non-Forest (Raiyati Land) | |
| 6 | Project Cost | : | Rs. 1.40 cr. | |
| 7 | EMP Budget | : | Capital: Rs. 5.00 Lakhs | Recurring: 5.70 Lakhs/year |
| 8 | New or Expansion | : | New (Re-appraisal of DEIAA EC) | |
| 9 | Mineable Reserves | : | 1274445.90 tons | 4,72,017 cum |
| 10 | Mine Life | : | Up to the lease period i.e. 07.11.2017 to 06.11.2027. | |
| 11 | Man power | : | 26 | |
| 12 | Water Requirement | : | 4.055 ~ 4.10 KLD (Drinking: 0.26 KLD, Dust Suppression: 2.595 KLD, Plantation: 1.20 KLD) | |
| 13 | Water Source | : | Water will be taken from nearby village | |
| 14 | DG Set / power | : | 500 KVA | |
| 15 | Crusher | : | No Crusher | |
| 16 | Nearest Water Body | : | Sukhnadia Nadi, Approx. 0.03 km towards West direction. | |
| 17 | Nearest Habitation | : | Tendui, Approx. 0.610 km in SW direction | |
| 18 | Nearest Railway Station | : | Japla Railway Station, approx. 15.30 km towards WNW direction. | |
| 19 | Nearest Air Port | : | Gaya International Airport, approx. 84.90 km towards ENE direction. | |
| 20 | Nearest Forest | : | Bansdohar Protected forest, Approx. 0.40 Km in East direction.<br>Protected forest, Approx. 1.40 Km in North direction<br>Protected forest, Approx. 2.40 km in West direction<br>Protected forest, Approx. 4.37 km in SSW direction | |
| 21 | Road & Highways | : | NH-139, Approx. 8.85 km in East direction. | |

**CO-ORDINATES**

| | | | |
|---|---|---|---|
| Latitude | : | From 24°28'52.0" N | To 24°28'55.10" N |
| Longitude | : | From 84°08'38.40" E | To 84°08'42.60" E |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 38 | 06 (P) |

STATUTORY CLEARANCES

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | Lease deed : 07.11.2017 to 06.11.2027. |
| 2 | CO | : | The CO, Pipra, Palamau vide letter no. 79, dated 15.07.2016 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan. |
| 3 | DMO | : | DMO, Palamau, Medininagar vide memo no. 1454/M, dated 08.07.2024 certified that 01 other mining lease area (6.00 Acre) exists within 500 m radius from proposed project site and total area is 13.00 Acre (5.26 Ha.). |
| 4 | DFO Wild Life | : | Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 365, dated 25.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve. |
| 5 | DFO Forest Distance | : | Division Forest Officer, Medininagar Forest Divisioin vide letter no. 3382, dated 03.09.2016 certified that the distance of forest land is more than 250 meter from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Palamau District (Sl. no. 29, Page no. 228). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 24.10.2016. |
| 8 | Scheme / Mine Plan Approval | : | Mining scheme approved by Additional Director, Geology, Hazaribagh vide Memo No. 69/G, dated 02.03.2022. |
| 9 | Previous Environmental Clearance (EC) | : | Previous EC granted by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/28, dated 29.05.2017. |
| 10 | Compliance report of EC | : | Compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 51, dated 13.01.2025. |
| 11 | Consent to Establish (CTE) | : | CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2027601 /2018 /368, dated 07.04.2018. |
| 12 | Consent to Operate (CTO) | : | CTO issued by JSPCB vide ref. no. :<br>i. JSPCB/RO/RNC/CTO-4765197 /2019/69, dated 18.03.2019.<br>ii. JSPCB/RO/RNC/CTO-12693970 /2022/88, dated 02.04.2022. |
| 13 | Production Report | : | Production report issued by DMO, Palamau vide memo no. 2668/M, dated 30.11.2024. |

| | | | |
|---|---|---|---|
| 14 | Qualified Person | : | Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Semi-mechanized mining method | |
| 2 | Quarry Area | : | 2.83 ha or 7.00 Acres | Life of Mine – Up to the lease period i.e. 07.11.2017 to 06.11.2027. |
| 3 | Waste Generation | : | Total 38044.70 Cum (14670.00 Cum Overburden and 23374.70 Cum inter burden) | |
| 4 | Stripping Ratio | : | 01:0.8 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 6m x 6m | |
| 7 | Elevation of Mine | : | 179 AMSL to 209 AMSL | |
| 8 | Ground Level Elevation | : | 179 AMSL | |
| 9 | Ultimate Working Depth | : | 150 AMSL (29 mbgl) | |
| 10 | Water Table | : | 146-144 AMSL (35- 33 mbgl) | |
| 11 | Topography of Mine | : | The lease area represents a small hillock. | |
| 12 | Explosive Requirement | : | 110 kg/day | |
| 13 | Diesel/Fuel requirement | : | 120 litre/day | |

**Production Details**

| Year | Proposed Production as per EC in Tons | Production of Stone | | Overburden in cum | Intercalated waste in cum | Total waste in cum | Bench section |
|---|---|---|---|---|---|---|---|
| | | cum | tons | | | | |
| 1st year | 240017 | 88883.90 | 239986.53 | - | 4678.10 | 4678.10 | 186-156 |
| 2nd year | 240095 | 88817.40 | 239806.98 | 7830.00 | 4674.60 | 12504.60 | 204-150 |
| 3rd year | 240071 | 88834.50 | 239853.15 | 6840.00 | 4675.50 | 11515.50 | 180-174 |
| 4th year | 240006 | 88834.50 | 239853.15 | - | 4675.50 | 4675.50 | 168-162 |
| 5th year | 240017 | 88749.00 | 239622.30 | - | 4671.00 | 4671.00 | 162-150 |
| Total | 1200206 | 444119.30 | 1199122.11 | 14670.00 | 23374.70 | 38044.70 | |

As per approved mine plan production: 88883.90 cum/annum or 239986.53 TPA

As per EC letter production: - 88924.07 cum/annum or 240095 TPA

Land Use

| Category | Present Land Use (in Ha) | At the End of Plan Period (in Ha) | At the End of mine (in Ha) |
|---|---|---|---|
| Quarry | 1.492 | 2.593 | 2.593 (0.318 ha. area shall be backfilled & Entire area shall be converted into water reservoir) |
| Road | 0.045 | 0.008 | 0.008 |
| Safety Zone | 0.219 (Plantation) | 0.219 (Plantation) | 0.219 (Plantation) |
| **Total area in use** | **1.756** | **2.82** | **2.82** |
| Balanced Unused Area | 1.074 | 0.01 | 0.01 |
| **Total Lease area** | **2.83** | **2.83** | **2.83** |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

| S. No. | Location | | Area/Length | No. of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | : | 0.219 ha | 550 (Already done during previous year of mining) |
| 2 | Along Approach Road | : | 250 m | 500 |
| 3 | No. of plants distributed with consultation local authorities /village Panchayat | : | -- | 100 |

**Note:** A total of 1150 saplings were proposed to be planted. Out of which 550 plant in Safety Zone area have been planted during previous year of mining.
(500 plants along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 600 Plants)

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

**COST PROPOSED FOR EMP**

| Sl. No | Description | Capital Cost (Rs.) | Recurring Cost (Rs.) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | -- | 2,00,000 |

546

| | | | |
|---|---|---|---|
| 2 | Baseline Monitoring<br>i) Air<br>ii) Water<br>iii) Soil<br>iv) Noise | -- | <br>50,000<br>40,000<br>20,000<br>10,000 |
| 3 | Plantation | 3,00,000 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 2,00,000 | 1,50,000 |
| **TOTAL** | | **5,00,000** | **5,70,000** |

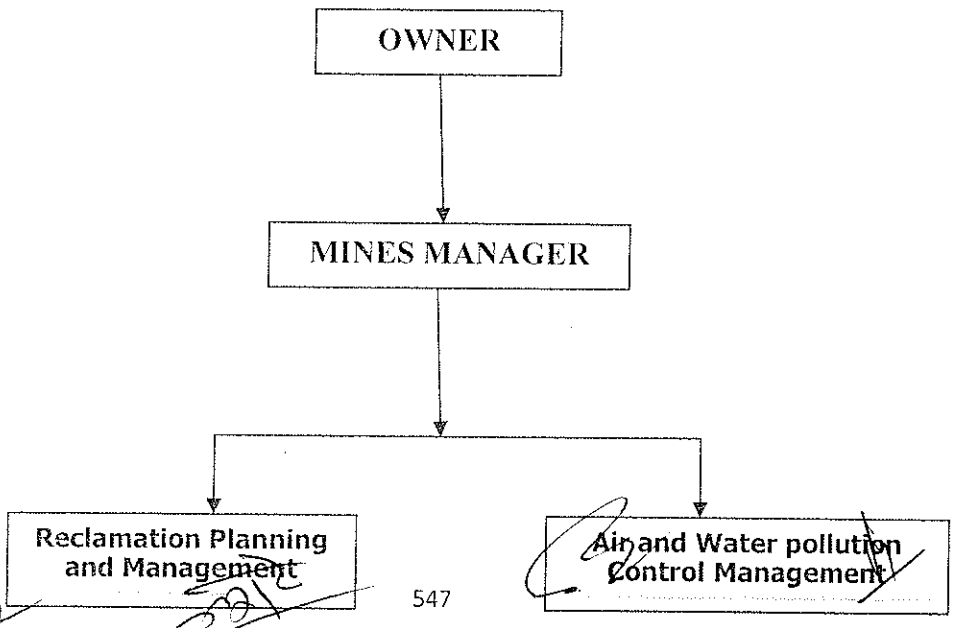
**Note:** * 600 plants * 500 Rs (for each plants including hedges and fences) = 3.0 Lakhs
A total of 1150 saplings were proposed to be planted. Out of which 550 plant in Safety Zone area have been planted during previous year of mining.
(500 plants along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 600 Plants)
Salary of Labor for haul road maintenance 1 labor*300 = 300 per day
300* 300 = 90000/- or 1,50,000/-(including maintenance material)

**Environment Monitoring Programme**

| Sl. No | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |
| 2 | Soil | 2 Stations | 6 Monthly |
| 3 | Surface Water | 2 Stations | 6 Monthly |
| 4 | Ground Water | 2 Stations | 6 Monthly |
| 5 | Noise | 4 Stations | 6 Monthly |

**Solid Waste Management**

Total 38044.70 cum of total waste will be generated during the plan period. Waste shall be dumped in the south western side of the lease area with maximum height of 6.36m. Third year onwards the yearly generated waste and dump material of 1st year & 2nd year shall be used in backfilling of exhausted quarry in northern part, these backfilling will cover 0.318 ha area.



**Water Quality Management**

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

**Air Quality Management**

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

**RISK ASSESSMENT**

The hazard identification and risk analysis is done using qualitative method:

**Probability/Likelihood of Occurrence of Hazard**

| Likelihood Level | Probability | Description |
|---|---|---|
| L5 | Very Unlikely | Has not occurred/reported within last 5 years. |
| L4 | Remote / Moderate | May occur if conditions exist. Has occurred within last 3 years. |

| | | |
|---|---|---|
| L3 | Occasional | Likely to occur if conditions exist. Has occurred within last 2 years. |
| L2 | Probable | Very likely to occur. Has occurred within last year. |
| L1 | Frequent | Almost certain to occur. Has occurred more than one within last year. |

Severity/Impact Intensity

| Severity Level | Severity | Description |
|---|---|---|
| C1 | Catastrophic | May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation. |
| C2 | Major | May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action. |
| C3 | Moderate | Minor injury to personnel or environment |
| C4 | Minor | Minor damage but does not cause injury to personnel |
| C5 | Insignificant | May result in no, or less minor, illness, injuryor system damage |

Risk Assessment Chart (Qualitative Method)

| Risk Rank (Likelihood x Consequence) | L5 (Very Unlikely) | L4 (Remote) | L3 (Occasional) | L2 (Probable) | L1 (Frequent) |
|---|---|---|---|---|---|
| C1 (Catastrophic) | 5 | 4 | 3 | 2 | 1 |
| C2 (Major) | 10 | 8 | 6 | 4 | 2 |
| C3 (Moderate) | 15 | 12 | 9 | 6 | 3 |
| C4 (Minor) | 20 | 16 | 12 | 8 | 4 |
| C5 (Insignificant) | 25 | 20 | 15 | 10 | 5 |

Risk Rating Scale

| S. No. | Rating | Scale |
|---|---|---|
| 1 | High Risk | 1-4 |
| 2 | Medium Risk | 5-12 |

| | | |
|---|---|---|
| 3 | *Low Risk* | *13-25* |

**Hazard identification & Risk Analysis in Stone mining operation**

| S. No. | Activity | Hazard | Probability | Severity | Score |
|---|---|---|---|---|---|
| 1 | Temporary Storage of Explosives | Unintended Explosion | Very Unlikely | Catastrophic | 5 |
| 2 | Charging of Explosives | Unwanted Explosion | Very Unlikely | Catastrophic | 5 |
| 3 | Blasting | Hit by fly rock (Bodily Injury) | Occasional | Major | 6 |
| 4 | Drilling | Exposure to Dust | Frequent | Insignificant | 5 |
| 5 | Bench Formation | Fall/Slide/Tripping (Bodily Injury) | Probable | Moderate | 6 |
| 6 | Loading/Unloading | Bodily injury by hitting by loading material, Exposure to Dust | Very Unlikely | Minor | 20 |
| 7 | Transportation | Vehicle Accident, Exposure to Dust | Remote | Minor | 16 |

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

**Preventive Measures:**

**Face Stability**

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)

- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

**Drilling Operations**

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

**Falls from the edge of a bench**

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

**Control Measures**

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

**Dust generation during drilling**

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

**Noise Generation during drilling**

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

**Blasting Operations**

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

**Handling of Explosives**

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

**Health Hazards**

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

**Accident at Site**

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

**Transportation**

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle..

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

**Undertaking submitted affirming:**

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.

f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

**Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 20, 21, 22, 23 & 24.01.2025, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure II alongwith following specific condition :-**

I. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.
II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*Ek Ped Ma Ke Naam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

**********

24. Pahaldeva Stone Mine of M/s Pahaldeva Stone Mine (Prop. : Shri Subodh Kumar Singh), Village : Pahaldeva, Thana : Pipra, Distt. : Palamau, Jharkhand (2.43 Ha).

(Proposal No. SIA/JH/MIN/ 517878/2025).

Name of the consultant : P & M Solution, Noida, U.P.

Project Sector: 1(a) Mining of Minerals, Category: B1.

**Application for Terms of Reference (ToR) (re-appraisal of Environment Clearance issued by DEIAA, Palamau).**

The project has been granted EC by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/26, dated 29.05.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Palamau which has been taken up for consideration on 22.01.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B1.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ · All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 2672/M, dated 30.11.2024 by DMO, Palamau is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 106, dated 20.01.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

**Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.**

**The self certified compliance report has been submitted and also presented before the Committee.**

**TOR Application for: Proposed Capacity- 57831.11 cum/annum or 156144 TPA.**

Project and Location Details:

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Pahaldeva Stone Mine | |
| 2 | Lessee: | : | M/s Pahaldeva Stone Mine<br>(Prop. – Shri Subodh Kumar Singh) | |
| 3 | Lease Address | : | Mouza – Pahaldeva, Thana - Pipra, District – Palamu, State – Jharkhand | |
| 4 | Lease Area | : | 2.43 ha | Acres- 6.00 Acres |
| 5 | Type of Land | : | Non-Forest (Raiyati Land) | |
| 6 | Project Cost | : | Rs. 1.10 cr. | |
| 7 | EMP Budget | : | Capital: Rs. 3.60 Lakhs | Recurring: 5.70 Lakhs/year |
| 8 | New or Expansion | : | New (Re-appraisal of DEIAA EC) | |
| 9 | Mineable Reserves | : | 1237764 tons | 458431.11 cum |
| 10 | Mine Life | : | Up to the lease period i.e. 24.10.2017 to 23.10.2027. | |
| 11 | Man power | : | 34 | |
| 12 | Water Requirement | : | 5.14 ~ 5.20 KLD (Drinking: 0.34 KLD, Dust Suppression: 4.16 KLD, Plantation: 0.64 KLD) | |
| 13 | Water Source | : | Water will be taken from nearby village | |
| 14 | DG Set / power | : | 500 KVA | |
| 15 | Crusher | : | No Crusher | |
| 16 | Nearest Water Body | : | -- | |
| 17 | Nearest Habitation | : | Kalipur, Approx. 0.54 km in SSW direction | |
| 18 | Nearest Railway Station | : | Japla Railway Station, approx. 17.30 km towards WNW direction. | |
| 19 | Nearest Air Port | : | Gaya International Airport, approx. 85.70km towards ENE direction. | |
| 20 | Nearest Forest | : | Protected Forest, Approx. 1.00 km. in North direction<br>Protected Forest, Approx. 4.50 km. in West direction<br>Protected Forest, Approx. 4.30 km. in SE direction | |
| 21 | Road & Highways | : | NH-139, Approx. 7.70 km. in East direction. | |

CO-ORDINATES

| | | | |
|---|---|---|---|
| Latitude | : | From 24°28'22.59"N | To 24°28'24.01"N |
| Longitude | : | From 84°9'20.15"E | To 84°9'23.17"E |

LAND DETAILS

| Khata no. | Plot no. |
|---|---|
| 36 | 31 |

STATUTORY CLEARANCES

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | Lease deed : 24.10.2017 to 23.10.2027. |
| 2 | CO | : | The CO, Pipra, Palamau vide letter no. 77, dated 15.07.2016 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan. |
| 3 | DMO | : | DMO, Palamau, Medininagar vide memo no. 1453/M, dated 08.07.2024 certified that 03 other mining lease area (4.00 Acre, 10.00 Acre & 8.00 Acre) exists within 500 m radius from proposed project site and total area is 28.00 Acre (11.33 Ha.). |
| 4 | DFO Wild Life | : | Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 757, dated 24.08.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve. |
| 5 | DFO Forest Distance | : | Division Forest Officer, Medininagar Forest Divisioin vide letter no. 3381, dated 03.09.2016 certified that the distance of forest land is more than 250 meter from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Palamau District (Sl. no. 17, Page no. 68). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 17.07.2016. |
| 8 | Scheme / Mine Plan Approval | : | Mining scheme approved by Additional Director, Geology, Hazaribagh vide Memo No. 326/G, dated 22.10.2022. |
| 9 | Previous Environmental Clearance (EC) | : | Previous EC granted by DEIAA, Palamau vide letter no. EC/DEIAA/2016-17/26, dated 29.05.2017. |
| 10 | Compliance report of EC | : | Compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 106, dated 20.01.2025. |
| 11 | Consent to Establish (CTE) | : | CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2017600 /2018 /8, dated 04.01.2018. |
| 12 | Consent to Operate (CTO) | : | CTO issued by JSPCB vide ref. no. : JSPCB/RO/RNC/CTO-14676852 /2022/239, dated 25.11.2022. |
| 13 | Production Report | : | Production report issued by DMO, Palamau vide memo no. 2672/M, dated 30.11.2024. |
| 14 | Qualified Person | : | Shri J.P. Bhattacharya vide letter dated 22.01.2025 affirmed that the mine plan has been prepared by him. |

Working Details

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast mechanized mining method | |
| 2 | Quarry Area | : | 2.43 ha or 6.00 Acres | Life of Mine – Up to the lease period i.e. 24.10.2017 to 23.10.2027. |
| 3 | Waste Generation | : | 18734 Cum | |
| 4 | Stripping Ratio | : | 01:0.6 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 6m x 6m | |
| 7 | Elevation of Mine | : | 187 AMSL to 196 AMSL | |
| 8 | Ground Level Elevation | : | 187 AMSL | |
| 9 | Ultimate Working Depth | : | 178 AMSL (9 mbgl) | |
| 10 | Water Table | : | 150 AMSL (37 mbgl) | |
| 11 | Topography of Mine | : | The lease area is a very gently sloping land with mass of Granite-gneiss. | |
| 12 | Explosive Requirement | : | 110 kg/day | |
| 13 | Diesel/Fuel requirement | : | 120 litre/day | |

Production Details

| Year | Proposed Production of EC in Tons | Proposed Production of Stone in Cum | Proposed Production of Stone in Tons | Overburden Removal (cum) | Bench section |
|---|---|---|---|---|---|
| 1st | 156092 | 57784.07 | 156017 | 13976 | 198-186 |
| 2nd | 156038 | 57788.14 | 156028 | 4758 | 196-180 |
| 3rd | 156144 | 57818.14 | 156109 | - | 186-177 |
| 4th | 156117 | 57791.11 | 156036 | - | 190-174 |
| 5th | 156095 | 57797.03 | 156052 | - | 184-171 |
| **Total** | **780486** | **288978.49** | **780242** | **18734** | -- |

**As per approved mine plan production: - 57818.14 cum/annum or 156109 TPA**
**As per EC letter production: - 57831.11 cum/annum or 156144 TPA**

Land Use

| Category | Present Land Use (in Ha) | At the End of Plan Period (in Ha) | At the End of mine (in Ha) |
|---|---|---|---|
| Quarry | 0.600 | 1.300 | 1.730 (Entire area will be converted into water reservoir) |
| Safety Zone | 0.700 (Plantation) | 0.700 (Plantation) | 0.700 (Plantation) |
| Dump | 0.050 | 0.080 | - |

| | | | |
|---|---|---|---|
| Total area in use | 1.350 | 2.080 | 2.430 |
| Balanced Unused Area | 1.080 | 0.350 | - |
| Total Lease area | 2.430 | 2.430 | 2.430 |

ENVIRONMENT MANAGEMENT

Green Belt Development

| S. No. | Location | | Area/Length | No. of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | : | 0.700 ha | 1750 (Already done during previous year of mining) |
| 2 | Along Approach Road | : | 110 m | 220 |
| 3 | No. of plants distributed with consultation local authorities /village Panchayat | : | -- | 100 |

**Note:** A total of 2070 saplings were proposed to be planted. Out of which 1750 plant in Safety Zone area have been planted during previous year of mining.
(220 plants along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 320 Plants)

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

| Sl. No | Description | Capital Cost (Rs.) | Recurring Cost (Rs.) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | -- | 2,00,000 |
| 2 | Baseline Monitoring<br>i) Air<br>ii) Water<br>iii) Soil<br>iv) Noise | -- | 50,000<br>40,000<br>20,000<br>10,000 |
| 3 | Plantation | 1,60,000 | 1,00,000 |
| 4 | Construction and maintenance of haul road | 2,00,000 | 1,50,000 |
| **TOTAL** | | **3,60,000** | **5,70,000** |

**Note:** *320 plants * 500 Rs (for each plants including hedges and fences) = 1.60 Lakhs

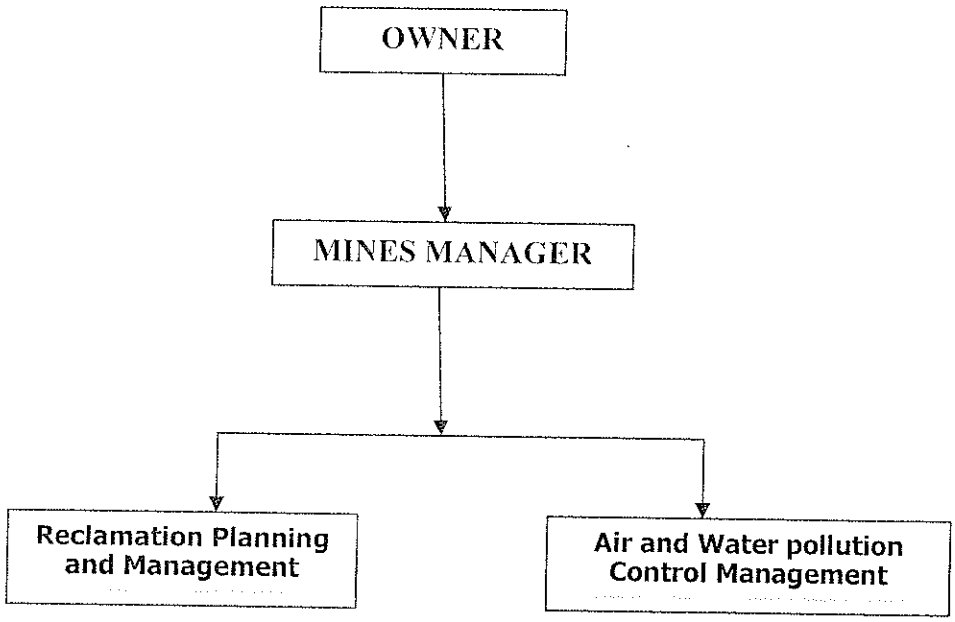
A total of 2070 saplings were proposed to be planted. Out of which 1750 plant in Safety Zone area have been planted during previous year of mining.
(220 plants along approach road & 100 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 320 Plants)
Salary of Labor for haul road maintenance 1 labor*300 = 300 per day
300* 300 = 90000/- or 1,50,000/-(including maintenance material)

**Environment Monitoring Programme**

| Sl. No | Description | No. Monitoring Stations | Duration |
|---|---|---|---|
| 1 | Air | 4 Stations | 6 Monthly |
| 2 | Soil | 2 Stations | 6 Monthly |
| 3 | Surface Water | 2 Stations | 6 Monthly |
| 4 | Ground Water | 2 Stations | 6 Monthly |
| 5 | Noise | 4 Stations | 6 Monthly |

**Solid Waste Management**

Total 18734 cum overburden will be generated during the plan period. The overburden materials will be transported up to the dumping area near southeast junction area and will be used in maintenance of approach road.




*Organization Structure*

**Water Quality Management**

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

**Air Quality Management**

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

**RISK ASSESSMENT**

The hazard identification and risk analysis is done using qualitative method:

**Probability/Likelihood of Occurrence of Hazard**

| Likelihood Level | Probability | Description |
|---|---|---|
| L5 | Very Unlikely | Has not occurred/reported within last 5 years. |
| L4 | Remote / Moderate | May occur if conditions exist. Has occurred within last 3 years. |
| L3 | Occasional | Likely to occur if conditions exist. Has occurred within last 2 years. |

| | | |
|---|---|---|
| L2 | Probable | Very likely to occur. Has occurred within last year. |
| L1 | Frequent | Almost certain to occur. Has occurred more than one within last year. |

Severity/Impact Intensity

| Severity Level | Severity | Description |
|---|---|---|
| C1 | Catastrophic | May commonly cause death or major system loss, 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 |

| 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 20, 21, 22, 23 & 24.01.2025, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure II alongwith following specific condition :-**

I. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.
II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*Ek Ped Ma Ke Naam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

**********

Day 4 : January 23rd, 2025 [Thursday]

## Consideration of proposals :

1. **Salbona Pahar Stone Mine of M/s Jyoti Construction and Engineering Pvt. Ltd., Village : Salbonapahar, Thana no. : 07, Distt. : Dumka, Jharkhand (2.05 Ha).**

   **(Proposal no.: SIA/JH/MIN/ 517105 /2025)**

   The application submitted is for grant of EC under B2 category.

   The cluster report has been issued by DMO, Dumka vide memo no. 1142/M, dated 19.08.2023.

   The Committee is of the opinion that the status of cluster is likely to be changed during the period of 17 months, as several ECs in the Salbonapahar village has been issued by SEIAA.

   **The PAs are required to submit current cluster report for further necessary action.**

   **On the receipt of the same the proposal will be taken up for consideration.**

**********

2. **M/s Godarma Kalan Stone Mine of Shri Satish Kumar Tiwary, Village : Godarma Kalan, Thana no. : 41, Thana : Rehla, Distt. : Palamau, Jharkhand (2.479 Ha).**

   **(Proposal no.: SIA/JH/MIN/ 503637 /2025)**

   **Name of the consultant : Oceao – Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.**

   **Project Sector: 1(a) Mining of Minerals, Category: B2.**

   **Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Palamau).**

   The project has been granted EC by DEIAA, Palamau vide letter no. EC/DEIAA /2016-17/49, dated 17.08.2017.

   As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

   This is re-appraisal of the EC issued by DEIAA, Palamau which has been taken up for consideration on 23.01.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 2740/M dated 10.12.2024 by DMO, Palamau, Medininagar is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 53, dated 13.01.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

**Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.**

**The self certified compliance report has been submitted and also presented before the Committee.**

**Proposed Capacity: 72,900 Cum per Annual/2,18,700 Tonnes per Annual or 243 Cum per Day/729 Tonnes per Day.**

**Project and Location Details:**

| S. No | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Godarma Kalan Stone Mine | |
| 2 | Lessee/Director | : | M/sGodarma Kalan Stone Mine<br>Shri Satish Kumar Tiwary | |
| 3 | Lessee Address | : | Gram – Nawadih, PO- Baidakala, Thana - Patan, District - Palamu,Jharkhand – 822113 | |
| 4 | Lease Area | : | 2.479 Ha. | 6.125 Acres |
| 5 | Type of Land | : | Raiyati Land | |
| 6 | Project Cost | : | 43 Lakhs | |
| 7 | EMP Budget | : | Capital: 13.18 Lakhs | Recurring: 5.0 Lakhs per year |
| 8 | New or Expansion | : | DEIAA TO SEIAA (Re-appraisal of DEIAA EC)<br>Lease Period- 18/10/2017 to 17/10/2027 | |
| 9 | Mineable Reserves | : | 7,08,949.3 Cum | 21,26,848 Tones |
| 10 | Mine Life | : | Up to the lease period i.e. 18/10/2017 to 17/10/2027. | |

| | | | | | |
|---|---|---|---|---|---|
| 11 | Man power | : | 20 persons | | |
| 12 | Water Requirement | : | Total water requirement is about 7.10 KLD.<br>0.60 KLD (Drinking & Domestic Uses) + 3.0 (Plantation) KLD + 3.50KLD (Dust Suppression). | | |
| 13 | Water Source | : | by Authorised hired water tankers | | |
| 14 | DG Set / power | : | 125 KVA (Temporary setup for Backup) | | |
| 15 | Crusher | : | Yes (Capacity 200-250 TPH) | | |
| 16 | Nearest Water Body | : | North Koel Riverat a distance of about 2.16 km in SW direction. | | |
| 17 | Nearest Habitation | : | VillagreGhordiha at a distance of about 0.61km in SSE direction. | | |
| 18 | Nearest Rail Station | : | Sigsigi Railway Station | 3.59 km | WNW |
| | | | Garhwa Road Junction | 3.01 km | S |
| 19 | Nearest Airport | : | Gaya international airport at a distance of about 120 km in ENE direction. | | |
| 20 | Nearest Industries | | Adity Birla Chemicals (India) Ltd. at 1.15km in South. | | |
| 21 | Nearest Forest | : | Khaira PF | 11.81 | NNE |
| | | | Gaurletwa PF | 12.79 | N |
| | | | Chhipadohar PF | 10.48 | E |
| | | | Jaharsarai PF | 13.08 | W |
| 22 | Road & Highways | : | Kholra Road at a distance of about 8.56 km in WNW direction. | | |

**CO-ORDINATES**

| PILLARS | LATITUDE | LONGITUDE |
|---|---|---|
| 1 | 24° 14'38.490"N | 83° 53' 8.566"E |
| 2 | 24° 14' 36.026" N | 83° 53' 8.673" E |
| 3 | 24° 14' 35.153" N | 83° 53' 9.625" E |
| 4 | 24° 14' 34.222" N | 83° 53' 11.178" E |
| 5 | 24° 14' 31.879" N | 83° 53' 10.106" E |
| 6 | 24° 14' 32.286" N | 83° 53' 6.873" E |
| 7 | 24° 14' 33.642" N | 83° 53' 3.809" E |
| 8 | 24° 14' 39.164" N | 83° 53' 5.402" E |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 118 | 1720 (P) |

STATUTORY CLEARANCES

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | Lease Deed- 18.10.2017 to 17.10.2027. |
| 2 | CO | : | The CO, Vishrampur (Palamau) vide letter no. 390, dated 29.07.2016 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in Khatiyan. |
| 3 | DMO | : | DMO, Palamau, Medininagar vide memo no. 1292/M, dated 18.06.2024 certified that no other mining lease area exists within 500 m radius from proposed project site. |
| 4 | DFO Wild Life | : | Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 279, dated 22.03.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve. |
| 5 | DFO Territorial | : | Division Forest Officer, Medininagar Forest Divisioin vide letter no. 5256 dated 27.12.2016 certified that the distance of forest land is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Palamau District (Sl. no. 14, Page no. 68). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 27.12.2016. |
| 8 | Scheme / Mine Plan Approval | : | Mining scheme approved by Additional Director, Geology, Hazaribag vide Letter No. G/2022-23-297, dated 14.10.2022. |
| 9 | Previous Environmental Clearance (EC) | : | Previous EC granted by DEIAA, Palamau vide letter no. EC/DEIAA /2016-17/49, dated 17.08.2017. |
| 10 | Compliance report of EC | : | Compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 53, dated 13.01.2025. |
| 11 | Consent to Establish (CTE) | : | CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2019617 /2018 /56, dated 09.01.2018. |
| 12 | Consent to Operate (CTO) | : | CTO issued by JSPCB vide Ref. no. : JSPCB/RO/RNC/CTO-12210377/2023/18, dated 04.01.2023. |
| 13 | Production Report | : | Production report issued by DMO, Palamau, Medininagar vide memo no. 2740/M dated 10.12.2024. |
| 14 | Qualified Person | : | Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | OCM & Mechanised | |
| 2 | Lease Area | : | 6.125 Acres / 2.479 Ha. | Life of Mine – Up to the lease period i.e. 18/10/2017 to 17/10/2027. |
| 3 | Waste Generation | : | 1250 Cum | |
| 4 | Stripping Ratio($t/m^3$) | : | 1:0.01 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 6m x 6m | |
| 7 | Highest Elevation of lease Area | : | 204 Amsl | |
| 8 | Lowest Elevation of lease Area | | 194 Amsl | |
| 9 | Ultimate Working Depth | : | 30m | |
| 10 | Water Table | : | 37m | |
| 11 | Topography of Mine | : | Undulating topography | |
| 12 | Explosive Requirement | : | 171 kg per day | |
| 13 | Diesel/Fuel requirement | | 472 Litres per day | |

**Year wise Production Details**

| Year | Generation of Waste/O. B in cum | Production of Stone in Cum | Production of Stone in Tonnes | Grade/Uses |
|---|---|---|---|---|
| **2022 – 23** | 1250 | 72882 | 218646 | Construction & Road |
| **2023 - 24** | 00 | 72900 | 218700 | Construction & Road |
| **2024 - 25** | 00 | 72900 | 218700 | Construction & Road |
| **2025 - 26** | 00 | 72900 | 218706 | Construction & Road |
| **2026 - 27** | 00 | 72900 | 218700 | Construction & Road |
| **TOTAL** | | **364484** | **1093452** | |
| **Production proposed in- 72,900 Cum/2,18,700 Ton** | | | | |
| **Stripping Ration in (m3/t)- 1:0.01** | | | | |

**Land Use**

| | Existing | First to Fifth Years | After Life of Mine |
|---|---|---|---|
| **Category** | **Area in Hectares** | **Area in Hectares** | **Area in Hectares** |

574

| | | | |
|---|---|---|---|
| Quarry | 1.01 | 1.80 | 1.90 ha. will be left as water reservoir |
| Haul Road | 0.01 | 0.03 | 0.00 |
| Proposed Crusher | 0.07 | 0.07 | Remove Crusher |
| Green belt in Safety Zone | 0.58 | 0.58 | 0.58 |
| Dump with Parapet wall & Garland drain | 0.00 | 0.00 | Nil (Waste dump to be removedand backfilling.) |
| **Total area in use** | **1.67** | **2.48** | **2.48** |
| Balance unused area | 0.81 | 0.00 | 0.00 |
| Balance used area | 0.00 | 0.00 | 0.00 |
| **Total Applied Lease Area** | **2.48** | **2.48** | **2.48** |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

| Year | Place of Plantation | Spacing b/w plants | Total No. of Plants | Area Cover in Square Meters | Total Area in Ha. | Species |
|---|---|---|---|---|---|---|
| 1st | Safety Zone | 2.5 x 2.5 | 928 | 5800 | 0.58 | Neem Pipal Bargad Palash Mango Jackfruit Guava Jamun |
| | Haul Road | 3 x 3 | 1108 | 832M Approach Road 832/3=277Plants **277x4row=1108Plants** | | |
| 2nd | Care &Protection | --- | --- | --- | --- | |
| 3rd | Care &Protection | --- | --- | --- | --- | |
| 4th | Care &Protection | --- | --- | --- | --- | |
| 5th | Care | --- | --- | --- | --- | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | &Protection | | | | | |
| **Total** | | | 2036 | **5800** | **0.58** | |

- 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.

**Proposed Environment Management Budget**

| S. No. | Mitigative measures to protect Environment | Criteria Pollutants | Capital Cost (In Lakh) | Recurring cost (In Lakh) | Implementation Responsibility | Frequency and Method |
|---|---|---|---|---|---|---|
| 1. | Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) One Water Tanker | Dust (PM 10 & PM 2.5) | 2.5 | 1.4 | Mining Mate supervised by Mine Manager | Daily Basis/Requirement Basis Register/Log book |
| | Solid waste management | Municipal Solid by workers | 0.50 | 0.1 | | Record maintain & coordination with vendors |
| 2. | Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No. of plants 2036 x 500Rs. | No2,So2 & CO reduction Noise reduction | 10.18 | 3.0 | Mining Mate supervised by Mine Manager | Care taking@twice a week, Tree Inventory, |
| 3. | Environment Monitoring (Air, Water, Noise& Soil Monitoring) | Deviation in Baseline | Nil | 0.50 | Out source to NABL Accredited Lab-Monitored by Mine Manager | Mine Manager Review of base line as per monitoring plan proposed |
| | **TOTAL** | | **13.18** | **5.0** | | |

**Solid Waste Management**

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the

removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

**Environment Monitoring Cell**

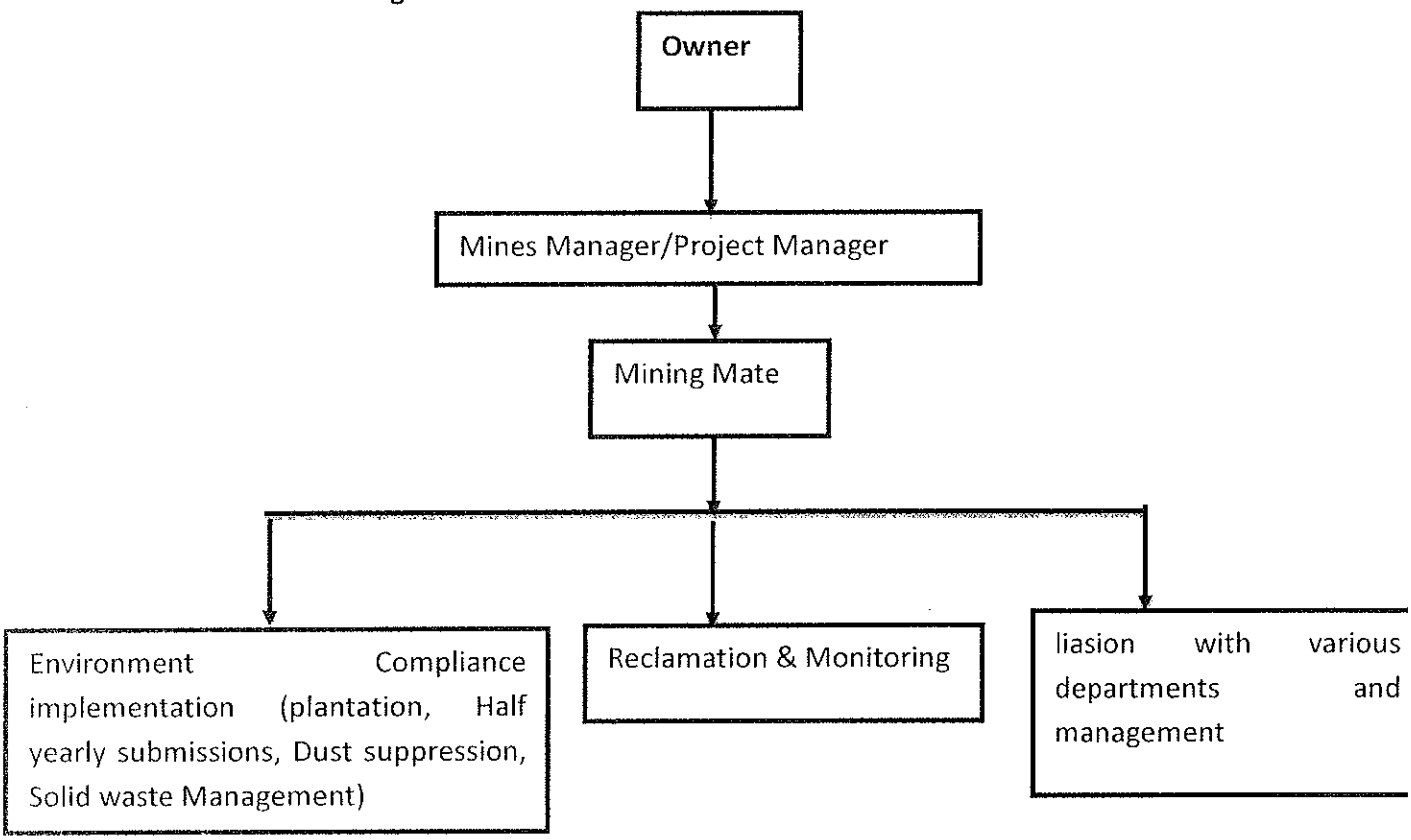



**Fig: Organization Chart for Environment Management Cell**

**Responsibility of Environment Management cell**

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
  - ✓ Implement environmental control measures.
  - ✓ Oversee reclamation planning and management.
  - ✓ Manage air and water pollution control.
  - ✓ Liaise with state and central statutory agencies.
  - ✓ Develop greenbelt areas.
- Performance Review: Assess corporate environmental performance and report non-compliances.
- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
- Coordination:

Collect health statistics for workers and local population.
Act as a bridge for project implementation and Project Authorities
Facilitate afforestation efforts.

**Monitoring Parameters and Frequency of Monitoring**

| S. no | Monitoring Parameters | No. of Locations | Frequency of Monitoring |
|---|---|---|---|
| 1 | Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only. | 2 Stations | Six Monthly |
| 2 | Water: Surface water sample in the vicinity of the Project area. | 2 Surface water 2 Ground water | Six Monthly |
| 3 | Noise: Day & Night level Noise Monitoring. | 4 stations | Six Monthly |
| 4 | Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc. | 2 station | Six Monthly |

**Water Quality Management**

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

**Air Quality Management**

Drilling – Drilling is a major source for emission of dust & Noxious Gases.
Mitigation measures:

**i. Use of Sharp Drill Bits**

**ii. Wet Drilling** – Water will be sprinkled on the site where drilling has to be done.

**iii. Blasting** – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

**iv.Operation of Diesel Equipment's** – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

**v. Loading of Product on Truck** – Water will be sprinkled on blasted stone mass before

they are loaded to trucks for transport.

**vi. Movement of Trucks on Road** – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Gaul road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

**RISK ASSESSMENT**

The hazard identification and risk analysis are done using qualitative method:

**Hazard identification & Risk Analysis in Stone Mining operation**

| S.No. | Activity | Hazard | Probability | Severity | Score* |
|---|---|---|---|---|---|
| 1 | Temporary Storage of Explosives | Unintended Explosion | Very Unlikely | Catastrophic | 5 |
| 2 | Charging of Explosives | Unwanted Explosion | Very Unlikely | Catastrophic | 5 |
| 3 | Blasting | Hit by fly rock (Bodily Injury) | Occasional | Major | 6 |
| 4 | Drilling | Exposure to Dust | Frequent | Insignificant | 5 |
| 5 | Bench Formation | Fall/Slide/Tripping (Bodily Injury) | Probable | Moderate | 6 |
| 6 | Loading/Unloading | Bodily injury by hitting by loading material, Exposure to Dust | Very Unlikely | Minor | 20 |
| 7 | Transportation | Vehicle Accident, Exposure to Dust | Remote | Minor | 16 |

**NOTE**: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

**Preventive Measures:**

**Slope Failure**

Face instability gives rise to rock falls or slides. Face instability can arise because of adversegeological faulting or poor work methods. Those at greatest risk will be workers engaged inloading material and driving vehicles. To manage the face stability, the Following measureswill be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.

- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

**Drilling Operations**

Drilling is common to the mining of stones. The main hazards linked to the drillingoperations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working orabandoned bench, the risk of minerals or materials falling onto workers at the foot of theface should not be overlooked. A face and bench are a necessary part of a working quarryand therefore it is not possible to remove the hazards associated with them.While others may need to work at or near the edge of a working bench the person most atrisk during the drilling operation is the driller. Others such as the manager of the mine ormaintenance personnel, may approach the bench edge during the drilling operation in theevent of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drillingoperation; part of the training includes instructions to always face towards the openedge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of thebench
- Provision to attach a safety line to the drilling rig and provide a harness for thedriller to wear.
- Restricted access to the area to all persons except those necessary for the drillingoperation.

  Dust generation during drilling

  The hazard is the inhalation of dust which is created during the drilling operation. Properlyapplied control measures can substantially reduce the risk to the drill operator.
- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability ofwater), exhaust/ vacuum system will be provided which removes the dust from thedrill hole continuously and discharges the same in a dust collector speciallyprovided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before startingdrilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk willbe assessed. Unless control measures are in place no-one, except those necessary for thework in hand, will be allowed inside the designated noisy area. In most cases this will bethe drill operator.

The risk is highest at older machines. Newer large drilling machines are provided withsound insulated operating cabins which control the noise level within the cabins toacceptable levels. Hence, it will be ensured that newly updated machines will be used fordrilling.Other control measures will include training operators and providing them with earprotection, although the latter should only be seen as an interim precaution until apermanent solution can be found.

**Blasting Operations**

Most of the accidents from blasting occur due to the projectiles and mainly due toovercharging of the shot holes as a result of certain special features of the local ground.Flying rocks are encountered during initial and final blasting operations. Noise and dustalso generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrationsdo not damage the structures/houses if the quarrying operations are close to humanhabitation.
- Blasting shall be conducted only during favourable weather conditions and onlyduring the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be givenin the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

**Handling of Explosives**

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the

weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.

- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

**Health Hazards**

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

**Accident at Site**

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting largequantity of mineral from a mine. During transportation of minerals in the mining

area,utmost care will be taken by the vehicle operator to avoid any accident with any incomingvehicle by keeping sufficient gap between the two vehicles, keep safe distance from theedge of the mine face, avoid any accident to a worker crossing the haul road and shallmaintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly underthe supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughlyat least once a month by the competent person authorized for the purpose by themanagement.
- Navigation signs will be provided at each and every turning point up to the mainroad (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

**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 M/s Godarma Kalan Stone Mine of Shri Satish Kumar Tiwary, Village : Godarma Kalan, Thana no. : 41, Thana : Rehla, Distt. : Palamau, Jharkhand (2.479 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.

II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in).10% of the total green belt proposed shall be allocated under this clause.

III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

**********

3. **M/s Manatu Stone Deposit of Shri Rameshwar Dayal Singh and Shri Santosh, Village : Manatu, Thana no. : 76, Thana : Kanke, Distt. : Ranchi, Jharkhand (4.04 Ha).**

**(Proposal no.: SIA/JH/MIN/ 503589 /2025)**

**Name of the consultant : Oceao – Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.**

**Project Sector: 1(a) Mining of Minerals, Category: B2.**

**Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Ranchi).**

The project has been granted EC by DEIAA, Ranchi vide letter no. EC/DEIAA /2016-17/03/95, dated 26.08.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Ranchi which has been taken up for consideration on 23.01.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per letter no. 1736/M dated 06.11.2024 by DMO, Ranchi is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 1568, dated 12.12.2024.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.

ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

**Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.**

**The self certified compliance report has been submitted and also presented before the Committee.**

**EC Application for: Proposed Capacity: 51406 cum per Annum/257 cum per day or 1,43,937 Ton Per Annum/ 480 Ton per Day.**

**Project and Location Details:**

| S. No | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | M/s Manatu Stone Deposit | |
| 2 | Partner's | : | Shri Rameshwar Dayal Singh and Shri Santosh Agarwal | |
| 3 | Lessee Address | : | Village Tendar, PO+PS Kanke,District Ranchi, Jharkhand Village+ PO Khelari, PS- Macluskiganj, District - Ranchi, State Jharkhand | |
| 4 | Lease Area | : | Ha: 4.04 | Acres: 10.00 |
| 5 | Type of Land | : | GM Land | |
| 6 | Project Cost | : | 46 Lakhs | |
| 7 | EMP Budget | : | Capital: 22.22 Lakhs | Recurring: 7.0 Lakhs / year |
| 8 | New or Expansion | : | Re-appraisal of DEIAA EC (DEIAA to SEIAA)<br>Lease Period-14/08/2018 to 13/08/2028 | |
| 9 | Mineable Reserves | : | 7,85,572.26Cum | 21,99,602.35 Tones |
| 10 | Mine Life | : | Up to the lease period i.e. 14.08.2018 to 13.08.2028. | |
| 11 | Man power | : | 35 persons | |
| 12 | Water Requirement | : | Total water requirement is about 18.225 KLD=1.225 KLD (Drinking & Domestic Uses) + 10 (Plantation) KLD + 7.0 KLD (Dust Suppression). | |
| 13 | Water Source | : | The drinking water will be available from nearby village by tractor tank manually by labors at the site. | |
| 14 | DG Set / power | : | 125 KVA (Temporary setup for Backup) | |
| 15 | Crusher | : | Proposed/Installed (250TPH) | |
| 16 | Nearest Water Body | : | Manatu Pond is about 1.84 km in E direction. | |
| 17 | Nearest Habitation | : | Tendar is about 0.88 km in SSW direction | |
| 18 | Nearest Rail Station | : | Piska Railway Station is about 11.56 km in SSE direction. | |
| 19 | Nearest Airport | : | Ranchi Airportis about 13.47 km in SSEdirection. | |
| 20 | Nearest Forest | | Patratu PF is about 12.03 km in SSE direction. | |
| 21 | Road & Highways | : | Ranchi Ring Road is about 2.33 km in E direction. | |

| | | | |
|---|---|---|---|
| | | | Kanke Patratu Road is about 7.53 km in ESE direction. |

CO-ORDINATES

| S. No. | Latitude | Longitude |
|---|---|---|
| P1 | 23°25'39.61"N | 85°14'49.52"E |
| P2 | 23°25'39.94"N | 85°14'46.24"E |
| P3 | 23°25'40.14"N | 85°14'42.15"E |
| P4 | 23°25'41.20"N | 85°14'42.81"E |
| P5 | 23°25'41.73"N | 85°14'42.39"E |
| P6 | 23°25'42.71"N | 85°14'42.88"E |
| P7 | 23°25'43.72"N | 85°14'42.80"E |
| P8 | 23°25'43.88"N | 85°14'42.32"E |
| P9 | 23°25'46.49"N | 85°14'43.11"E |
| P10 | 23°25'47.58"N | 85°14'44.19"E |
| P11 | 23°25'47.45"N | 85°14'44.58"E |
| P12 | 23°25'47.86"N | 85°14'44.93"E |
| P13 | 23°25'47.79"N | 85°14'45.63"E |
| P14 | 23°25'47.54"N | 85°14'45.26"E |
| P15 | 23°25'46.22"N | 85°14'45.18"E |
| P16 | 23°25'46.48"N | 85°14'45.18"E |
| P17 | 23°25'45.74"N | 85°14'45.62"E |
| P18 | 23°25'44.01"N | 85°14'50.01"E |
| P19 | 23°25'41.75"N | 85°14'79.79"E |

LAND DETAILS

| Khata no. | Plot no. |
|---|---|
| 214 | 334 (P) |

STATUTORY CLEARANCES

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | Lease Deed- 14.08.2018 to 13.08.2028. |
| 2 | CO | : | The CO, Kanke (Ranchi) vide letter no. 1082 (ii), dated 19.12.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in Khatiyan & Register II. |
| 3 | DMO | : | DMO, Ranchi vide memo no. 1735/M, dated 06.11.2024 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. 508, dated 26.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Ranchi Forest Divisioin vide letter no. 3733 dated 06.11.2015 certified that the distance of forest land is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Ranchi District (Sl. no. 08, Page no. 33). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 24.08.2015. |
| 8 | Scheme / Mine Plan Approval | : | Mining scheme approved by Additional Director, Geology, Hazaribag vide Letter No. 42/G, dated 07.02.2022. |
| 9 | Previous Environmental Clearance (EC) | : | Previous EC granted by DEIAA, Ranchi vide letter no. EC/DEIAA /2016-17/03/95, dated 26.08.2017. |
| 10 | Compliance report of EC | : | Compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 1568, dated 12.12.2024. |
| 11 | Consent to Establish (CTE) | : | CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-3438458 /2018 /1015, dated 01.10.2018. |
| 12 | Consent to Operate (CTO) | : | CTO issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTO-14026377/2022/1425, dated 12.10.2022. |
| 13 | Production Report | : | Production report issued by DMO, Ranchi vide letter no. 1736/M dated 06.11.2024. |
| 14 | Qualified Person | : | Shri Tapan Kumar Chakravary through e-mail dated 21.01.2025 affirmed that the mine plan has been prepared by him. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | OCM & Semi-Mechanised | |
| 2 | Lease Area | : | 10.00 ACRES /4.04 HA | Life of Mine – Up to the lease period i.e. 14.08.2018 to 13.08.2028. |
| 3 | Waste Generation | : | 5 years– 4575 Ton | |
| 4 | Stripping Ratio($t/m^3$) | : | 1:0.006 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 6m x 6m | |

| | | | |
|---|---|---|---|
| 7 | Highest Elevation of lease Area | : | 706mRL |
| 8 | Lowest Elevation of lease Area | | 688mRL |
| 9 | Ultimate Working Depth | : | 658 mRL |
| 10 | Water Table | : | 640mRL |
| 11 | Topography of Mine | : | Hillock of Granite/Gneiss |
| 12 | Explosive Requirement | : | 08 Ton/Kg |
| 13 | Diesel/Fuel requirement | | 548 Litres per day |

**Production Details**

| Year | Production of stone in Tonnes | Weathered Rock |
|---|---|---|
| 1st | 143618.00 | 3600.00 |
| 2nd | 143808.00 | 975.00 |
| 3rd | 142990.00 | - |
| 4th | 143920.00 | - |
| 5th | 143937.00 | - |
| **Total** | **718273.00** | **4575.00** |

**Land Use**

| Land Use Pattern (area in Ha) | | | |
|---|---|---|---|
| Land Use | Exiting | After Plan Period | After life of mine |
| Quarry | 0.968 | 3.078 | 3.378 area shall be left as water reservoir for rain water harvesting |
| Haul Road | 0.08 | 0.08 | 0 |
| Safety Zone | 0.662 | 0.662 | 0.662 |
| Crusher | 0.22 | 0.22 | 0.0 |
| Unused area | 2.11 | 0.0 | 0.0 |
| Total Area | 4.04 | 4.04 | 4.04 |

**ENVIRONMENT MANAGEMENT**

**Green Belt**

**Development**

| Year | Place of Plantation | Spacing b/w plants | Total No. of Plants | Area Cover in Square Meters | Total Area in Ha. | Species |
|---|---|---|---|---|---|---|
| 1st | Safety Zone | 2.5 x 2.5 | 1056 | 6620 | 0.662 | Neem, Peepal, Bargad, Jamun , |
| | Haul Road | 3 x 3 | 472 | 355 M Approach Road 355/3=118Plants | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | 118x4row=472Plant | | Fruit Bearing Trees Mango, Jackfruit, Amrud. |
| 2nd | Care & Protection | --- | --- | --- | --- | |
| 3rd | Care & Protection | --- | --- | --- | --- | |
| 4th | Care & Protection | --- | --- | --- | --- | |
| 5th | Care & Protection | --- | --- | --- | --- | |
| **Total** | | | **1528** | **6620** | **0.662** | |

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

**Environment Management Budget**

| PROPOSED FOR ENVIRONMENT MANAGEMENT COST | | | | | | |
|---|---|---|---|---|---|---|
| **S. No.** | **Mitigative measures to protect Environment** | **Criteria Pollutants** | **Capital Cost (In Lakh)** | **Recurring cost (In Lakh)** | **Implementation Responsibility** | **Frequency and Method** |
| **1.** | Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) One Water Tanker | Dust (PM 10 & PM 2.5) | 9.0 | 3.9 | Mining Mate supervised by Mine Manager | Daily Basis/Requirement Basis Register/Log book |
| | Solid waste management | Municipal Solid by workers | 1.0 | 0.1 | | Record maintain & coordination with vendors |
| **2.** | Green belt development safety zone 7.5mtr and | No2,So2 & CO reduction Noise | 12.22 | 2.0 | Mining Mate supervised by Mine Manager | Care taking@twice a week, Tree Inventory, |

| | | | | | | |
|---|---|---|---|---|---|---|
| | along the road (for each plant including hedges and fences) @No. of plants 1528 x 800Rs. | reduction | | | | |
| 3. | Environment Monitoring (Air, Water, Noise& Soil Monitoring) | Deviation in Baseline | Nil | 1.0 | Outsource to NABL Accredited Lab-Monitored by Mine Manager | Mine Manager Review of base line as per monitoring plan proposed |
| | **TOTAL** | | **22.22** | **7.0** | | |

**Solid Waste Management**

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

**Environment Monitoring Cell**

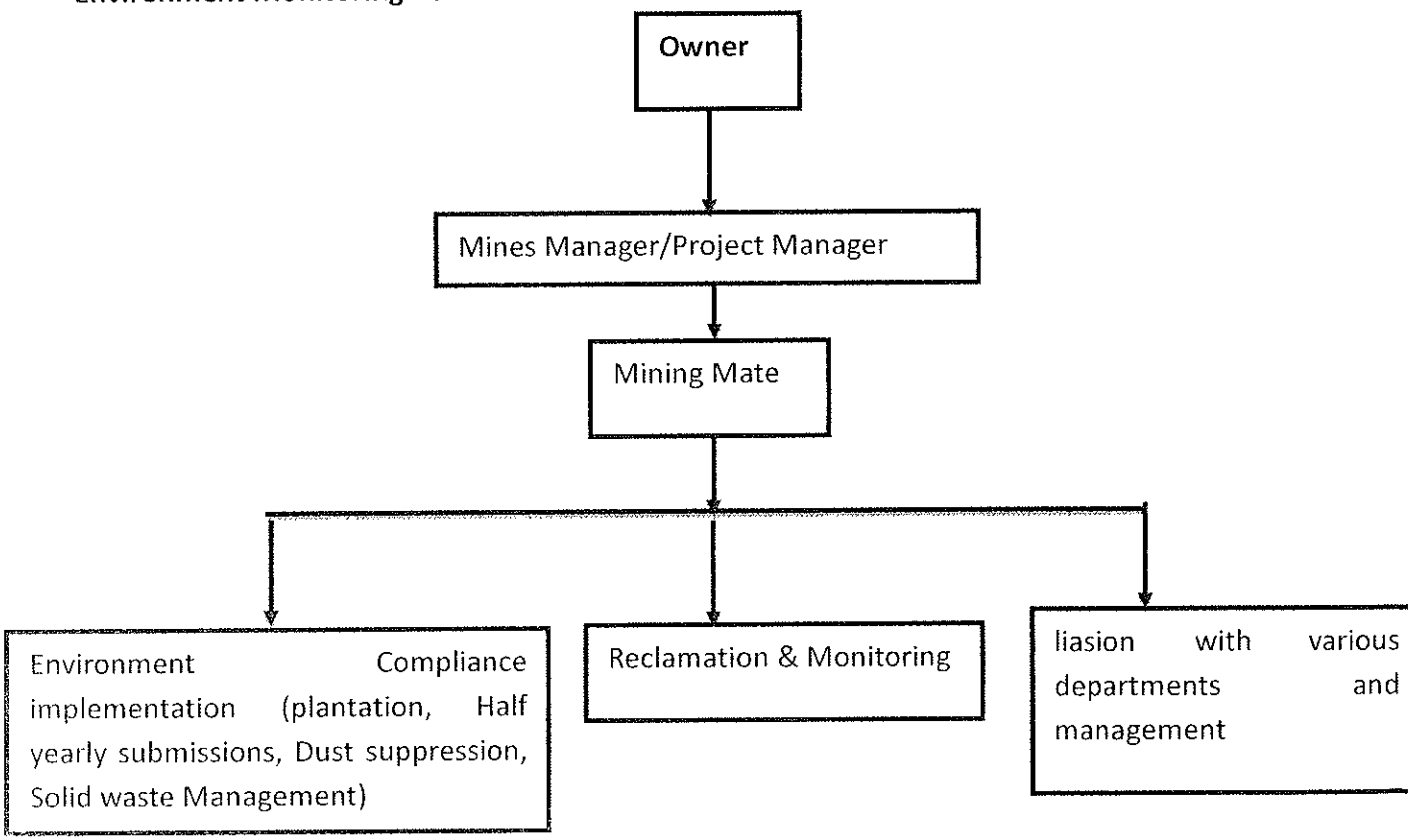



**Fig: Organization Chart for Environment Management Cell**

**Responsibility of Environment Management cell**

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
  - ✓ Implement environmental control measures.
  - ✓ Oversee reclamation planning and management.
  - ✓ Manage air and water pollution control.
  - ✓ Liaise with state and central statutory agencies.
  - ✓ Develop greenbelt areas.
  - Performance Review: Assess corporate environmental performance and report non-compliances.
  - Remedial Actions: Suggest and implement actions for exceeding pollution limits.
  - Coordination:

Collect health statistics for workers and local population.
Act as a bridge for project implementation and Project Authorities
Facilitate afforestation efforts.

**Environment Monitoring Plan (post operation)**

**Monitoring Parameters and Frequency of Monitoring**

| S. no | Monitoring Parameters | No. of Locations | Frequency of Monitoring |
|---|---|---|---|
| 1 | Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only. | 2 Stations | Six Monthly |
| 2 | Water: Surface water sample in the vicinity of the Project area. | 2 Surface water<br>2 Ground water | Six Monthly |
| 3 | Noise: Day & Night level Noise Monitoring. | 4 stations | Six Monthly |
| 4 | Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc. | 2 station | Six Monthly |

**Water Quality Management**

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.

- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

**Air Quality Management**

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

**i. Use of Sharp Drill Bits**

**ii. Wet Drilling** – Water will be sprinkled on the site where drilling has to be done.

**iii. Blasting** – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

**iv. Operation of Diesel Equipment's** – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

**v. Loading of Product on Truck** – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

**vi. Movement of Trucks on Road** – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Gaul road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

**RISK ASSESSMENT**

The hazard identification and risk analysis are done using qualitative method:

**Hazard identification & Risk Analysis in Stone Mining operation**

| S.No. | Activity | Hazard | Probability | Severity | Score* |
|---|---|---|---|---|---|
| 1 | Temporary Storage of Explosives | Unintended Explosion | Very Unlikely | Catastrophic | 5 |
| 2 | Charging of Explosives | Unwanted Explosion | Very Unlikely | Catastrophic | 5 |
| 3 | Blasting | Hit by fly rock (Bodily Injury) | Occasional | Major | 6 |
| 4 | Drilling | Exposure to Dust | Frequent | Insignificant | 5 |
| 5 | Bench Formation | Fall/Slide/Tripping (Bodily Injury) | Probable | Moderate | 6 |

| | | | | | |
|---|---|---|---|---|---|
| 6 | Loading/Unloading | Bodily injury by hitting by loading material, Exposure to Dust | Very Unlikely | Minor | 20 |
| 7 | Transportation | Vehicle Accident, Exposure to Dust | Remote | Minor | 16 |

**NOTE**: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable**"

**Preventive Measures:**

**Slope Failure**

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the Following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

**Drilling Operations**

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.

- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

**Blasting Operations**

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.

- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

**Handling of Explosives**

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

**Health Hazards**

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only

affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

**Accident at Site**

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- 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 M/s Manatu Stone Deposit of Shri Rameshwar Dayal Singh and Shri Santosh, Village : Manatu, Thana no. : 76, Thana : Kanke, Distt. : Ranchi, Jharkhand (4.04 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.
II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
III. During appraisal of the project, it is seen that the project authority have not fully

complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

**********

4. **M/s Bardag Stone Mine of Shri Praveen Kumar Agarwal, Village : Bardag, Thana : Pipra, Distt. : Palamau, Jharkhand (4.89 Ha).**

**(Proposal no.: SIA/JH/MIN/ 510008 /2024)**

**Name of the consultant : Oceao – Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.**

**Project Sector: 1(a) Mining of Minerals, Category: B1.**

**Application for Terms of Reference (ToR) (re-appraisal of Environment Clearance issued by DEIAA, Palamau).**

The project has been granted EC by DEIAA, Palamau vide letter no. EC/DEIAA /2016-17/23, dated 29.05.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Palamau which has been taken up for consideration on 23.01.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B1.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 2969/M dated 26.12.2024 by DMO, Palamau, Medininagar is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 90, dated 17.01.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

**Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.**

**The self certified compliance report has been submitted and also presented before the Committee.**

**ToR Application for: Proposed Capacity:141300 Cum Per Annum/471 Cum Per Day or 423900 Ton Per Annum/ 1413 Ton per Day.**

**Project and Location Details:**

| S. No | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | M/s Bardag Stone Mine | |
| 2 | Partner's | : | Shri Parveen Kumar Agarwal, Sri Arun Kumar Singh, Sri Bipin Bihari Singh & Sri Amit Kumar Singh | |
| 3 | Lessee Address | : | Dhurwa, Po-Latehar, District-Latehar, Jharkhand | |
| 4 | Lease Area | : | Ha: 4.89 Ha | Acres: 12.09 Acres |

| | | | | |
|---|---|---|---|---|
| 5 | Type of Land | : | Govt. Land | |
| 6 | Project Cost | : | 65 Lakhs | |
| 7 | EMP Budget | : | Capital: **29,66,600** | Recurring: **9,07,110** |
| 8 | New or Expansion | : | Re-appraisal of DEIAA EC (Lease Period- 20.11.2017 to 19.11.2027) | |
| 9 | Mineable Reserves | : | 1810479.7 Cum | 5431439 Tonnes |
| 10 | Mine Life | : | Up to the lease period i.e. 20.11.2017 to 19.11.2027. | |
| 11 | Man power | : | 35 persons | |
| 12 | Water Requirement | : | Total water requirement is about 15.0 KLD=1.05 KLD (Drinking & Domestic Uses) + 6.0 (Plantation) KLD + 7.95 KLD (Dust Suppression). | |
| 13 | Water Source | : | by Authorised hired water tankers | |
| 14 | DG Set / power | : | 125 KVA (Temporary setup for Backup) | |
| 15 | Crusher | : | Yes (200-250TPH) Installed | |
| 16 | Nearest Water Body | : | Tandwa Pond is about 9.36 km in NNW direction. | |
| 17 | Nearest Habitation | : | Bardag Village is about 0.23 km in SE direction | |
| 18 | Nearest Rail Station | : | JaplaPakur Railway Station is about 17.58 Km in NW direction. | |
| 19 | Nearest Airport | : | Gaya Airport is about 84.4 Km in ENE direction. | |
| 20 | Nearest Forest | : | Rakshel Range Forest is about 3.45 km in NNE direction. Reserved Forest is about 4.18 km in SSW direction. | |
| 21 | Road & Highways | : | SH-69 is about 8.26 km in E direction. | |

**CO-ORDINATES**

| S. No. | Latitude | Longitude | S. No. | Latitude | Longitude |
|---|---|---|---|---|---|
| 1 | 24° 28' 12.421" N | 84° 9' 47.134" E | 11 | 24° 28' 12.532" N | 84° 9' 56.921" E |
| 2 | 24° 28' 11.770" N | 84° 9' 47.036" E | 12 | 24° 28' 12.716" N | 84° 9' 56.325" E |
| 3 | 24° 28' 9.113" N | 84° 9' 48.441" E | 13 | 24° 28' 13.580" N | 84° 9' 56.484" E |
| 4 | 24° 28' 7.788" N | 84° 9' 49.688" E | 14 | 24° 28' 14.092" N | 84° 9' 55.113" E |
| 5 | 24° 28' 7.395" N | 84° 9' 52.147" E | 15 | 24° 28' 14.993" N | 84° 9' 54.670" E |
| 6 | 24° 28' 8.091" N | 84° 9' 54.881" E | 16 | 24° 28' 15.394" N | 84° 9' 52.713" E |
| 7 | 24° 28' 8.799" N | 84° 9' 56.006" E | 17 | 24° 28' 15.217" N | 84° 9' 51.634" E |
| 8 | 24° 28' 8.652" N | 84° 9' 56.422" E | 18 | 24° 28' 14.451" N | 84° 9' 50.404" E |
| 9 | 24° 28' 9.884" N | 84° 9' 57.003" E | 19 | 24° 28' 13.794" N | 84° 9' 48.572" E |
| 10 | 24° 28' 11.848" N | 84° 9' 56.955" E | 20 | 24° 28' 12.415" N | 84° 9' 47.604" E |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 130 | 429 (P) |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | i. Lease Deed- 20.11.2017 to 19.11.2027.<br>ii. The Letter of Intent (LoI) has been issued by District Mining Officer, Palamau, Madininagar vide letter no. 2368/M, dated 29.12.2016. |
| 2 | CO | : | The CO, Pipra (Palamau) vide letter no. 296, dated 14.12.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in Hal Survey. |
| 3 | DMO | : | DMO, Palamau, Medininagar vide memo no. 1528/M, dated 06.07.2023 certified that 02 other mining lease area (7.00 Acre & 10.00 Acre) exists within 500 m radius from proposed project site and total area is 29.09 Acre (11.77 Ha). |
| 4 | DFO Wild Life | : | Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 210, dated 07.03.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve. |
| 5 | DFO Territorial | : | Division Forest Officer, Medininagar Forest Divisioin vide letter no. 4518 dated 16.11.2016 certified that the distance of forest land is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Palamau District (Sl. no. 08, Page no. 175). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 22.10.2016. |
| 8 | Mine Plan Approval | : | Approved by Additional Director, Geology, Hazaribag vide Memo No. 13/G, dated 11.04.2022. |
| 9 | Previous Environmental Clearance (EC) | : | Previous EC granted by DEIAA, Palamau vide letter no. EC/DEIAA /2016-17/23, dated 29.05.2017. |
| 10 | Compliance report of EC | : | The compliance report of previous EC has been issued by JSPCB, Regional Office, Dhurwa vide letter no. 90, dated 17.01.2025. |

| | | | |
|---|---|---|---|
| 11 | Consent to Establish (CTE) | : | CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2193368 /2018 /601, dated 01.06.2018. |
| 12 | Consent to Operate (CTO) | : | CTO issued by JSPCB vide Ref. no. :<br>i. JSPCB/RO/RNC/CTO-13777200/2022/162, dated 21.07.2022.<br>ii. JSPCB/RO/RNC/CTO-19002357/2024/86, dated 12.06.2024. |
| 13 | Production Report | : | Production report issued by DMO, Palamau, Medininagar vide memo no. 2969/M dated 26.12.2024. |
| 9 | Qualified Person | : | Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | OCM &Mechanised | |
| 2 | Lease Area | : | 12.09 ACRES / 4.89 HA | Life of Mine – Up to the lease period i.e. 20.11.2017 to 19.11.2027. |
| 3 | Waste Generation | : | 5 years– 78500 | |
| 4 | Stripping Ratio($t/m^3$) | : | 1:0.55. | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size & No | : | 6m x 6m | |
| 7 | Highest Elevation of lease Area | : | 223.02 mRL | |
| 8 | Lowest Elevation of lease Area | | 204.9 mRL | |
| 9 | Ultimate Working Depth | : | 30m | |
| 10 | Water Table | : | 169 mRL | |
| 11 | Topography of Mine | : | elliptically isolated hills with gentle to sudden steep slope | |
| 12 | Explosive Requirement | : | 14 kg slurry explosives (1 hole) | |
| 13 | Diesel/Fuel requirement | | 440 Litres per day | |

**Production Details**

| Year Wise | Weathered rock (cum) | Exploitation of Mineral | Saleable Quantities of stone | Soil (Cum) | Mineral reject | Grade |
|---|---|---|---|---|---|---|
| 2022-23 | 00 | 1,41,300 | 4,23,900 | 00 | Nil | Construction, Road |

| | | | | | | |
|---|---|---|---|---|---|---|
| 2023-24 | 00 | 1,41,300 | 4,23,900 | 00 | Nil | Construction, Road |
| 2024-25 | 00 | 1,41,300 | 4,23,900 | 00 | Nil | Construction, Road |
| 2025-26 | 00 | 1,41,300 | 4,23,900 | 00 | Nil | Construction, Road |
| 2026-27<br>Upto-<br>19.11.2027 | 00 | 1,41,300 | 4,23,900 | 00 | Nil | Construction, Road |
| **Total** | **00** | **7,06,500** | **21,19,500** | **00** | | |

**Land Use**

| LAND USE PATTERN | | | |
|---|---|---|---|
| | **Existing** | **First to fifth Year** | **After Life of Mine** |
| **Category** | **Area in Hectares** | **Area in Hectares** | **Area in Hectares** |
| Quarry | 2.24 | 4.11 | 4.23Ha. will be left as water reservoir |
| Haul Road | 0.02 | 0.04 | 0.00 |
| Crusher | 0.08 | 0.08 | Crusher Remove |
| Green belt in Safety Zone | 0.66 | 0.66 | 0.66 |
| Dump with Parapet wall & Garland Drain | 0.02 | 0.00 | Nil (Waste dump to be removed and backfilled |
| Total area in use | 3.02 | 4.89 | 4.89 |
| Balance unused area | 1.87 | 0.00 | 0.00 |
| Balance used area | 0.00 | 0.00 | 0.00 |
| Total Existing Area | 4.89 | 4.89 | 4.89 |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

| Year | Place of Plantation | Spacing b/w plants | Total No. Of Plants | Area Cover in Square Meters | Total Area in Ha. | Species |
|---|---|---|---|---|---|---|
| 1st | Safety Zone | 2.5 x 2.5 | 1056 | 6600 | 0.66 | Neem, Peepal, Bargad, Jamun, Fruit Bearing Trees |
| | Haul Road | 3 x 3 | 1680 | 1260 M Approach Road<br>1260/3=420Plants<br>420x4row=1680Plant | | |
| 2nd | Care & Protection | --- | --- | --- | --- | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 3rd | Care & Protection | --- | --- | --- | --- | Mango, Jackfruit, Amrud. |
| 4th | Care & Protection | --- | --- | --- | --- | |
| 5th | Care & Protection | --- | --- | --- | --- | |
| **Total** | | | **2736** | **6600** | **0.66** | |

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

**Environment Management Budget**

| S .NO. | Particulars | Budget Provisions (Rs) | |
|---|---|---|---|
| | | Capital | Recurring |
| **Water Demand** | | | |
| 1(a) | Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and green belt Cost for 300 days for 13.95 KLD @5 KL tanker capacity, Rupees 500/- per tanker | 1,00,000 | 4,18,500 |
| | & One dedicated tanker of 5 KL for Greenbelt Management | 10,00,000 | 50,000 |
| 1(b) | Discharge of waste water 300 days for 0.84 KLD @5 KL tanker capacity, Rupees 2000/per tanker | 0 | 1,00,800 |
| 2 | Prepare & Maintenance of approach road (Max. Road length 500 m, Width 4.0 m) @ 100 Rs. /Meter. | 50,000 | 5,000 |
| 3 | Monitoring (Air, Water, Soil & Noise) | Nil | 1,00,000 |
| 4 | Settling tank 2 in no's (LBH 12 m* 7 m* 4 m) & Garland drains | 2,00,000 | 30,000 |
| 5 | Wire Fence 807 m x 300 /– meter | 2,42,100 | 24,210 |
| **Plantation Scheme** | | | |
| **Plantation in consultation with DFO & Gram Panchayat and conversion to Grazing land as far as possible.** | | | |
| 6 | Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) 2736 No. of plants x 500 Rs. | 13,68,000 | 2,00,000 |
| Solid Waste Management | | | |
| 7 | Bins 2 Nos. | 1,500 | 4,000 |
| 8 | Transport of Dry Waste | 5,000 | |
| 9 | Vehicle Maintenance +PUC Certification | Nil | 25,000 |

| Total EMP Budget | 29,66,600 | 9,07,110 |
|---|---|---|

**Environmental Monitoring period: 15 Oct 2024 to 15 Jan 2025**

**Baseline Monitoring Location**

**AIR MONITORING LOCATIONS**

| S. No. | Particulars | Distance (KM) | Direction | Land use | Latitude | Longitude |
|---|---|---|---|---|---|---|
| AAQ1 | On site | - | - | Project site | 24°28'9.06"N | 84° 9'49.77"E |
| AAQ2 | Other Mine Site | 1.04 | WNW | Industrial Site | 24°28'21.87"N | 84° 9'18.24"E |
| AAQ3 | Dharmendra kumar Yadav - University | 0.95 | ENE | Silent Zone | 24°28'26.09"N | 84°10'22.99"E |
| AAQ4 | Project Dhanmani+2 High School Pipra BardagPalamu | 1.09 | SSE | Silent Zone | 24°27'36.35"N | 84°10'4.07"E |
| AAQ5 | Maa Goat Farm | 2.1 | SW | Residential Area | 24°27'25.93"N | 84° 8'54.71"E |
| AAQ6 | Pipra Thana jharkhand - Market | 1.39 | ESE | Residential Area | 24°27'56.17"N | 84°10'40.65"E |
| AAQ7 | Devi Dham Polda - Hindu temple | 2.97 | ESE | Residential Area | 24°27'15.02"N | 84°11'19.53"E |
| AAQ8 | Balha Village | 3.01 | E | Silent Zone | 24°28'4.77"N | 84°11'40.32"E |

**NOISE MONITORING LOCATIONS**

| S. No. | Particulars | Distance (KM) | Direction | Landuse | Latitude | Longitude |
|---|---|---|---|---|---|---|
| NQ1 | On site | - | - | Project site | 24°28'9.06"N | 84° 9'49.77"E |
| NQ2 | Other Mine Site | 1.04 | WNW | Industrial Site | 24°28'21.87"N | 84° 9'18.24"E |
| NQ3 | Dharmendra kumar Yadav - University | 0.95 | ENE | Silent Zone | 24°28'26.09"N | 84°10'22.99"E |
| NQ4 | Project Dhanmani+2 High School Pipra BardagPalamu | 1.09 | SSE | Silent Zone | 24°27'36.35"N | 84°10'4.07"E |
| NQ5 | Maa Goat Farm | 2.1 | SW | Residential Area | 24°27'25.93"N | 84° 8'54.71"E |

**SOIL MONITORING LOCATIONS**

| S. No. | Particulars | Distance (KM) | Direction | Landuse | Latitude | Longitude |
|---|---|---|---|---|---|---|
| SQ1 | On site | - | - | Project site | 24°28'9.06"N | 84° 9'49.77"E |
| SQ2 | Other Mine Site | 1.04 | WNW | Industrial Site | 24°28'21.87"N | 84° 9'18.24"E |
| SQ3 | Dharmendra kumar Yadav - University | 0.95 | ENE | Silent Zone | 24°28'26.09"N | 84°10'22.99"E |
| SQ4 | Project Dhanmani+2 High School Pipra BardagPalamu | 1.09 | SSE | Silent Zone | 24°27'36.35"N | 84°10'4.07"E |
| SQ5 | Maa Goat Farm | 2.1 | SW | Residential Area | 24°27'25.93"N | 84° 8'54.71"E |

**GROUND WATER MONITORING LOCATIONS**

| S. No. | Particulars | Distance (KM) | Direction | Landuse | Latitude | Longitude |
|---|---|---|---|---|---|---|
| GWQ1 | Dharmendra kumar Yadav - University | 0.95 | ENE | Silent Zone | 24°28'26.09"N | 84°10'22.99"E |
| GWQ2 | Project Dhanmani+2 High School Pipra BardagPalamu | 1.09 | SSE | Silent Zone | 24°27'36.35"N | 84°10'4.07"E |
| GWQ3 | Maa Goat Farm | 2.1 | SW | Residential Area | 24°27'25.93"N | 84° 8'54.71"E |

**SURFACE WATER MONITORING LOCATIONS**

| S. No. | Particulars | Distance (KM) | Direction | Latitude | Longitude |
|---|---|---|---|---|---|
| SWQ1 | Sirnia Dam | 4.49 | ENE | 24°29'5.64"N | 84°12'24.58"E |
| SWQ2 | Devgan mandir Dam | 4.96 | SSE | 24°25'41.80"N | 84°11'2.79"E |

### Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

### Environment Monitoring Cell

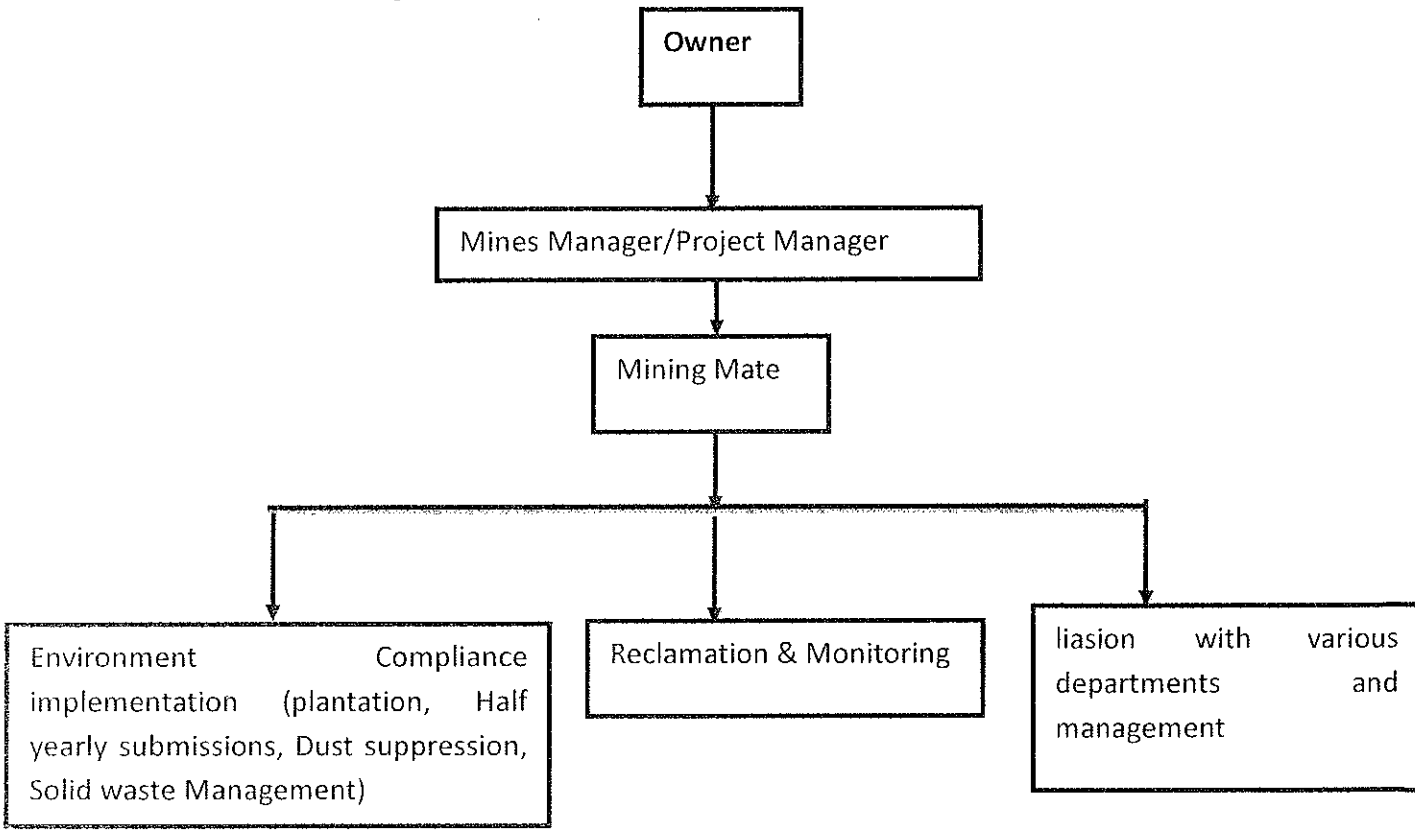



**Fig: Organization Chart for Environment Management Cell**

**Responsibility of Environment Management cell**

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
  - ✓ Implement environmental control measures.
  - ✓ Oversee reclamation planning and management.
  - ✓ Manage air and water pollution control.
  - ✓ Liaise with state and central statutory agencies.
  - ✓ Develop greenbelt areas.
- Performance Review: Assess corporate environmental performance and report non-compliances.
- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
- Coordination:

Collect health statistics for workers and local population.
Act as a bridge for project implementation and Project Authorities
Facilitate afforestation efforts.

**Environment Monitoring Plan (post operation)**

**Monitoring Parameters and Frequency of Monitoring**

| S. no | Monitoring Parameters | No. of Locations | Frequency of Monitoring |
|---|---|---|---|
| 1 | Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only. | 2 Stations | Six Monthly |
| 2 | Water: Surface water sample in the vicinity of the Project area. | 2 Surface water 2 Ground water | Six Monthly |
| 3 | Noise: Day & Night level Noise Monitoring. | 4 stations | Six Monthly |
| 4 | Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc. | 2 station | Six Monthly |

**Water Quality Management**

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.

- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

**Air Quality Management**

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

**i. Use of Sharp Drill Bits**

**ii. Wet Drilling** – Water will be sprinkled on the site where drilling has to be done.

**iii. Blasting** – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

**iv. Operation of Diesel Equipment's** – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

**v. Loading of Product on Truck** – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

**vi. Movement of Trucks on Road** – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Gaul road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

**RISK ASSESSMENT**

The hazard identification and risk analysis are done using qualitative method:

**Hazard identification & Risk Analysis in Stone Mining operation**

| S.No. | Activity | Hazard | Probability | Severity | Score* |
|---|---|---|---|---|---|
| 1 | Temporary Storage of Explosives | Unintended Explosion | Very Unlikely | Catastrophic | 5 |
| 2 | Charging of Explosives | Unwanted Explosion | Very Unlikely | Catastrophic | 5 |
| 3 | Blasting | Hit by fly rock (Bodily Injury) | Occasional | Major | 6 |
| 4 | Drilling | Exposure to Dust | Frequent | Insignificant | 5 |
| 5 | Bench Formation | Fall/Slide/Tripping (Bodily Injury) | Probable | Moderate | 6 |
| 6 | Loading/Unloading | Bodily injury by hitting by loading | Very Unlikely | Minor | 20 |

| | | | | | |
|---|---|---|---|---|---|
| | | material, Exposure to Dust | | | |
| 7 | Transportation | Vehicle Accident, Exposure to Dust | Remote | Minor | 16 |

**NOTE**: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "**Acceptable"**

**Preventive Measures:**

**Slope Failure**

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the Following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

**Drilling Operations**

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.

- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

**Blasting Operations**

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.

- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

**Handling of Explosives**

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

**Health Hazards**

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only

affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

**Accident at Site**

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

**Undertaking submitted affirming:**

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

**Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 20, 21, 22, 23 & 24.01.2025, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure II alongwith following specific condition :-**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. The cluster report has been issued by DMO, Palamau vide memo no. 1528/M, dated 06.07.2023. The PAs are required to submit current cluster report at the time of final EIA / EMP report.

III. 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.

**********

5. **Jalka, Duko & Sikwar Sand Deposit (in the River Bed of South Koel ) of M/s Jharkhand State Mineral Development Corporation Ltd., Mauza : Jalka, Duko & Sikwar, Block : Sisai & Ghaghra, Distt. : Gumla, Jharkhand (16.60 Ha).**

**(Proposal No. SIA/JH/MIN/ 505632/2024).**

**Name of the consultant : Oceao – Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.**

This is a new project which has been taken for appraisal on 23.01.2025.

**Project Sector: 1(a) Mining of Minerals, Category: B1.**

**Application for Terms of Reference (ToR) as per EIA Notification, 2006.**

**Application for: Proposed Capacity- 99,600 Cum/Annum or 498.0 Cum/day.**

**PROJECT AND LOCATION DETAILS:**

| S.No. | Parameter | Details | |
|---|---|---|---|
| 1 | Project Name | Jalka, Duko &Sikwar Sand Deposit | |
| 2 | Proponent: | M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises) Sri Karun Kumar Chandan (In-Charge-Sand) | |
| 3 | Lessee Address | Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand) | |
| 4 | Lease Area | 16.60 ha. | |
| 5 | Type of Land | Non-Forest Government Land (River Bed) | |
| 6 | Project Cost | Rs – 31.05Lakhs | |
| 7 | EMP Budget | **Capital**: Rs 35,35,000 | **Recurring**: 8,11,000/ year |
| 8 | New or Expansion | New | |
| 9 | Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity | **99,600 Cum per Annum (Dry basis)** | |
| 10 | Mine Life | Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy. | |

| | | |
|---|---|---|
| 11 | Man power | 350 |
| 12 | Water Requirement | Total water requirement is about 33.75 KLD= 15.75KLD (Drinking Water & Domestic Uses, 350 persons @45 LPCD) + 6.0 KLD (Water sprinkling) + 12.0 KLD (plantation). |
| 13 | Water Source | By Authorised hired tankers |
| 14 | DG Set / power | NA |
| 15 | Crusher | NA |
| 16 | Nearest Water Body | South Koel River (Project site) |
| 17 | Nearest Habitation | Jalka, at 0.79 KM in E direction. |
| 18 | Nearest Rail Station | Lohardaga Railway Station is about 24.0 Km in N direction |
| 19 | Nearest Air Port | Birsa Munda Airport Ranchi is about 67.0 Km in E direction |
| 20 | Nearest Forest | Name of Places / Distance (Km) / Direction<br>ARANGI R.F. / 4.96 / SSW<br>BANPUR P.F. / 7.9 / NE |
| 21 | Road Highways | NH-43 is about 9.11 km in SE direction |
| 22 | Seismic zone | Zone II as per seismic zone map of India |

**CO-ORDINATES**

| Pillar No. | Latitude | Longitude | Pillar No. | Latitude | Longitude |
|---|---|---|---|---|---|
| 1 | 23°13'57.45"N | 84°40'14.41"E | 12 | 23°13'29.70"N | 84°40'34.73"E |
| 2 | 23°14'1.00"N | 84°40'18.36"E | 13 | 23°13'33.28"N | 84°40'33.20"E |
| 3 | 23°13'58.15"N | 84°40'22.10"E | 14 | 23°13'36.86"N | 84°40'30.93"E |
| 4 | 23°13'56.91"N | 84°40'23.11"E | 15 | 23°13'38.61"N | 84°40'29.93"E |
| 5 | 23°13'52.77"N | 84°40'25.59"E | 16 | 23°13'40.64"N | 84°40'28.35"E |
| 6 | 23°13'50.05"N | 84°40'28.50"E | 17 | 23°13'46.09"N | 84°40'25.01"E |
| 7 | 23°13'46.70"N | 84°40'31.12"E | 18 | 23°13'47.70"N | 84°40'22.44"E |
| 8 | 23°13'42.82"N | 84°40'32.79"E | 19 | 23°13'49.93"N | 84°40'20.58"E |
| 9 | 23°13'40.23"N | 84°40'34.47"E | 20 | 23°13'52.37"N | 84°40'18.15"E |
| 10 | 23°13'34.21"N | 84°40'37.28"E | 21 | 23°13'54.46"N | 84°40'16.53"E |
| 11 | 23°13'31.22"N | 84°40'39.23"E | | | |

LAND DETAILS

| Mauza | Khata no. | Plot no. |
|---|---|---|
| Jalka | 109 | 01 (P) & 1475 (P) |
| Duko | 98 | 902 (P) |
| Sikwar | 51 | 463 |

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.<br><br>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, Sisai vide letter no. 86 (ii), dated 25.01.2023 and CO, Ghaghra vide letter no. 46, dated 25.01.2023 have mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Gumla vide memo no. 399/M, dated 27.05.2024 certified that no other balughat exists within 500 m radius from proposed project site. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Ranchi vide letter no. 707, 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, Gumla Forest Division vide letter no. 270, dated 02.02.2023 certified that the distance of forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Gumla District (Sl. No. – SK07, Page No. – 88) |
| 7 | Gram Sabha | : | BDO, Sisai vide letter no. 977 (ii), dated 19.07.2024 informed that Gram Sabha conducted on 12.07.2024 and BDO, Ghaghra vide letter no. 860 (ii), dated 13.07.2024 informed that Gram Sabha conducted on 03.07.2024 |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Gumla vide Letter No. 397/M, dated 24.05.2024. |
| 9 | Qualified Person | : | Shri Vidya Bhushan Mishra 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 | : | 16.60Ha |
| 3 | Waste Generation | : | No waste generation |
| 4 | Stripping Ratio | : | 0:0 |
| 5 | Working Days | : | 200 day |
| 6 | Benches: size & No | : | NA |
| 7 | Ground Level Elevation | : | Approx 615m |
| 8 | Ultimate Working Depth | : | 1.0 Max |
| 9 | Water Table | : | NA |
| 10 | Topography of Mine | : | Area represents gently sloping land. |
| 11 | Explosive Requirement | : | None. No blasting required |
| 12 | Diesel/Fuel Requirement | : | Not required for mining. |

**PRODUCTIONDETAILS**

| Year | Total Area (Ha) | Average Replenishment Rate (%) | Thickness (m) | 60% Volume in (cum) |
|---|---|---|---|---|
| **1st Year** | 9.96 | 60% | 1 | 99600 |

**Every year replenishment study (pre-monsoon &Post-Monsoon) will be carried out and 60% of production will be done as per Sustainable Sand Mining guidelines, 2016 & 2020.**

**LAND USE**

| GM Land | Area in Hectares |
|---|---|
| Private Land | Nil |
| Proposed Mining Area (Govt. Waste Land) | 9.96 |
| Residential Area | Nil |
| Company land | Nil |
| Unused Area | 6.64 |
| **Total Area** | **16.60** |

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ENVIRONMENT MANAGEMENT

GREEN BELT DEVELOPMENT

| Village | No of plants | Area consider for plantation (length of approach road) KM | Species of plant | Expected Survival Rate (%) |
|---|---|---|---|---|
| Jalka, Duko &Sikwar Sand Deposit Total area of 16.60 ha in River – South Koel | 4000 | 3 Km Plants. Two row plantation along the both side road. | Neem, Pipal Bargad Palash **Fruit Bearing Trees** Mango, Jackfruit, Guava, Jamun | 80% |

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

**Environment Management Budget**

| Sr. No. | Particulars | | Budget Provisions (Rs) | |
|---|---|---|---|---|
| | | | Capital | Recurring |
| 1 | Water Requirement | Water sprinkling for outgoing and incoming transportation vehicles for haul road and Green Belt. Cost for 200 days for 18 KLD @5 KL tanker capacity, Rupees 500- per tanker | 30,000 | 3,60,000 |
| 2 | Road Maintenance & Monitoring budget | Prepare & Maintenance of approach road (Max. Road length 3 Km, Width 4.0m) @500Rs. /Sq. Meter. | 15,00,000 | 1,50,000 |
| | | Monitoring twice a year (Air, Soil, Water & Noise twice a year) | - | 1,00,000 |
| 3 | Plantation Scheme | Green Belt Development along the road (for eac plants including hedges and fences)4000 Plants @ INR 500/Plant | 20,00,000 | 2,00,000 |
| 4 | Solid Waste Management | Bins 10 nos. | 5,000 | 1,000 |
| | | Transport of Dry Waste/Wet Waste | - | |
| **Total EMP Budget** | | | **35,35,000** | **8,11,000** |

**Environment Monitoring Cell**

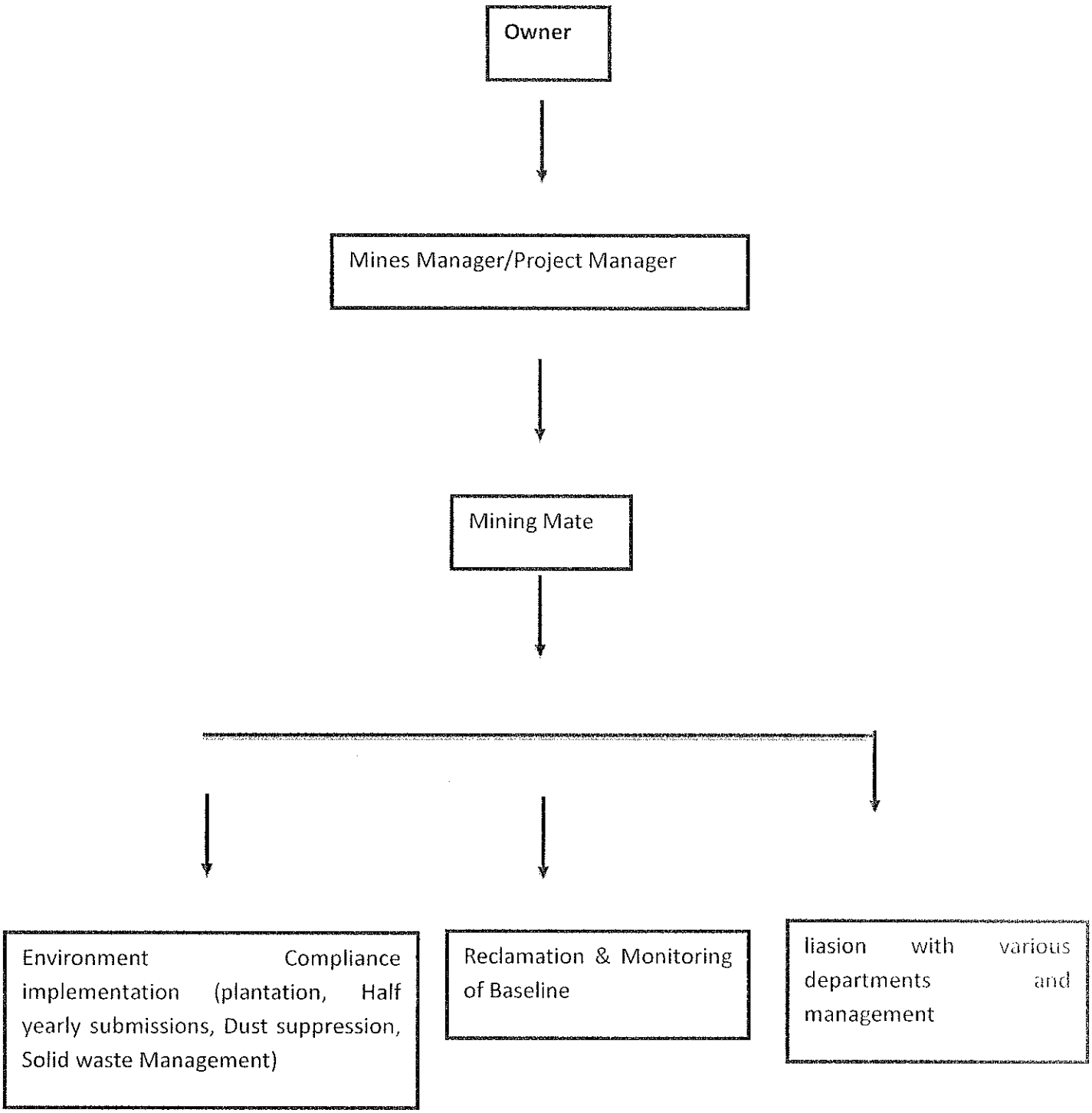



**Fig: Organization Chart for Environment Management Cell**

**Responsibility of Environment Management cell**

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
  - ✓ Implement environmental control measures.
  - ✓ Oversee reclamation planning and management.
  - ✓ Manage air and water pollution control.

- ✓ Liaise with state and central statutory agencies.
- ✓ Develop greenbelt areas.

- Performance Review: Assess corporate environmental performance and report non-compliances.
- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
- Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

| S. no | Monitoring Parameters | No. of Locations | Frequency of Monitoring |
|---|---|---|---|
| 1 | Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only. | 2 Stations | Six Monthly |
| 2 | Water: Surface water sample in the vicinity of the Project area. | 2 Surface water 2 Ground water | Six Monthly |
| 3 | Noise: Day & Night level Noise Monitoring. | 4 stations | Six Monthly |
| 4 | Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc. | 2 station | Six Monthly |

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 soakpit.
- There is no other source for generation or discharge of tradeeffluent.

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 & maintainedregularly.

LOADING OF PRODUCT ON TIPPERS –Water will be sprinkled on blasted Sand mass before they are loaded to trucks fortransport.

MOVEMENT OF TIPPERS ON ROAD –Movement of tippers on road generate dust. For mitigation of this pollution following measures will betaken

- Regular water sprinkling on Haul road by using watertankers.
- Regular repair of Haulroad
- All Trucks carrying Sand outside lease area will have PUCcertificate.
- 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 40KMPH.
- Regular maintenance of haulageroad
- Appropriate navigational signs informing sensitive area like school andhabitation
- Regular maintenance of thevehicles.

**DUST GENERATION**

- No drilling involved
- Dust mass would be supplied toworkers
- Regular sprinkling of water onroad

**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 timeonly.
- ✓ There would be a speed limit of 40 kmph for tippers. Higher is speed higher isnoise.
- ✓ Regular repair and maintenance oftippers/tractors.
- ✓ Plantation on both sides of haulageroad.
- ✓ Tippers having PUC certified will be allowed to be used for sandtransportation.

**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 haulageroads.
- ✓ Tree plantation on both sides of haulageroad.
- ✓ Tippers / Tractors carrying sand would becovered.
- ✓ Mask would be provided to workmen employed for digging, loading, transportation and unloadingactivities

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 minesite
- ✓ 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 minesite
- ✓ Proper maintenance of haulageroads

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 roadroller.
- ✓ Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- ✓ Mine road will be made sufficiently wide to keep two-waytraffic.
- ✓ Mine roads will be designed as per the specifications given under MMR1961.
- ✓ Regular water sprinkling will be done on mine road and haul road to avoid suspension ofdust.
- ✓ All transportation within the mine lease area should be carried out directly under the supervision and control ofmanagement.
- ✓ 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 (whereverrequired)
- ✓ To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spottingoperating.
- ✓ Only trained drivers will behired.

**Undertaking submitted affirming:**

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.

e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
l. Transportation from the river bed to the NH-43 will be done using the existing road.
m. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
n. Wet sand will not be transported.

**Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 20, 21, 22, 23 & 24.01.2025, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure II alongwith following specific condition :-**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"EkPed Ma KeNaam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in).10% of the total green belt proposed shall be allocated under this clause.

II. Pre-monsoon data of current year is to be included in final EIA report.
III. Satellite imagery with Geo-Cordinates of pre-monsoon (current year) to be included in the final EIA report.

**********

6. **Painki Sand Ghat of M/s Jharkhand State Mineral Development Corporation Ltd., Mauza : Painki, Block : Mandu, Distt. : Ramgarh, Jharkhand (0.62 Ha).**

**(Proposal No. SIA/JH/MIN/ 492924/2024).**

**Name of the consultant : Oceao – Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.**

This is a new project which has been taken for appraisal on 23.01.2025.

**Project Sector: 1(a) Mining of Minerals, Category: B2.**

**Application for Environmental Clearance (EC).**

**EC Application for: Proposed Capacity- 5,550 Cum/Annum & 8,547Ton/Annum and Daily production 27.75Cum/Day & 42.73Ton/Day or 979.85 Cft/day**

**PROJECT AND LOCATION DETAILS:**

| S.No. | Parameter | Details | |
|---|---|---|---|
| 1 | Project Name | Painki Sand Ghat | |
| 2 | Proponent | M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises)<br>Sri Karun Kumar Chandan (Sand-In-Charge) | |
| 3 | Lessee Address | Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand) | |
| 4 | Lease Area | 0.62Ha. or 1.53Acre | |
| 5 | Type of Land | Non-Forest Government Land (River Bed) | |
| 6 | Project Cost | Rs. 10.87 Lakhs | |
| 7 | EMP Budget | **Capital**: Rs 23.86 Lakhs | **Recurring**: 4.3 lakhs / year |
| 8 | New or Expansion | New | |
| 9 | Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity | 5,550 Cum Per Annum (Dry basis) | |
| 10 | Mine Life | Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy. | |
| 11 | Man power | 15 | |
| 12 | Water Requirement | Total water requirement is about 3.575 KLD= 0.675 KLD (Drinking Water & Domestic Uses, 15 persons @45 LPCD) + 1.74 KLD (Water sprinkling) + 1.16 KLD (plantation). | |
| 13 | Water Source | By Authorised hired tankers | |
| 14 | DG Set / power | NA | |
| 15 | Crusher | NA | |
| 16 | Nearest Water Body | Damoder River (Project Site) | |
| 17 | Nearest Habitation | Painki, at 0.17 KM in N direction. | |
| 18 | Nearest Rail Station | Ranchi Road - Train station is about 3.80 Km in NW direction. | |

| | | |
|---|---|---|
| | | Ramgarh Cantonment - Train station is about 4.07 Km in SSW direction. |
| 19 | Nearest Air Port | Birsa Munda Airport Ranchi is about 37.11 Km in SSW direction |
| 20 | Nearest Forest | <table><tr><th>Name of Places</th><th>Distance (Km)</th><th>Direction</th></tr><tr><td>Protected Forest</td><td>5.08</td><td>E</td></tr></table> |
| 21 | Road Highways | SH-2 is about 3.56 km in SW and NH-20 is about 1.02km in ESE Direction. |
| 22 | Seismic zone | Zone II and III as per seismic zone map of India |

**CO-ORDINATES**

| S.no | Latitude | Longitude | S.no | Latitude | Longitude |
|---|---|---|---|---|---|
| 1 | 23.646186 N | 85.54264637 E | 8 | 23.645984 N | 85.54500184 E |
| 2 | 23.645913 N | 85.54282464 E | 9 | 23.646108 N | 85.54543803 E |
| 3 | 23.645848 N | 85.54307007 E | 10 | 23.646143 N | 85.54562287 E |
| 4 | 23.645917 N | 85.54330547 E | 11 | 23.64626 N | 85.5455682 E |
| 5 | 23.645886 N | 85.54375068 E | 12 | 23.646127 N | 85.54411952 E |
| 6 | 23.645976 N | 85.54403563 E | 13 | 23.646089 N | 85.54331563 E |
| 7 | 23.646001 N | 85.54437984 E | | | |

**LAND DETAILS**

| Mauza | Khata no. | Plot no. |
|---|---|---|
| Painki | 38 | 275 & 257 |

**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.<br><br>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, Mandu (Ramgarh) vide letter no. 961, dated 13.09.2024 have mentioned the plot no. of the project is not recorded as |

| | | | |
|---|---|---|---|
| | | | "Jungle- Jhari" in R.S. Khatiyan. |
| 3 | DMO | : | DMO, Ramgarh vide memo no. 661/Khanan, dated 28.05.2024 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. 1007, dated 04.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Ramgarh Forest Division vide letter no. 983, dated 24.05.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Ramgarh District (Page No. – 65) |
| 7 | Gram Sabha | : | CO, Mandu (Ramgarh) vide letter no. 642, dated 06.06.2024 informed that Gram Sabha conducted on 01.06.2024. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Ramgarh vide Letter No. 627/Mining, dated 18.05.2024. |
| 9 | Qualified Person | : | Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him. |

**WORKING DETAILS**

| | | | |
|---|---|---|---|
| 1 | Mining Method | : | Opencast Manual Method |
| 2 | Quarry Area | : | 0.62Ha |
| 3 | Waste Generation | : | No waste generation |
| 4 | Stripping Ratio | : | 0:0 |
| 5 | Working Days | : | 200 day |
| 6 | Benches: size & No | : | NA |
| 7 | Ground Level Elevation | : | 301.5-303 MSL |
| 8 | Ultimate Working Depth | : | 1.5 m |
| 9 | Water Table | : | NA |
| 10 | Topography of Mine | : | Area represents gently sloping land. |
| 11 | Explosive Requirement | : | None. No blasting required |
| 12 | Diesel/Fuel Requirement | : | Not required for mining. |

**PRODUCTIONDETAILS**

| Year | Total Area (Ha) | Thickness (m) | Average Replenishment Rate | Volume (cum) | Tonnage factor DSR | Quantity in ton |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | (60%) | | |
| 1st | 0.37 | 1.5 | 60% | 5,550 | 1.54 | 8,547 |

**Every year replenishment study (pre-monsoon & Post-Monsoon) will be carried out and 60% of production will be done as per Sustainable Sand Mining guidelines, 2016 & 2020.**

**LAND USE**

| Types of Land | Area in Hectares |
|---|---|
| Private Land | Nil |
| Excavated Area | 0.37 |
| No Mining Zone | 0.005 |
| Unused Area | 0.24 |
| **Total Area** | **0.62** |

**ENVIRONMENT MANAGEMENT**

**GREEN BELT DEVELOPMENT**

| Village | No of plants | Area consider for plantation (length of approach road) KM | Species of plant | Expected Survival Rate (%) |
|---|---|---|---|---|
| Painki Sand Ghat Total area of 0.62 HA in River - Damodar | 772 | 0.58 KM Approach Road, 58/3 = 193 Plants 193*4 = 772 Plants (two row plantation along the both side of the road) | Mango, Jackfruits, Jamun, Babul, Gulmohar, Neem, Pipal, Arjun etc. | 80% |

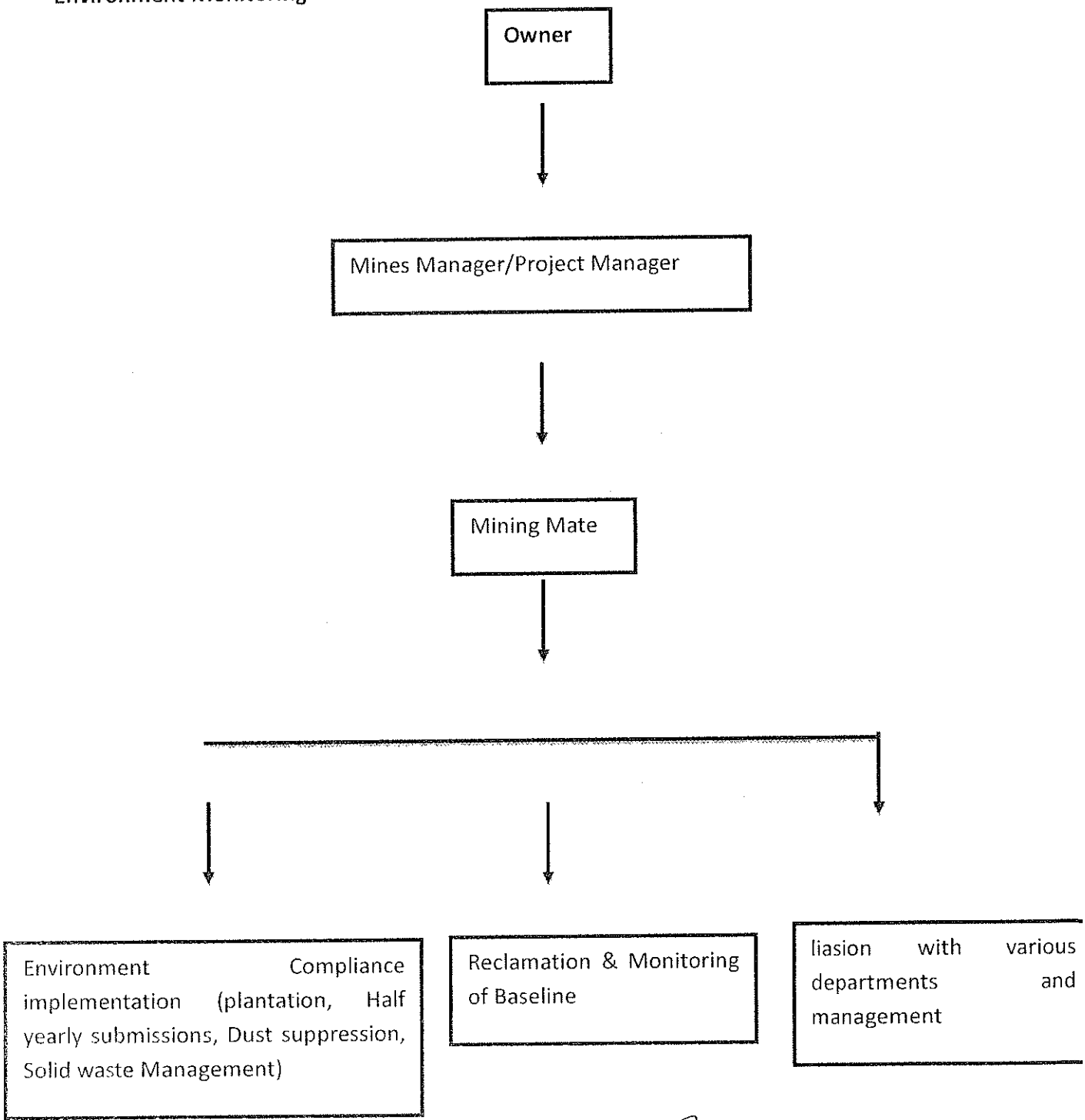
- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

**Environment Management Budget**

| PROPOSED FOR ENVIRONMENT MANAGEMENT COST | | | |
|---|---|---|---|
| S. No. | Mitigative measures to protect Environment | Capital Cost (In Lakh) | Recurring cost (In Lakh) |

| | | | |
|---|---|---|---|
| 1. | Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) | 20.0 | 2.5 |
| 2. | Green belt development on approach the road (for each plant including hedges and fences) @No. of plants 772 x 500 Rs. | 3.86 | 1.0 |
| 3. | Environment Monitoring (Air, Water, Noise& Soil Monitoring) | Nil | 0.80 |
| | **TOTAL** | **23.86** | **4.3** |

**Environment Monitoring Cell**



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- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
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Act as a bridge for project implementation and Project Authorities
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630

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- ✓ 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.
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k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
l. Transportation from the river bed to the NH-320G will be done using the existing road.
m. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
n. Wet sand will not be transported.

**Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal Painki Sand Ghat of M/s Jharkhand State Mineral Development Corporation Ltd., Mauza : Painki, Block : Mandu, Distt. : Ramgarh, Jharkhand (0.62 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a

time bound manner.

III. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.

IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.

V. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

VI. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VII. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance.

VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.

IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

XI. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.

XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XIII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.

XIV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.

XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the

mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

XVI. Extraction of sand beyond annual production capacity is not permitted.

XVII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

XIX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.

XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XXI. No labour camp shall be allowed in riverbed.

XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

XXIII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.

XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.

XXV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXXI. Mining depth should be restricted to 3 meters and distance from the band should be 1/4$^{th}$ of river width and should not be less than 7.5 meters.

XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.

XXXIII. River bed sand mining shall be restricted within the central 3/4$^{th}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.

**********

7. **Akto -07 Sand Ghat of M/s Jharkhand State Mineral Development Corporation Ltd., Mauza : Tilokri and Jogiatila, Block : Jainagar & Markacho, Distt. : Koderma, Jharkhand (2.86 Ha).**

**(Proposal No. SIA/JH/MIN/ 518770/2025).**

**Name of the consultant : Oceao – Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.**

This is a new project which has been taken for appraisal on 23.01.2025.

**Project Sector: 1(a) Mining of Minerals, Category: B2.**

**Application for Environmental Clearance (EC).**

**EC Application for: Proposed Capacity- 17,160 Cum per Annum/26941.2 Tonnes per Annum or 85.8 Cum per Day/134.70 Tonnes per Day.**

**PROJECT AND LOCATION DETAILS:**

| S.No. | Parameter | Details |
|---|---|---|
| 1 | Project Name | Akto - 07 Sand Ghat (Tilokri and Jogiatila Sand Ghat) |
| 2 | Proponent: | M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises) Sri Karun Kumar Chandan(In-Charge-Sand) |
| 3 | Lessee Address | Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand) |
| 4 | Lease Area | 2.86Ha.or 7.06 Acre |
| 5 | Type of Land | Non-Forest Government Land (River Bed) |
| 6 | Project Cost | Rs 22.82 Lakhs |

| | | | |
|---|---|---|---|
| 7 | EMP Budget | **Capital**: Rs 33.34 Lakhs | **Recurring**: 3.3 lakhs / year |
| 8 | New or Expansion | New | |
| 9 | Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity | **17160 Cum Per Annum (Dry basis)** | |
| 10 | Mine Life | Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy. | |
| 11 | Man power | 45 | |
| 12 | Water Requirement | Total water requirement is about 14.029 KLD=2.025 KLD (Drinking Water & Domestic Uses, 45 persons @45 LPCD) + 4.0 KLD (Water sprinkling) + 8.0KLD (plantation). | |
| 13 | Water Source | By Authorised hired tankers | |
| 14 | DG Set / power | NA | |
| 15 | Crusher | NA | |
| 16 | Nearest Water Body | Akto River ( project site) | |
| 17 | Nearest Habitation | Jogiatila, at 0.65 KM in NW direction. | |
| 18 | Nearest Rail Station | Sarmatanr Railway Station is about 2.21 Km in NW direction | |
| 19 | Nearest Air Port | Gaya International Airport is about 86.03 Km in NW direction | |
| 20 | Nearest Forest | **Name of Places** / **Distance (Km)** / **Direction**<br>JOGIATILA PF / 0.4 / WSW<br>DUMDUMA PF / 4.65 / S<br>HATHGADA PF / 7.43 / SW | |
| 21 | Road Highways | Urwan -Kanko Jainagar Road is about 1.4 in W direction. | |
| 22 | Seismic zone | Zone III as per seismic zone map of India | |

CO-ORDINATES

| Pillar No. | Latitude | Longitude | Pillar No. | Latitude | Longitude |
|---|---|---|---|---|---|
| 1 | 24°19'50.04"N | 85°40'33.09"E | 18 | 24°19'57.79"N | 85°40'36.03"E |
| 2 | 24°19'49.88"N | 85°40'31.96"E | 19 | 24°19'57.91"N | 85°40'36.08"E |
| 3 | 24°19'49.93"N | 85°40'31.03"E | 20 | 24°20'0.74"N | 85°40'36.73"E |
| 4 | 24°19'50.23"N | 85°40'30.13"E | 21 | 24°20'2.59"N | 85°40'36.51"E |
| 5 | 24°19'50.68"N | 85°40'29.36"E | 22 | 24°20'2.39"N | 85°40'37.20"E |
| 6 | 24°19'50.82"N | 85°40'29.63"E | 23 | 24°20'1.94"N | 85°40'37.69"E |
| 7 | 24°19'50.83"N | 85°40'29.67"E | 24 | 24°20'0.85"N | 85°40'38.32"E |

| | | | | | |
|---|---|---|---|---|---|
| 8 | 24°19'51.31"N | 85°40'30.92"E | 25 | 24°20'0.02"N | 85°40'38.87"E |
| 9 | 24°19'52.04"N | 85°40'32.07"E | 26 | 24°19'59.85"N | 85°40'38.89"E |
| 10 | 24°19'53.15"N | 85°40'33.43"E | 27 | 24°19'58.90"N | 85°40'38.87"E |
| 11 | 24°19'53.19"N | 85°40'33.46"E | 28 | 24°19'56.08"N | 85°40'37.98"E |
| 12 | 24°19'53.34"N | 85°40'33.65"E | 29 | 24°19'55.60"N | 85°40'37.79"E |
| 13 | 24°19'53.76"N | 85°40'33.97"E | 30 | 24°19'54.36"N | 85°40'37.27"E |
| 14 | 24°19'54.14"N | 85°40'34.31"E | 31 | 24°19'52.03"N | 85°40'35.55"E |
| 15 | 24°19'54.47"N | 85°40'34.55"E | 32 | 24°19'51.45"N | 85°40'35.01"E |
| 16 | 24°19'56.01"N | 85°40'35.35"E | 33 | 24°19'50.49"N | 85°40'33.81"E |
| 17 | 24°19'57.47"N | 85°40'35.96"E | 34 | | |

**LAND DETAILS**

| Mauza | Khata no. | Plot no. |
|---|---|---|
| **Tilokri** | 117 | 1502 |
| **Jogiatila** | 52 | 1700, 753 & 1468 |

**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.<br><br>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, Jainagar (Koderma) vide letter no. 224, dated 13.04.2023 have mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Koderma vide memo no. 790/M, dated 08.05.2024 certified that 02 other balughat (0.49 Ha & 0.76 Ha) exists within 500 m radius from proposed project site and total area is 4.11 Ha. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Hazaribag vide letter no. 1780, dated 13.08.2024 certified that the proposed project site is outside Eco |

| | | | |
|---|---|---|---|
| | | | Sensitive Zone of Koderma Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Koderma Forest Division vide letter no. 1637, dated 21.04.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Koderma District |
| 7 | Gram Sabha | : | BDO, Jainagar (Koderma) vide letter no. 554, dated 09.05.2024 informed that Gram Sabha conducted on 02.05.2024. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Koderma vide Memo No. 750/M, dated 03.05.2024. |
| 9 | Qualified Person | : | Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him. |

**WORKING DETAILS**

| | | | |
|---|---|---|---|
| 1 | Mining Method | : | Opencast Manual Method |
| 2 | Quarry Area | : | 2.86Ha |
| 3 | Waste Generation | : | No waste generation |
| 4 | Stripping Ratio | : | 0:0 |
| 5 | Working Days | : | 200 day |
| 6 | Benches: size & No | : | NA |
| 7 | Ground Level Elevation | : | 358m |
| 8 | Ultimate Working Depth | : | 1.0 m |
| 9 | Water Table | : | NA |
| 10 | Topography of Mine | : | Area represents gently sloping land. |
| 11 | Explosive Requirement | : | None. No blasting required |
| 12 | Diesel/Fuel Requirement | : | Not required for mining. |

**PRODUCTIONDETAILS**

| Year | Total area (Ha) | Thickness (m) | Average Replenishment Rate | Volume (cum) | Tonnage Factor | Quantity in tonne |
|---|---|---|---|---|---|---|
| 1st | 1.716 | 1.0 | 60% | 17,160 | 1.57 | 26941 |

Every year replenishment study (pre-monsoon & Post-Monsoon) will be carried out and 60% of production will be done as per Sustainable Sand Mining guidelines, 2016 & 2020.

LAND USE

| Types of Land | Area in Hectares |
|---|---|
| Private Land | 0.00 |
| Proposed Mining Area | 1.716 |
| Safety Zone | 0.04 |
| Unused Area | 1.104 |
| **Total** | **2.86** |

ENVIRONMENT MANAGEMENT

GREEN BELT DEVELOPMENT

| Village | No of plants | Area consider for plantation (length of approach road) KM | Species of plant |
|---|---|---|---|
| Tilokri And Jogiatila Sand Ghat Total area of 2.86 ha in River- Akto | 2668 | 2.0 KM Approach Road, 2000/3 = 667 Plants 667 *4 = 2668 plants (Two Row Plantation along The both side of the raod) | Mango, Jackfruit, Jamun, babul, Gulmohar, Neem, Pipal, Arjun etc |

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

| PROPOSED FOR ENVIRONMENT MANAGEMENT COST | | | |
|---|---|---|---|
| S. No. | Mitigative measures to protect Environment | Capital Cost (In Lakh) | Recurring cost (In Lakh) |
| 1. | Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) | 20.0 | 1.5 |
| 2. | Green belt development on approach the road (for each plant including hedges and fences) @No. of plants 2668 x 500 Rs. | 13.34 | 1.0 |
| 3. | Environment Monitoring (Air, | Nil | 0.80 |

| | | | |
|---|---|---|---|
| | Water, Noise& Soil Monitoring) | | |
| | **TOTAL** | **33.34** | **3.3** |

**Environment Monitoring Cell**

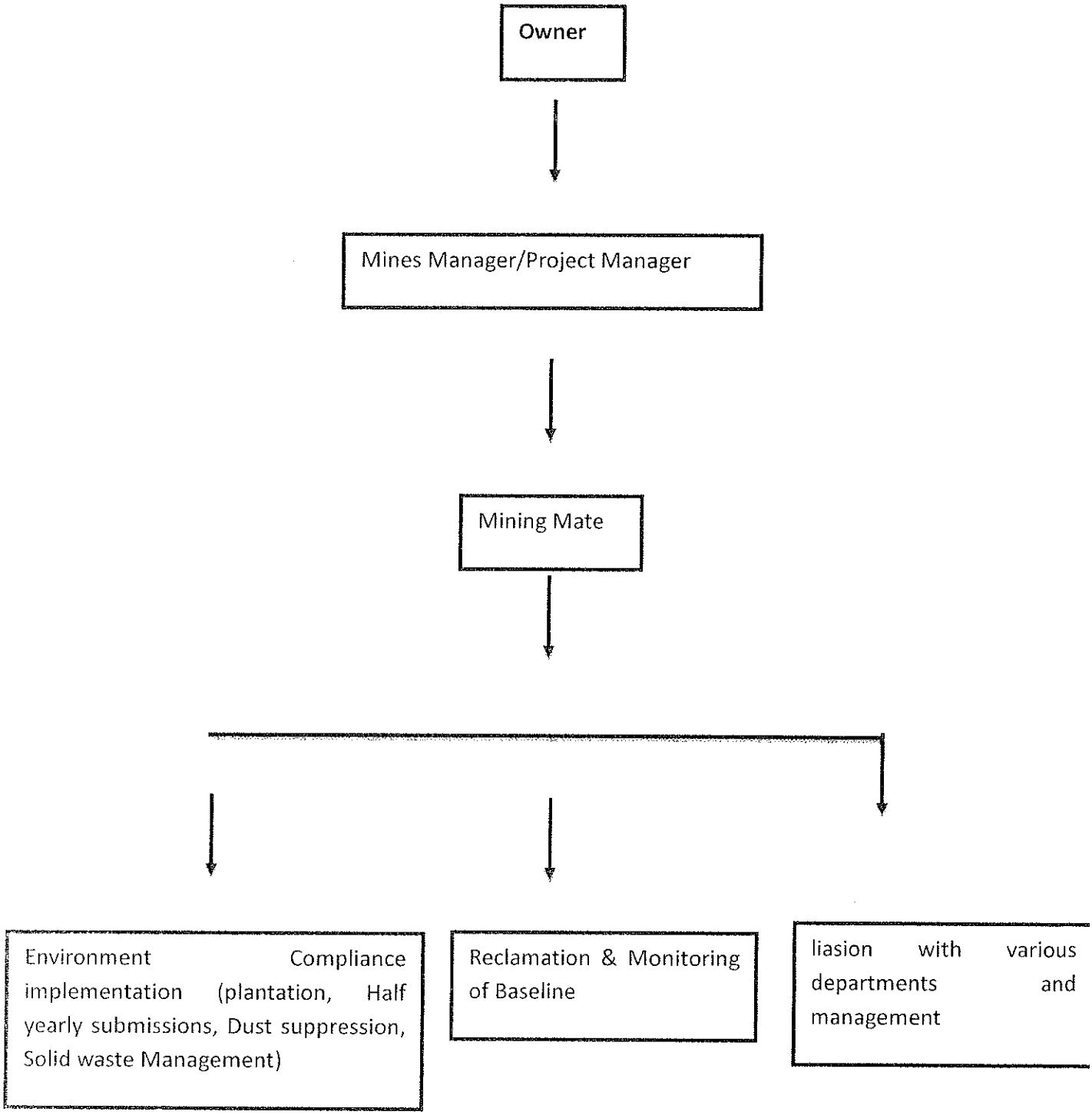


**Fig: Organization Chart for Environment Management Cell**

**Responsibility of Environment Management cell**

- Supervision: Managed by Mines Manager with a qualified technical team.

- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
  - ✓ Implement environmental control measures.
  - ✓ Oversee reclamation planning and management.
  - ✓ Manage air and water pollution control.
  - ✓ Liaise with state and central statutory agencies.
  - ✓ Develop greenbelt areas.
- Performance Review: Assess corporate environmental performance and report non-compliances.
- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
- Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

## Environment Monitoring Plan (post operation)

### Monitoring Parameters and Frequency of Monitoring

| S. no | Monitoring Parameters | No. of Locations | Frequency of Monitoring |
|---|---|---|---|
| 1 | Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only. | 2 Stations | Six Monthly |
| 2 | Water: Surface water sample in the vicinity of the Project area. | 2 Surface water<br>2 Ground water | Six Monthly |
| 3 | Noise: Day & Night level Noise Monitoring. | 4 stations | Six Monthly |
| 4 | Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc. | 2 station | Six Monthly |

**SOLID WASTE MANAGEMENT**

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 betaken

- Regular water sprinkling on Haul road by using water tankers.
- Regular repair of Haul road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

**RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED BELOW:**

ROAD ACCIDENTS

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school andhabitation
- 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 MMR1961.
- ✓ Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- ✓ All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- ✓ The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- ✓ Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- ✓ To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- ✓ Only trained drivers will be hired.

**Undertaking submitted affirming:**

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.

c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
l. Transportation from the river bed to the Urwan -Kanko Jainagar Road will be done using the existing road.
m. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
n. Wet sand will not be transported.

**Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal Akto -07 Sand Ghat of M/s Jharkhand State Mineral Development Corporation Ltd., Mauza : Tilokri and Jogiatila, Block : Jainagar & Markacho, Distt. : Koderma, Jharkhand (2.86 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

III. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.

IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.

V. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

VI. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VII. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance.

VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.

IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

XI. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.

XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XIII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.

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XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the

mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

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XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

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XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

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XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.

XXV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXXI. Mining depth should be restricted to 3 meters and distance from the band should be 1/4$^{th}$ of river width and should not be less than 7.5 meters.

XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.

XXXIII. River bed sand mining shall be restricted within the central 3/4$^{th}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.

**********

8. **Sirka Sand Deposit (in the River Bed of Damodar) of M/s Jharkhand State Mineral Development Corporation Ltd., Mauza : Sirka, Block : Ramgarh, Distt. : Ramgarh, Jharkhand (2.46 Ha).**

**(Proposal No. SIA/JH/MIN/ 492920/2024).**

**Name of the consultant : Oceao – Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.**

This is a new project which has been taken for appraisal on 23.01.2025.

**Project Sector: 1(a) Mining of Minerals, Category: B2.**

**Application for Environmental Clearance (EC).**

**EC Application for: Proposed Capacity- 110.25 cum /day or 22050 Cum Per Annum**

**PROJECT AND LOCATION DETAILS:**

| S.No. | Parameter | Details |
|---|---|---|
| 1 | Project Name | Sirka Sand Deposit |
| 2 | Proponent: | M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises) Sri Karun Kumar Chandan (In-Charge-Sand) |
| 3 | Lessee Address | Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand) |
| 4 | Lease Area | 2.46 ha. |

| | | | |
|---|---|---|---|
| 5 | Type of Land | Non-Forest Government Land (River Bed) | |
| 6 | Project Cost | Rs 29 Lakhs | |
| 7 | EMP Budget | **Capital**: Rs 27.32 Lakhs | **Recurring**: 6.3 lakhs / year |
| 8 | New or Expansion | New | |
| 9 | Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity | 22050 Cum Per Annum (Dry basis) | |
| 10 | Mine Life | Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy. | |
| 11 | Man power | 63 | |
| 12 | Water Requirement | Total water requirement is about 18.42 KLD= 2.83 KLD (Drinking Water & Domestic Uses, 63 persons @45 LPCD) + 5.2 KLD (Water sprinkling) + 10.39 KLD (plantation) | |
| 13 | Water Source | By Authorised hired tankers | |
| 14 | DG Set / power | NA | |
| 15 | Crusher | NA | |
| 16 | Nearest Water Body | Damoder River (Project Site) | |
| 17 | Nearest Habitation | Sirka, at 0.69 KM in NNE direction. | |
| 18 | Nearest Rail Station | Railway Station Barkakana is about 3.5 Km in SE direction | |
| 19 | Nearest Air Port | Birsa Munda Airport Ranchi is about 37.11 Km in SSW direction | |
| 20 | Nearest Forest | **Name of Places** / **Distance (Km)** / **Direction**<br>**Orla P.F.** / **7.63** / **NE**<br>**Ghaghra P.F.** / **7.38** / **WSW**<br>**Hehal P.F.** / **2.48** / **SSW**<br>**Baridih P.F.** / **8.09** / **S** | |
| 21 | Road Highways | SH-2 Partatu- Barkakana Road is about 1.27 km in S direction | |
| 22 | Seismic zone | Zone II as per seismic zone map of India | |

**CO-ORDINATES**

| Pillar No. | Latitude | Longitude |
|---|---|---|
| A | 23° 38'08.6064"N | 85°26'07.0425"E |
| B | 23° 38'07.2780"N | 85°26'15.2654"E |
| C | 23° 38'07.7964"N | 85°26'17.8839"E |
| D | 23° 38'08.0520"N | 85°26'19.8154"E |
| E | 23° 38'08.9916"N | 85°26'18.6061"E |

| | | |
|---|---|---|
| F | 23° 38'10.0572"N | 85°26'16.1739"E |
| G | 23° 38'10.4244"N | 85°26'10.6290"E |
| H | 23° 38'09.9888"N | 85°26'05.1736"E |
| I | 23° 38'08.6064"N | 85°26'07.0425"E |

**LAND DETAILS**

| Mauza | Khata no. | Plot no. |
|---|---|---|
| Sirka | 42 | 243 |

**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.<br><br>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, Ramgarh vide letter no. 1648, dated 12.09.2024 have mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan. |
| 3 | DMO | : | DMO, Ramgarh vide memo no. 659/Khanan, dated 28.05.2024 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. 1007, dated 04.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Ramgarh Forest Division vide letter no. 983, dated 24.05.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Ramgarh District (Page No. – 67) |
| 7 | Gram Sabha | : | CO, Ramgarh vide letter no. 1647, dated 12.09.2024 informed that Gram Sabha conducted on 28.08.2024. |

| | | | |
|---|---|---|---|
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Ramgarh vide Letter No. 610/Mining, dated 11.05.2024. |
| 9 | Qualified Person | : | Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him. |

WORKING DETAILS

| | | | |
|---|---|---|---|
| 1 | Mining Method | : | Opencast Manual Method |
| 2 | Quarry Area | : | 2.46Ha |
| 3 | Waste Generation | : | No waste generation |
| 4 | Stripping Ratio | : | 0:0 |
| 5 | Working Days | : | 200 day |
| 6 | Benches: size & No | : | NA |
| 7 | Ground Level Elevation | : | 310.08 MRL |
| 8 | Ultimate Working Depth | : | 1.5 m |
| 9 | Water Table | : | NA |
| 10 | Topography of Mine | : | Area represents gently sloping land. |
| 11 | Explosive Requirement | : | None. No blasting required |
| 12 | Diesel/Fuel Requirement | : | Not required for mining. |

PRODUCTIONDETAILS

| Year | Total Area (Ha) | Average Replenishment Rate (%) | Thickness (m) | Geological Resource (cum) | Geological Resource MT (cum*1.54) |
|---|---|---|---|---|---|
| 1st year | 1.47 | 128 | 1.5 | 22050 | 33957 |

**Every year replenishment study (pre-monsoon & Post-Monsoon) will be carried out and 60% of production will be done as per Sustainable Sand Mining guidelines, 2016 & 2020.**

LAND USE

| Types of Land | Area in Hectares |
|---|---|
| Forest Land | Nil |
| Mining Area | 1.47 |
| Residential area | Nil |
| Unused Area | 0.99 |
| **Total** | **2.46** |

ENVIRONMENT MANAGEMENT

GREEN BELT DEVELOPMENT

| Village | No of plants | Area consider for plantation (length of approach road) KM | Species of plant | Expected Survival Rate (%) |
|---|---|---|---|---|
| Sirka Sand Ghat Total area of 2.46 ha in River-Damodar | 3464 | 2.60km Approach Road 2600/3=866 plants 866*4= 3464 plants (Two row plantations along with the both side of road) | Mango, Jackfruit, Jamun, babul, Gulmohar, Neem, Pipal, Arjun etc | 80% |

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

**Environment Management Budget**

| PROPOSED FOR ENVIRONMENT MANAGEMENT COST | | | |
|---|---|---|---|
| S. No. | Mitigative measures to protect Environment | Capital Cost (In Lakh) | Recurring cost (In Lakh) |
| 1. | Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) | 10.0 | 3.5 |
| 2. | Green belt development on approach the road (for each plant including hedges and fences) @No. of plants 3464 x 500 Rs. | 17.32 | 2.0 |
| 3. | Environment Monitoring (Air, Water, Noise& Soil Monitoring) | Nil | 0.80 |
| | **TOTAL** | **27.32** | **6.3** |

Environment Monitoring Cell

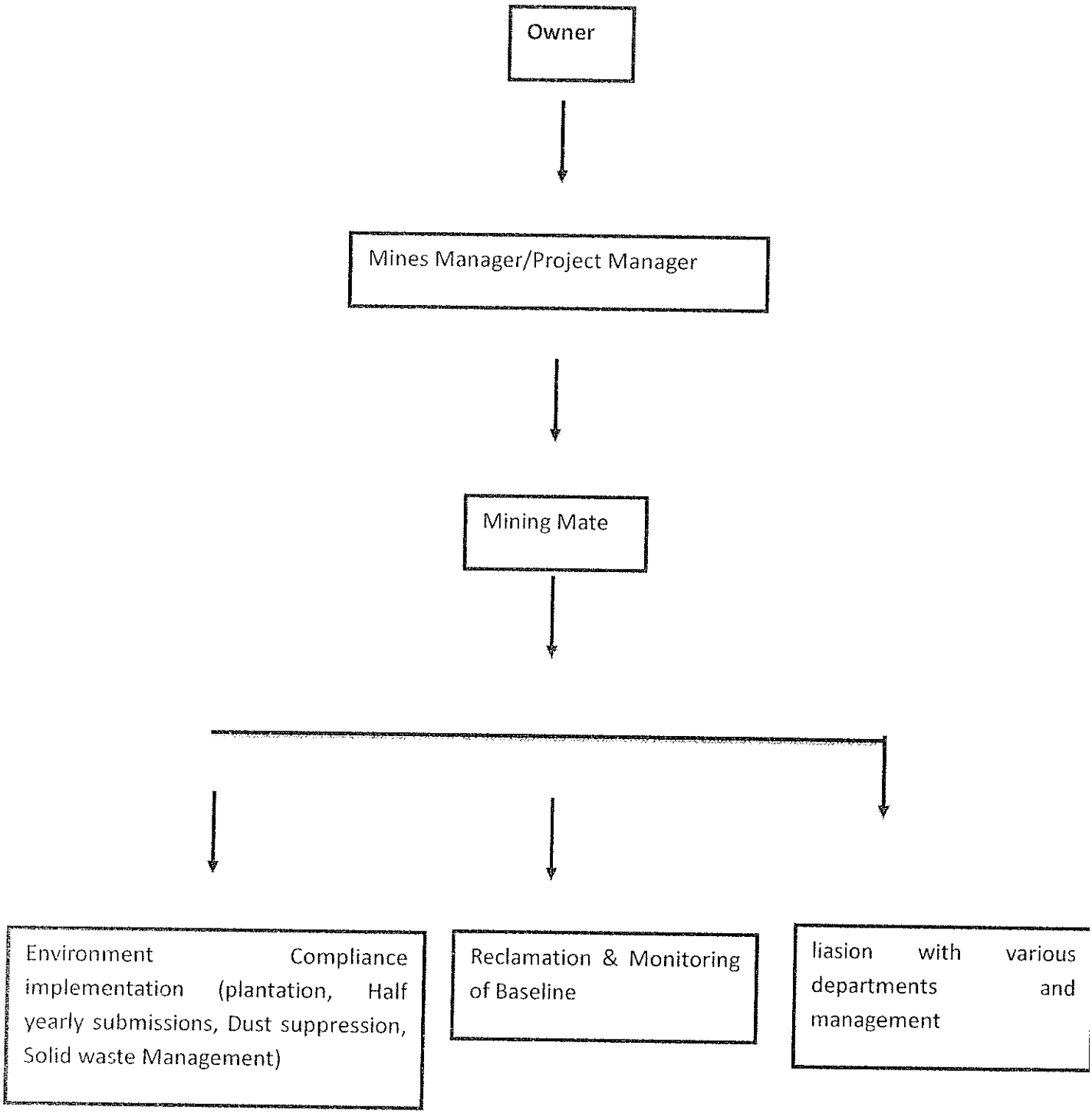


**Fig: Organization Chart for Environment Management Cell**

**Responsibility of Environment Management cell**

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
  - ✓ Implement environmental control measures.
  - ✓ Oversee reclamation planning and management.
  - ✓ Manage air and water pollution control.

- ✓ Liaise with state and central statutory agencies.
- ✓ Develop greenbelt areas.

- Performance Review: Assess corporate environmental performance and report non-compliances.
- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
- Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

**Environment Monitoring Plan (post operation)**

**Monitoring Parameters and Frequency of Monitoring**

| S. no | Monitoring Parameters | No. of Locations | Frequency of Monitoring |
|---|---|---|---|
| 1 | Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only. | 2 Stations | Six Monthly |
| 2 | Water: Surface water sample in the vicinity of the Project area. | 2 Surface water<br>2 Ground water | Six Monthly |
| 3 | Noise: Day & Night level Noise Monitoring. | 4 stations | Six Monthly |
| 4 | Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc. | 2 station | Six Monthly |

**SOLID WASTE MANAGEMENT**

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 betaken

- Regular water sprinkling on Haul road by using water tankers.
- Regular repair of Haul road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

**RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED BELOW:**

**ROAD ACCIDENTS**

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school andhabitation
- 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 MMR1961.
- ✓ Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- ✓ All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- ✓ The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- ✓ Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- ✓ To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- ✓ Only trained drivers will be hired.

**Undertaking submitted affirming:**

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.

f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
l. Transportation from the river bed to the NH-320G will be done using the existing road.
m. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
n. Wet sand will not be transported.

**Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal Sirka Sand Deposit (in the River Bed of Damodar) of M/s Jharkhand State Mineral Development Corporation Ltd., Mauza : Sirka, Block : Ramgarh, Distt. : Ramgarh, Jharkhand (2.46 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*Ek Ped Ma Ke Naam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
III. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The

production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.

V. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

VI. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VII. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance.

VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.

IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

XI. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.

XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XIII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.

XIV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.

XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

XVI. Extraction of sand beyond annual production capacity is not permitted.

XVII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

XIX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.

XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XXI. No labour camp shall be allowed in riverbed.

XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

XXIII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.

XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.

XXV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXXI. Mining depth should be restricted to 3 meters and distance from the band should be $1/4^{th}$ of river width and should not be less than 7.5 meters.

XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.

XXXIII. River bed sand mining shall be restricted within the central 3/4th 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.

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9. **Khetko - Chalkari Sand Ghat of M/s Jharkhand State Mineral Development Corporation Ltd. (JSMDC), Mauza : Khetko & Chalkari, Block : Peterwar, Distt.: Bokaro, Jharkhand (26.14 Ha).**

**(Proposal no.: SIA/JH/MIN/518640/2025)**

**Name of the consultant : Oceao – Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.**

This is a new project which has been taken for appraisal on 23.01.2025.

**Project Sector: 1(a) Mining of Minerals, Category: B1.**

**Application for Environmental Clearance (EC) after ToR.**

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 115th meeting held on 23 - 27.07.2024 and SEIAA, Jharkhand has approved the ToRs in 115th meeting held on 06th & 07th August, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3211/2024/216, dated 13.08.2024. The final EIA / EMP submitted by PP to SEAC on 16.01.2025.

**Application for: Proposed Capacity- 2,19,576cum/annum or 3,82,062TPA (Dry Basis)**

**PROJECT AND LOCATION DETAILS:**

| S.No. | Parameter | Details | |
|---|---|---|---|
| 1 | Project Name | Khetko – Chalkari Sand Ghat | |
| 2 | Lessee: | M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises) | |
| 3 | Lessee Address | Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand) | |
| 4 | Lease Area | **Ha.** 26.14 Ha. | **Acres** – 64.56 Acres |
| 5 | Type of Land | Non-Forest Government Land (River Bed) | |

| | | | |
|---|---|---|---|
| 6 | Project Cost | Rs 2.05Crore | |
| 7 | EMP Budget | **Capital**: Rs 35.41 Lakhs | **Recurring**: 4.92 lakhs / year |
| 8 | New or Expansion | New | |
| 9 | Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity | **CUM**: 2,19,576 cum (Dry Basis) | |
| 10 | Mine Life | Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy. | |
| 11 | Man power | 578 | |
| 12 | Water Requirement | Total water requirement is about 36.8 KLD= 26 KLD (Drinking Water & Domestic Uses, 578 persons @45 LPCD) + 3.6 KLD (Water sprinkling) + 7.2 KLD (plantation) | |
| 13 | Water Source | By Authorised hired tankers | |
| 14 | DG Set / power | NA | |
| 15 | Crusher | NA | |
| 16 | Nearest Water Body | Damodar River (Project Site) | |
| 17 | Nearest Habitation | Khetko Village, at 0.33 KM in WNW direction. | |
| 18 | Nearest Rail Station | Jarangdih Train station is about 1.67 Km in NE direction | |
| 19 | Nearest Air Port | Bokaro Airport is about 25.8 Km in ESE direction. | |
| 20 | Nearest Forest | **Name of Places** / **Distance (Km)** / **Direction**<br>Pipilio P.F. / 7.6 / NNW<br>Gandhinagar P.F. / 11.46 / NE<br>Angwali P.F. / 5.6 / SE<br>Tenughat P.F. / 10.72 / WSW | |
| 21 | Road Highways | Jarangdih Road is about 1.88 km in N direction<br>NH-320D is about 11.4 km in S direction | |
| 22 | Seismic zone | Zone III as per seismic zone map of India | |

**CO-ORDINATES**

| Pillar No. | Latitude | Longitude | Pillar No. | Latitude | Longitude |
|---|---|---|---|---|---|
| 1 | 23°45'24.958"N | 85°56'11.504"E | 16 | 23°45'27.832"N | 85°55'09.310"E |
| 2 | 23°45'23.119"N | 85°56'12.664"E | 17 | 23°45'24.54"N | 85°55'12.71"E |
| 3 | 23°45'20.95"N | 85°56'14.21"E | 18 | 23°45'23.00"N | 85°55'15.90"E |
| 4 | 23°45'19.62"N | 85°56'15.15"E | 19 | 23°45'21.74"N | 85°55'19.40"E |
| 5 | 23°45'16.24"N | 85°56'6.30"E | 20 | 23°45'20.55"N | 85°55'22.14"E |

| | | | | | |
|---|---|---|---|---|---|
| 6 | 23°45'11.81"N | 85°55'54.44"E | 21 | 23°45'18.98"N | 85°55'26.81"E |
| 7 | 23°45'11.08"N | 85°55'49.10"E | 22 | 23°45'16.05"N | 85°55'38.33"E |
| 8 | 23°45'11.00"N | 85°55'43.30"E | 23 | 23°45'15.05"N | 85°55'44.09"E |
| 9 | 23°45'11.23"N | 85°55'40.08"E | 24 | 23°45'16.05"N | 85°55'51.12"E |
| 10 | 23°45'11.72"N | 85°55'36.46"E | 25 | 23°45'16.82"N | 85°55'55.68"E |
| 11 | 23°45'13.60"N | 85°55'29.30"E | 26 | 23°45'18.21"N | 85°56'0.20"E |
| 12 | 23°45'17.19"N | 85°55'19.06"E | 27 | 23°45'19.09"N | 85°56'2.29"E |
| 13 | 23°45'20.60"N | 85°55'13.26"E | 28 | 23°45'19.86"N | 85°56'4.69"E |
| 14 | 23°45'23.071"N | 85°55'8.281"E | 29 | 23°45'21.35"N | 85°56'6.82"E |
| 15 | 23°45'25.781"N | 85°55'08.867"E | 30 | 23°45'23.40"N | 85°56'9.62"E |

**LAND DETAILS**

| Mauza | Khata no. | Plot no. |
|---|---|---|
| Khetko | 120 | 2470 |
| Chalkari | 225 | 4149 |

**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.<br><br>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, Peterwar vide letter no. 811, dated 19.07.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II. With regard to Khata number & Plot number involved in this project the DMO, Bokaro has certified vide letter no. 1095/Khanan, dated 22.07.2024. |
| 3 | DMO | : | DMO, Bokaro vide letter no. 904/Khanan, dated 12.06.2024 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. 883, dated 17.05.2024 certified that the proposed project site is outside Eco |

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| | | | |
|---|---|---|---|
| | | | Sensitive Zone of Topchanchi Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Bokaro Forest Division vide letter no. 654, dated 10.03.2023 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 Bokaro District (Sl. no. 04, Page no. 72-73). |
| 7 | Gram Sabha | : | BDO, Peterwar vide letter no. 962, dated 10.06.2024 informed that Gram Sabha conducted on 10.06.2024. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Bokaro vide Memo No. 886/M, dated 08.06.2024. |
| 9 | Qualified Person | : | Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him. |
| 10 | Public Hearing | : | Public Hearing conducted on 06.01.2025. |
| 11 | Baseline Monitoring Period | : | 1st December, 2023 to 29th February, 2024. |

WORKING DETAILS

| | | | |
|---|---|---|---|
| 1 | Mining Method | : | Opencast Manual Method |
| 2 | Quarry Area | : | 26.14Ha |
| 3 | Waste Generation | : | No waste generation |
| 4 | Stripping Ratio | : | 0:0 |
| 5 | Working Days | : | 200 days |
| 6 | Benches: size & No | : | NA |
| 7 | Elevation of Mine | : | 155 m AMSL to 153.6m AMSL |
| 8 | Ground Level Elevation | : | 153.6 m AMSL |
| 9 | Ultimate Working Depth | : | 1.4 m |
| 10 | Water Table | : | NA |
| 11 | Topography of Mine | : | Area represents gently sloping land. |
| 12 | Explosive Requirement | : | None. No blasting required |
| 13 | Diesel/Fuel Requirement | : | Not required for mining. |

PRODUCTIONDETAILS

| Year | Total Area(Ha) | Thickness(m) | Average Replenishment Rate | Volume(cum) 60% | Tonnage factor | Quantity in ton 60% |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| 1st | 26.14 | 1.4 | 60% | 2,19,576 | 1.74 | 3,82,062 |

LAND USE

| GM Land | Area in Hectares |
|---|---|
| Private Land | 0.00 |
| Proposed Mining Area (Govt. Bhu-jal Land) | 26.14 |
| Company land | 00 |
| **Total Area** | 26.14 |

ENVIRONMENT MANAGEMENT

GREEN BELT DEVELOPMENT

| Village | No of plants | Area consider for plantation (length of approach road | Species of plant |
|---|---|---|---|
| Khetko&Chalkari Sand Ghat Total area of 26.14 ha in River - Damodar | 2400 | 1.80 Km<br>1800/3=600 Plants<br>600x4=2400 Plants.<br>Two row plantation along the both side road. | Anjan, Sahjan, Mango, Jackfruit, Jamun, Sal, Gulmohar, Neem, Pipal, Arjun etc other local Fruits Bearing Tress |

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

| Sr. No. | Particulars | | Budget Provisions (Rs) | |
|---|---|---|---|---|
| | | | Capital | Recurring |
| 1 | Water Requirement & Other Requirements | Water sprinkling for outgoing and incoming transportation vehicles for haul road and Green Belt.<br>Cost for 200 days for 10.8 KLD @5 KL tanker capacity, Rupees 500- per tanker | 30,000 | 2,16,000 |
| 2 | Road Maintenance & Monitoring | Prepare & Maintenance of approach road (Max. Road length 1.8 Km, Width 4.0m) @320Rs. / Meter. | 23,04,000 | 1,15,200 |

| | | | | |
|---|---|---|---|---|
| | | Monitoring twice a year (Air, Soil, Water & Noise twice a year) | - | 1,00,000 |
| 3 | Plantation Scheme | Green Belt Development along the road (for each plants including hedges and fences) 2400 Plants @ INR 500/Plant | 12,00,000 | 60,000 |
| 4 | Solid Waste Management | Bins 15 nos. | 7,500 | 1,000 |
| | | Transport of Dry Waste/Wet Waste | - | |
| **Total EMP Budget** | | | **35,41,500** | **4,92,200** |

CSR/CER

| S.No. | Particulars | Budgets |
|---|---|---|
| 1 | Infrastructure development (in any nearby school) i.e., boundary wall, furniture, computers etc. identified school UPG Middle School, Khetko | 2,00,000 |

Minutes of Public Hearing Commitment

| Sl. No. | Activities as per Public Hearing | Year of Implementation & Budgets | | | | | Total |
|---|---|---|---|---|---|---|---|
| | | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | |
| 1 | Water facilities for the villagers | 1,00,000 | 1,00,000 | 1,00,000 | 1,00,000 | 1,00,000 | 5,00,000 |
| 2 | Medical aid for poor people | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 2,50,000 |
| 3 | For water facility for the villagers (Repairing of non- functional hand pumps in the villages.) | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 2,50,000 |
| 4 | Compensatory budget for anticipated damage to field | 75,000 | 75,000 | 75,000 | 75,000 | 75,000 | 3,75,000 |
| | Total | 2,75,000 | 2,75,000 | 2,75,000 | 2,75,000 | 2,75,000 | 13,75,000 |

Environment Monitoring Cell

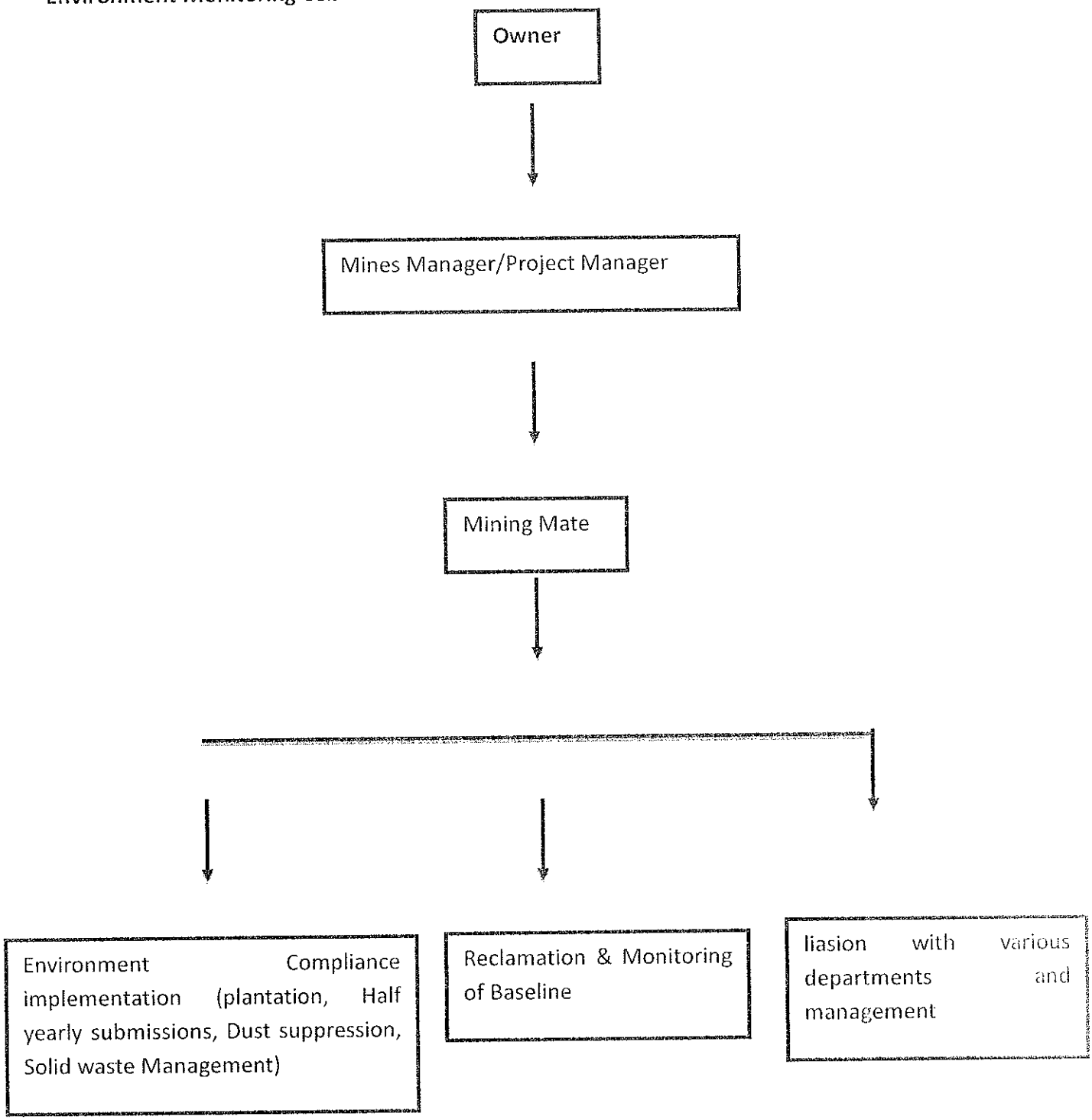


**Fig: Organization Chart for Environment Management Cell**

**Responsibility of Environment Management cell**

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
  - ✓ Implement environmental control measures.
  - ✓ Oversee reclamation planning and management.
  - ✓ Manage air and water pollution control.

- ✓ Liaise with state and central statutory agencies.
- ✓ Develop greenbelt areas.

- Performance Review: Assess corporate environmental performance and report non-compliances.
- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
- Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

| S. no | Monitoring Parameters | No. of Locations | Frequency of Monitoring |
|---|---|---|---|
| 1 | Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only. | 2 Stations | Six Monthly |
| 2 | Water: Surface water sample in the vicinity of the Project area. | 2 Surface water 2 Ground water | Six Monthly |
| 3 | Noise: Day & Night level Noise Monitoring. | 4 stations | Six Monthly |
| 4 | Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc. | 2 station | Six Monthly |

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 betaken

- Regular water sprinkling on Haul road by using water tankers.
- Regular repair of Haul road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

**RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED BELOW:**

**ROAD ACCIDENTS**

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school andhabitation
- 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 MMR1961.
- ✓ Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- ✓ All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- ✓ The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- ✓ Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- ✓ To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- ✓ Only trained drivers will be hired.

**Undertaking submitted affirming:**

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.

f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
l. Transportation from the river bed to the NH-320G will be done using the existing road.
m. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
n. Wet sand will not be transported.

**Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal Khetko - Chalkari Sand Ghat of M/s Jharkhand State Mineral Development Corporation Ltd. (JSMDC), Mauza : Khetko & Chalkari, Block : Peterwar, Distt.: Bokaro, Jharkhand (26.14 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"Ek Ped Ma Ke Naam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.
II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
III. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The

production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.

V. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

VI. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VII. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance.

VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.

IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.

X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

XI. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.

XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).

XIII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.

XIV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.

XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

XVI. Extraction of sand beyond annual production capacity is not permitted.

XVII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.

XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

XIX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.

XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

XXI. No labour camp shall be allowed in riverbed.

XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

XXIII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.

XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.

XXV. Sand and gravel may be extracted across the entire active channel during the dry season.

XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.

XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

XXXI. Mining depth should be restricted to 3 meters and distance from the band should be $1/4^{th}$ of river width and should not be less than 7.5 meters.

XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.

XXXIII. River bed sand mining shall be restricted within the central 3/4$^{th}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.

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10. **Proposed Commercial Building Project "Ram Krishna Arcade" and Residential Building "Prabhu Dham" of M/s Sukhdham Realtors Pvt. Ltd., Mouza : Kolakushma, Thana no. : 12, Distt. : Dhanbad, Jharkhand.**

**(Proposal no.: SIA/JH/INFRA2/ 516832 /2025)**
**Name of the consultant : Rian Enviro Pvt. Ltd., Patna, Bihar.**

This is a new project which has been taken for appraisal on 23.01.2025.

**Project Sector: 8(a) Building and Construction Projects , Category: B2.**

**Application for Environment Clearance (EC) as per EIA notification, 2006.**

**M/s Sukhdham Realtors Pvt Ltd.** is proposed Commercial Building Project "**Ram Krishna Arcade" and Residential Building "Prabhu Dham"** on the **total land area** measuring **20255.5Sqm.** at, Dist.- Dhanbad, State- Jharkhand. The proposed **built up area is 69377.78** Sqm. (Existing Built-up Area= 8544.17 Sqm. + Proposed Built-up area= 60833.61 Sqm.).

**SalientFeatures of the Project**

| Sr. No. | Particulars | |
|---|---|---|
| 1. | Latitude | 23°49'22.57"N |
| 2. | Longitude | 86°28'40.89"E |
| 3. | **Total Plot area** | **20255.5 Sqm** |
| 4. | Commercial Plot Area | 7670.96 Sqm |
| 5. | Residential Plot Area | 12584.54 Sqm |
| 6. | Permissible FAR | 56931.02 Sqm |
| 7. | Total FAR Achieved | 56692.8 Sqm |
| 8. | Commercial Block Built-up area (F.A.R) | 19874.4 Sqm |
| 9. | Commercial Block Non-FAR Area (Staircase Lift | 5973.06 Sqm |

| Sr. No. | Particulars | |
|---|---|---|
| | Balcony etc.) | |
| 10. | Commercial Block Built-up Area | 25847.46 Sqm |
| 11. | Residential Built-up area (F.A.R) | 36818.4 Sqm |
| 12. | Residential Non-FAR Area (Staircase Lift Balcony etc.) | 6711.92 Sqm |
| 13. | Residential Block Built-up Area | 43530.32 Sqm |
| 14. | **Existing Built-area** | **8544.17 sqm** |
| 15. | **Proposed Built-up area** | **60833.61 sqm** |
| 16. | **Total Built-up area** | **69377.78Sqm** |
| 17. | Total No. of Parking Required | 473 ECS |
| 18. | Total No. of Parking Proposed | 524 ECS |
| 19. | Proposed surface parking for two-wheeler | 885 No. |
| 20. | Permissible Ground Coverage @ 50 % | 10127.75 Sqm |
| 21. | Proposed Ground Coverage @ 49.76 | 10080.35 Sqm |
| 22. | Greenbelt area Provided @ 18.59 | 3766.41 Sqm |
| 23. | Road Area | 1922.62 Sqm |
| 24. | Open & Paved Area | 4486.118 Sqm |
| 25. | Rain Water Harvesting Pits (with size) | 9 (RWH Pit size= 12.27 $m^3$) |
| 26. | STP Capacity | 200 KLD |
| 27. | Maximum Height of the Building (m) | Approx. 44.7 m. |
| 28. | Power Requirement | ~2400 KW |
| 29. | Power Backup | ~2000 KVA<br>2X1000 KVA |
| 30. | Total Water Requirement | ~195 KLD<br>Fresh water- 127 KLD<br>Treated water- 87 KLD<br>Source: Ground water |
| 31. | Waste water Generated | ~169 KLD |
| 32. | Solid Waste Generated | ~861 Kg/day |
| 33. | Biodegradable Waste | ~344 Kg/day |
| 34. | Non-Biodegradable Waste | ~517 Kg/day |
| 35. | Number of Building Block | 06 |
| 36. | Basement | 01 |
| 37. | Max. Stories | G+12 |
| 38. | Project Cost | Approx. 108 Crores |
| 39. | EMP Budget | **During Construction**<br>Capital Cost: 43 Lakhs<br>Recurring Cost: 13 Lakhs |
| | | **During Operation**<br>Capital Cost: 228 Lakhs<br>Recurring Cost: 27.5 Lakhs |

LAND DETAILS

| Khata no. | Plot no. |
|---|---|
| New- 446, 538, 539, 444, 208, 389, 126 | New - 842,866,826,887,886,901,844,865,862,864, 849,843,823,879,888,840,845,907, 841,882,900,885,883,849,918 |

**Detailed Area Statement**

| S. No. | Details | Area | |
|---|---|---|---|
| 1 | **Total Plot area** | **20255.5** | **Sqm** |
| 2 | Commercial Plot Area | 7670.96 | sqm |
| 3 | Residential Plot Area | 12584.54 | Sqm |
| 4 | Permissible FAR | 56931.02 | sqm |
| 5 | **Total FAR Achieved** | **56692.8** | Sqm |
| 6 | Commercial Block Built-up area (F.A.R) | 19874.4 | Sqm |
| 7 | Commercia Block Non-FAR Area (Staircase Lift Balcony etc.) | 5973.06 | sqm |
| 8 | Commercial Block Built-up Area | 25847.46 | |
| 9 | Residential Built-up area (F.A.R) | 36818.4 | Sqm |
| 10 | Residential Non-FAR Area (Staircase Lift Balcony etc.) | 6711.92 | Sqm |
| 11 | Residential Block Built-up Area | 43530.32 | sqm |
| 12 | Existing Built-area | 8544.17 | sqm |
| 13 | Proposed Built-up area | 60833.61 | sqm |
| **14** | **Total Built-up area** | **69377.78** | **Sqm** |
| **15** | **Constructed Built-up area in Commercial Block** | **8544.17** | **Sqm** |
| 16 | Total No. of Parking Required | 473 | ECS |
| 17 | Total No. of Parking Proposed | 524 | ECS |
| 18 | Proposed surface parking for two-wheeler | 885 | No. |
| 19 | Permissible Ground Coverage @ 50 % | 10127.75 | sqm |
| 20 | Proposed Ground Coverage @ 49.76 | 10080.35 | sqm |
| 21 | Greenbelt area Provided @ 18.59 | 3766.41 | Sqm |
| 22 | Road Area | 1922.62 | Sqm |
| 23 | Open & Paved Area | 4486.118 | sqm |

**Details of SiteSurroundings and Connectivity**

| Connectivity & Site Surroundings | | | |
|---|---|---|---|
| S. No. | Description | | Distance and Direction |
| 1. | Nearest Junction Nearest Railway | Dhanbad Junction Railway Station PradhankhuntaJunction Railway Station | Approx.6 Km towards SW Approx. 7 Km towards SE |

| | Stations | | |
|---|---|---|---|
| 2. | Nearest Airport | Deoghar International Airport | Approx. 72.55 km towards NNE |
| 3. | Nearest Village | Sabalpur<br>Amaghata<br>Saharjori | Approx. 1.25 Km towards North<br>Approx. 2.25 Km towards East<br>Approx. 2.75 Km towards NNW |
| 4. | Nearest Highway/Roads | NH 18 | Adjascent to site towards North |
| 5. | Nearest School & College | Upgraded +2 High School, Gosaidih<br>BurragarhGolai Govt. School<br>Govt. Sc Resi. High School<br>Govindpur<br>B.Y.S.N Inter College<br>P.K. Roy Memorial College | Approx. 1 Km towards NE<br>Approx. 2.5 Km towards East<br>Approx. 3.50 Km towards WNW<br>Approx. 1 Km towards WNW<br>Approx. 3 Km towards WSW |
| 6. | Nearest Hospital | JIMS Hospital<br>District Hospital Dhanbad | Approx. 3 Km towards WSW<br>Approx. 5 Km towards WSW |
| 7. | Places of worship | Shiv Mandir, Vanasthali colony<br>KalyaneshwarMahadevMandir<br>NWGEL church, Dhanbad<br>Bada Gurdwara<br>Noori Masjid | Approx. 0.5 Km towards ENE<br>Approx. 0.5 Km towards NW<br>Approx. 3.5 Km towards SW<br>Approx. 7.25 Km towards WSW<br>Approx. 1.25 Km towards SSE |
| 8. | Water Bodies | Khudia River<br>Bekar Bandh<br>BartandBandh Pond<br>Mandal Talab<br>Budha Bandh Talab<br>Tapwan Pond | Approx. 5.75 Km towards ENE<br>Approx. 5.5 Km towards WSW<br>Approx. 4.5 Km towards WSW<br>Approx. 0.2 Km towards South<br>Approx. 0.5 Km towards SSW<br>Approx. 0.5 Km towards NW |
| 9. | Nearest Town | Dhanbad | Approx. 5.0 Km towards WSW |
| 10. | Protected Forest/Zoo | Dhangi Hill Reserved Forest<br>Jagdish Protected Forest<br>Karitanr Protected Forest | Approx. 0.60 Km towards East<br>Approx. 7.0 Km towards SE.<br>Approx. 6.90 Km towards SSE. |

**Details of Building Blocks**

**Details of Commercial Building Blocks**

| S. No. | Details | Built-up Area | F.A.R. |
|---|---|---|---|
| 1 | Basement Floor | 4244.66 | 1138.85 |
| 2 | Ground Floor B/U Area | 4088.54 | 3035.07 |
| 3 | First Floor B/U Area | 3101.97 | 2844.31 |

| | | | |
|---|---|---|---|
| 4 | Second Floor B/U Area | 3331.35 | 3174.33 |
| 5 | Third Floor B/U Area | 3276.46 | 2549.84 |
| 6 | Fourth Floor B/U Area | 3191.95 | 2968.58 |
| 7 | Fifth Floor B/U Area | 1903.1 | 1726.43 |
| 8 | Sixth Floor B/U Area | 753.31 | 596.16 |
| 9 | Seventh Floor B/U Area | 652.04 | 613.61 |
| 10 | Eighth Floor B/U Area | 652.04 | 613.61 |
| 11 | Ninth Floor B/U Area | 652.04 | 613.61 |
| 12 | Terrace Floor | 0 | 0 |
| | **Total** | **25847.46** | **19874.4** |

**Details ofResidential Building Blocks**

| S. No. | Details | Built-up Area | F.A. R |
|---|---|---|---|
| 1 | G. Floor B/U Area | 6246.95 | 662.56 |
| 2 | First Floor B/U Area | 3075.44 | 2994.15 |
| 3 | Second Floor B/U Area | 3075.44 | 2994.15 |
| 4 | Third Floor B/U Area | 3075.44 | 2994.15 |
| 5 | Fourth Floor B/U Area | 3075.44 | 2994.15 |
| 6 | Fifth Floor B/U Area | 3075.44 | 2994.15 |
| 7 | Sixth Floor B/U Area | 3151.48 | 2994.15 |
| 8 | Seventh Floor B/U Area | 3075.44 | 2994.15 |
| 9 | Eighth Floor B/U Area | 3075.44 | 2994.15 |
| 10 | Ninth Floor B/U Area | 3075.44 | 2994.15 |
| 11 | Tenth Floor B/U Area | 3151.48 | 2994.15 |
| 12 | Eleventh Floor B/U Area | 3075.44 | 2994.15 |
| 13 | Twelveth Floor B/U Area | 3075.44 | 2994.15 |
| 14 | Terrace Floor | 226.01 | 226.01 |
| | **Total** | **43530.32** | **36818.4** |

**CalculationofPopulation**

| Block | Total Dwelling Units | Unit Population | Population |
|---|---|---|---|
| Residential Block | 143 | 4/5/6/7 | 924 |
| Visitors | 10% of Residential | | 92 |

| | Population | |
|---|---|---|
| **Commercial Block** | | |
| Visitors For Shops & Office (1st to 7th floor) | .... | 1852 |
| Staff for Shops & Office, restaurant ,Food Court etc | ..... | 624 |
| First Floor (Food Court) | ..... | 210 |
| Hotel Restaurant 2nd floor | ..... | 263 |
| Hotel rooms, 96 beds (4th to 9th floor ) | .... | 192 |
| Total Population | .... | **4157** |

**ParkingDetails**

**Parking Details for commercial building**

| **Vehicle Type** | **Required** | | **Provided** | |
|---|---|---|---|---|
| **Car** | **Number** | **Area** | **Number** | Area |
| **Two stack car** | | | **121** | **1512.5** |
| **Total Stack Car** | | | **121** | **1512.5** |
| Total Car | 237 | 2962.5 | 242 | 3025 |
| Loading /Unloading | | | 1 | 26.25 |
| Two wheeler | | | 476 | 954 |
| Two stack/two wheeler | | | 265 | 588 |
| **total two wheeler** | **738** | **1476** | **742** | **1542** |
| Other Parking | | | | 665.57 |
| Total | 237 ECS, 738 two wheeler | | 242 ECS & 742 two Wheeler | |

**Parking Details for Ressidential building**

| **Car Parking Required** | |
|---|---|
| Required Car Parking for use of residential | 205 ECS |
| Required Car Parking for use of Visitors (15 %) | 31ECS |
| Total Car Parking required | 236 ECS |
| **Car Parking provided** | |

| | |
|---|---|
| Proposed car parking at Ground Floor (Open Parking) | 66ECS |
| Proposed car parking in stilt | 216ECS |
| Total Car Parking provided | 282 ECS |
| Two Wheeler parking provided | 143 NO |

## Calculation of Green belt

| | |
|---|---|
| **Total Plot Area** | **20255.5 Sqm.** |
| Landscape area provided @ 18.59 % | 3766.41 Sqm. |
| No. of trees to be cut | 2 |
| Total No. of Trees will be Planted @ 1 tree per 80 Sqm. of Plot Area (Requirement) | 254 Nos. |
| No. of trees to be planted (Proposed) | 280 |

## Details of Water Requirement

| S. No. | Description | No. of units / Area in Sqm | Population | Unit water consumption (lpcd) | Total water required (kld) | Fresh water required (kld) | Flushing (kld) | Total Wastewater (kld) (80% of domestic +100% Total flushing) |
|---|---|---|---|---|---|---|---|---|
| | Main Dwelling Units (Residential) | 143 | 924 | 100(65+35) | 92.4 | 60.06 | 32.34 | 80.388 |
| | Visitors (10% of the residential population) | .. | 92 | 15(10+5) | 1.38 | 0.92 | 0.46 | 1.196 |
| 1 | Main Shop & Office unit Staff (1st to 7th floor ) | | 624 | 45* (25+20) | 28 | 15.6 | 12 | 24.96 |
| 2 | Main Shop & Office unit Visitors (1st to 7th floor) | ... | 1852 | 15 (10+5) | 27.78 | 18.52 | 9.26 | 24.076 |
| 3 | First Floor (Food Court ) | | 210 | 35(25+10) | 7.35 | 5.25 | 2.1 | 6.3 |
| 4 | Hotel Resturent 2nd floor | | 263 | 70(55+15) | 18.41 | 14.465 | 3.945 | 15.517 |
| 5 | Hotel Guest Room | 96 | 192 | 100 (65+35) | 19.2 | 12.48 | 6.72 | 16.704 |
| | Subtotal I | | | | **195** | **127** | **67.305** | **169** |
| | Reuse of treated water | | | | | | | |
| 1 | Horticulture | 3766.41 | ... | | 19 | | | 0 |
| 2 | Flushing | | | | | | | |

## Energy Conservation Measures

| S. No. | Net Energy saved (weighted Average Calculation) | |
|---|---|---|
| 1 | Solar Based lighting will be done in the common areas, Signages, entry gates and boundary walls etc. @ 5% | 120 KVA |
| 2. | LED Based lighting will be done in the dwelling units | 34.01 KVA |
| 3. | Usage of energy efficient Lift (VVVF non gear lifts) | 42 KVA |
| | Total Energy saved | 196.01 KVA |
| | Total Energy consumption | 2400 KW |
| | **Total Energy saving** | **8.16 %** |

## Environmental Management Cost – Construction Phase

| Sr. No. | Component | Particulars | Capital Investment (Lakhs) | Recurring Expenditure per Annum (Lakhs) |
|---|---|---|---|---|
| 1. | Air | Anti-Smog Gun | 10.0 | 3.0 |
| 2. | Water | Mobile STP, etc. | 5.0 | 2.5 |
| 3. | Solid and C&D Waste and its Management | Stack yard and its management | 3.0 | 2.0 |
| 4. | Environment Monitoring & Management | Environment Monitoring as per monitoring plan<br>Construction of wind breaking wall<br>Green Curtains on under truction building | 15.0 | 3.0 |
| 5. | Green Belt | Development and maintenance of green belt | 10.0 | 2.5 |
| **Total (Rs.)** | | | 43 | 13 |

## Environmental Management Cost – Operation Phase

| Sr. No. | Component | Particulars | Capital Investment (Lakhs) | Recurring Expenditure per Annum (Lakhs) |
|---|---|---|---|---|
| 1. | Air | Stack emission control | 5.0 | 2.0 |

| Sr. No. | Component | Particulars | Capital Investment (Lakhs) | Recurring Expenditure per Annum (Lakhs) |
|---|---|---|---|---|
| 2. | Water | Sewage Treatment Plant (STP) | 150.0 | 6.0 |
| 3. | Rain Water Harvesting | Installation of RWH System & Annual Cleaning of RWH tank | 18.0 | 4.0 |
| 4. | Solid waste Area and its Management | Purchase of Containers for Storage of Waste & OWC of 350 kg/day | 10.0 | 3.0 |
| 5. | Environment Monitoring & Management | Environment Monitoring as per monitoring plan | 0.00 | 2.0 |
| 6. | Green Belt | Development and maintenance of green belt | 10.0 | 2.5 |
| 7. | Others | Energy saving devices, solar miscellaneous<br>Electrical Vehicle Charging point | 25<br>10 | 5<br>3 |
| | | **Total (Rs.)** | **228** | **27.5** |

**Statutory Clearances :**

| | | | |
|---|---|---|---|
| 1 | Land Docs | : | Part of the land is self owned and rest part obtained as per conversion agreement. |
| 2 | DFO Territorial | | DFO, Dhanbad Forest Division vide letter no. 3241, dated 24.12.2024 certified that the distance of reserved / protected forest is less than 250 meters from project site. |
| 3 | DFO Wildlife | : | DFO, Wildlife Division, Hazaribag vide letter no. 2273, dated 01.11.2024 certified that proposed project site is out side Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary. |
| 4 | CO certificate | : | The CO, Dhanbad vide letter no. 1207, dated 09.09.2023 has mentioned the plot no. of the project is not recorded as "Jangle Jhari" in R.S. Khatiyan & Register II. |
| 5 | AAI NOC | : | This site is located at the distance of more than 60 km from the nearest airport. Hence NOC is not required. |
| 6 | Building Plan approval | : | Building plan for BUA of 19963.72 sq.m approved by Dhanbad Municipal Corporation vide memo no. DMC/BP/0289/W23 |

| | | | |
|---|---|---|---|
| | | | /2024, dated 21.09.2024.<br><br>The proposed expansion of the 05 blocks is on the basis of conceptual plan. |
| 7 | Fire Department | : | Fire Advisory has been issued by Fire Department, Jharkhand, Ranchi, vide memo no. 1232/Tech./2022, dated 11.03.2022. |

**Based on the presentation made and information provided, the Committee decided that the proposal for Proposed Commercial Building Project "Ram Krishna Arcade" and Residential Building "Prabhu Dham" of M/s Sukhdham Realtors Pvt. Ltd., Mouza : Kolakushma, Thana no. : 12, Distt. : Dhanbad, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure –III alongwith the following specific conditions :**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. Ground water to be drawn for use in the project only after obtaining permission from the Competent Authority.

III. Environment management system including organization structure to be drawn to ensure compliance of EC conditions stipulated based on principles of Continual Improvement and periodical management review.

IV. All raw material to be stored only under covered shed.

V. PAs to offset (upto20%) consumption of conventional energy sources by promoting use of solar energy, passive energy utilization, optimum fenestration, shading effect and heat islands.

VI. Developers to promote energy conservation measures such that it offsets not less than 02 % of connected load. It is to be achieved by solar panels etc meeting ECBC norms.

VII. Trees should be developed & maintained not less than 15% of project area.

VIII. Organic Waste Converter (OWC) to be installed of sufficient capacity such that all organic waste (bio degradable) generated is composted at source only.

IX. Developers/Company to install STP of sufficient capacity such that all the sewer produced is treated and reused.

X. Developers/Company to install Rain water harvesting structures such that all the roof top water runoff is collected and harvested including reuse on 100% basis.

XI. Developers/Company to conduct and submit carbon footprint and carbon sequestration study report including mitigation measures as a part of EC compliance.

XII. Water runoff originating from open non constructed areas of project premises to be harvested /guided in such a way that it does not create water logging condition outside.

XIII. Sufficient number of EV fast charging points to be installed.

XIV. MSW Collection centre should be located in isolated and preferably unmanned area. Movement of the vehicle carrying waste should be under tarpaulin covered condition only. Route of vehicle should be such that it avoids residential areas as far as practical.

XV. ISO 14k EMS system standard to be followed for implementation of EMPs with MRM in place for feedback to Sr management.

XVI. A cycling tract to be provided in residential complex so as to save on fuel and make in campus movement environment friendly.

**********

11. **Jugra Stone Mine of M/s Maa Jagdamba Stone Works (Partners : Shri Shailendra Kumar Mehta & Shri Baleshwar Saw), Village : Jugra, Thana : Barkagaon, Distt. : Hazaribagh, Jharkhand (1.72 Ha).**

**(Proposal no.: SIA/JH/MIN/ 506404 /2025)**

**Name of the consultant : Rian Enviro Pvt. Ltd., Patna, Bihar.**

**Project Sector: 1(a) Mining of Minerals, Category: B2.**

**Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Hazaribag).**

The project has been granted EC by DEIAA, Hazaribag vide letter no. EC/DEIAA/2017-18/43, dated 03.08.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Hazaribag which has been taken up for consideration on 23.01.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 1502/Khanan, dated 28.12.2024 by DMO, Hazaribag is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Hazaribag vide letter no. 47, dated 08.01.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

**Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.**

**The self certified compliance report has been submitted and also presented before the Committee.**

**Project and Location Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Jugra Stone Mine | |
| 2 | Lessee: | : | M/S Maa Jagdamba Stone Works<br>(Partners- Sri Shailendra Kumar Mehta & Sri Baleshwar Saw) | |
| 3 | Lessee Address | : | Village- Jugra, P.O. & P.S.-Barkagaon, District- Hazaribagh, Jharkhand | |
| 4 | Lease Area | : | 1.72 ha. | 4.26 Acres |
| 5 | Type of Land | : | Non-Forest (Raiyati Land) | |
| 6 | Project Cost | : | Rs. 42 Lakhs | |
| 7 | EMP Budget | : | Capital: Rs. 12.01 Lakhs | Recurring: 7.09 Lakhs / year |
| 8 | New or Expansion | : | DEIAA to SEIAA (re-appraisal of DEIAA EC) | |
| 9 | Mineable Reserves | : | 2,62,461.63 Cum | |
| 10 | Mine Life | : | Up to the lease period i.e. 02.07.2015 to 01.07.2025 | |
| 11 | Man power | : | 26 | |
| 12 | Water Requirement | : | 3.37 KLD= 0.26 KLD (Drinking & Domestic Uses) + 0.75 (Plantation) KLD + 2.36 KLD (Dust Suppression). | |
| 13 | Water Source | : | Water will be taken from nearby village | |
| 14 | DG Set / power | : | 60 KVA | |
| 15 | Crusher | : | No Crusher | |
| 16 | Nearest Water Body | : | Barkagaon Nadi, approx. 0.18 Km towards SW. | |

| | | | |
|---|---|---|---|
| 17 | Nearest Habitation | : | Arahara, Approx. 1.72 km towards SSW direction. |
| 18 | Nearest Railway Station | : | Bes Railway Station, approx. 7.89 km towards ESE. |
| 19 | Nearest Air Port | : | Birsa Munda Airport Ranchi, Approx, 60.86 km towards South. |
| 20 | Nearest Forest | : | More than 250m, as per DFO Territorial, Hazaribagh, Letter no. 1090 dated-26/02/16 |
| 21 | Road & Highways | : | Hazaribagh Tandwa Tanger Road, approx. 1.76 km towards SE. |

**CO-ORDINATES**

**Geo-Coordinates of all corner points of Demarcated Block Boundary**

**(GPS Co-ordinates)**

| LATITUDE | LONGITUDE |
|---|---|
| 23°55'3.70"N | 85°14'46.47"E |
| 23°55'3.47"N | 85°14'48.15"E |
| 23°55'3.22"N | 85°14'48.54"E |
| 23°55'2.98"N | 85°14'48.85"E |
| 23°55'3.07"N | 85°14'49.16"E |
| 23°55'2.79"N | 85°14'49.10"E |
| 23°55'2.49"N | 85°14'49.28"E |
| 23°55'2.18"N | 85°14'49.85"E |
| 23°55'1.13"N | 85°14'49.30"E |
| 23°55'0.85"N | 85°14'49.68"E |
| 23°55'1.24"N | 85°14'50.00"E |
| 23°55'1.12"N | 85°14'50.20"E |
| 23°55'1.40"N | 85°14'50.64"E |
| 23°55'0.10"N | 85°14'52.62"E |
| 23°55'0.16"N | 85°14'52.94"E |
| 23°54'59.65"N | 85°14'53.19"E |
| 23°54'58.87"N | 85°14'51.14"E |
| 23°54'59.01"N | 85°14'51.03"E |
| 23°54'58.78"N | 85°14'50.55"E |
| 23°54'58.96"N | 85°14'50.21"E |
| 23°54'58.79"N | 85°14'49.49"E |
| 23°54'58.38"N | 85°14'49.03"E |
| 23°54'58.91"N | 85°14'47.83"E |
| 23°54'59.25"N | 85°14'48.03"E |
| 23°54'59.25"N | 85°14'48.44"E |
| 23°54'59.61"N | 85°14'48.58"E |
| 23°55'0.29"N | 85°14'49.46"E |
| 23°55'0.72"N | 85°14'48.85"E |

| | |
|---|---|
| 23°54'59.58"N | 85°14'47.56"E |
| 23°54'59.39"N | 85°14'47.32"E |
| 23°54'59.45"N | 85°14'45.66"E |
| 23°55'0.25"N | 85°14'45.75"E |
| 23°55'0.92"N | 85°14'45.87"E |
| 23°55'1.33"N | 85°14'46.21"E |
| 23°55'1.83"N | 85°14'46.34"E |
| 23°55'2.77"N | 85°14'46.17"E |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 97 | 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135 (P), 137, 138, 139 & 140 |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | i. The Letter of Intent (LoI) has been issued by District Mining Officer, Hazaribag vide memo no. 2101/Khanan, dated 13.06.2015.<br>ii. Lease Deed- 02.07.2015 to 01.07.2025. |
| 2 | CO | : | The CO, Barkagaon vide letter no. 1284, dated 26.12.2008 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in Khatiyan. |
| 3 | DMO | : | DMO, Hazaribag vide memo no. 1307/Khanan, dated 14.11.2024 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 memo no. 1123, dated 30.07.2013 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Hazaribag West Forest Divisioin vide letter no. 101 dated 04.01.2025 certified that the distance of notified and demarcated forest land is 175 meters from proposed project site.<br>As this is an existing mine in operation since 2008, the siting criteria is not applicable. |
| 6 | DSR | : | This project is mentioned in approved DSR of Hazaribag District |

| | | | |
|---|---|---|---|
| | | | (Sl. no. 17, Page no. 76). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 02.08.2013. |
| 8 | Mine Plan Approval | : | Mine plan approved by Geologist, H.Q.R., Jharkhand, Ranchi vide Memo No. 1412, dated 26.09.2014. |
| 9 | Previous Environmental Clearance (EC) | : | Previous EC granted by DEIAA, Hazaribag vide letter no. EC/DEIAA /2017-18/43, dated 03.08.2017. |
| 10 | Compliance report of EC | : | Compliance report of previous EC has been issued by JSPCB, Regional Office, Hazaribag vide letter no. 47, dated 08.01.2025. |
| 11 | Consent to Establish (CTE) | : | CTE issued by JSPCB vide Ref. no. 2966 (N), dated 05.11.2015. |
| 12 | Consent to Operate (CTO) | : | CTO issued by JSPCB vide Ref. no. : JSPCB/RO/HZB/CTO-9503885/2020/164, dated 28.12.2020. |
| 13 | Production Report | : | Production report issued by DMO, Hazaribag vide memo no. 1502/Khanan, dated 28.12.2024. |
| 14 | Qualified Person | : | The mining scheme has been prepared by B. Tirkey. As he has since deceased, he was not present in the meeting. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Semi-Mechanized Method | |
| 2 | Quarry Area | : | 1.72 Ha | Life of Mine – Up to the lease period i.e. 02.07.2015 to 01.07.2025. |
| 3 | Waste Generation | : | 0 cum | |
| 4 | Stripping Ratio | : | 0 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size | : | 6 m x 6 m, | |
| 7 | Elevation of Mine | : | Highest elevation: 443 AMSL<br>Lowest elevation: 410 AMSL | |
| 8 | Ground Level Elevation | : | 443 m AMSL | |
| 9 | Ultimate Working Depth | : | 33 m AMSL | |
| 10 | Water Table | : | 390 m in AMSL | |
| 11 | Topography of Mine | : | Area represents gently sloping land. | |
| 12 | Explosive Requirement | : | 30 kg per day of Power Gel Cartridge | |

| | | | |
|---|---|---|---|
| 13 | Diesel/Fuel requirement | : | 712liters / day |

**Production Details**

| Year | Production in cum | O.B. Cum | Density Tonnes/Cum | Stone Prod. Mt | Prod. Per day Mt. |
|---|---|---|---|---|---|
| 1st | 45226.00 | nil | 2.70 | 122110.20 | 407.03 |
| 2nd | 45290.00 | nil | 2.70 | 122283.00 | 407.61 |
| 3rd | 44200.00 | nil | 2.70 | 119340.00 | 397.87 |
| 4th | 45795.00 | nil | 2.70 | 123646.50 | 412.16 |
| 5th | 43655.00 | nil | 2.70 | 117868.50 | 392.90 |
| **Total** | **224166.00** | **nil** | **2.70** | **605248.20** | **403.50** |

**Land Use**

**Existing Land Use pattern**

| LAND USE PATTERN | | | |
|---|---|---|---|
| **Pattern of Utilization** | **Land used in present 5 yrs plan period Acres** | **Land for balance period acers** | **Total land used at the end of life of mine acers** |
| Mining activities | 3.24 | 0.00 | 3.24 |
| Crusher, Magazine & offices etc. | 0.00 | 0.00 | 0.00 |
| Dumping | 0.00 | 0.00 | 0.00 |
| Mining Road | 0.01 | 0.00 | 0.01 |
| Garland drain | 0.01 | 0.00 | 0.01 |
| Green belt/ Safety Zone | 0.70 | 0.00 | 0.70 |
| Stone Stock yards | 0.00 | 0.00 | 0.00 |
| Unutilized | 0.30 | 0.00 | 0.30 |
| **Total** | **4.26** | **0.00** | **4.26** |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

| Year | Plantation Site | No. of sampling to be planted |
|---|---|---|
| 1st | Along lease boundary | 50 |
| 2nd | Along lease boundary | 50 |
| 3rd | Un utilized area | 100 |

| | | |
|---|---|---|
| 4th | Along lease boundary | 50 |
| 5th | Along lease boundary | 50 |
| | Total | 300 |

- 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**

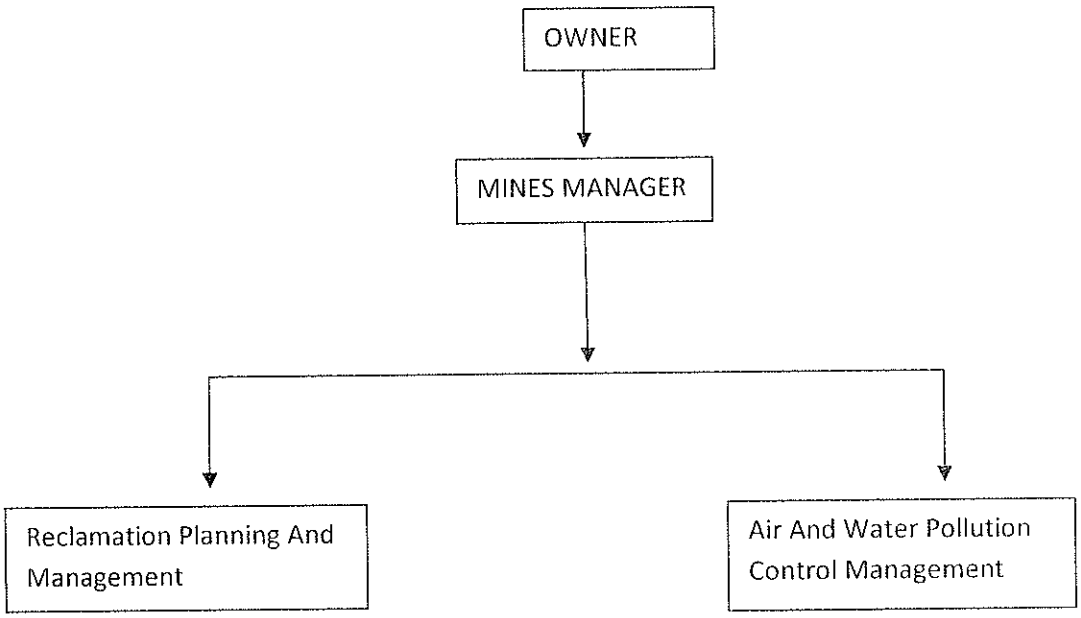
| S.NO | Particulars | Annual Budget Provisions (Lakh) | |
|---|---|---|---|
| A)Site Facilities | | Capital Cost (In Lakh) | Recurring cost (In Lakh) |
| | a) Cost of Water Rs. 500/Tanker/day (Capacity 5.0 KL x 1 No.) (500X 1 X 300) | - | 1.5 |
| 2. | Garland Drains and Settling Tanks (10m x 02 m x 03m x | 2.75 | 0.15 |
| 3 | Road Development and Maintenance (Road length approx. 200m, Width 5.0 m.) | 2.0 | 0.4 |
| 4. | Plantation over the periphery of the project (1625 saplings). 1625*40= 0.65 Lakh | 2.27 | 0.2 |
| 5 | PUC certification of vehicles and maintenance | - | 0.10 |
| | **Sub Total(A)** | **7.02** | **2.35** |
| B)Labor Welfare | | | |
| 1 | Drinking Water Facility and rest shelter (10X20 m) with solar | 1.0 | 0.10 |
| 2 | Toilets 3 nos. (Rs 25000 x 3) | 0.75 | 0.05 |
| 3 | Occupational health checkup in a year for 26 workers (@twice/year) @200*2*26 and onsite first aid set-up | 0.2 | 0.10 |
| 4 | Provision of PPEs (helmets, safety shoes, safety glasses, gloves etc. (34 x 3000) | 1.0 | 0.5 |
| 5 | Vocational training on mining methods and safe work practices (@twice/year)@ 250 x 2 x 26) | - | 0.2 |
| | **Sub Total(B)** | **2.95** | **0.95** |
| C)Emergency Rescue Plan | | | |
| 1 | Fire Extinguishers (2 Nos.) @ 50000 / firefighting and, first aid @ 2000 per kit | 1.0 | 0.01 |
| 2 | Safety signage and warning boards like sirens, red flags, cones etc. | 1.0 | 0.05 |
| | **Sub Total(C)** | **2.0** | **0.06** |
| D)Solid Waste Management | | | |

| | | | |
|---|---|---|---|
| 1 | a) Bins 3 Nos. @ Rs. 1500 each | 0.045 | 0.05 |
| **Sub Total(D)** | | **0.045** | **0.05** |
| **E)Monitoring Program** | | | |
| 1 | a) Ambient Air Quality | - | 0.90 |
| | b) Water Quality | - | 0.80 |
| | c) Noise Quality | - | 0.18 |
| | d) Soil Quality | - | 0.80 |
| | e) Biodiversity Survey | - | 0.50 |
| | f) Socio- Economy Survey | - | 0.50 |
| **Sub Total(E)** | | - | **3.68** |
| **Grand Total(A+B+C+D+E)** | | **12.01** | **7.09** |

**Environment Monitoring Programme:**

| SL. No. | Description | No. Of Monitoring Stations | Duration |
|---|---|---|---|
| 1. | Air | 3 stations | 6 Monthly |
| 2. | Water | 2 stations | 6 Monthly |
| 3. | Noise | 3 stations | 6 Monthly |
| 4. | Soil | 3 stations | 6 Monthly |

**Organization Structure**




**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 | Very | Minor | 20 |

| | | | | | |
|---|---|---|---|---|---|
| | | hitting by loading material, Exposure to Dust | Unlikely | | |
| 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 Jugra Stone Mine of M/s Maa Jagdamba Stone Works (Partners : Shri Shailendra Kumar Mehta & Shri Baleshwar Saw), Village : Jugra, Thana : Barkagaon, Distt. : Hazaribagh, Jharkhand (1.72 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.
II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

**********

12. **Murumatu Stone Mine of M/s Laborious Construction Pvt. Ltd., Village : Murumatu, Thana no. : 178, Anchal : Tatijhariya, Distt. : Hazaribagh, Jharkhand (1.845 Ha).**

**(Proposal no.: SIA/JH/MIN/ 507097 /2025)**

**Name of the consultant : Rian Enviro Pvt. Ltd., Patna, Bihar.**

**Project Sector: 1(a) Mining of Minerals, Category: B2.**

**Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Hazaribag).**

The project has been granted EC by DEIAA, Hazaribag vide letter no. EC/DEIAA/2016-17/23 dated 07.01.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Hazaribag which has been taken up for consideration on 23.01.2025. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 -96 $\mu g/m^3$PM 2.5-567 $\mu g/m^3$ SO2-18.2 NO2- 19.0 $\mu g/m^3$ . All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 08/Khanan, dated 03.01.2025 by DMO, Hazaribag is within the permissible limit of EC.

The compliance report of previous EC has been issued by JSPCB, Regional Office, Hazaribag vide letter no. 175, dated 21.01.2025.

The SEAC has found that the certification of the compliance of the conditions of previous EC is not appropriate with respect to the following :-

i. There is no clarity on the status of execution of compliance and no details have been provided.
ii. The word "AGREED" has been mentioned as compliance status of many of the conditions.This has been written without the consent of the project authorities.

**Hence, the Committee decided to obtain a self certified compliance report along with the supporting details as evidence of execution.**

**The self certified compliance report has been submitted and also presented before the Committee.**

**EC Application for: Proposed Capacity- 14983 cum/annum or 37458 TPA.**

**Project and Location Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | Murumatu Stone Mine | |
| 2 | Lessee: | : | M/S Laborious Construction Private Limited (Director- Sri Om Prakash Mehta) | |
| 3 | Lessee Address | : | Corporate Office- Om Prakash Mehta, House of Anita and Binata Kumari, Kunda Kothi Campus, Canary Road, P.T.C. Chowk, Hazaribag, Jharkhand, Pin Code- 825301 | |
| 4 | Lease Area | : | 1.845 ha. | 4.56 Acres |
| 5 | Type of Land | : | Non-Forest (Raiyati Land) | |

| | | | | |
|---|---|---|---|---|
| 6 | Project Cost | : | Rs. 50 Lakhs | |
| 7 | EMP Budget | : | Capital: Rs. 12.01 Lakhs | Recurring: 7.09 Lakhs / year |
| 8 | New or Expansion | : | DEIAA to SEIAA (re-appraisal of DEIAA EC) | |
| 9 | Mineable Reserves | : | 312490 tons | |
| 10 | Mine Life | : | Up to the lease period i.e. 18.11.2017 to 17.11.2027. | |
| 11 | Man power | : | 34 | |
| 12 | Water Requirement | : | 8.2 KLD= 1.2 KLD (Drinking & Domestic Uses) + 5.0 (Plantation) KLD + 2.0 KLD (Dust Suppression). | |
| 13 | Water Source | : | Water will be taken from nearby village | |
| 14 | DG Set / power | : | 60 KVA | |
| 15 | Crusher | : | No Crusher | |
| 16 | Nearest Water Body | : | Pandwa River, Approx. 1.33 Km towards North.<br><br>Araghwa River, Approx. 1.71 Km towards NW. | |
| 17 | Nearest Habitation | : | Murumatu, Approx. 0.50 km towards NW direction. | |
| 18 | Nearest Railway Station | : | Hazaribagh Railway Station, approx. 30.83 km towards West direction. | |
| 19 | Nearest Air Port | : | Birsa Munda Airport, Ranchi, approx. 83.94 km towards SW. | |
| 20 | Nearest Forest | : | More than 250m, as per DFO Territorial, Hazaribagh, Letter no. 4172 dated-19/12/2015. | |
| 21 | Road & Highways | : | NH- 522 (Bagodar- Hazaribagh Rd), approx. 1.21 km towards North direction. | |

**CO-ORDINATES**

**Geo-Coordinates of all corner points of Demarcated Block Boundary**

**(GPS Co-ordinates)**

| Pillar No. | Latitude | Longitude |
|---|---|---|
| 1 | 24° 1'4.86" | 85°38'32.90" |
| 2 | 24° 1'4.41" | 85°38'33.95" |
| 3 | 24° 1'3.17" | 85°38'32.99" |
| 4 | 24° 1'2.44" | 85°38'32.61" |
| 5 | 24° 1'2.14" | 85°38'33.28" |
| 6 | 24° 1'1.68" | 85°38'32.97" |
| 7 | 24° 1'0.54" | 85°38'34.98" |
| 8 | 24° 1'0.04" | 85°38'34.52" |
| 9 | 24° 1'0.22" | 85°38'34.06" |
| 10 | 24° 0'59.20" | 85°38'33.32" |
| 11 | 24° 0'59.70" | 85°38'32.30" |
| 12 | 24° 0'59.95" | 85°38'32.35" |
| 13 | 24° 1'0.14" | 85°38'32.37" |
| 14 | 24° 1'0.48" | 85°38'31.19" |
| 15 | 24° 0'59.10" | 85°38'30.60" |

| | | |
|---|---|---|
| 16 | 24° 0'59.53" | 85°38'28.62" |
| 17 | 24° 1'0.19" | 85°38'28.23" |
| 18 | 24° 1'0.84" | 85°38'26.59" |
| 19 | 24° 1'1.66" | 85°38'26.90" |
| 20 | 24° 1'2.69" | 85°38'27.57" |
| 21 | 24° 1'2.83" | 85°38'27.17" |
| 22 | 24° 1'3.25" | 85°38'27.75" |
| 23 | 24° 1'2.87" | 85°38'27.74" |
| 24 | 24° 1'2.46" | 85°38'28.59" |
| 25 | 24° 1'2.16" | 85°38'29.25" |
| 26 | 24° 1'1.65" | 85°38'29.26" |
| 27 | 24° 1'1.38" | 85°38'29.99" |
| 28 | 24° 1'2.60" | 85°38'30.59" |
| 29 | 24° 1'3.68" | 85°38'31.16" |
| 30 | 24° 1'3.39" | 85°38'32.20" |

**LAND DETAILS**

| Khata no. | Plot no. |
|---|---|
| 90, 10, 125, 01, 08, 43, 48, 70 & 119 | 1212, 1216, 1217, 1218, 1219, 1220, 1221, 1269, 1288, 1237, 1270, 1271, 1272, 1235, 1285, 1289, 1241, 1238, 1240, 1239, 1236, 1243, 1244 & 1272 |

**STATUTORY CLEARANCES**

| | | | |
|---|---|---|---|
| 1 | LOI / Lease docs | : | Lease Deed- 18.11.2017 to 17.11.2027. |
| 2 | CO | : | The CO, Totijhariya vide letter no. 846, dated 11.12.2015 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in Khatiyan. |
| 3 | DMO | : | DMO, Hazaribag vide memo no. 1323/Khanan, dated 18.11.2024 certified that 02 other mining lease area exists within 500 m radius from proposed project site total area is 11.85 Acre. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Hazaribag vide memo no. 2322, dated 19.11.2024 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Hazaribag East Forest Divisioin vide letter no. 4172 dated 19.12.2015 certified that the distance of forest |

| | | | |
|---|---|---|---|
| | | | land is 445 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Hazaribag District (Sl. no. 03, Page no. 68). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 21.12.2015. |
| 8 | Scheme / Mine Plan Approval | : | Mining scheme approved by Additional Director, Geology, Hazaribag vide Memo No. 355/G, dated 29.10.2022. |
| 9 | Previous Environmental Clearance (EC) | : | Previous EC granted by DEIAA, Hazaribag vide letter no. EC/DEIAA/2016-17/23 dated 07.01.2017 |
| 10 | Compliance report of EC | : | The compliance report of previous EC has been issued by JSPCB, Regional Office, Hazaribag vide letter no. 175, dated 21.01.2025. |
| 11 | Consent to Establish (CTE) | : | CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-1991232 /2018/264, dated 22.03.2018. |
| 12 | Consent to Operate (CTO) | : | CTO issued by JSPCB vide Ref. no. : JSPCB/RO/HZB/CTO-15459305/2023/55, dated 18.03.2023. |
| 13 | Production Report | : | Production report issued by DMO, Hazaribag vide memo no. 96/Khanan, dated 22.01.2025. |
| 14 | Qualified Person | : | Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Semi-Mechanized Method | |
| 2 | Quarry Area | : | 1.845 Ha | Life of Mine – Up to the lease period i.e. 18.11.2017 to 17.11.2027. |
| 3 | Waste Generation | : | 0 cum | |
| 4 | Stripping Ratio | : | 0 | |
| 5 | Working Days | : | 300 | |
| 6 | Benches: size | : | 6 m x 6 m, | |
| 7 | Elevation of Mine | : | Highest elevation: 523 AMSL<br>Lowest elevation: 505 AMSL | |
| 8 | Ground Level Elevation | : | RL 523m to RL 505m | |
| 9 | Ultimate Working Depth | : | 18 m AMSL | |
| 10 | Water Table | : | 488 m in AMSL | |
| 11 | Topography of Mine | : | Area represents gently sloping land. | |

| | | | |
|---|---|---|---|
| 12 | Explosive Requirement | : | 30 kg per day ofslurry explosives |
| 13 | Diesel/Fuel requirement | : | 472 liters / day |

**Production Details**

| Year | Production of stone in cum | Production of stone in Tonnes | Gritty Soil in Cum | Gritty Soil Tonnes |
|---|---|---|---|---|
| 2024-2025 | 14982 | 37455 | 700 | 1050 |
| 2025-2026 | 14983 | 37458 | - | - |
| 2026-2027 | 14982 | 37455 | - | - |
| **Total** | **11947** | **1,12,368** | **700** | **1050** |

**Land Use**

| Land Use Pattern | | | | | | |
|---|---|---|---|---|---|---|
| **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 | 0.306 | 1.040 | 1.195 | --- | 0.537 | 0.658 (Dead bench plantation) |
| Greenbelt within Safety Barrier | Nil | 0.650 | 0.650 | --- | --- | 0.650 |
| Road | 0.002 | Nil | Nil | --- | --- | --- |
| **Total Area in Use** | **0.308** | **1.690** | **1.845** | --- | **0.537** | 1.308 |
| Balanced Area unused | 1.537 | 0.155 | Nil | --- | --- | --- |
| **Total Lease Area** | **1.845** | **1.845** | **1.845** | **1.845** | | |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

| Year | Area for Greenbelt in m2 | Proposed No. of Saplings to be Planted |
|---|---|---|
| 1st year | 6500 | 1625 |
| 2nd Year | - | Maintenance |
| 3rd Year | - | Maintenance |
| Total | 6500 | - |

- 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**

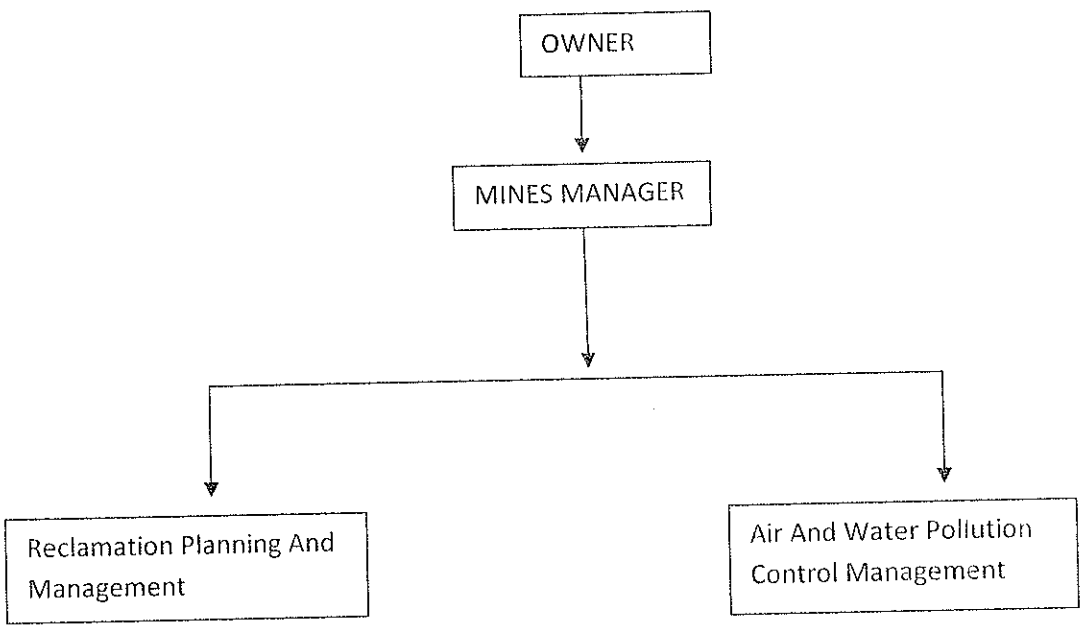
| S.NO | Particulars | Annual Budget | |
|---|---|---|---|
| A)Site Facilities | | Capital Cost (In Lakh) | Recurring cost (In Lakh) |
| | a) Cost of Water Rs. 500/Tanker/day (Capacity 5.0 KL x 1 No.) (500X 1 X 300) | - | 1.5 |
| 2. | Garland Drains and Settling Tanks (10m x 02 m x 03m x | 2.75 | 0.15 |
| 3 | Road Development and Maintenance (Road length approx. 200m, Width 5.0 m.) | 2.0 | 0.4 |
| 4. | Plantation over the periphery of the project (2000 saplings). | 2.27 | 0.2 |
| 5 | PUC certification of vehicles and maintenance | - | 0.10 |
| | **Sub Total(A)** | **7.02** | **2.35** |
| B)Labor Welfare | | | |
| 1 | Drinking Water Facility and rest shelter (10X20 m) with solar | 1.0 | 0.10 |
| 2 | Toilets 3 nos. (Rs 25000 x 3) | 0.75 | 0.05 |
| 3 | Occupational health checkup in a year for 34 workers (@twice/year) @200*2*34 and onsite first aid set-up | 0.2 | 0.10 |
| 4 | Provision of PPEs (helmets, safety shoes, safety glasses, gloves etc. (34 x 3000) | 1.0 | 0.5 |
| 5 | Vocational training on mining methods and safe work practices (@twice/year) @ 250 x 2 x 34) | - | 0.2 |
| | **Sub Total(B)** | **2.95** | **0.95** |
| C)Emergency Rescue Plan | | | |

| | | | |
|---|---|---|---|
| 1 | Fire Extinguishers (2 Nos.) @ 50000 / firefighting and, first aid @ 2000 per kit | 1.0 | 0.01 |
| 2 | Safety signage and warning boards like sirens, red flags, cones etc. | 1.0 | 0.05 |
| **Sub Total(C)** | | **2.0** | 0.06 |
| **D)Solid Waste Management** | | | |
| 1 | a) Bins 3 Nos. @ Rs. 1500 each | 0.045 | 0.05 |
| **Sub Total(D)** | | **0.045** | **0.05** |
| **E)Monitoring Program** | | | |
| 1 | a) Ambient Air Quality | - | 0.90 |
| | b) Water Quality | - | 0.80 |
| | c) Noise Quality | - | 0.18 |
| | d) Soil Quality | - | 0.80 |
| | e) Biodiversity Survey | - | 0.50 |
| | f) Socio- Economy Survey | - | 0.50 |
| **Sub Total(E)** | | - | 3.68 |
| **Grand Total(A+B+C+D+E)** | | **12.01** | **7.09** |

**Environment Monitoring Programme:**

| SL. No. | Description | No. Of Monitoring Stations | Duration |
|---|---|---|---|
| 1. | Air | 3 stations | 6 Monthly |
| 2. | Water | 2 stations | 6 Monthly |
| 3. | Noise | 3 stations | 6 Monthly |
| 4. | Soil | 3 stations | 6 Monthly |

**Organization Structure**




**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 | 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 |

***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 Murumatu Stone Mine of M/s Laborious Construction Pvt. Ltd., Village : Murumatu, Thana no. : 178, Anchal : Tatijhariya, Distt. : Hazaribagh, Jharkhand (1.845 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :**

I. The production shall be restricted as per approved mining scheme or the approved mine plan at the time of EC, which ever is less.
II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the

details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

III. During appraisal of the project, it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only.Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.

VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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13. **Proposed Sahi Sand Mining Project on Lilajan River of M/s Jharkhand State Mineral Development Corporation Ltd. (JSMDC), Village : Sahi, Tetaria, Tulsipur, Dewaria & Gorwali, Block : Hunterganj, Distt.: Chatra, Jharkhand (10.74 Ha).**

**(Proposal no.: SIA/JH/MIN/518235 /2025)**

**Name of the consultant : Rian Enviro Pvt. Ltd., Patna, Bihar.**

This is a new project which has been taken for appraisal on 23.01.2025.

**Project Sector: 1(a) Mining of Minerals, Category: B1.**

Application for Terms of Reference (ToR) as per EIA Notification, 2006.

ToR Application for: Sand Mining (64,400 Cum Per Annum/ 1,01,752 Ton Per Annum)

**PROJECT and LOCATION Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | SAHI SAND DEPOSIT | |
| 2 | Lessee: | : | M/s Jharkhand State Mineral Development Corporation Ltd.<br>(A Govt. of Jharkhand Enterprises) | |
| 3 | Lease Address | : | Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand) | |
| 4 | Lease Area | : | 10.74HA. | Acres:26.52Acres |
| 5 | Type of Land | : | Non-Forest Government Waste Land (River Bed) | |
| 6 | Project Cost | : | 32.3 Lakhs | |
| 7 | CSR / CER Budget | : | - | |
| 8 | New or Expansion | : | New Project | |
| 9 | Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity | : | Cum.:64,400 cum per annum | Tonnes:1,01,752 TPA |
| 10 | Mine Life | : | Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy. | |
| 11 | Man power | : | 51 | |
| 12 | Water Requirement | : | 2.526KLD=0.51 KLD (Drinking & Domestic Uses) + 0.216 (Plantation) KLD + 1.8KLD (Dust Suppression). | |
| 13 | Water Source | : | Water will be sourced from local vendor and abandoned Mine through Water Tanker for Dust Suppression and Plantation and permission from gram panchayat will be taken to fulfill water requirement for mining operation after the grant of Environment clearance. | |
| 14 | DG Set / power | : | -- | |
| 15 | Crusher | : | -- | |

| | | | |
|---|---|---|---|
| 16 | Nearest Water Body | : | Mining lease allocated on the river bed of the Lilanjan River. |
| 17 | Nearest Habitation | : | Deoria, approx. 0.17 Km towards West. |
| 18 | Nearest RailwayStation | : | Kathautia Railway Halt, approx. 48.08 Km towards ESE. |
| 19 | Nearest Air Port | : | Gaya International Airport, approx. 41.67 Km towards NNE. |
| 20 | Nearest Forest | : | PF, approx. 1.62 Km towards SSE. |
| 21 | Road & Highways | : | NH-22,approx. 0.15 Km towards West. |

**CO-ORDINATES**

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | | From 24° 22' 47.7864" N | To 24° 23' 18.8190" N |
| 2 | Longitude | | From 84° 48' 34.5713" E | To 84° 48' 44.9103" E |

**LAND DETAILS**

| Mauza | Khata no. | Plot no. |
|---|---|---|
| Sahi | 71 | 01 |
| Tetaria | 69 | 01 |
| Tulsipur | 39 | 190 |
| Gorwali | 41 | 190 |
| Dewaria | 44 | 265 |

**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.<br><br>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, Hunterganj (Chatra) vide letter no. 08, dated 26.09.2024 have mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II. |

| | | | |
|---|---|---|---|
| 3 | DMO | : | DMO, Chatra vide memo no. 104/Khanan, dated 25.01.2025 certified that 03 other balughat (0.37 Ha, 6.66 Ha & 1.90 Ha) exists within 500 m radius from proposed project site total area is 19.67 Ha. |
| 4 | DFO Wild Life | : | DFO, Wildlife Division, Hazaribag vide letter no. 957, dated 25.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Gautambudha Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Chatra North Forest Division vide letter no. 2348, dated 30.08.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Chatra District (Sl. No. – 13, Page No. – 101) within the sand ghat code PO_CH_HG_LJ_14.<br>The DMO, Chatra vide memo no. 104/Khanan, dated 21.01.2025 has certified that all the khata number and plot numbers are located within the sand ghat code PO_CH_HG_LJ_14. |
| 7 | Gram Sabha | : | Gram Sabha conducted on 23.09.2024, 15.06.2024 & 16.06.2024. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Chatra vide Letter No. 38/Khanan, dated 09.01.2025. |
| 9 | Qualified Person | : | Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him. |

**Working Details**

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Manual Method | |
| 2 | Quarry Area | : | 10.74 ha. | Life of Mine – 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 | : | 1:0 | |
| 5 | Working Days | : | 200 | |
| 10 | Topography of Mine | : | Area represents gently sloping land. | |
| 11 | Explosive Requirement | : | None. No blasting required | |

| | | | |
|---|---|---|---|
| 12 | Diesel/Fuel requirement | : | Not required for mining. |

**Production Details**

| Year | Production of Sand (Cum) | Production of Sand (Tonnes) |
|---|---|---|
| 1st | 64,400 | 1,01,752 |

The development plan submitted along with the mining plan relates to mining operation during the first year.

**Land Use**

| EXISTING LAND USE PATTERN | |
|---|---|
| **Type of Land** | **Area in Hectares** |
| Forest Land | 0.00 |
| Govt. waste land (River) | 10.74 |
| Residential area | 0.00 |
| Company land | 0.00 |
| Private Land | 0.00 |
| **Total** | **10.74** |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

| S. No. | Location | | Area/Length | No of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | | 4.30 Ha | 00 |
| 2 | Along Approach Road | | 0.310 km | 72 |

- 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**

No solid waste is generated during the course of mining.

**ENVIRONMENT MANAGEMENT COST**

| Sl. No | Description | Capital Cost (lakh) | Recurring Cost (lakh) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | Nil | 2.5 |
| 2 | Pollution Monitoring<br>i) Air pollution<br>ii) Water pollution<br>iii) Soil Quality<br>iv) Noise Pollution | -- | 2.0 |
| 3 | Plantation and salary for one gardener (part time basis). | 0.21 | 2.5 |
| 4 | Haul road Maintenance Cost | 0.45 | 1.20 |
| **TOTAL** | | **0.66** | **8.20** |

**Schedule of Monitoring**

| S.No. | Description of Parameters | Schedule of Monitoring |
|---|---|---|
| 1 | Air Quality | 24 hourly samples twice a week in each season except monsoon |
| 2 | Water Quality (Surface & Groundwater) | Once a season for 4 seasons in a year |
| 3 | Soil Quality | Once in a year in project area |
| 4 | Noise Level | Twice a year for first two years & then once a year |
| 5 | Socio-economic Condition | Once in 3 years |
| 6 | Plantation Monitoring | Once in a season |

**GREEN BELT**

| Year | No. of Trees | Capital Cost (Lakh) | Recurring Cost (Lakhs) |
|---|---|---|---|
| 1st year | 72 | 72*300=0.21 | 0.5 |
| 2nd year | Maintenance | - | 0.5 |
| 3rd year | Maintenance | - | 0.5 |
| 4th year | Maintenance | - | 0.5 |
| 5th year | Maintenance | - | 0.5 |
| Total | **72** | **0.21** | **2.5** |

**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 Haul Road by using water tankers.
- ✓ Regular repair of Haul Road
- ✓ All Trucks carrying Sand outside lease area will have PUC certificate.
- ✓ Transport tippers/traders moving on public road will be covered with tarpaulin.

**RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED BELOW:**

**Road accidents**

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

- 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 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 trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.

- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

**Organizational Structure:**

**Introduction**

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

**Environmental Policy**

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

**EMP Cell Objectives**

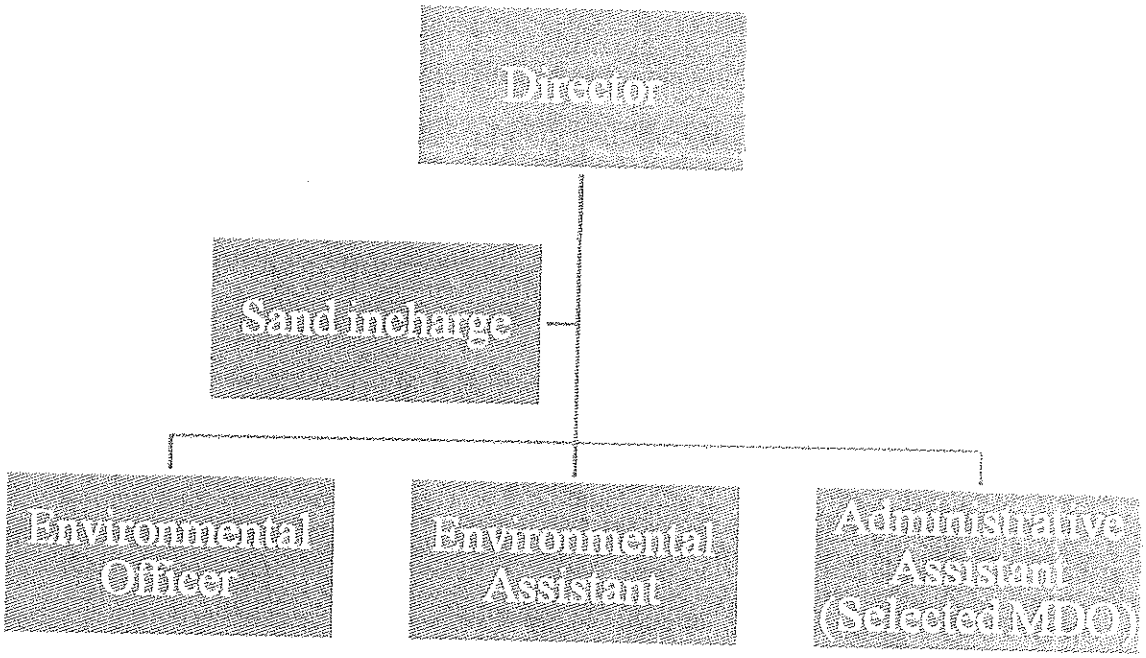
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

**EMP Cell Structure**

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks




EMP Cell structure

**Roles and Responsibilities**

**Environmental Officer (EO)**

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

**Environmental Assistant (EA)**

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

**Administrative Assistant (AA)**

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation

- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

**Director/Top Management Responsibilities**

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

**EMP Process Flow**

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

**Key Decision Points**

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

**Documentation**

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

**Implementation Timeline**

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

**Reporting**

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

**Conclusion**

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

**Undertaking submitted affirming:**

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
l. Transportation from the river bed to the stockyard will be done using the existing road.
m. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
n. Wet sand will not be transported.

**Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 20, 21, 22, 23 & 24.01.2025, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure II alongwith following specific condition :-**

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*EkPed Ma KeNaam*" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in). 10% of the total green belt proposed shall be allocated under this clause.

II. PAs are required to submit revised DFO, Wildlife certificate mentioning plot no. 01 of village Sahi at the time of final EIA / EMP report.

III. Pre-monsoon data of current year is to be included in final EIA report.

IV. Satellite imagery with Geo-Cordinates of pre-monsoon (current year) to be included in the final EIA report.

**********

14. **Proposed Uraili & Bahera Sand Mining Project on Lilajan River of M/s Jharkhand State Mineral Development Corporation Ltd. (JSMDC), Village : Uraili & Bahera, Deoriya, Pindari Kalan, Block : Hunterganj, Distt.: Chatra, Jharkhand (24.70 Ha).**

**(Proposal no.: SIA/JH/MIN/518258 /2025)**

**Name of the consultant : Rian Enviro Pvt. Ltd., Patna, Bihar.**

This is a new project which has been taken for appraisal on 23.01.2025.

**Project Sector: 1(a) Mining of Minerals, Category: B1.**

**Application for Terms of Reference (ToR) as per EIA Notification, 2006.**

**ToR Application for: Stone Mining (1,48,200 Cum Per Annum/ 2,34,156 Ton Per Annum)**

**PROJECT and LOCATION Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | URAILI & BAHERA SAND DEPOSIT | |
| 2 | Lessee: | : | M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises) | |
| 3 | Lease Address | : | Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand) | |
| 4 | Lease Area | : | 24.70HA. | Acres:61.00Acres |
| 5 | Type of Land | : | Non-Forest Government Waste Land (River Bed) | |
| 6 | Project Cost | : | 70.3 Lakhs | |
| 7 | CSR / CER Budget | : | - | |
| 8 | New or Expansion | : | New Project | |

| | | | | |
|---|---|---|---|---|
| 9 | Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity | : | Cum.:1,48,200 cum per annum | Tonnes:2,34,156 TPA |
| 10 | Mine Life | : | Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy. | |
| 11 | Man power | : | 114 | |
| 12 | Water Requirement | : | 6.656KLD=1.14 KLD (Drinking & Domestic Uses) + 0.516 (Plantation) KLD + 5.0KLD (Dust Suppression). | |
| 13 | Water Source | : | Water will be sourced from local vendor and abandoned Mine through Water Tanker for Dust Suppression and Plantation and permission from gram panchayat will be taken to fulfill water requirement for mining operation after the grant of Environment clearance. | |
| 14 | DG Set / power | : | -- | |
| 15 | Crusher | : | -- | |
| 16 | Nearest Water Body | : | Mining lease allocated on the river bed of the Lilanjan River. | |
| 17 | Nearest Habitation | : | Bahera, approx. 0.59 Km towards South. | |
| 18 | Nearest Railway Station | : | Gaya Railway Station, approx. 41.31 Km towards NNE. | |
| 19 | Nearest Air Port | : | Gaya Airport, approx. 33.37 Km towards NNE. | |
| 20 | Nearest Forest | : | PF, approx. 0.81 Km towards North. | |
| 21 | Road & Highways | : | NH-22,approx. 1.26 Km towards NNW. | |

**CO-ORDINATES**

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | | From 24° 27' 03.4283"N | To 24° 27' 19.9946"N |
| 2 | Longitude | | From 84° 50' 34.9740" E | To 84° 51' 18.7084"E |

**LAND DETAILS**

| Mauza | Khata no. | Plot no. |
|---|---|---|
| Uraili | 54 | 76 |
| Bahera | 98 | 01 & 1133 |
| Deoriya | 135 | 360 |
| Pindri Kalan | - | 433 & 1284 |

## 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.<br><br>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, Hunterganj (Chatra) vide letter no. 07, dated 26.09.2024 have mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Chatra vide memo no. 106/Khanan, dated 21.01.2025 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. 968, dated 25.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Gautambudha Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Chatra North Forest Division vide letter no. 2346, dated 30.08.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Chatra District (Sl. No. – 02, Page No. – 100). |
| 7 | Gram Sabha | : | Gram Sabha conducted on 14.06.2024 and 12.08.2024. |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Chatra vide Letter No. 39/Khanan, dated 09.01.2025. |
| 9 | Qualified Person | : | Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him. |

## Working Details

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Manual Method | |
| 2 | Quarry Area | : | 24.70 ha. | Life of Mine – 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 | : | 1:0 | |
| 5 | Working Days | : | 200 | |
| 10 | Topography of Mine | : | Area represents gently sloping land. | |
| 11 | Explosive Requirement | : | None. No blasting required | |
| 12 | Diesel/Fuel requirement | : | Not required for mining. | |

**Production Details**

| Year | Production of Sand (Cum) | Production of Sand (Tonne) |
|---|---|---|
| 1st | 1,48,200 | 2,34,156 |

The development plan submitted along with the mining plan relates to mining operation during the first year.

**Land Use**

| EXISTING LAND USE PATTERN | |
|---|---|
| **Type of Land** | **Area in Hectares** |
| Forest Land | 0.00 |
| Govt. waste land (River) | 24.70 |
| Residential area | 0.00 |
| Company land | 0.00 |
| Private Land | 0.00 |
| **Total** | **24.70** |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

| S. No. | Location | | Area/Length | No of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | | 9.88 Ha | 00 |
| 2 | Along Approach Road | | 0.860 km | 172 |

- 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**

No solid waste is generated during the course of mining.

**ENVIRONMENT MANAGEMENT COST**

| Sl. No | Description | Capital Cost (lakh) | Recurring Cost (lakh) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | Nil | 2.5 |
| 2 | Pollution Monitoring<br>i) Air pollution<br>ii) Water pollution<br>iii) Soil Quality<br>iv) Noise Pollution | -- | 2.0 |
| 3 | Plantation and salary for one gardener (part time basis). | 0.51 | 2.5 |
| 4 | Haul road Maintenance Cost | 1.25 | 1.20 |
| **TOTAL** | | **1.76** | **8.20** |

**Schedule of Monitoring**

| S.No. | Description of Parameters | Schedule of Monitoring |
|---|---|---|
| 1 | Air Quality | 24 hourly samples twice a week in each season except monsoon |
| 2 | Water Quality (Surface & Groundwater) | Once a season for 4 seasons in a year |
| 3 | Soil Quality | Once in a year in project area |
| 4 | Noise Level | Twice a year for first two years & then once a year |
| 5 | Socio-economic Condition | Once in 3 years |
| 6 | Plantation Monitoring | Once in a season |

**GREEN BELT**

| Year | No. of Trees | Capital Cost (Lakh) | Recurring Cost (Lakhs) |
|---|---|---|---|
| 1st year | 172 | 172*300=0.51 | 0.5 |
| 2nd year | Maintenance | - | 0.5 |
| 3rd year | Maintenance | - | 0.5 |

| | | | |
|---|---|---|---|
| 4th year | Maintenance | - | 0.5 |
| 5th year | Maintenance | - | 0.5 |
| Total | 172 | 0.51 | 2.5 |

**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.

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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.

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**Movement of tippers on Road –** Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul Road by using water tankers.
- ✓ Regular repair of Haul Road
- ✓ All Trucks carrying Sand outside lease area will have PUC certificate.
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**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.

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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

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- Tree plantation on both sides of haulage road
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- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

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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 trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.

- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

**Organizational Structure:**

**Introduction**

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

**Environmental Policy**

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

**EMP Cell Objectives**

The EMP Cell objectives are:

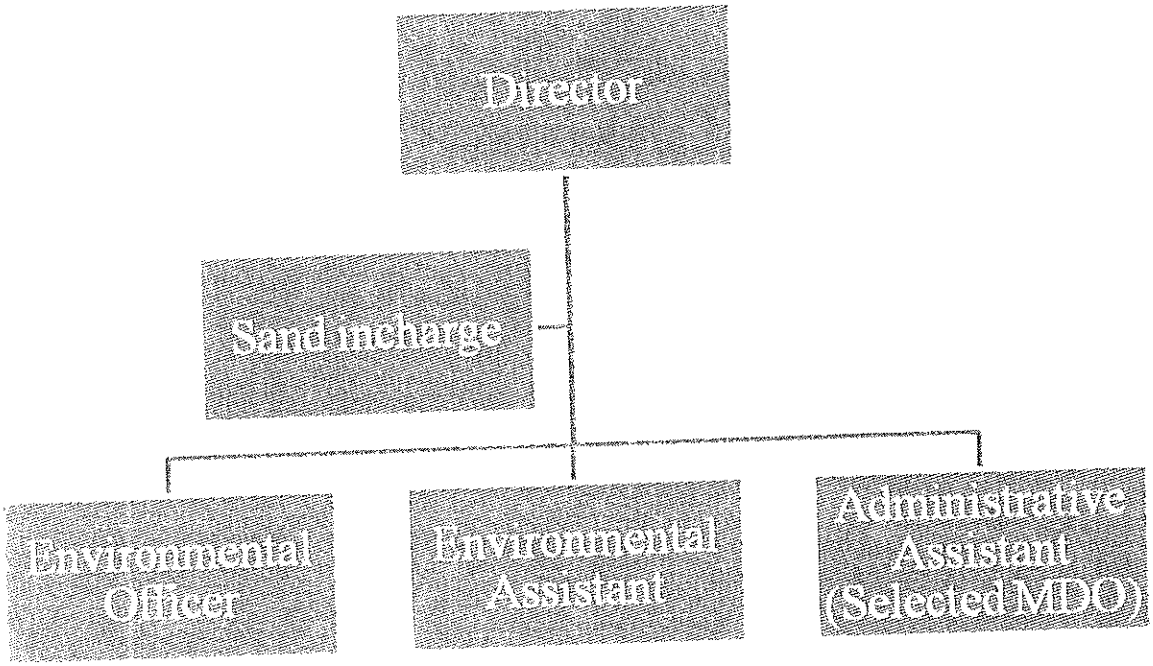
- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

**EMP Cell Structure**

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection

- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks




EMP Cell structure

**Roles and Responsibilities**

**Environmental Officer (EO)**

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

**Environmental Assistant (EA)**

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

**Administrative Assistant (AA)**

- Maintain environmental records

- Coordinate documentation
- Assist in preparing quarterly reports
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- Provide administrative support
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- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

**Director/Top Management Responsibilities**

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

**EMP Process Flow**

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

**Key Decision Points**

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

**Documentation**

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

**Implementation Timeline**

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

**Reporting**

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

**Conclusion**

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

**Undertaking submitted affirming:**

a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
i. If any tree felling than necessary permission shall be taken from the competent authority.
j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
l. Transportation from the river bed to the stockyard will be done using the existing road.
m. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
n. Wet sand will not be transported.

**Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 20, 21, 22, 23 & 24.01.2025, the Committee recommends in the light of Hon'ble NGT,**

Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure II alongwith following specific condition :-

I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign *"EkPed Ma KeNaam"* and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in).10% of the total green belt proposed shall be allocated under this clause.
II. Pre-monsoon data of current year is to be included in final EIA report.
III. Satellite imagery with Geo-Cordinates of pre-monsoon (current year) to be included in the final EIA report.

**********

15. **Proposed Kedalikalan, Patwa, Banki and Kobni Sand Mining Project on Lilajan River of M/s Jharkhand State Mineral Development Corporation Ltd. (JSMDC), Village : Kedalikalan, Patwa, Banki and Kobna, Bihari, Godowar, Bhondal, Dumri Khurd, Block : Hunterganj, Distt.: Chatra, Jharkhand (46.54 Ha).**

**(Proposal no.: SIA/JH/MIN/518195 /2025)**

**Name of the consultant : Rian Enviro Pvt. Ltd., Patna, Bihar.**

This is a new project which has been taken for appraisal on 23.01.2025.

**Project Sector: 1(a) Mining of Minerals, Category: B1.**

**Application for Terms of Reference (ToR) as per EIA Notification, 2006.**

**ToR Application for: Sand Mining (2,76,200 Cum Per Annum/ 4,36,396 Ton Per Annum)**

**PROJECT and LOCATION Details:**

| Sl | Parameter | | Details | |
|---|---|---|---|---|
| 1 | Project Name | : | KEDALIKALAN, PATWA, BANKI & KOBNI SAND DEPOSIT | |
| 2 | Lessee: | : | M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises) | |
| 3 | Lease Address | : | Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand) | |
| 4 | Lease Area | : | 46.54HA. | Acres:114.95Acres |
| 5 | Type of Land | : | Non-Forest Government Waste Land (River Bed) | |
| 6 | Project Cost | : | 127.92 Lakhs | |
| 7 | CSR / CER Budget | : | - | |
| 8 | New or Expansion | : | New Project | |

| | | | | |
|---|---|---|---|---|
| 9 | Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity | : | Cum.:2,76,200 cum per annum | Tonnes:4,36,396 TPA |
| 10 | Mine Life | : | Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy. | |
| 11 | Man power | : | 210 | |
| 12 | Water Requirement | : | 8.142KLD=2.1 KLD (Drinking & Domestic Uses) + 0.342 (Plantation) KLD + 5.7KLD (Dust Suppression). | |
| 13 | Water Source | : | Water will be sourced from local vendor and abandoned Mine through Water Tanker for Dust Suppression and Plantation and permission from gram panchayat will be taken to fulfill water requirement for mining operation after the grant of Environment clearance. | |
| 14 | DG Set / power | : | -- | |
| 15 | Crusher | : | -- | |
| 16 | Nearest Water Body | : | Mining lease allocated on the river bed of the Lilanjan River. | |
| 17 | Nearest Habitation | : | Kedlikalan, approx. 0.5 Km towards East. | |
| 18 | Nearest Railway Station | : | Gaya Railway Station, approx. 45.5 Km towards NNE. | |
| 19 | Nearest Air Port | : | Gaya Airport, approx. 38.0 Km towards NNE. | |
| 20 | Nearest Forest | : | PF, approx. 1.2 Km towards East | |
| 21 | Road & Highways | : | NH-22,approx. 0.2 Km towards West. | |

**CO-ORDINATES**

| | | | | |
|---|---|---|---|---|
| 1 | Latitude | | From 24° 24' 08.7855" N | To 24° 25' 45.1636" N |
| 2 | Longitude | | From 84° 48' 39.8735" E | To 84° 48' 59.6881"E |

**LAND DETAILS**

| Mauza | Khata no. | Plot no. |
|---|---|---|
| Kedalikalan | 127 | 01, 400 & 837 |
| Patwa | 03 | 44 |
| Banki | 13 | 01 |
| Kobni | 51 | 01 |

## 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.<br><br>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, Hunterganj (Chatra) vide letter no. 06, dated 26.09.2024 have mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II. |
| 3 | DMO | : | DMO, Chatra vide memo no. 105/Khanan, dated 21.01.2025 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. 956, dated 25.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Gautambudha Wildlife Sanctuary. |
| 5 | DFO Territorial | : | Division Forest Officer, Chatra North Forest Division vide letter no. 2349, dated 30.08.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site. |
| 6 | DSR | : | This project is mentioned in approved DSR of Chatra District (Sl. No. – 06, Page No. – 100 & 101) |
| 7 | Gram Sabha | : | Gram Sabha conducted on 15.06.2024 & 14.06.2024 |
| 8 | Mine Plan Approval | : | Approved by District Mining Officer, Chatra vide Letter No. 37/Khanan, dated 09.01.2025. |
| 9 | Qualified Person | : | Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him. |

## Working Details

| | | | | |
|---|---|---|---|---|
| 1 | Mining Method | : | Opencast Manual Method | |
| 2 | Quarry Area | : | 46.54 ha. | Life of Mine – 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 | : | 1:0 | |
| 5 | Working Days | : | 200 | |
| 10 | Topography of Mine | : | Area represents gently sloping land. | |
| 11 | Explosive Requirement | : | None. No blasting required | |
| 12 | Diesel/Fuel requirement | : | Not required for mining. | |

**Production Details**

| Year | Production of Sand (Cum) | Production of Sand (Tonne) |
|---|---|---|
| 1st | 2,76,200 | 4,36,396 |

The development plan submitted along with the mining plan relates to mining operation during the first year.

**Land Use**

| EXISTING LAND USE PATTERN | |
|---|---|
| **Type of Land** | **Area in Hectares** |
| Forest Land | 0.00 |
| Govt. waste land (River) | 46.54 |
| Residential area | 0.00 |
| Company land | 0.00 |
| Private Land | 0.00 |
| **Total** | **46.54** |

**ENVIRONMENT MANAGEMENT**

**Green Belt Development**

| S. No. | Location | | Area/Length | No of Trees |
|---|---|---|---|---|
| 1 | Safety Zone | | 18.62 Ha | 00 |
| 2 | Along Approach Road | | 0.570 km | 114 |

- 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**

No solid waste is generated during the course of mining.

**ENVIRONMENT MANAGEMENT COST**

| Sl. No | Description | Capital Cost (lakh) | Recurring Cost (lakh) |
|---|---|---|---|
| 1 | Pollution Control & Dust Suppression | Nil | 2.5 |
| 2 | Pollution Monitoring<br>i) Air pollution<br>ii) Water pollution<br>iii) Soil Quality<br>iv) Noise Pollution | -- | 2.0 |
| 3 | Plantation and salary for one gardener (part time basis). | 0.34 | 2.5 |
| 4 | Haul road Maintenance Cost | 0.42 | 1.20 |
| **TOTAL** | | **1.76** | **8.20** |

**Schedule of Monitoring**

| S.No. | Description of Parameters | Schedule of Monitoring |
|---|---|---|
| 1 | Air Quality | 24 hourly samples twice a week in each season except monsoon |
| 2 | Water Quality (Surface & Groundwater) | Once a season for 4 seasons in a year |
| 3 | Soil Quality | Once in a year in project area |
| 4 | Noise Level | Twice a year for first two years & then once a year |
| 5 | Socio-economic Condition | Once in 3 years |
| 6 | Plantation Monitoring | Once in a season |

**GREEN BELT**

| Year | No. of Trees | Capital Cost (Lakh) | Recurring Cost (Lakhs) |
|---|---|---|---|
| 1st year | 114 | 114*300=0.34 | 0.5 |
| 2nd year | Maintenance | - | 0.5 |
| 3rd year | Maintenance | - | 0.5 |
| 4th year | Maintenance | - | 0.5 |

| | | | |
|---|---|---|---|
| 5th year | Maintenance | - | 0.5 |
| **Total** | **114** | **0.34** | **2.5** |

**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 Haul Road by using water tankers.
- ✓ Regular repair of Haul Road
- ✓ All Trucks carrying Sand outside lease area will have PUC certificate.
- ✓ Transport tippers/traders moving on public road will be covered with tarpaulin.

**RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DICUSSED BELOW:**

**Road accidents**

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

- 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 minimize risk of road accident-

- Separate alignment for movement of loaded vehicles coming out of mine site
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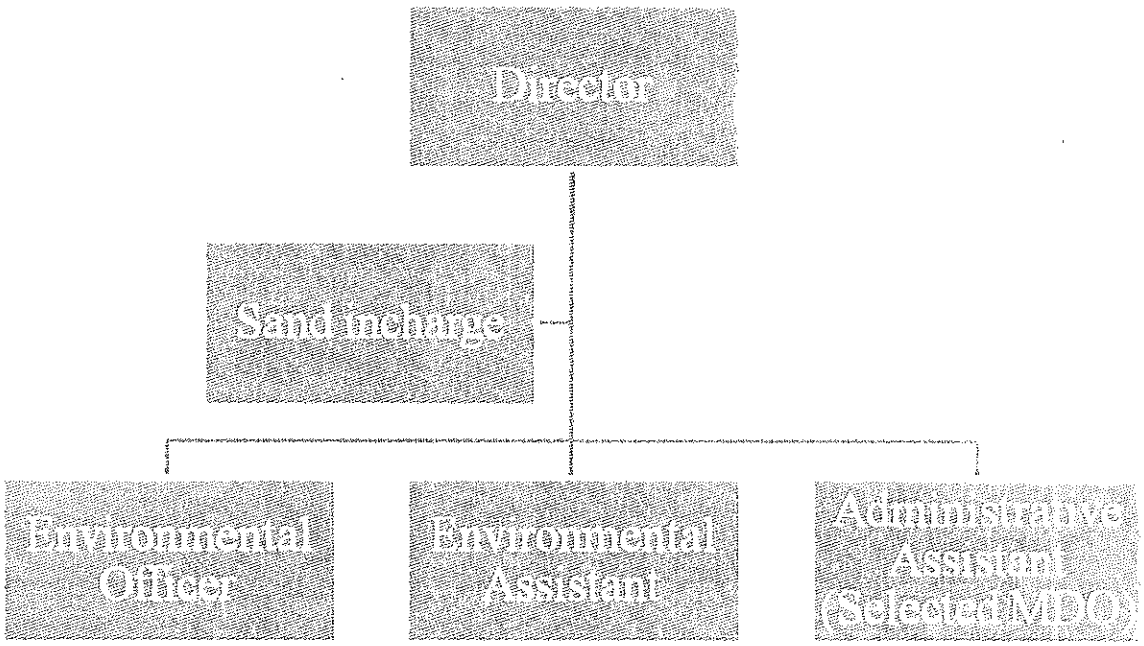


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n. Wet sand will not be transported.

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II. Pre-monsoon data of current year is to be included in final EIA report.
III. Satellite imagery with Geo-Cordinates of pre-monsoon (current year) to be included in the final EIA report.

**********

The meeting concluded with thanks to all present.

Ashok Kumar Dubey, IFS (Retd.)
Member

Dr. Ajay Govind Bhatt
Member

Niranjan Lal Agarwalla
Member

Dr. Raju Kumar
Member

Sonali Verma, IFS
Member Secretary

Ashok Kumar Singh, IFS (Retd.)
Chairman

I. Statutory compliance

i. This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.

ii. In the writ petition (Civil) no. 202/1995, T.N. 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 ail sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance: Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEF&CC/ Central Pollution Control Board.

**III. Water quality monitoring and preservation**

i. In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEF&CC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.

ii. Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.

iii. Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be

submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.

iv. The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-à-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEF&CC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.

v. Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J- 20012/1/2006-IAJI (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.

vi. Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEF&CC annually.

vii. Industrial waste water (workshop and waste water from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.

viii. The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board/Committee.

**IV. Noise and vibration monitoring and prevention**

i. The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.

ii. The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.

iii. The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PPshall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

**V. Mining Plan**

i. The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.

ii. The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.

iii. The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-à-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self sustaining. The compliance status shall be submitted half-yearly to the MoEF&CC and its concerned Regional Office.

**VI. Land reclamation**

i. The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.

ii. The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.

iii. The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.

iv. The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.

v. The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC.

vi. Catch drains, settling tanks and ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.

vii. Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.

viii. The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.

**VII. Transportation**

i. No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.

ii. The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.

## VIII. Green Belt

i. The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.

ii. The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.

iii. The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.

iv. The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.

v. And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.

## IX. Public hearing and human health issues

i. The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures

be taken. A status report on the same may be sent to MoEF&CC Regional Office and DGMS on half-yearly basis.

ii. The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years.

iii. The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) Estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17 x14 inches and of good quality).

iv. The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities ,(c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1),Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have normal

range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEF&CC annually along with details of the relief and compensation paid to workers having above indications.

v. The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.

vi. Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.

vii. The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.

## X. Corporate Environment Responsibility (CER)

i. The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M No 22-65/2017-IA. II (M) dated 01.05.2018 or as proposed by EAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase documents, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.

ii. Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEF&CC and its concerned Regional Office.

## XI. Miscellaneous

i. The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.

ii. The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.

iii. It shall be mandatory for the project management to submit six (06) monthly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard copies and soft copies to the regulatory authority concerned Regional Office of MoEF& CC at Ranchi and Jharkhand State Pollution Control Board (J.S.P.C.B.), Ranchi / CPCB / SEIAA.

iv. A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC.

v. The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information / monitoring reports.

vi. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

vii. The Ministry / SEIAA / SEAC may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

viii. The Ministry / SEIAA / SEAC reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

ix. The Environmental Clearance accorded shall be valid for the period of lease of the mine. The PP shall not increase production rate and alter lease area during the validity of Environmental Clearance

x. Any appeal against this Environmental Clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.

Annexure - II

**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 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.