

MINUTES OF THE 109TH MEETING OF STATE LEVEL EXPERT APPRAISAL COMMITTEE (SEAC), JHARKHAND HELD ON 09TH, 10TH, 11TH, 12TH and 13TH OCTOBER, 2023.

The 109th meeting of State Level Expert Appraisal Committee (SEAC), Jharkhand was held on 09th, 10th, 11th, 12th and 13th October, 2023 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. Dr. Kirti Avishek - Member
3. Shri Niranjan Lal Agarwalla - Member
4. Dr. Raju Kumar - Member
5. Dr. Ajay Govind Bhatt - Member
6. Shri Srikant Verma, IFS - Secretary

SEIAA forwarded various projects to the SEAC for the technical appraisal after the last SEAC meeting held on 19th, 20th, 21st, 22nd, 23rd, 24th and 25th September, 2023. 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 : October 09th, 2023 [Monday]

Consideration of Proposals

1. Stone Mine of M/s Tamanna Stone Works (Prop. : Md. Karimuddin), Village : Bagcha Mako, Tehsil : Taljhari, Distt. : Sahibganj, Jharkhand (2.63 Ha).

(Proposal No. SIA/JH/MIN/444568 /2023).

Name of the consultant : AWS Envirotech (OPC) Pvt. Ltd., Lucknow, U.P.

This is a new project which has been taken for appraisal on 09.10.2023.

Project Category : B-2– Applied for Environmental Clearance.

EC Application for: Stone Mining for production of 3, 06,000.00 tons per annum

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Tamanna stone works Stone Mining
2	Lessee:	: M/s Tamanna Stone Works (Prop. Md Karimuddin) R/o- Chhoti Kodarjanna, PO- Ganga Prasad, District- Sahibganj State- Jharkhand- 816109
3	Lease Address	: Mauza- Bagcha Mako, Circle- Taljhari District- Sahibganj, State- Jharkhand
4	Lease Area	: 2.63ha. Acres- 6.51 Acres
5	Type of Land	: Rayati Land
6	Project Cost	: Rs. 70 Lakhs
7	EMP Budget	: Capital: 7.5 Lakhs Recurring: 3.8Lakhs/year
8	CSR/CER Budget	: 1.4 Lac
9	New or Expansion	: New
10	Mineable Reserves	: 40,16,238.00tonnes
11	Mine Life	: 10 years
12	Man power	: 40
13	Water Requirement	: 15.56KLD (Drinking: 0.60KLD, Dust Suppression: 7.2KLD, Plantation: 7.76KLD)
14	Water Source	: Water will be sourced from Abandoned mines through the water tanker for dust suppression and plantation water will be sourced from a bore well within the lease area for drinking and domestic consumptions.
15	DG Set / power	: NA
16	Crusher	: NA
17	Nearest Water Body	: Ganga River, at approx. 10 km towards NNE direction
18	Nearest Habitation	: Taljhari Village, 5.9 km towards ENEdirection
19	Nearest Rail Station	: Kalian Chak Railway Station, approx. 6.40 km in ESE direction
20	Nearest Air Port	: Malda Airport, approx. 45.2 km towardsESEdirection.
21	Nearest Forest	: Nil
22	Road & Highways	: Rajmahal-Tinpahar- Boria Road-2.8 km towards SSWdirection

A

U

2

B

am

J

m

CO-ORDINATES

Latitude	Longitude
25°03'31.67" to 25°03'41.91" N	87°40'46.80" to 87°40'54.30" E

LAND DETAILS :

Khata No	Plot No
05	84 (P)
07	83(P)
10	09(P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 786/M, dated 04.08.2023.
2	CO	:	The CO, Taljhari vide letter no. 96, dated 15.02.2021 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 787/M, dated 04.08.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Hazaribagh vide letter no. 1900, dated 01.11.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 1870, dated 20.09.2021 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	The DC – cum – District Magistrate, Sahibganj vide letter no. 939/M, dated 09.09.2023 has informed that this project is part of District Survey Report (DSR) of Sahibganj district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	:	Gram Sabha conducted on 30.01.2021.
8	Mine Plan Approval	:	DMO, Sahibganj vide Letter No. 901, dated 26.08.2023.

9	DMO (Grid certificate)	: DMO, Sahibganj vide memo no. 964/M, dated 22.09.2023 confirm that proposed project is outside of Grid 1, 3, 4 and 7 as decided by Hon'ble NGT in the matter of Sayed Arshad Nasar vs State of Jharkhand & Ors.

Working Details

1	Mining Method	: Opencast. Semi mechanized Mining method, wagon drill with blasting
2	Quarry Area	: 2,63 ha. Life of Mine – 10 years
3	Waste Generation	: Almost nil; weathered rock with mixed soil may be generated, which will be used for road development
4	Stripping Ratio	: 0:1
5	Working Days	: 300
6	Benches: size & No	: 6m x 6m, Bench No 1 to 5 (Conceptual period depth)
7	Elevation of Mine	: 220 m AMSL to 270m AMSL
8	Ground Level Elevation	: 216 AMSL
9	Ultimate Working Depth	: 240mRL
10	Water Table	: 158 AMSL
11	Topography of Mine	: Area represents a small hillock
12	Explosive Requirement	: 34 Kg/day
13	Diesel/Fuel requirement	: 150 litre/day

Production Details

Year	Slice/Bench	Area Excavated (in m ²)	Length of influence (m)	Annual Production (m ³)	Annual Production in (Tonne)	Total Average Production Per Day (Tonne) Stone Boulders
1 st	First(1) Bench (266m to 260 m) Second (2) Bench (260m to 254m) Third (3) Bench (254m to 248m) Height of slicing 6.00m	944.44	120.00	113,333.33	306000.00	1020.00

A V 4 B cm 7

2 nd	Fourth (4) Bench (248m to 242m) Height of slicing 6.00m	944.44	120.00	113,333.33	306000.00	1020.00
3 rd	Fifth (5) Bench (242m to 236m) Height of slicing 6.00m	944.44	120.00	113,333.33	306000.00	1020.00
4 th	Sixth (6) Bench (236m to 230m) Height of slicing 6.00m	944.44	120.00	113,333.33	306000.00	1020.00
5 th	Seventh (7) Bench (230m to 224m) Height of slicing 6.00m	944.44	120.00	113,333.33	306000.00	1020.00
6 th to 10 th Year	@1020.00 (Stone) Per day					

Land Use

Post Mining Land Use Pattern

Type of land use	Existing Ha	During Plan Period (ha)	During Conceptual Period/after Closure of Mines Ha
Barren Land	2.62	0.56	Nil
Quarry	Nil	1.43	2.08
Infrastructure	Nil	0.01	Nil
Approach Road	0.01	Nil	Nil
Garland Drain	Nil	0.07	Nil
Green Belt	Nil	0.55	0.55
Settling Tank	Nil	0.01	Nil
Total	2.63	2.63	2.63

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.56 ha	952
2	Haul /Approach Road	:	900 m	600

A     

- 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

- Waste Generation is almost nil, however if generated will be weathered rocks mixed with loose soil that 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 shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside.
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice.
- Ambient air pollution monitoring shall be carried out every six months

A U 6 B edw J

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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Quantity of HSD/ Fuel consumption per day of Stone mine

S. No	Machine	Details of fuel (Diesel) requirements	Consumption of Diesel (in liters/day.)
1	Jack Hammer Drill	Number of Machine=2 Diesel consumption in one shift working. (i.e-10 liters) $=2*8*10=160$ liters	160 liters
2	Excavator	Number of Machine=1 Diesel consumption in one shift working. (i.e- 07litre/hr) $=1*8*7=56$ liters	56 liters



3	Tippers	Number of Tippers= 03 Diesel consumption in one shift working. (i.e-4ltr/hr.) =3*10*4=120 Ltr.	120 liters
4	DG Set	Number of DG Set =1(60 KVA) Diesel consumption by one in one shift working.(i.e-16 liter/hr) =1*10*16=220 liters	160 liters
5	Water Sprinkler	Number of Sprinkler=02 Diesel consumption by Sprinkler in one shift working (i.e-2ltr/hr). =2*10*2=40 liters.	40 ltr.
6	Extra	Transport vehicle, super vision vehicle, maintenance vehicle	100 liters
Total			636

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.

A W 8 B am J

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

A ULM *Ch* *Wm* *dx* *mm*

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

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

- 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 equipments 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.

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

- 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.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF & CC O.M dated 12.12.18 decided that the proposal for Stone Mine of M/s Tamanna Stone Works (Prop. : Md. Karimuddin), Village : Bagcha Mako, Tehsil : Taljhari, Distt. : Sahibganj, Jharkhand (2.63 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

2. Stone Mine of Shri Amit Kumar Mandal, Village : Badalpur, Thana no. : 187, Distt. : Dhanbad, Jharkhand (1.18 Ha).

(Proposal No. SIA/JH/MIN/305356 /2023).

Name of the consultant : AWS Envirotech (OPC) Pvt. Ltd., Lucknow, U.P.

This is an amendment project which has been taken for appraisal on 09.10.2023.

Project Category : B2- Applied for amendment in Environmental Clearance for Production reduction from 38888.88 Cum/Year to 23927.65 Cum/Year i.e. 64604.66 TPA (Max.). Earlier this project was granted EC by SEIAA vide letter no. EC/SEIAA/2022-23/278/2023/20, dated 12.04.2023.

EC Application for: Stone Mining for reduction in production quantity from 38888.88 Cum/Year to 23927.65 Cum/Year (64604.66 tons per annum max.)

A 14 B C D E F

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Amit kumar mandal Stone Mining
2	Lessee:	: Lessee- Shri Amit Kumar Mandal, S/o Shri Sudhan Chandra Mandal, Village – Asanbani, PO- Vitia& P.S – Govindpur District -Dhanbad, State Jharkhand
3	Lease Address	: Mouza- Badalpur, Thana Nirsa No.- 187, District- Dhanbad, State- Jharkhand
4	Lease Area	: 1.18 ha. Acres- 2.92 Acres
5	Type of Land	: Private Rayati Land
6	Project Cost	: Rs. 60 Lakhs
7	EMP Budget	: Capital: 5.208 Lakhs Recurring: 2.844Lakhs/year
8	CSR/CER Budget	: 1.2 Lac
9	New or Expansion	: Applied for amendment in environmental clearance for reduction in production quantity from 105000 TPA to 64604.66MTPA(Max.), Earlier this project was granted EC on 12.04.2023 vide letter no. EC/SEIAA/2022-23/278/2023/20.
10	Mineable Reserves	: 405321.30 tonnes
11	Mine Life	: 6.27 years
12	Man power	: 12
13	Water Requirement	: 9.14 KLD (Drinking: 0.18 KLD, Dust Suppression: 3.2 KLD, Plantation: 5.76 KLD)
14	Water Source	: Water will be sourced from Abandoned mines through the water tanker for dust suppression and plantation water will be sourced from a bore well within the lease area for drinking and domestic consumptions.
15	DG Set / power	: NA
16	Crusher	: NA
17	Nearest Water Body	: Panchet Reservoir, at approx. 2.2 km towards S direction
18	Nearest Habitation	: Badalpur, 0.8 km towards SE direction
19	Nearest Rail Station	: Kalubathan Railway Station, approx. 8.3 km in NE direction
20	Nearest Air Port	: Dhanbad Airport, approx. 24.5 km towardsNWdirection.
21	Nearest Forest	: Nil
22	Road & Highways	: Baliapur-PatlabariRaod- 3.8 km towards NW-direction

CO-ORDINATES

Latitude	Longitude
23° 41'47.57" to 23°41'53.83" N	86°36'50.19" to 86°36'56.75" E

LAND DETAILS :

Khata No.	Plot No.
82	44 & 46
162	41 & 42
193	43

STATUTORY CLEARANCES

1	LOI / Lease docs	: The Letter of Intent (LoI) has been issued by District Mining Officer, Dhanbad vide letter no. 178/M, dated 09.02.2023.
2	CO	: The CO, Kaliyasol (Dhanbad) vide letter no. 66, dated 25.01.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatian & Register II.
3	DMO	: DMO, Dhanbad vide memo no. 206/M, dated 13.02.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	: DFO, Wildlife Hazaribagh vide letter no. 483, dated 04.03.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Sanctuary.
5	DFO Forest Distance	: Division Forest Officer, Dhanbad Forest Division vide letter no. 75, dated 09.01.2023 certified that the distance of reserved / protected forest is 1200 meter from proposed project site.
6	DSR	: The DC, Dhanbad vide letter no. 205/M, dated 13.02.2023 has informed that this project is part of District Survey Report (DSR) of Dhanbad district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	: Gram Panchayat, Susunliya vide letter no. 52/2023, dated 17.01.2023 informed that Gram Sabha conducted on 17.01.2023.



16





8	Mine Plan Approval	:	Approved by DMO, Dhanbad vide Memo No. 1531/M dated 30.09.2023.
9	Earlier Environmental Clearance (EC)	:	Earlier EC granted by SEIAA vide letter no. EC/SEIAA/2022-23/2781/2023/20, dated 12.04.2023.

Working Details

1	Mining Method	:	Opencast. Semi mechanized Mining method, wagon drill with blasting
2	Quarry Area	:	1.18 ha Life of Mine – 6.27years
3	Waste Generation	:	Almost nil; weathered rock with mixed soil may be generated, which will be used for road development
4	Stripping Ratio	:	0:1
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m, Bench No 1 to 5 (Conceptual period depth)
7	Elevation of Mine	:	147M AMSL to 148MAMSL
8	Ground Level Elevation	:	180M AMSL
9	Ultimate Working Depth	:	118M AMSL
10	Water Table	:	106 M AMSL
11	Topography of Mine	:	Area represents a small hillock
12	Explosive Requirement	:	68 Kg/day
13	Diesel/Fuel requirement	:	200 litre/day

Production Details

Section	Bench RL	Volume	Stones
		(m ³)	(tonne)
A-B	148-142	20968.40	56614.68
A-B	148-142	18431.90	49766.13
A-B	142-136	17985.55	48560.99
A-B	142-136	16571.80	44743.86
A-B	136-130	23927.65	64604.66

(Handwritten signatures and initials)

Land Use

Type of land use	Area (Ha)
Mining area converted into Water Reservoir	0.66
Infrastructure	Nil
Approach roads	0.01
Garland drain	Nil
Green Belt	0.51
Settling Tank	Nil
Total	1.18

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.52 ha	884
2	Haul /Approach Road	:	400 m	268

- 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

- Waste Generation is almost nil, however if generated will be weathered rocks mixed with loose soil that 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 shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside

- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months

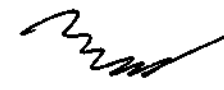
Undertaking submitted affirming:

- 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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Quantity of HSD/ Fuel consumption per day of Stone mine

S. No	Machine	Details of fuel (Diesel) requirements	Consumption of Diesel (in liters/day.)
1	Jack Hammer Drill	Number of Machine=2 Diesel consumption in one shift working. (i.e-10 liters) $=2*8*10=160$ liters	160 liters
2	Excavator	Number of Machine=1 Diesel consumption in one shift working. (i.e- 07litre/hr) $=1*8*7=56$ liters	56 liters
3	Tippers	Number of Tippers= 03 Diesel consumption in one shift working. (i.e-4ltr/hr.) $=3*10*4=120$ Ltr.	120 liters
4	DG Set	Number of DG Set =1(60 KVA) Diesel consumption by one in one shift working.(i.e-16 liter/hr) $=1*10*16=220$ liters	160 liters
5	Water Sprinkler	Number of Sprinkler=02 Diesel consumption by Sprinkler in one shift working (i.e-2ltr/hr). $=2*10*2=40$ liters.	40 ltr.
6	Extra	Transport vehicle, super vision vehicle, maintenance vehicle	100 liters
Total			636

A  20    

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

A  22    

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 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.

A [Signature]

[Signature]

[Signature]

[Signature]

[Signature]

- 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 equipments 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.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF & CC O.M dated 12.12.18 decided that the proposal for Stone Mine of Shri Amit Kumar Mandal, Village : Badalpur, Thana no. : 187, Distt. : Dhanbad, Jharkhand (1.18 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I.

A

U

C

U

X

U

3. Stone Mine of Shri Amit Kumar Mandal, Village : Badalpur, Thana no. : 188, Distt. : Dhanbad, Jharkhand (1.23 Ha).

(Proposal No. SIA/JH/MIN/305358 /2023).

Name of the consultant : AWS Envirotech (OPC) Pvt. Ltd., Lucknow, U.P.

This is an amendment project which has been taken for appraisal on 09.10.2023.

Project Category:B2- Applied for amendment in Environmental Clearance for production reduction. Earlier Environmental clearance was issued by SEIAA vide letter no. EC/SEIAA/2022-23/2777/2023/28, vide dated 12/04/2023

EC Application for: Stone Mining for production quantity of 86530.28 TPA (Max.)

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Amit kumar mandal Stone Mine
2	Lessee:	: Lessee- Shri Amit Kumar Mandal, S/o Shri Sudhan Chandra Mandal, Mouza - Tentuliya, Thana Nirsa, No 188, Block - Keliasole District – Dhanbad, State – Jharkhand
3	Lease Address	: Village – Asanbani, PO- Bhitia& P.S – Govindpur District -Dhanbad, State Jharkhand
4	Lease Area	: 1.23 ha. Acres- 3.04 Acres
5	Type of Land	: Private Rayati Land
6	Project Cost	: Rs. 90 Lakhs
7	EMP Budget	: Capital: 6.18 Lakhs Recurring: 2.73Lakhs/year
8	CSR/CER Budget	: 1.8 Lac
9	New or Expansion	: Applied for amendment in EC (For production reduction from 192000 TPA to 86530.28 TPA Max.),Earlier Environmental clearance for the project was issued vide letter no. EC/SEIAA/2022-23/2777/2023/28 vide dated 12/04/2023
10	Mineable Reserves	: 435177.90tonne
11	Mine Life	: 5 years
12	Man power	: 20
13	Water Requirement	: 8.5KLD (Drinking: 0.30 KLD, Dust Suppression: 3.2 KLD, Plantation: 5.00 KLD)
14	Water Source	: Water will be sourced from Abandoned mines through the water tanker for dust suppression and plantation water will be sourced from a bore well within the lease area for drinking and domestic consumptions.

A UMA B CDE

15	DG Set / power	:	NA
16	Crusher	:	NA
17	Nearest Water Body	:	Panchet Reservoir, at approx. 2.0 km towards S direction
18	Nearest Habitation	:	Tentuliya- 1.0 km towards N direction
19	Nearest Rail Station	:	Chota Ambana Railway Station, approx. 8.4 km in NNW direction
20	Nearest Air Port	:	Dhanbad Airport, approx. 24.4 km towards NWdirection.
21	Nearest Forest	:	Nil
22	Road & Highways	:	Baliapur-PatlabariRaod- 3.7 km towards NW-direction

CO-ORDINATES

Latitude	Longitude
23° 41'41.67" to 23°41'45.60" N	86° 36'41.73" to 86°36'49.06" E

LAND DETAILS :

Khata No	Plot No
80	2891, 2892, 2893, 2884
79	2886

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dhanbad vide letter no. 177/M, dated 09.02.2023.
2	CO	:	The CO, Kaliyasol (Dhanbad) vide letter no. 67, dated 25.01.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Dhanbad vide memo no. 207/M, dated 13.02.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Hazaribagh vide letter no. 482, dated 04.03.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Sanctuary.

5	DFO Forest Distance	:	Division Forest Officer, Dhanbad Forest Division vide letter no. 56, dated 07.01.2023 certified that the distance of reserved / protected forest is 1300 meter from proposed project site.
6	DSR	:	The DC, Dhanbad vide letter no. 205/M, dated 13.02.2023 has informed that this project is part of District Survey Report (DSR) of Dhanbad district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	:	Gram Panchayat, Susunliya vide letter no. 53/2023, dated 17.01.2023 informed that Gram Sabha conducted on 17.01.2023.
8	Mine Plan Approval	:	Approved by DMO, Dhanbad vide Memo No. 1526/M dated 29.09.2023.
9	Earlier Environmental Clearance (EC)	:	Earlier EC granted by SEIAA vide letter no. EC/SEIAA/2022-23/2777/2023/28, dated 12.04.2023.

Working Details

1	Mining Method	:	Opencast. Semi mechanized Mining method, wagon drill with blasting
2	Quarry Area	:	1.23 ha Life of Mine – 5 years
3	Waste Generation	:	Almost nil; weathered rock with mixed soil may be generated, which will be used for road development
4	Stripping Ratio	:	0:1
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m, Bench No 1 to 5 (Conceptual period depth)
7	Elevation of Mine	:	150m AMSL to 152m AMSL
8	Ground Level Elevation	:	170 m AMSL
9	Ultimate Working Depth	:	upto 126mRL
10	Water Table	:	115 m AMSL
11	Topography of Mine	:	Area represents a small hillock
12	Explosive Requirement	:	102/day
13	Diesel/Fuel requirement	:	118litre/day

(Handwritten signatures and marks)

Production Details

Year	Section	Bench RL	Sectional Area (m ²)	Length of influence (m)	Volume (m ³)	95% Recovery	TF	Stones (tonne)
1 st	A-B	151-144	172.00	175.00	30100.00	28595.00	2.7	77206.50
	Total							77206.50
2 nd	A-B	151-144	195.00	173.00	33735.00	32048.25	2.7	86530.28
	Total							86530.28
3 rd	A-B	144-138	180.00	164.00	29520.00	28044.00	2.7	75718.80
	Total							75718.80
4 th	A-B	144-138	98.50	143.00	14085.50	13381.23	2.7	36129.31
	A-B	138-132	109.00	151.60	16524.40	15698.18	2.7	42385.09
	Total							78514.40
5 th	A-B	138-132	97.60	144.00	14054.40	13351.68	2.7	36049.54
	A-B	132-126	135.30	138.00	18671.40	17737.83	2.7	47892.14
	Total							83941.68

Land Use

Type of land use	Area (ha)
Mining area converted into water reservoir	0.87
Approach roads	0.01
Garland drain	Nil
Green Belt	0.35
Settling Tank	0.00
Total	1.23

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.35 ha	595
2	Haul /Approach Road	:	600 m	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.

Solid Waste Management

- Waste Generation is almost nil, however if generated will be weathered rocks mixed with loose soil that 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 shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months

Handwritten signatures and initials are present at the bottom of the page, including a large 'A' on the left, a stylized 'B' in the center, and several other scribbled marks on the right.

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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Quantity of HSD/ Fuel consumption per day of Stone mine

S. No	Machine	Details of fuel (Diesel) requirements	Consumption of Diesel (in liters/day.)
1	Jack Hammer Drill	Number of Machine=2 Diesel consumption in one shift working. (i.e-10 liters) $=2*8*10=160$ liters	160 liters
2	Excavator	Number of Machine=1 Diesel consumption in one shift working. (i.e- 07litre/hr) $=1*8*7=56$ liters	56 liters

3	Tipppers	Number of Tipppers= 03 Diesel consumption in one shift working. (i.e-4ltr/hr.) =3*10*4=120 Ltr.	120 liters
4	DG Set	Number of DG Set =1(60 KVA) Diesel consumption by one in one shift working.(i.e-16 liter/hr) =1*10*16=220 liters	160 liters
5	Water Sprinkler	Number of Sprinkler=02 Diesel consumption by Sprinkler in one shift working (i.e-2ltr/hr). =2*10*2=40 liters.	40 ltr.
6	Extra	Transport vehicle, super vision vehicle, maintenance vehicle	100 liters
Total			636

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.

A [Signature] B [Signature] [Signature] [Signature] [Signature]

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.

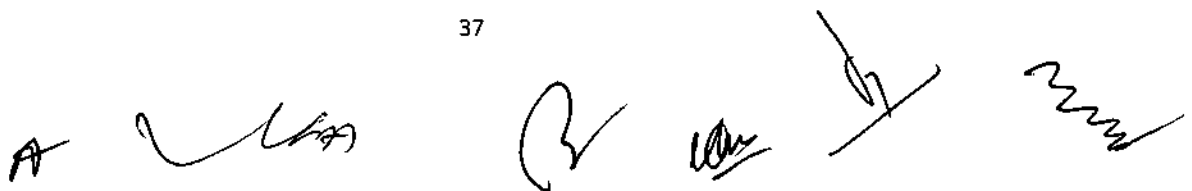
Handling of Explosives

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.

The bottom of the page features several handwritten signatures and initials in black ink. From left to right, there is a large 'A', a signature that appears to be 'V. K. Singh', a signature that appears to be 'B. Singh', a signature that appears to be 'S. Singh', a signature that appears to be 'D. Singh', and a signature that appears to be 'M. Singh'.

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 equipments 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.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF & CC O.M dated 12.12.18 decided that the proposal for Stone Mine of Shri Amit Kumar Mandal, Village : Badalpur, Thana no. : 188, Distt. : Dhanbad, Jharkhand (1.23 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

4. Stone Mine Project of Shri Khalid Hussain & Shri Firoj Ansari, Village : Shahrad, Thana : Govindpur, Thana no. : 210, Distt. : Dhanbad, Jharkhand (0.967 Ha).
(Proposal No. SIA/JH/MIN/447286 /2023).

Name of the consultant : AWS Envirotech (OPC) Pvt. Ltd., Lucknow, U.P.

This is an expansion project which has been taken for appraisal on 09.10.2023.

Project Category : B2– Applied for Environmental Clearance for production enhancement from 9822 TPA to 48738.85 TPA.

EC Application for: Stone Mining for enhancement of production (48738.85 tonne per annum)

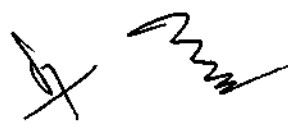
Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Khalid Hussain & Firoj Ansari Stone Mining
2	Lessee:	: Lessee- Khalid Hussain, S/o - Md Abid Hussain Masjid Tola, Village & PO- Jangalpur District – Dhanbad, State- Jharkhand, & Firoj Ansari S/o- Abdul Ansari Village – Karbladhi, PO- Jangalpur District – Dhanbad, State- Jharkhand

3	Lease Address	:	Mouza – Shahrad, Thana No 210, District – Dhanbad, State – Jharkhand
4	Lease Area	:	0.967 ha. Acres- 2.39 Acres
5	Type of Land	:	BarrenRayati Land
6	Project Cost	:	Rs. 60 Lakhs
7	EMP Budget	:	Capital: 5.208 Lakhs Recurring: 2.844Lakhs/year
8	CSR/CER Budget	:	1.2 Lac
9	New or Expansion	:	Expansion (For production enhancement)
10	Mineable Reserves	:	487657.80tonnes
11	Mine Life	:	10 years
12	Man power	:	16
13	Water Requirement	:	9.14KLD (Drinking: 0.18 KLD, Dust Suppression: 3.2 KLD, Plantation: 5.76 KLD)
14	Water Source	:	Water will be sourced from Abandoned mines through the water tanker for dust suppression and plantation water will be sourced from a bore well within the lease area for drinking and domestic consumptions.
15	DG Set / power	:	NA
16	Crusher	:	NA
17	Nearest Water Body	:	Barakar River, at approx. 4.5 km towards NNE direction
18	Nearest Habitation	:	Shahrad, 0.5 km towards SSW direction
19	Nearest Rail Station	:	Kalubathan Railway Station, approx. 13.8 km in N direction
20	Nearest Air Port	:	Dhanbad Airport, approx. 22.9 km towards WSWdirection.
21	Nearest Forest	:	Nil
22	Road & Highways	:	NH-419 - 3.5 km towards NNW-direction

CO-ORDINATES

Latitude	Longitude
23°53'00.90" to 23°53'05.43" N	86°38'36.32" to 86°38'40.28" E

A  40   

LAND DETAILS :

Khata No	Plot No
344	4560, 4572, 4568, 4569, 4573, 4570, 4571, 4575, 4562

STATUTORY CLEARANCES :

1	LOI/Lease docs	:	The Letter of Intent (LoI) has been issued by DMO, Dhanbad vide letter no. 878/M, dated 16.03.2022.
2	CO	:	The CO, Govindpur (Dhanbad) vide letter no. : 111, dated 20.01.2021 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Dhanbad vide memo no. 1745/M, dated 13.06.2022 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Hazaribagh vide letter no. : 1032, dated 23.06.2021 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Forest Distance	:	DFO, Dhanbad Forest Division vide letter no. : 823, dated 08.04.2021 certified that the distance of reserved / protected forest is 275 m from proposed project site.
6	DSR	:	The DC, Dhanbad vide letter no. 205/M, dated 13.02.2023 has informed that this project is part of District Survey Report (DSR) of Dhanbad district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	:	Gram Sabha conducted on 19.10.2020.
8	Mine Plan Approval	:	Approved by DMO, Dhanbad vide memo no. 1528/M, dated 29.09.2023.
9	Earlier Environmental Clearance (EC)	:	Earlier EC granted by SEIAA vide letter no. EC/SEIAA/2022-23/2782/2023/18, dated 12.04.2023.

Working Details

1	Mining Method	:	Opencast. Semi mechanized Mining method, wagon drill with blasting
2	Quarry Area	:	0.967 ha. Life of Mine – 10 years
3	Waste Generation.	:	Almost nil; weathered rock with mixed soil may be generated, which will be used for road development
4	Stripping Ratio	:	0:1
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m, Bench No 1 to 5 (Conceptual period depth)
7	Elevation of Mine	:	147m AMSL to 148m AMSL
8	Ground Level Elevation	:	180m AMSL
9	Ultimate Working Depth	:	118Mrl
10	Water Table	:	106 AMSL
11	Topography of Mine	:	Area represents a small hillock
12	Explosive Requirement	:	34 Kg/day
13	Diesel/Fuel requirement	:	150 litre/day

Production Details

Year	Section	Bench RL	Sectional Area (m ²)	Length of influence (m)	Volume (m ³)	95% Recovery	TF	Stones (tonne)
1 st	A-B	201-194	260.00	71.00	18460.0	17537.00	2.7	47349.90
	Total							47349.90
2 nd	A-B	200-194	311.50	61.00	19001.5	18051.43	2.7	48738.85
	Total							48738.85
3 rd	A-B	200-194	64.00	54.00	3456.00	3283.20	2.7	8864.64
	A-B	194-188	258.00	60.00	15480.0	14706.00	2.7	39706.20
	Total							48570.84
4 th	A-B	194-188	370.00	39.00	14430.0	13708.50	2.7	37012.95
	A-B	188-182	92.00	48.00	4416.00	4195.20	2.7	11327.04
	Total							48339.99

5th								
	A-B	188-182	464.00	40.00	18560.0	17632.00	2.7	47606.40
	Total							47606.40

Land Use

Type of land use	Area (Ha)
Water reservoir	0.652
Road	0.00
Garland drain & Sump	0.00
Green Belt	0.315
Total	0.967

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.315 ha	540
2	Haul /Approach Road	:	250 m	170

- 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

- Waste Generation is almost nil, however if generated will be weathered rocks mixed with loose soil that 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 shall be made around the Waste dump and the rain water shall be collected in a garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months

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.



44




- 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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Quantity of HSD/ Fuel consumption per day of Stone mine

S. No	Machine	Details of fuel (Diesel) requirements	Consumption of Diesel (in liters/day.)
1	Jack Hammer Drill	Number of Machine=2 Diesel consumption in one shift working. (i.e-10 liters) $=2*8*10=160$ liters	160 liters
2	Excavator	Number of Machine=1 Diesel consumption in one shift working. (i.e- 07litre/hr) $=1*8*7=56$ liters	56 liters
3	Tippers	Number of Tippers= 03 Diesel consumption in one shift working. (i.e-4ltr/hr.) $=3*10*4=120$ Ltr.	120 liters
4	DG Set	Number of DG Set =1(60 KVA) Diesel consumption by one in one shift working.(i.e-16 liter/hr) $=1*10*16=220$ liters	160 liters
5	Water Sprinkler	Number of Sprinkler=02 Diesel consumption by Sprinkler in one shift working (i.e-2ltr/hr). $=2*10*2=40$ liters.	40 ltr.



6	Extra	Transport vehicle, super vision vehicle, maintenance vehicle	100 liters
Total			636

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

A  46    

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

A *U* *B* *edu* *g* *m*

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:

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

- 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 equipments 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.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF & CC O.M dated 12.12.18 decided that the proposal for Stone Mine Project of Shri Khalid Hussain & Shri Firoj Ansari, Village : Shahrad, Thana : Govindpur, Thana no. : 210, Distt. : Dhanbad, Jharkhand (0.967 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

The bottom of the page features several handwritten signatures and initials in black ink. From left to right, there is a large 'A', a signature that appears to be 'Uman', a signature that appears to be 'B', a signature that appears to be 'Rohit', a signature that appears to be 'S', and a signature that appears to be 'M'.

5. Stone Mine Project of Shri Binay Kumar Mandal, Village : Laxhipur & Bhursa, Thana no. : 162 & 163, Distt. : Dhanbad, Jharkhand (1.52 Ha).

(Proposal No. SIA/JH/MIN/417666 /2023).

Name of the consultant : AWS Envirotech (OPC) Pvt. Ltd., Lucknow, U.P.

This is an amendment project which has been taken for appraisal on 09.10.2023.

Project Category:B2- Applied for amendment in Environmental Clearance for Production reduction from 118500 TPA to of 93852.07 tonne per annum (Max.). Earlier Environmental clearance was issued by SEIAA for the project vide letter no. EC/SEIAA/2022-23/2779/2023/32, vide dated 12/04/2023.

EC Application for: Stone Mining for reduction in production quantity from 118500TPA to of 93852.07 tonne per annum (Max.)

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Binay Kumar mandal Stone Mining
2	Lessee:	: Lessee- Sri Binay Kumar Mandal, S/o Sri Dharani Dhar Mandal, R/o- Village – Barwa adda, PO- Kalyanpur & PS – Barwadda District – Dhanbad, State- Jharkhand- 826004
3	Lease Address	: Mouza –Laxhipur & Bhursa, Block – Keliasole (Nirsa), Thana No.162 & 163, District – Dhanbad, State – Jharkhand
4	Lease Area	: 1.52 Ha. Acres- 3.75 Acres
5	Type of Land	: Private Rayati Land
6	Project Cost	: Rs. 80 Lac
7	EMP Budget	: Capital: 6.344 Lac Recurring: 3.412 Lac/year
8	CSR/CER Budget	: 1.60 Lac
9	New or Expansion	: Applied for amendment in environmental clearance for reduction in production quantity from 118500 TPA to of 93852.07 tonne per annum (Max.)Applied for amendment in Environmental Clearance for Production reduction. Earlier Environmental clearance was issued by SEIAA for the project vide letter no. EC/SEIAA/2022-23/2779/2023/32, dated 12/04/2023
10	Mineable Reserves	: 422455.50 tonnes
11	Mine Life	: 5 years
12	Man power	: 16
13	Water Requirement	: 12.77KLD (Drinking: 0.24 KLD, Dust Suppression: 5.6 KLD, Plantation: 6.93KLD)

A  52    

14	Water Source	:	Water will be sourced from Abandoned mines through the water tanker for dust suppression and plantation water will be sourced from a bore well within the lease area for drinking and domestic consumptions.
15	DG Set / power	:	NA
16	Crusher	:	NA
17	Nearest Water Body	:	Khudia River, at approx. 4.6 km towards NE direction
18	Nearest Habitation	:	Kanadi, 0.7 km towards WSW direction
19	Nearest Rail Station	:	Kalubathan Railway Station, approx. 4.8 km in NE direction
20	Nearest Air Port	:	Dhanbad Airport, approx. 23 km towards NW direction.
21	Nearest Forest	:	Nil
22	Road & Highways	:	Simoldone road, approx.1.55 km, N direction

CO-ORDINATES

Latitude	Longitude
23° 43'46.11" to 23°43'53.38" N	86° 37'32.01" to 86°37'36.80" E

LAND DETAILS :

Khata No	Plot No
31(Lakhipur)	437 (P)
92(Bhursa)	124, 125, 127, 128, 129 &130 (P)

STATUTORY CLEARANCES :

1	LOI/Lease docs	:	The Letter of Intent (LoI) has been issued by DMO, Dhanbad vide letter no. 3389/M, dated 29.12.2022.
2	CO	:	The CO, Kaliyasol (Dhanbad) vide letter no. : 208, dated 12.05.2022 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Dhanbad vide memo no. 149/M, dated 30.01.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.

A *U* *LA* *B* *cm* *h* *m*

4	DFO Wild Life	: DFO, Wildlife Hazaribagh vide letter no. : 166 & 167, dated 24.01.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Forest Distance	: DFO, Dhanbad Forest Division vide letter no. : 599, dated 03.03.2023 and letter no. 1460, dated 28.06.2022 certified that the distance of reserved / protected forest is 585 meter & 273 meter from proposed project site.
6	DSR	: The DC, Dhanbad vide letter no. 205/M, dated 13.02.2023 has informed that this project is part of District Survey Report (DSR) of Dhanbad district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	: BDO, Kaliyasol vide letter no. 992, dated 10.08.2022 informed that Gram Sabha conducted on 06.08.2022.
8	Mine Plan Approval	: Approved by DMO, Dhanbad vide memo no. 1527/M, dated 29.09.2023.
9	Earlier Environmental Clearance (EC)	: Earlier EC granted by SEIAA vide letter no. EC/SEIAA/2022-23/2779/2023/32, dated 12.04.2023.

Working Details

1	Mining Method	: Opencast. Semi mechanized Mining method, wagon drill with blasting
2	Quarry Area	: 3.75 Acres (1.52 ha) Life of Mine – 5 years
3	Waste Generation	: Almost nil; weathered rock with mixed soil may be generated, which will be used for road development
4	Stripping Ratio	: 0:1
5	Working Days	: 300
6	Bench: size & No	: 6m x 6m, Bench No 1 to 5 (Conceptual period depth)
7	Elevation of Mine	: 157m AMSL to 159AMSL
8	Ground Level Elevation	: 185 AMSL
9	Ultimate Working Depth	: 134 mRL
10	Water Table	: 122 AMSL
11	Topography of Mine	: Area represents a small hillock
12	Explosive Requirement	: 312.84 Kg/day

13	Diesel/Fuel requirement	:	150 litre/day

Production Details

Year	Section	Bench RL	Sectional Area (m ²)	Length of influence (m)	Volume (m ³)	95% Recovery	TF	Stones (tonne)
1 st	A-B	158-152	160.00 (32x5)	180.00	28800.0	27360.00	2.7	73872.00
	Total							73872.00
2 nd	A-B	158-152	132.00 (26.55x5)	186.00	24552.0	23324.40	2.7	62975.88
	Total							62975.88
3 rd	A-B	152-146	211.50 (35.25x6)	173.00	36589.5	34760.03	2.7	93852.07
	Total							93852.07
4 th	A-B	152-146	68.00 (11.33x6)	173.00	11764.0	11175.80	2.7	30174.66
	A-B	146-140	133.00 (22.08x6)	158.50	21080.5	20026.48	2.7	54071.48
	Total							84246.14
5 th	A-B	146-140	75.00 (12.47x6)	161.00	12075.00	11471.25	2.7	30972.38
	A-B	140-134	135.30 (22.55x6)	145.57	19695.62	18710.84	2.7	50519.27
	Total							81491.64

Land Use

Type of land use	Area (Ha)
Mining area converted into water reservoir	0.88
Infrastructure	0.01
Approach roads	0.01
Garland drain	0.08
Green Belt	0.53
Settling Tank	Nil
Total	1.52

ENVIRONMENT MANAGEMENT

Green Belt Development

A *Ulm* *B* *edu* *12* *mm*

S. No.	LOCATION		Area/Length	No. of Trees
1	Safety Zone	:	0.54 ha	918
2	Haul /Approach Road	:	700 m	468

- 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

- Waste Generation is almost nil, however if generated will be weathered rocks mixed with loose soil that 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 shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.

- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months

Quantity of HSD/ Fuel consumption per day of Stone mine

S. No	Machine	Details of fuel (Diesel) requirements	Consumption of Diesel (in liters/day.)
1	Jack Hammer Drill	Number of Machine=2 Diesel consumption in one shift working. (i.e-10 liters) $=2*8*10=160$ liters	160 liters
2	Excavator	Number of Machine=1 Diesel consumption in one shift working. (i.e- 07litre/hr) $=1*8*7=56$ liters	56 liters
3	Tippers	Number of Tippers= 03 Diesel consumption in one shift working. (i.e-4ltr/hr.) $=3*10*4=120$ Ltr.	120 liters
4	DG Set	Number of DG Set =1(60 KVA) Diesel consumption by one in one shift working.(i.e-16 liter/hr) $=1*10*16=220$ liters	160 liters
5	Water Sprinkler	Number of Sprinkler=02 Diesel consumption by Sprinkler in one shift working (i.e-2ltr/hr). $=2*10*2=40$ liters.	40 ltr.
6	Extra	Transport vehicle, super vision vehicle, maintenance vehicle	100 liters
Total			636

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

[Handwritten signatures and marks]

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.

A [Signature] 60 [Signature] [Signature] [Signature]

- 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.

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

- 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 equipments 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.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF & CC O.M dated 12.12.18 decided that the proposal for Stone Mine Project of Shri Binay Kumar Mandal, Village : Lakhipur & Bhursa, Thana no. : 162 & 163, Distt. : Dhanbad, Jharkhand (1.52 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

6. Soil / Clay (Earth) Mining Project of M/s RBS Bricks (Shri Dhaneshwar Sahu), Village : Arya, Taluka : Basia, Distt. : Gumla, Jharkhand (1.19 Ha).

(Proposal No. SIA/JH/MIN/447299 /2023).

Name of the consultant : AWS Envirotech (OPC) Pvt. Ltd., Lucknow, U.P.

This is a new project which has been taken for appraisal on 09.10.2023.

Project Category : B2- Applied for Environmental Clearance.

EC Application for: Soil/ Clay (Earth) for production of 1584 Cum per annum

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Soil/Clay (Earth) Project
2	Lessee:	: Lessee- M/s RBS Bricks (Sri Dhaneshwar Sahu), Village & PO- Longa & P.S- Basia, District- Gumla, State- Jharkhand
3	Lease Address	: Mouza - Arya, Thana- Basia Thana No.- 133, District- Gumla, State- Jharkhand
4	Lease Area	: 2.95Acres 1.19 ha.
5	Type of Land	: Private Rayati Land
6	Project Cost	: Rs. 40 Lac
7	EMP Budget	: Capital: 5.0 Lac Recurring: 2.0Lacs/year
8	CSR/CER Budget	: 1.50 Lac
9	New or Expansion	: New
10	Mineable Reserves	: 19800 cum
11	Mine Life	: 12.50 years
12	Man power	: 28
13	Water Requirement	: 3.88KLD (Drinking: 0.28 KLD, Dust Suppression: 3.0 KLD, Plantation: 0.6 KLD)
14	Water Source	: Water will be sourced from Abandoned mines through the water tanker for dust suppression and plantation water will be sourced from a bore well within the lease area for drinking and domestic consumptions.
15	DG Set / power	: NA
16	Crusher	: NA
17	Nearest Water Body	: Canal, at approx. 1.00 km towards SW direction
18	Nearest Habitation	: Arya Village, 1.0 km towards SE direction
19	Nearest Rail Station	: Kurkura Railway Station, approx. 13.7 km in ESE direction

20	Nearest Air Port	:	Rourkela Airport, approx. 63.35 km towards S direction.
21	Nearest Forest	:	Nil
22	Road & Highways	:	NH 143 D, approx. 2.2 km, Wdirection

CO-ORDINATES

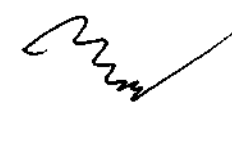
Latitude	Longitude
22°49'30.40" N to 22°49'35.74" N	84°47'53.16" E to 84°47'57.52" E

LAND DETAILS :

Khata No	Plot No
82	699
101	705

STATUTORY CLEARANCES :

1	LOI/Lease docs	:	Land agreement made.
2	CO	:	The CO, Basia vide letter no. : 416 (ii), dated 18.09.2020 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Gumla vide memo no. 847/M, dated 27.09.2023 certified that 01 other mining lease area (6.30 Acre) exists within 500 m radius from proposed project site and total area is 9.25 Acre (3.74 Ha).
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide memo no. : 412, dated 02.06.2020 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	DFO, Gumla Forest Division vide letter no. : 1477, dated 21.08.2020 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla District.

A.     

7	Gram Sabha	:	Gram Sabha conducted on 25.08.2020.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide letter no. 877/M, dated 03.10.2023.

Working Details

1	Mining Method	:	Opencast. Semi mechanized Mining method, wagon drill with blasting	
2	Quarry Area	:	2.10 Acers	Life of Mine – 12.50 years
3	Waste Generation	:	Almost nil; weathered rock with mixed soil may be generated, which will be used for road development	
4	Stripping Ratio	:	0:1	
5	Working Days	:	300	
6	Benches: size & No	:	1m x 1m, Bench No 1 (Conceptual period depth)	
7	Elevation of Mine	:	525 AMSL	
8	Ground Level Elevation	:	525 mAMSL	
9	Ultimate Working Depth	:	524m AMSL	
10	Water Table	:	480m AMSL	
11	Topography of Mine	:	Area represents flat terrain	

Production Details

Year	RL	Section	Surface Area (sq m)	Depth (m)	Volume (cum)	Volume of Bricks (cum)	Total no of bricks production
1st	524.85 to 523.85	A-B	1584	1.00	15484	0.00264	600000
2nd	524.85 to 523.85	A-B	1584	1.00	15484	0.00264	600000
3rd	524.85 to 523.85	A-B	1584	1.00	15484	0.00264	600000
4th	524.85 to 523.85	A-B	1584	1.00	15484	0.00264	600000
5th	524.85 to 523.85	A-B	1584	1.00	15484	0.00264	600000
6th to 12th year	@1584 cum per year						

A     

Land Use

Type of land use	Area (ha)
Quarry	2.10
Top Soil Storage	0.20
Safety Barrier/ Berm	0.15
Chimney and Storage of casted bricks	0.50
Total	2.95

ENVIRONMENT MANAGEMENT

Green Belt Development

- 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

- Waste Generation is almost nil, however if generated will be weathered rocks mixed with loose soil that 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 shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months

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.

A  68    

- I. 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.

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 Soil / Clay (Earth) Mining Project of M/s RBS Bricks (Shri Dhaneshwar Sahu), Village : Arya, Taluka : Basia, Distt. : Gumla, Jharkhand (1.19 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

7. Latu Stone Mine of M/s Neelam Stone Mines (Prop. : Smt. Neelam Singh), Village : Latu, Tehsil : Raidih, Distt. : Gumla, Jharkhand (0.825 Ha).

(Proposal No. SIA/JH/MIN/447135 /2023).

Project Category : B2 – Application for Environment Clearance

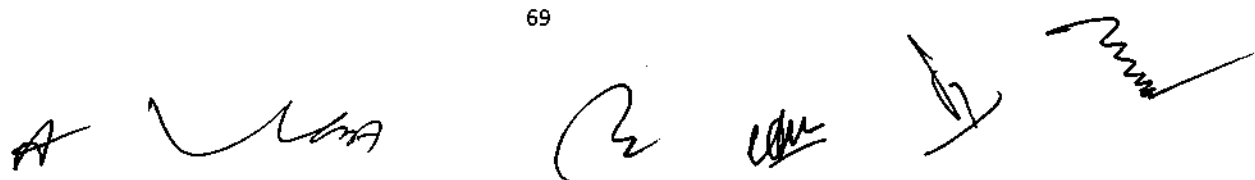
EC Application for : Boulder Stone: 2,673.3 Cu.M./ Year i.e. 7,218 TPA

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

This is a new project which has been taken for appraisal on 09.10.2023.

PROJECT AND LOCATION DETAILS:

Sl.	Parameter	Details
1	Project Name	: Latu Stone Mine
2	Lessee:	: M/s Neelam Stone Mines, (Prop.: Smt. Neelam Singh)
3	Lease Address	: Mouza – Latu, Thana – Raidih
4	Lease Area	: Ha: 0.825 ha. Acres: 2.04 Ac.
5	Type of Land	: Non Forest – Rayati Land
6	Project Cost	: 57.50 Lakhs
7	EMP Budget	: Capital: 6.50 Lakhs Recurring: 3.00 Lakh / year
8	CSR / CER Budget	: Rs. 1.00 Lakhs
9	New or Expansion	: New Project



10	Mineable Reserves	:	Cu. M.: 26482	Tonnes: 71501 Tonnes
11	Mine Life	:	10 years	
12	Man power	:	17	
13	Water Requirement	:	7.00 KLD (Drinking: 1.00 KLD, Dust Suppression: 5.00 KLD, Plantation: 1.00 KLD)	
14	Water Source	:	Dug well for drinking & River water for dust suppression/ green	
15	DG Set / power	:	Not required	
16	Crusher	:	Not within mine lease area	
17	Nearest Water Body	:	Sankh River 1.50 KM	
18	Nearest Habitation	:	Lodam Village: 3.00 KM; Gumla Town: 30 KM	
19	Nearest Rail Station	:	Nagri - 120 KM	
20	Nearest Air Port	:	Ranchi - 130 KM	
21	Nearest Forest	:	Not within 250m	
22	Road & Highways	:	NH 43 - 4.00 KM;	

CO-ORDINATES

1	Latitude		From 22° 58' 45.5119" N	To 22° 58' 49.3031" N
2	Longitude		From 84° 21' 13.9020" E	To 84° 21' 20.9184" E

LAND DETAILS :

Khata No.	Plot No.
166	2106 & 2107
137	2110

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LOI) has been issued by District Mining Officer, Gumla vide letter no. 347/M, dated 08.04.2023.
2	CO	:	The CO, Raidih vide letter no. 467, dated 06.12.2022 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Gumla vide memo no. 868/M, dated 30.09.2023 certified that 03 other mining lease area (3.68 Acre, 5.16 Acre & 1.40 Acre) exists within 500 m radius from proposed project site and total area is 12.28 Acre (4.97 Ha).

4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 1053, dated 25.11.2022 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division vide letter no. 1716, dated 27.08.2022 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.
7	Gram Sabha	:	BDO, Raidih vide letter no. 1014, dated 16.12.2022 informed that Gram Sabha conducted on 05.11.2022.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 576/M, dated 26.06.2023.

Working Details

1	Mining Method	:	Opencast Mechanized.
2	Quarry Area	:	Plan period – 0.165 ha.
3	Waste Generation	:	Plan period – 2436 m ³
4	Stripping Ratio	:	0.092 (overall stripping ratio)
5	Working Days	:	300
6	Benches: Size & No	:	6m x 6m and 3 benches.
7	Elevation of Mine	:	685m AMSL
8	Ground Level Elevation	:	368m AMSL
9	Ultimate Working Depth	:	663 m AMSL
10	Water Table	:	640 m AMSL
11	Topography of Mine	:	Gentle slope from North - West to South - East.
12	Explosive Requirement	:	902 kg/year
13	Diesel/Fuel requirement	:	NA (as DG set not required)

Production Details

Year	Production of stone (Cum)	Production of stone (Tonne)	OB (Cum)	Bench AMSL in Meters
1	2665.32	7196.36	840	675 – 669
2	2673.30	7217.91	1512	675 – 669
3	2633.40	7110.18	-	669 – 663
4	2649.36	7153.27	-	669 – 663
5	2665.32	7196.36	84	669 – 663
Total	13286.70	35874.00	2436	

[Handwritten signatures and marks]

Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Current Plan Period (Ha)	Proposed Land Use at End of Life of Mine (Ha)	Land Usage at Conceptual Stage
1	Mining Area	0.00	0.165	0.459	Water Body- 0.328 ha
2	Dump	0.00	0.063	0.000	
3	Office /Store	0.00	0.000	0.000	
4	Crusher	0.00	0.000	0.000	0.131 ha will be backfilled & Green Belt
5	Road	0.00	0.030	0.000	
6	Safety Zone	0.00	0.366	0.366	
7	Unutilized	0.825	0.201	0.000	-
	TOTAL	0.825	0.825	0.825	

Protection Measures for Post Mine Closure Action Plan

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

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

Total Ware Reservoir Potential in Post Mine Closure = Area x Ultimate Depth

$$= 0.459 \times 100 \times 100 \text{ sqm} \times 18 \text{ m}$$

$$= 82,860 \text{ cum.}$$

ENVIRONMENT MANAGEMENT

Green Belt Development

Sl. No.	LOCATION	Area/Length	No. of Trees
1.	Safety Zone	: 0.366 ha	400 trees
2.	Other Reclaimed Area	: 0.131 ha	100 trees (Conceptual stage)
3.	Haul /Approach Road	: 00 m	00 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.

72

A [Signature] [Signature] [Signature] [Signature] [Signature]

Solid Waste Management

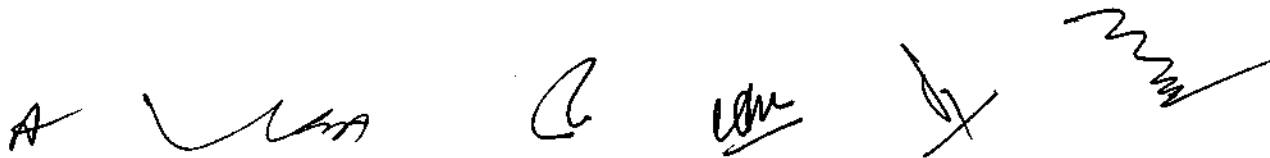
- Total OB to be removed during mining period has been estimated as 2436 M³.
- Mined out OB would be stored in demarcated OB dump area.
- On the end of mining operations, the quantity stored in external dump would be back filled in the western part of mined out quarry.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be used for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made in the outer part of safety barrier 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
- Domestic waste water will not be generated.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission.
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done.
- Use of personal protective equipment like dust mask etc. shall be put in practice.
- Ambient air pollution monitoring shall be carried out every six months.

The bottom of the page features several handwritten signatures and initials in black ink. From left to right, there is a signature that appears to be 'A', followed by a signature that looks like 'Uman', then a signature that looks like 'C', followed by a signature that looks like 'LGM', then a signature that looks like 'J', and finally a signature that looks like 'M'. There are also some other marks and scribbles.

Quantity of HSD/ Fuel consumption per day of Stone mine

S. No.	Machine	Details of fuel (Diesel) requirements	Consumption of Diesel (in liters/day.)
1	Compressor/ Wagon Drill	01	Total Diesel consumption about 80 Litre/day
2	Excavator	01	
3	Dumper	01	
4	DG Set	Not Required	
5	Water Sprinkler	01	
6	Compressor	01	
Total			80

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

[Handwritten signatures and marks at the bottom of the page]

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.

Handwritten signatures and initials at the bottom of the page, including a large 'A' on the left, a stylized 'B' in the center, and several other scribbled marks on the right.

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 equipments 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.

80

A [Signature] [Signature] [Signature] [Signature] [Signature]

- 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 protecting 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 Latu Stone Mine of M/s Neelam Stone Mines (Prop. : Smt. Neelam Singh), Village : Latu, Tehsil : Raidih, Distt. : Gumla, Jharkhand (0.825 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

8. Latu Stone Mine of M/s Neelam Stone Mines (Prop. : Smt. Neelam Singh), Village : Latu, Tehsil : Raidih, Distt. : Gumla, Jharkhand (1.49 Ha).
(Proposal No. SIA/JH/MIN/447115 /2023).

Project Category : B2 – Application for Environment Clearance

EC Application for : Boulder Stone: 26,688 Cu.M./ Year i.e. 72,058 TPA

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

This is a new project which has been taken for appraisal on 09.10.2023.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	: Latu Stone Mine
2	Lessee:	: M/s Neelam Stone Mines, (Prop.: Smt. Neelam Singh)
3	Lease Address	: Mouza – Latu, Thana – Raidih District – Gumla, State – Jharkhand.
4	Lease Area	: Ha: 1.49 ha. Acres: 3.68 Ac.
5	Type of Land	: Non Forest – Rayati Land
6	Project Cost	: 100.30 Lakhs

[Handwritten signatures and initials at the bottom of the page]

7	EMP Budget	:	Capital: 8.50 Lakhs	Recurring: 4.00 Lakh / year
8	CSR / CER Budget	:	Rs. 1.80 Lakhs	
9	New or Expansion	:	New Project	
10	Mineable Reserves	:	Cu. M.: 2,68,272	Tonnes: 7,24,334 Tonnes
11	Mine Life	:	10 years	
12	Man power	:	24	
13	Water Requirement	:	10.00 KLD (Drinking: 1.00 KLD, Dust Suppression: 8.00 KLD, Plantation: 1.00 KLD)	
14	Water Source	:	Dug well for drinking & River water for dust suppression/ green belt	
15	DG Set / power	:	Not required	
16	Crusher	:	Not within mine lease area	
17	Nearest Water Body	:	Sankh River 1.50 KM	
18	Nearest Habitation	:	Lodam Village: 3.00 KM; Gumla Town: 30 KM	
19	Nearest Rail Station	:	Nagri - 120 KM	
20	Nearest Air Port	:	Ranchi - 130 KM	
21	Nearest Forest	:	Not within 250m	
22	Road & Highways	:	NH 43 - 4.00 KM;	

CO-ORDINATES

1	Latitude	From 22° 58' 42.02" N	To 22° 58' 46.55" N
2	Longitude	From 84° 21' 06.16" E	To 84° 21' 16.94" E

LAND DETAILS :

Khata No.	Plot No.
184	2083 & 2103

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Gumla vide letter no. 348/M, dated 08.04.2023.
2	CO	:	The CO, Raidih vide letter no. 468, dated 06.12.2022 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, Gumla vide memo no. 869/M, dated 30.09.2023 certified that 03 other mining lease area (2.04 Acre, 5.16 Acre & 1.40 Acre) exists within 500 m radius from proposed project site and total area is 12.28

			Acre (4.97 Ha).
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 1053, dated 25.11.2022 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division vide letter no. 1716, dated 27.08.2022 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.
7	Gram Sabha	:	BDO, Raidih vide letter no. 1016, dated 17.12.2022 informed that Gram Sabha conducted on 05.11.2022.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 577/M, dated 26.06.2023.

Working Details

1	Mining Method	:	Opencast Mechanized.
2	Quarry Area	:	Plan period – 0.520 ha.
3	Waste Generation	:	Plan period – 23,856 m ³
4	Stripping Ratio	:	0.0858 (overall stripping ratio)
5	Working Days	:	300
6	Bench: Size & No	:	6m x 6m and 4 benches.
7	Elevation of Mine	:	678m AMSL
8	Ground Level Elevation	:	672m AMSL
9	Ultimate Working Depth	:	643 m AMSL
10	Water Table	:	640 m AMSL
11	Topography of Mine	:	Gentle slope from South - East to North - West.
12	Explosive Requirement	:	9,007 kg/year
13	Diesel/Fuel requirement	:	Transport Vehicle & Machineries- 120 Litre/day, (DG set not required)

Production Details

Year	Production of stone (Cum)	Production of stone (Tonne)	OB (Cum)	Bench AMSL in Meters	Production of stone (Cum)
1 st	26,688	72,058	23,856	673 – 670	26,688
2 nd	26,688	72,058	-	670 – 667	26,688
3 rd	26,688	72,058	-	670 – 667	26,688
4 th	26,688	72,058	-	667 - 664	26,688

5 th	26,688	72,058	-	664 - 661	26,688
Total	1,33,440	3,60,290	23,856		1,33,440

Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Current Plan Period (Ha)	Proposed Land Use at End of Life of Mine (Ha)	Land Usage at Conceptual Stage
1	Mining Area	0.00	0.520	0.780	Water Body
2	Dump	0.00	0.380	0.200	Green Belt (backfilled)
3	Office /Store	0.00	0.000	0.000	-
4	Crusher	0.00	0.000	0.000	-
5	Road	0.00	0.000	0.000	-
6	Safety Zone	0.00	0.510	0.510	Green Belt
7	Unutilized	1.49	0.080	0.000	-
	TOTAL	1.49	1.490	1.490	

Protection Measures for Post Mine Closure Action Plan

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

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

Total Ware Reservoir Potential in Post Mine Closure = Area x Ultimate Depth
= 0.78 x 100 x 100 sqm x 54 m
= 4,21,200 cum.

ENVIRONMENT MANAGEMENT

Green Belt Development

Sl. No.	LOCATION		Area/Length	No. of Trees
1.	Safety Zone	:	0.510 ha	550 trees
2.	Other Reclaimed Area	:	0.200 ha	220 trees (Conceptual stage)
3.	Haul /Approach Road	:	50 m	30 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.

Solid Waste Management

Total OB to be removed during mining period has been estimated as 2436 M³.

- **Mined out OB would be stored in demarcated OB dump area.**
- **On the end of mining operations, the quantity stored in external dump would be back filled in the western part of mined out quarry.**

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be used for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.

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

- 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.

Quantity of HSD/ Fuel consumption per day of Stone mine

S. No.	Machine	Details of fuel (Diesel) requirements	Consumption of Diesel (in liters/day.)
1	Jack Hammer Drill	02	Total Diesel consumption about 120 Litre/day
2	Excavator	02	
3	Dumper	03	
4	DG Set	Not Required	
5	Water Sprinkler	01	
6	Compressor	02	
Total			120

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

[Handwritten signatures and marks at the bottom of the page]

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.

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

- 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.

A 









- 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 equipments 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 protecting 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 Latu Stone Mine of M/s Neelam Stone Mines (Prop. : Smt. Neelam Singh), Village : Latu, Tehsil : Raidih, Distt. : Gumla, Jharkhand (1.49 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

9. Makandu Stone Mine of M/s Safari Stone Works (Prop. : Shri Anisur Rahman), Village : Makandu, Tehsil : Kuru, Distt. : Lohardaga, Jharkhand (1.21 Ha).

(Proposal No. SIA/JH/MIN/447034 /2023).

Project Category : B2 – Application for Environment Clearance

EC Application for : Boulder Stone: 18889 Cu.M./ year i.e. 51,000 TPA

Name of the consultant: Crystal Consultants, Ranchi

On request of PAs this project is taken up for appraisal on 11.10.2023.

PROJECT AND LOCATION DETAILS:

Sl	Parameter	Details
1	Project Name	: Makandu Stone Mine
2	Lessee:	: M/s Safari Stone Works, (Proprietor: Sri Anisur Rahman)
3	Lease Address	: Mouza – Makandu, Thana – Kuru District – Lohardaga, State – Jharkhand.
4	Lease Area	: Ha: 1.21 ha. Acres: 3.84 Ac.
5	Type of Land	: Non Forest – Government Land
6	Project Cost	: 78.40 Lakhs
7	EMP Budget	: Capital: 7.00 Lakhs Recurring: 4.00 Lakh / year
8	CSR / CER Budget	: Rs. 1.40 Lakhs
9	New or Expansion	: New Project (Through Auction)
10	Mineable Reserves	: Cu.M.: 1,78,689 Tonnes: 4,82,460 Tonnes
11	Mine Life	: 9 years
12	Man power	: 20

(Handwritten signatures and initials at the bottom of the page)

13	Water Requirement	:	10 KLD (Drinking: 1.0 KLD, Dust Suppression: 8.0 KLD, Plantation: 1.0 KLD)
14	Water Source	:	Dug well for drinking & River water for dust suppression/ green belt
15	DG Set / power	:	Not required
16	Crusher	:	Not within mine lease area
17	Nearest Water Body	:	Koel River 5.00 KM, Sapahi Nala about 0.80 KM.
18	Nearest Habitation	:	Makandu Village: 1.00 KM; Kuru: 5.00 KM
19	Nearest Rail Station	:	Lohardaga - 25.00 KM
20	Nearest Air Port	:	Ranchi - 60.00 KM
21	Nearest Forest	:	Not within 250m
22	Road & Highways	:	Ranchi – Daltanganj Road – 2.50 KM

CO-ORDINATES

1	Latitude	From 23° 30' 40.90" N	To 23° 30' 45.82" N
2	Longitude	From 84° 52' 04.40" E	To 84° 52' 11.46" E

LAND DETAILS

Khata No.	Plot No.
287 (Old : 128)	1223 (P) (Old : 1171/P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by Director of Mines, Deptt. of Mines & Geology, Govt. of Jharkhand vide letter no. Kha. Ni (Nilami)-10/2022/ 1947, dated 14.09.2022.
2	CO	:	The CO, Kuru vide letter no. 1075, dated 07.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Lohardaga vide memo no. 1218/M, dated 11.10.2023 certified that 01 other mining lease area (9.00 Acre) exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 122, dated 15.02.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.

5	DFO Forest Distance	:	Division Forest Officer, Ranchi West Forest Division, Lohardaga vide letter no. 2649, dated 21.12.2011 certified that the distance of forest is 300 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Lohardaga district.
7	Gram Sabha	:	Gram Sabha conducted on 09.01.2011.
8	Mine Plan Approval	:	Approved by DMO, Lohardaga vide Letter No. 575/M, dated 05.12.2022.

Working Details

1	Mining Method	:	Opencast Mechanized.
2	Quarry Area	:	Plan period – 0.40 ha
3	Waste Generation	:	Plan period – 00.00 m ³
4	Stripping Ratio	:	0.080 (overall stripping ratio)
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m and 6 benches.
7	Elevation of Mine	:	693m AMSL
8	Ground Level Elevation	:	687m AMSL
9	Ultimate Working Depth	:	657 m AMSL
10	Water Table	:	652 m AMSL
11	Topography of Mine	:	Hump like
12	Explosive Requirement	:	6,384 kg/year
13	Diesel/Fuel requirement	:	NA (as DG set not required)

Production Details

Year	Production of stone (Cum)	Production of stone (Tonne)	OB (Cum)	Bench AMSL in Meters
1 st	18,915.19	51071	-	687 - 681
2 nd	18,908.15	51052	-	693 - 687
3 rd	18,901.85	51035	-	687 - 675
4 th	18,914.07	51068	-	687 - 681
5 th	18,908.15	51052	-	681 - 669
Total	94,547.41	2,55,278	-	

[Handwritten signatures and marks at the bottom of the page]

Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Current Plan Period (Ha)	Proposed Land Use at End of Life of Mine (Ha)	Land Usage at Conceptual Stage
1	Mining Area	0.250	0.400	0.710	Water Body
2	Dump	0.100	0.100	0.100	Green Belt
3	Office /Store	0.000	0.000	0.000	-
4	Crusher	0.000	0.000	0.000	-
5	Road	0.000	0.020	0.020	-
6	Safety Zone	0.380	0.380	0.380	Green Belt
7	Unutilized	0.480	0.310	0.000	-
	TOTAL	1.210	1.210	1.210	

Protection Measures for Post Mine Closure Action Plan

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

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

Total Ware Reservoir Potential in Post Mine Closure = Area x Ultimate Depth
 = 0.71 x 100 x 100 sqm x 30 m
 = 2,13,000 cum.

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION	Area/Length	No of Trees
1	Safety Zone	: 0.38 ha	450 trees
2	Other Reclaimed Area	: NIL	NIL
3	Haul /Approach Road	: 0.50 km	50 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.

Solid Waste Management

- Total OB to be removed during mining period has been estimated as Nil (already removed).
- Earlier mined out OB has been stored in demarcated OB dump area.
- On the end of mining operations, the quantity stored in external dump would be back filled in the eastern part of mined out quarry.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be used for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made in the outer part of safety barrier 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
- Domestic waste water will not be generated.
- 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.

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

- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done.
- Use of personal protective equipment like dust mask etc. shall be put in practice.
- Ambient air pollution monitoring shall be carried out every six months.

Undertaking submitted affirming:

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

Quantity of HSD/ Fuel consumption per day of Stone mine

S. No.	Machine	Details of fuel (Diesel) requirements	Consumption of Diesel (in liters/day.)
1.	Jack Hammer Drill	01	Total Diesel consumption about 100
2.	Excavator	01	

3.	Dumper	03	Litre/day
4.	DG Set	Not Required	
5.	Water Sprinkler	01	
6.	Compressor	02	
7.	Portable Pump	01	
8.	Rock Breaker	01	
Total			100

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.

A *U* *U* *B* *low* *low* *low*

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

Sl. 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

Sl. 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.

A *WMA* *R* *WMA* *WMA* *WMA*

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.

A [Signature] 102 [Signature] [Signature] [Signature]

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 equipments 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.

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 Makandu Stone Mine of M/s Safari Stone Works (Prop. : Shri Anisur Rahman), Village : Makandu, Tehsil : Kuru, Distt. : Lohardaga, Jharkhand (1.21 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

10. Dalmadih Stone Deposit of M/s Tijraj Buildcon (Partners : Shri Vikas Kumar Sahu & Shri Deepak Prasad), Village : Dalmadih, Tehsil : Basia, Distt. : Gumla, Jharkhand (2.496 Ha).
(Proposal No. SIA/JH/MIN/447308 /2023).

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

This is a new project which has been taken for appraisal on 09.10.2023.

Project Category: B2 – Application for Environment Clearance

EC Application for: Stone Mining (57941 Cum Per Annum or 162233 Tonnes Per Annum)

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	: DALMADIH STONE DEPOSIT OF M/S TIJRAJ BUILDCON
2	Lessee:	: TIJRAJ BUILDCON PARTNERS : SHRI VIKAS KUMAR SAHU & SHRI DEEPAK PRASAD
3	Lease Address	: AT VILLAGE – DALMADIH, THANA – BASIA, DISTRICT – GUMLA STATE – JHARKHAND
4	Lease Area	: 2.496 Ha. Acres: 6.17 Acres
5	Type of Land	: Non Forest – Rayati Land
6	Project Cost	: 37,00,000 Lakhs
7	EMP Budget	: Capital: 15,82,000 Lakhs Recurring: 1,58,200 Lakh / year
8	CSR / CER Budget	: -
9	New or Expansion	: New Project
10	Mineable Reserves	: Cu.M.: 289565 Cum Tonnes: 810781
11	Mine Life	: 5years

(Handwritten signatures and marks)

12	Man power	:	55
13	Water Requirement	:	550 litres of potable water and 30 KLD for industrial use
14	Water Source	:	From nearby villages/Nearest Canal by tankers
15	DG Set / power	:	0 KVA
16	Crusher	:	1 (Capacity-60 TPH)
17	Nearest Water Body	:	South Koel, approx. 5 Km towards North-East direction
18	Nearest Habitation	:	Kurkura approx.9 km towards East direct
19	Nearest Rail Station	:	Kurkura Railway Station., approx. 9.98 km towards East direction.
20	Nearest Air Port	:	Birsa Airport Ranchi, approx. 76.80 km towards North East direction.
21	Nearest Forest	:	Nil
22	Road & Highways	:	State Highway 3 – Approx. 6.29 km towards NW direction.

CO-ORDINATES

1	Latitude	From 22°47'43.016"N	To 22°47'48.397"N
2	Longitude	From 84°49'38.960E	To 84°49'49.286"E

LAND DETAILS :

Khata No.	Plot No.
75	882 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (Loi) has been issued by Deputy Commissioner, Gumla vide letter no. 751/M, dated 28.08.2023.
2	CO	:	The CO, Basia vide letter no. 144, dated 14.03.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyon & Register II.
3	DMO	:	DMO, Gumla vide memo no. 897/M, dated 06.10.2023 certified that 01 other mining lease area (6.00 Acre) exists within 500 m radius from proposed project site and total area is 12.17 Acre (4.92 Ha).
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 984, dated 30.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division vide letter no. 478, dated 23.02.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.

6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.
7	Gram Sabha	:	BDO, Basia vide memo no. 368 (ii), dated 28.03.2023 informed that Gram Sabha conducted on 22.03.2023.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 887/M, dated 05.10.2023.

Working Details

1	Mining Method	:	Opencast Method, Manual
2	Quarry Area	:	5 years – 2.496 ha. Life of Mine – 5 Year
3	Waste Generation	:	8871 Cum gritty soil, 15240 cum Intercalated Waste Life of Mine – 5 Year
4	Stripping Ratio	:	00:05 cum/ tonne
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Elevation of Mine	:	Highest elevation: 548m AMSL Lowest elevation: 500m AMSL
8	Ground Level Elevation	:	548m – 538m RL
9	Ultimate Working Depth	:	500 m
10	Water Table	:	487m in Post Monsoon to 480m in Pre Monsoon AMSL
11	Topography of Mine	:	Undulatory
12	Explosive Requirement	:	94.5 Kg
13	Diesel/Fuel requirement	:	300 Litres/day

Production Details

Year	Production of stone (Cum)	Production of stone (Tonne)	Removal of gritty soil in cum	Intercalated waste in cum	Bench RL in Meters
1 st	57861	162010	3336	3045	548-530
2 nd	57922	162183	2430	3049	548-524
3 rd	57941	162233	3105	3050	548-536
4 th	57938	162225	000	3049	536-524
5 th	57891	162095	000	3047	524-500
Total	289553	810746	8871	15240	

(Handwritten signatures and marks)

Land Use

Protection Measures for Post Mine Closure Action Plan

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

A warning sign board will be erected at the site giving general information about the hazards at the site.

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)			
				Back-fill	Stone pitching wall	Water Body	Plantation
Quarry	Nil	1.866 (including Backfill 0.389 Ha, Stone pitching wall 0.003 Ha. & Proposed Crusher 0.040Ha.)	1.866 (including Backfill 0.389 Ha, Stone pitching wall 0.003 Ha.	0.383	0.002	1.225	0.256 (Dead bench plantation)
Greenbelt within Safety Barrier	Nil	0.630	0.630	---	---	---	0.630
Road	0.016	Nil	Nil	---	---	---	---
Total Area in Use	0.016	2.496	2.496	0.383	0.002	1.225	0.886
Balanced Area unused	2.480	Nil	Nil	---	---	---	---
Total Applied Area	2.496	2.496	2.496	2.496			

The periphery of the water reservoir pit will be secured by constructing a parapet wall or gabion walls.

Plantation is also proposed at the backfilled area along with around the benches.

Total Water Reservoir Potential in Post Mine Closure – Area x Ultimate Depth
 = 2.496x100x100 sqm x 48 m
 =11,98,080 cum.

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No. of Trees
1	Safety Zone	:	0.63ha.	1575 trees
2	Other Reclaimed Area	:	NIL	NIL
3	Safety Zone	:	0.63	1575 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.

Solid Waste Management

The entire produce of boulder stone will be used as building material.

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. During rainy season to prevent dump failure/soil erosion, toe-wall with weep-holes and garland drains will be constructed.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be used for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside

- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Quantity of HSD/ Fuel consumption per day of Stone mine

S. No	Machine	Details of fuel (Diesel) requirements	Consumption of Diesel (in liters/day.)
1	Wagon Drill	Number of Machine=2	40 liters
2	Hydraulic Excavator	Number of Machine=3	50 liters
3	Compressor	Number of Tippers= 02	30 liters
4	Jack Hammer	No. of Jack hammer= 02	35 litres
5	Rock breakers	No. of rock breakers= 02	40 litres
6	Crusher	No. of crusher= 01	105 litres
7	Tippers	No. of tippers= 04	30 litres
Total			300

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

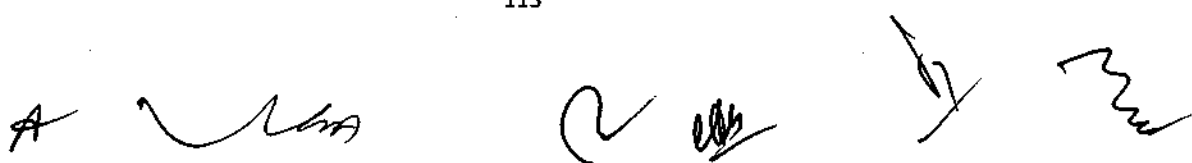
The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

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.

A  114    

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 equipments 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.

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 Dalmadih Stone Deposit of M/s Tijraj Buildcon (Partners : Shri Vikas Kumar Sahu & Shri Deepak Prasad), Village : Dalmadih, Tehsil : Basia, Distt. : Gumla, Jharkhand (2.496 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

**11. Dalmadih Stone Deposit of M/s Rajsons Metco (Partners : Smt. Upnit Shree & Smt. Damyanti Sahu), Village : Dalmadih, Tehsil : Basia, Distt. : Gumla, Jharkhand (2.428 Ha).
(Proposal No. SIA/JH/MIN/447317 /2023).**

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

This is a new project which has been taken for appraisal on 09.10.2023.

Project Category: B2 – Application for Environment Clearance

EC Application for: Stone Mining (97665 Cum Per Annum or 273463 Tonnes Per Annum)

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	: DALMADIH STONE DEPOSIT OF M/S RAJONS METCO
2	Lessee:	: RAJONS METCO PARTNER: SMT. UPNIT SHREE & SMT. DAMYANTI SAHU
3	Lease Address	: AT VILLAGE – DALMADIH, THANA – BASIA, DISTRICT – GUMLA STATE – JHARKHAND
4	Lease Area	: 2.428 Ha. Acres:6.00Acres
5	Type of Land	: Non Forest – Rayati Land
6	Project Cost	: 37,00,000 Lakhs
7	EMP Budget	: Capital: 15,82,000 Lakhs Recurring: 1,58,200 Lakh / year
8	CSR / CER Budget	: -
9	New or Expansion	: New Project
10	Mineable Reserves	: Cu.M.:488320Cum Tonnes:1367295
11	Mine Life	: 5years
12	Man power	: 65
13	Water Requirement	: 550 litres of potable water and 30 KLD for industrial use
14	Water Source	: From nearby villages/Nearest Canal by tankers
15	DG Set / power	: 0 KVA
16	Crusher	: -
17	Nearest Water Body	: South Koel, approx. 5 Km towards North-East direction
18	Nearest Habitation	: Kurkura approx.9 km towards East direct
19	Nearest Rail Station	: Kurkura Railway Station., approx. 9.86 km towards East direction.
20	Nearest Air Port	: Birsa Airport Ranchi, approx. 76.81 km towards North East direction.
21	Nearest Forest	: Nil
22	Road & Highways	: State Highway3- Approx6.53 km towards NW direction.

CO-ORDINATES

1	Latitude	From 22°47'40.156"N	To 22°47'47.962"N
2	Longitude	From 84°49'46.623"E	To 84°49'52.530"E

LAND DETAILS :

Khata No.	Plot No.
75	882 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by Deputy Commissioner, Gumla vide letter no. 752/M, dated 28.08.2023.
2	CO	:	The CO, Basia vide letter no. 145, dated 14.03.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyon & Register II.
3	DMO	:	DMO, Gumla vide memo no. 896/M, dated 06.10.2023 certified that 01 other mining lease area (6.17 Acre) exists within 500 m radius from proposed project site and total area is 12.17 Acre (4.92 Ha).
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 984, dated 30.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division vide letter no. 479, dated 23.02.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.
7	Gram Sabha	:	Gram Sabha conducted on 22.03.2023.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 888/M, dated 05.10.2023.

Working Details

1	Mining Method	:	Opencast Method, Manual	
2	Quarry Area	:	5 years–2.428 ha.	Life of Mine – 5 Year
3	Waste Generation	:	7651 Cum gritty soil, 25696 cum Intercalated Waste	Life of Mine – 5Year
4	Stripping Ratio	:	NA	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	Highest elevation: 544mAMSL Lowest elevation: 496m AMSL	
8	Ground Level Elevation	:	544m – 538m RL	

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

9	Ultimate Working Depth	: 496 m AMSL
10	Water Table	: 487m in Post Monsoon to 480m in Pre Monsoon AMSL
11	Topography of Mine	: Undulatory
12	Explosive Requirement	: 157.5 Kg
13	Diesel/Fuel requirement	: 300 Litres/day

Production Details

Year	Production of stone (Cum)	Production of stone (Tonne)	Removal of gritty soil in cum	Intercalated waste in cum	Bench RL in Meters
1 st	97664	273459	5046	5139	544-532
2 nd	97665	273463	1035	5140	538-526
3 rd	97664	273459	000	5139	532-520
4 th	97665	273463	000	5140	520-502
5 th	97662	273451	1570	5138	544-496
Total	488320	1367295	7651	25696	

Land Use

Protection Measures for Post Mine Closure Action Plan

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

A warning sign board will be erected at the site giving general information about the hazards at the site

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)			
				Back-fill	Stone pitching wall	Water Body	Plantation
Quarry	Nil	1.895 (including backfill 0.446 Ha. & stone pitching wall 0.025 Ha.)	1.895 (including backfill 0.446 Ha. & stone pitching wall 0.025 Ha.)	0.117	0.011	1.628	0.139 (Dead bench plantation)

Greenbelt within Safety Barrier	Nil	0.533	0.533	----	----	----	0.533
Road	0.012	Nil	Nil	----	----	----	----
Total Area in Use	0.012	2.428	2.428	0.117	0.011	1.628	0.672
Balanced Area unused	2.416	Nil	Nil	----	----	----	----
Total Applied Area	2.428	2.428	2.428	2.428			

The periphery of the water reservoir pit will be secured by constructing a parapet wall or gabion walls.

Plantation is also proposed at the backfilled area along with around the benches.

Total Water Reservoir Potential in Post Mine Closure = Area x Ultimate Depth
= 2.428x100x100 sqm x 48 m
=11,65,440cum.

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No. of Trees
1	Safety Zone	:	0.53ha.	1335 trees
2	Other Reclaimed Area	:	NIL	NIL
3	Safety Zone	:	0.53	1335trees

- 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

The entire produce of boulder stone will be used as building material.

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. During

rainy season to prevent dump failure/soil erosion, toe-wall with weep-holes and garland drains will be constructed.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be used for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Quantity of HSD/ Fuel consumption per day of Stone mine

S. No	Machine	Details of fuel (Diesel) requirements	Consumption of Diesel (in liters/day.)
1	Wagon Drill	Number of Machine=2	40 liters
2	Hydraulic Excavator	Number of Machine=4	50 liters
3	Compressor	Number of Tippers= 02	30 liters
4	Jack Hammer	No. of Jack hammer= 02	35 litres
5	Rock breakers	No. of rock breakers= 02	40 litres
7	Tippers	No. of tippers= 05	105 litres
Total			300

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

A [Signature] [Signature] [Signature] [Signature]

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.

Handwritten signatures and marks at the bottom of the page, including a large 'A' followed by a wavy line, a stylized 'B', a signature, a checkmark, and a wavy line.

- 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 equipments 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.

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 Dalmadih Stone Deposit of M/s Rajsons Metco (Partners : Smt. Upnit Shree & Smt. Danyanti Sahu), Village : Dalmadih, Tehsil : Basia, Distt. : Gumla, Jharkhand (2.428 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

12. Barmartola Itra Stone Block of M/s F.D. Enterprises & Construction Pvt. Ltd., Village : Itra, Tehsil : Kuru, Distt. : Lohardaga, Jharkhand (0.81 Ha).

(Proposal No. SIA/JH/MIN/ 447318 /2023).

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

This is a new project which has been taken for appraisal on 09.10.2023.

Project Category : B2 – Application for Environment Clearance

EC Application for : Earthwork /Soil Mining (9095.55 cum Per Annum i.e. 24558 Tonnes Per Annum)

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	: Barmartola Itra Stone Block
2	Lessee:	: M/s F.D. Enterprises & Construction Pvt. Ltd.
3	Lease Address	: Village: Itra, Tehsil : Kuru, Distt. : Lohardaga
4	Lease Area	: 0.81 Ha Acres: 2.00
5	Type of Land	: Non-Forest & Government Land
6	Project Cost	: 37.00 Lakhs
7	EMP Budget	: Capital: 34.157 Lakhs Recurring:0.787 Lakh / year
8	CSR / CER Budget	: NIL
9	New or Expansion	: New Project
10	Mineable Reserves	: Cu.M.: 90956 Tonnes: 245581
11	Mine Life	: 10 years
12	Man power	: 10
13	Water Requirement	: 32.20 KLD=1.20 KLD (Drinking & Domestic Uses) + 1.00 KLD (Plantation) KLD + 30 KLD (Dust Suppression).
14	Water Source	: Hired water tankers from authorize source.
15	DG Set / power	: 0 KVA
16	Crusher	: --
17	Nearest Water Body	: South Koel River, Approx. 3.50 Km towards North-East direction
18	Nearest Habitation	: Lohardaga approx. 5 Km
19	Nearest Rail Station	: Lohardaga Railway Station, 19Km.
20	Nearest Air Port	: Birsa Airport Ranchi, approx. 50 km away.
21	Nearest Forest	: Huddu Pahar open mix jungle, 300m away.
22	Road & Highways	: National Highway is about 5 Km away.

CO-ORDINATES

1	Latitude	From 23°29'21.91"N	To 23°29'25.51"N
2	Longitude	From 84°53'35.45"E	To 84°53'40.23"E

A [Signature] 30 [Signature] [Signature]

LAND DETAILS :

KHATA NO.	PLOT NO.
203 (new)	1643 (new)
172 (old)	1334 (old)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by Director of Mines, Deptt. of Mines & Geology, Govt. of Jharkhand vide letter no. Kha. Ni (Nilami)-12/2022/ 1995, dated 20.09.2022.
2	CO	:	The CO, Kuru vide letter no. 1047, dated 01.12.2022 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, Lohardaga vide memo no. 1144/M, dated 30.09.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 908, dated 01.10.2022 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. 2712, dated 13.10.2022 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Lohardaga district.
7	Gram Sabha	:	BDO, Kuru vide letter no. 1256/Ra, dated 02.12.2022 informed that Gram Sabha conducted on 07.11.2022.
8	Mine Plan Approval	:	Approved by DMO, Lohardaga vide Letter No. 471/M, dated 08.10.2022.

Working Details

1	Mining Method	:	Opencast Mechanized Mining
2	Quarry Area	:	5 years – 0.53 ha. Life of Mine – 10 Year
3	Waste Generation	:	5 years– Life of Mine – 10 Year
4	Stripping Ratio	:	NA

5	Working Days	:	200
6	Bench: size & No	:	6m x 6m
7	Elevation of Mine	:	Highest elevation: 690m AMSL Lowest elevation: 688m AMSL
8	Ground Level Elevation	:	688 m AMSL to 684m AMSL
9	Ultimate Working Depth	:	661 m AMSL
10	Water Table	:	658.73 m AMSL (Post Monsoon) Source-Approved DSR(Stone) Latitude-23°29'43.30"N Longitude-84°53'53.60"E Distance-700m from project area in NNE direction
11	Topography of Mine	:	Undulatory
12	Explosive Requirement	:	Nil
13	Diesel/Fuel requirement	:	300 Litres /day

Production Details

Year	Annual Production (cum)	Annual Production (cum)
1st	9095.555	24558.00
2nd	9095.555	24558.00
3rd	9095.555	24558.00
4th	9095.555	24558.00
5th	9095.555	24558.00
Total	45,477.775	1,22,790.00

Land Use

Type of land use	Present Land Use (In Ha.)	At the end of Plan Period (In Ha.)	At the end of life of mines (In Ha.)	Conceptual Stage
Quarry	0.07	0.53	0.57	Converted in Water Body
Infrastructure	0.00	0.01	0.00	--
Road	0.01	0.01	0.01	Public Use
Garland Drain	0.00	0.02	0.00	--
Green Belt Within Safety Barrier	0.23	0.23	0.23	Plantation
Settling Tank	0.00	0.1	0.00	--
Total area in use	0.31	0.81	0.81	

Balance area unused	0.50	0.00	0.00	
Total Applied area	0.81	0.81	0.81	

Protection Measures for Post Mine Closure Action Plan

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

A warning sign board will be erected at the site giving general information about the hazards at the site.

The periphery of the water reservoir pit will be secured by constructing a parapet wall or gabion walls.

Plantation is also proposed at the backfilled area along with around the benches.

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area (Ha.)	No. of Trees
1	Safety Zone	:	0.23	250
2	Approach Road	:	0.03	80
Total		:	0.26	330

- 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.

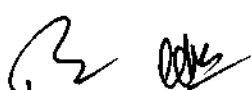
Solid Waste Management

The entire produce of boulder stone will be used as building material.

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. During rainy season to prevent dump failure/soil erosion, toe-wall with weep-holes and garland drains will be constructed.

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.

A    

- The rain water during rainy season will be collected in a pit and shall be used for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months

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.

A

[Signature]

[Signature]

[Signature]

- 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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Quantity of HSD/ Fuel consumption per day of Barmartola Itra Stone mine

S. No	Machine	Details of fuel (Diesel) requirements	Consumption of Diesel (in liters/day.)
1	Wagon Drill	Number of Machine=2	40 liters
2	Hydraulic Excavator	Number of Machine=3	50 liters
3	Compressor	Number of Tippers= 02	30 liters
4	Jack Hammer	No. of Jack hammer= 02	35 litres
5	Rock breakers	No. of rock breakers= 02	40 litres
6	Crusher	No. of crusher= 01	105 litres
7	Tippers	No. of tippers= 04	30 litres
Total			300

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.

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

- 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 equipments 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.

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 Barmartola Itra Stone Block of M/s F.D. Enterprises & Construction Pvt. Ltd., Village : Itra, Tehsil : Kuru, Distt. : Lohardaga, Jharkhand (0.81 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

13. Brick Soil Mining for M/s Aman Bricks (Prop. : Shri Ram Lakhan Prasad), Village : Serenghatu, Thana : Senha, Thana no. : 192, Distt. : Lohardaga, Jharkhand (2.118 Ha).

(Proposal No. SIA/JH/MIN/447323 /2023).

Project Category: B2 – Application for Environment Clearance

EC Application for: Earthwork / Soil Mining (1200 Cum Per Annum & 6,00,000 Bricks Per Annum)

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

This is a new project which has been taken for appraisal on 09.10.2023.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	BRICK SOIL MINING FOR M/s AMAN BRICKS
2	Lessee:	M/s AMAN BRICKS PROPRIETOR: RAM LAKHAN PRASAD
3	Lease Address	AT VILLAGE – BARHI, THANA – SENHA, DISTRICT – LOHARDAGA, STATE – JHARKHAND, PIN CODE, - 835302.
4	Lease Area	2.118 Ha. Acres: 5.235 Acres
5	Type of Land	Non Forest – Rayati Land
6	Project Cost	7.50 Lakhs
7	EMP Budget	Capital: 0.975 Lakhs Recurring: 2.75 Lakh / year
8	CSR / CER Budget	-
9	New or Expansion	New Project
10	Mineable Reserves	Cu.M.: 34889 Cum Tonnes:
11	Mine Life	34 years
12	Man power	10
13	Water Requirement	6.0 KLD=0.4 KLD (Drinking & Domestic Uses) + 1.6 (Plantation) KLD + 4.0 KLD (Dust Suppression).
14	Water Source	From nearby villages/Nearest Canal by tankers
15	DG Set / power	0 KVA
16	Crusher	--
17	Nearest Water Body	South Koel River, Approx. 2.29 Km towards East direction
18	Nearest Habitation	Serenghatu approx. 0.5 km towards NW
19	Nearest Rail Station	Lohardaga Railway Station., approx. 5.35 km towards North.
20	Nearest Air Port	Birsa Airport Ranchi, approx. 65.86 km towards WSW.
21	Nearest Forest	Protected Forest- Approx. 2.21 Km towards West
22	Road & Highways	National Highway 143 - Approx 1.90 km towards NE.

CO-ORDINATES

1	Latitude	From N192°52'36.56"	To N192°52'32.82"
2	Longitude	From E84°06'54.32"	To E84°06'45.50"

LAND DETAILS :

Khata No.	Plot No.
79, 112 & 132	118, 81, 77, 78, 84, 85 & 86

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease agreement made.
2	CO	:	The CO, Senha (Lohardaga) vide letter no. 921 (A), dated 22.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Lohardaga vide memo no. 1145/M, dated 30.09.2023 certified that 01 other mining lease area (2.77 Acre) exists within 500 m radius from proposed project site and total area is 8.00 Acre (3.23 Ha).
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 649, dated 13.07.2023 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. 1181, dated 27.06.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Lohardaga district.
7	Gram Sabha	:	BDO, Senha (Lohardaga) vide letter no. 214, dated 02.08.2023 Gram Sabha conducted on 26.07.2023.
8	Mine Plan Approval	:	Approved by DMO, Lohardaga vide Letter No. 1184/M, dated 05.10.2023.

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

Working Details

1	Mining Method	:	Opencast Method, Manual
2	Quarry Area	:	5 years – 2.118 ha. Life of Mine – 34 Year
3	Waste Generation	:	5 years– 695 cum (topsoil) Life of Mine – 34 Year
4	Stripping Ratio	:	NA
5	Working Days	:	200
6	Benches: size & No	:	1m x 1m
7	Elevation of Mine	:	Highest elevation: 690m AMSL Lowest elevation: 688m AMSL
8	Ground Level Elevation	:	688 m AMSL
9	Ultimate Working Depth	:	686 m AMSL
10	Water Table	:	679 m AMSL (Post Monsoon)
11	Topography of Mine	:	Undulatory
12	Explosive Requirement	:	Nil
13	Diesel/Fuel requirement	:	Nil

Production Details

Year	Production of Recoverable Soil Volume (in Cum)	Production of Brick Blocks (in Nos.)
1st	1200	6,00,000
2nd	1200	6,00,000
3rd	1200	6,00,000
4th	1200	6,00,000
5th	1200	6,00,000
Total	6000	30,00,000

Land Use

Type of land use	Present Land Use (In Ha.)	At the end of Plan Period (In Ha.)	At the end of life of mines (In Ha.)
Quarry	0.00	0.358	2.020
Road	0.011	0.00	0.00
Green Belt Within Safety	0.00	0.098	0.098

Barrier			
Total area in use	0.011	0.456	2.118
Balance area unused	2.107	1.662	0.00
Total Applied area	2.118	2.118	2.118

Protection Measures for Post Mine Closure Action Plan

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

A warning sign board will be erected at the site giving general information about the hazards at the site.

The periphery of the water reservoir pit will be secured by constructing a parapet wall or gabion walls.

Plantation is also proposed at the backfilled area along with around the benches.

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area (Ha.)	No. of Trees
1	Safety Zone	:	0.098	245
2	Approach Road	:	0.048	80
Total		:	0.146	325

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

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be used for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to

(Handwritten signatures and initials)

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

- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

Undertaking submitted affirming:

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

A  146    

- I. 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.

Risk & Hazards Management

Risk Assessment

It is a small manual mining by tractor & haulage. No major risk is anticipated.

Some anticipated risks are briefed below;

Minor Injuries

In Course of project activities during excavation of soil and its loading into tractor. There might be some minor personal Injury.

Road Accident

In course of haulage of soil to Brick kiln by tractor, road accident may happen.

Disaster Management Plan

i) Road Safety

Tractor driven will be instructed to ensure that speed of tractor on public road should be restricted to 15 KMPH.

Haulage road would be repaired & maintained regularly.

ii) An information centre would be maintained at office with telephone contact no. of local police station and hospital. In case of a road accident, police will be informed and arrangements would be made for medical aid to injured person.

iii) Arrangement for first aid to minor injuries to personnel working in the mine would be made in Temporary office.

Top Soil Management

During quarry development an amount of 695 cum of fertile top-soil will be generated and this produced top-soil will be preserved temporarily by dumping. This preserved top-soil will be spread concurrently over the excavated part of the land after the end of each year production of brick soil and grass cultivation will be done on it.

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 Aman Bricks (Prop. : Shri Ram Lakhani Prasad), Village : Serenghatu, Thana : Senha, Thana no. : 192, Distt. : Lohardaga, Jharkhand (2.118 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

A     

14. Brick Soil Mining for M/s Dipak Bricks (Prop. : Shri Nandlal Sahu), Village : Nigni, Thana : Lohardaga, Thana no. : 144, Distt. : Lohardaga, Jharkhand (0.76 Ha).

(Proposal No. SIA/JH/MIN/447330 /2023).

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

This is a new project which has been taken for appraisal on 09.10.2023.

Project Category: B2 – Application for Environment Clearance

EC Application for: Earthwork / Soil Mining (1200 Cum Per Annum & 6,00,000 Bricks Per Annum)

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	: BRICK SOIL MINING FOR M/s DIPAK BRICKS
2	Lessee:	: M/s DIPAK BRICKS PROPRIETOR: NANDLAL SAHU
3	Lease Address	: AT VILLAGE – NIGNI, THANA – LOHARDAGA, DISTRICT – LOHARDAGA, STATE – JHARKHAND, PIN CODE. – 835302.
4	Lease Area	: 0.76 Ha. Acres: 1.89 Acres
5	Type of Land	: Non Forest – Rayati Land
6	Project Cost	: 5.50 Lakhs
7	EMP Budget	: Capital: 0.53 Lakhs Recurring: 2.75 Lakh / year
8	CSR / CER Budget	: -
9	New or Expansion	: New Project
10	Mineable Reserves	: Cu.M.: 12336 Cum Tonnes:
11	Mine Life	: 10 years
12	Man power	: 10
13	Water Requirement	: 6.0 KLD=0.4 KLD (Drinking & Domestic Uses) + 1.6 (Plantation) KLD + 4.0 KLD (Dust Suppression).
14	Water Source	: From nearby villages/Nearest Canal by tankers
15	DG Set / power	: 0 KVA
16	Crusher	: --
17	Nearest Water Body	: South Koel River, Approx. 4.56 Km towards East direction
18	Nearest Habitation	: Lohardaga approx. 3.70 km towards South-East direction
19	Nearest Rail Station	: Lohardaga Railway Station., approx. 3.63 km towards East direction.
20	Nearest Air Port	: Birsa Airport Ranchi, approx. 68.46 km towards South-East direction.
21	Nearest Forest	: Chitrauli Protected Forest in approx. 5km in SW direction.
22	Road & Highways	: National Highway 143A - Approx 1.90 km towards SE direction

A

U

148

CSM

12

W

CO-ORDINATES

1	Latitude	From N23°26'54.40"	To N23°27'00.12"
2	Longitude	From E84°40'16.67"	To E84°40'19.47"

LAND DETAILS :

Khata No.	Plot No.
564	New : 2434 Old : 2159

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease agreement made.
2	CO	:	The CO, Lohardaga (Sadar) vide letter no. 1260 (I), dated 20.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Lohardaga vide memo no. 1163/M, dated 03.10.2023 certified that 01 other mining lease area (2.36 Acre) exists within 500 m radius from proposed project site and total area is 4.54 Acre.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 989, dated 03.10.2023 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. 1517, dated 19.08.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Lohardaga district.
7	Gram Sabha	:	BDO, Lohardaga Sadar vide letter no. 888, dated 03.10.2023 Gram Sabha conducted on 18.09.2023.
8	Mine Plan Approval	:	Approved by DMO, Lohardaga vide memo No. 1188/M, dated 06.10.2023.

Working Details

1	Mining Method	:	Opencast Method, Manual
2	Quarry Area	:	5 years – 0.354 ha. Life of Mine – 10Year
3	Waste Generation	:	700 cum (topsoil) Life of Mine – 10 Year
4	Stripping Ratio	:	NA
5	Working Days	:	200
6	Bench: size & No	:	1m x 1m
7	Elevation of Mine	:	Highest elevation: 697m AMSL Lowest elevation: 695m AMSL
8	Ground Level Elevation	:	697-698 m AMSL
9	Ultimate Working Depth	:	2m
10	Water Table	:	678m AMSL in Pre Monsoon to 686m AMSL in Post Monsoon
11	Topography of Mine	:	Almost flat
12	Explosive Requirement	:	Nil
13	Diesel/Fuel requirement	:	Nil

Production Details

Year	Production of Recoverable Soil Volume (in Cum)	Production of Brick Blocks (in nos.)
1 st	1200	6,00,000
2 nd	1200	6,00,000
3 rd	1200	6,00,000
4 th	1200	6,00,000
5 th	1200	6,00,000
Total	6000	30,00,000

Land Use Pattern after Proposed Plan Period (5 Years Plan Period):

Category	Area in Ha.	Area in Acres
Quarry	0.354	0.87
Plantation in Safety Barrier	0.041	0.10
Total Area in Used	0.395	0.97
Balance Unused Area	0.365	0.90
Total Applied Area	0.760	1.89

Land Use Pattern after Life of the Mine:

Category	Area in Ha.	Area in Acres
Quarry	0.719	1.77
Green Belt	0.419	1.02
Total Area in Used	0.760	1.89

A

U

50

100

150

200

Balance Unused Area	Nil	Nil
Total Applied Area	0.760	1.89

Protection Measures for Post Mine Closure Action Plan

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

A warning sign board will be erected at the site giving general information about the hazards at the site.

The periphery of the water reservoir pit will be secured by constructing a parapet wall or gabion walls.

Plantation is also proposed at the backfilled area along with around the benches.

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION	Area/Length	No. of Trees
1	Safety Zone	0.041 ha.	105
2	Approach road	040	80
	Total	0.081	185 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.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be used for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.

[Handwritten signatures and marks at the bottom of the page]

- 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

- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

Undertaking submitted affirming:

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

Risk & Hazards Management

Risk Assessment

It is a small manual mining by tractor & haulage. No major risk is anticipated.

Some anticipated risks are briefed below;

Minor Injuries

In Course of project activities during excavation of soil and its loading into tractor. There might be some minor personal Injury.

Road Accident

In course of haulage of soil to Brick kiln by tractor, road accident may happen.

Disaster Management Plan

i) Road Safety

Tractor driven will be instructed to ensure that speed of tractor on public road should be restricted to 15 KMPH.

Haulage road would be repaired & maintained regularly.

ii) An information centre would be maintained at office with telephone contact no. of local police station and hospital. In case of a road accident, police will be informed and arrangements would be made for medical aid to injured person.

iii) Arrangement for first aid to minor injuries to personnel working in the mine would be made in Temporary office.

Top Soil Management

During quarry development an amount of 695 cum of fertile top-soil will be generated and this produced top-soil will be preserved temporarily by dumping. This preserved top-soil will be spread concurrently over the excavated part of the land after the end of each year production of brick soil and grass cultivation will be done on it.

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 Dipak Bricks (Prop. : Shri Nandlal Sahu), Village : Nigni, Thana : Lohardaga, Thana no. : 144, Distt. : Lohardaga, Jharkhand (0.76 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – i.

A UMA C edk J m

15. Amlagachhi Stone Mine of M/s Maa Durga Stone Works (Prop. : Shri Soumitro Ghosh), Village : Amlagachhi, Block Office : Maheshpur, Thana : Maheshpur (10), Distt. : Pakur, Jharkhand (1.28 Ha).

(Proposal No. SIA/JH/MIN/444140 /2023).

Applied Area : 3.16 ACRES (1.28 Ha.)

Project Category :B1 – Application for ToR (Cluster)

EC Application for : 44209 cum / year (max)

Overburden: 24696 cum. during plan period..

DG Set: NA

Crusher- Notproposed

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

This is a existing project which has been taken for appraisal on 09.10.2023.

PROJECT and LOCATION Details:

Sl.	Parameter	Details
1	Project Name	Amlagachhi Stone Mine Project Type – Stone Mine
2	Lessee:	Shri Soumitro Ghosh
3	Lease Address	Village- Amlagachhi , Block Office .-Maheshpur, Thana- Maheshpur (10) ,District-Pakur , Jharkhand
4	Lease Area	Ha: 1.28 Acres: 3.16
5	Type of Land	Non-Forest – Raiyati Land
6	Project Cost	95.7 Lakhs
7	EMP Budget	Capital: Rs. –4.865 Lakhs Recurring: Rs. 1.64 Lakhs/ year
8	CSR / CER Budget	NA
9	New or Expansion	New
10	Mineable Reserves	Cu.M.: 286454 Tonnes: 773426
11	Mine Life	7.59 Years say 8 years.
12	Manpower	27 Person
13	Water Requirement	7.46 KLD (Drinking:0.40 KLD, Dust Suppression: 2.2 KLD, Plantation:4.86 KLD)
14	Water Source	Water will be sourced from 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.

A

USA

754

can

h

am

15	DG Set / power	:	Nil.
16	Crusher	:	Not Applicable
17	Nearest Water Body	:	Ganges River – 30 km in East direction
18	Nearest Habitation	:	Amlagachhi Village
19	Nearest Rail Station	:	Pakur Railway Station – 15.90 Km in North-East direction
20	Nearest Airport	:	Ranchi Airport 354 Km in SW direction.
21	Nearest Forest	:	DFO Pakur Division letter no.-834 Dated- 24.07.2019 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
22	Road & Highways	:	MDR (Maheshpur-Hiranpur Road) -0.68 KM in.

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary (GPS Co-ordinates) Datum: WGS 84		
Corner Point	Latitude	Longitude
1	24°33'15.86" N	87°43'11.11" E
2	24°33'16.01" N	87°43'09.78" E
3	24°33'22.17" N	87°43'12.09" E
4	24°33'21.77" N	87°43'12.80" E
5	24°33'22.00" N	87°43'13.65" E
6	24°33'21.67" N	87°43'14.65" E
7	24°33'18.37" N	87°43'13.14" E
8	24°33'17.70" N	87°43'13.02" E

LAND DETAILS :

KHATA NO.	PLOT NO.
18	451(P)
18	455(P)
12	480(P)

(Handwritten signatures and marks)

STATUTORY CLEARANCES

1	LOI / Lease docs	: Lease deed : 21.05.2021 to 20.05.2031
2	CO	: The CO, Maheshpur vide letter no. 648/Ra, dated 06.09.2019 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyar & Register II.
3	DMO	: DMO, Pakur vide memo no. 2059/M, dated 11.09.2023 certified that 03 other mining lease area (7.09 Acre, 6.58 Acre & 6.88 Acre) exists within 500 m radius from proposed project site and total area is 23.71 Acre (9.60 Ha).
4	DFO Wild Life	: DFO, Wildlife Hazaribagh vide letter no. 1549, dated 03.08.2019 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Forest Distance	: Division Forest Officer, Pakur Forest Division vide letter no. 834, dated 24.07.2019 certified that the distance of notified forest is 500 meter from proposed project site.
6	DSR	: This project is mentioned in District Survey Report (DSR) of Pakur district.
7	Gram Sabha	: BDO, Maheshpur vide letter no. 1068/Vi, dated 07.08.2019 informed that Gram Sabha conducted on 05.08.2019.
8	Mine Plan Approval	: Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Letter No. 414/DDM, dated 15.09.2023.
9	Production Report	: Production figure issued by DMO, Pakur vide memo no. 2060/M, dated 11.09.2023.
10	Consent to Establish (CTE)	: CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-10621399 /2021/265, dated 11.10.2021.
11	Consent to Operate (CTO)	: CTO issued by JSPCB vide Ref. no. : JSPCB/RO/DMK/CTO-11380166 /2021/196, dated 28.10.2021.
12	Previous Environmental Clearance (EC)	: Previous EC granted by SEIAA vide letter no. EC/SEIAA/2020-21/2303/2021/155, dated 27.01.2021.
13	Compliance report of previous EC	: Compliance report certified by Regional Office cum Laboratory, JSPCB, Dumka vide Ref. no. : 1944, dated 16.09.2023.

WORKING DETAILS

1	Mining Method	:	Opencast Mechanized Mining	
2	Quarry Area	:	Plan period – 1.98acres	Conceptual stage –1.98 Acres
3	Waste Generation	:	Plan Period : 24696 Cum.	Conceptual Stage – 24696 Cum.
4	Stripping Ratio	:	1:0.05	
5	Working Days	:	300 days/year	
6	Benches: size & No	:	6m x 6m, No. of benches -4	
7	Elevation of Mine	:	177 AMSL	
9	Ultimate Working Depth	:	153 AMSL	
10	Water Table	:	111 MSL and	
11	Topography of Mine	:	Gently sloping area	
12	Explosive Requirement	:	40 Kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 868 liters / day (260.4 KL/year)	

PRODUCTION DETAILS

SUMMARY OF YEARWISE OF PRODUCTION						
Years	Production In Cum/Year	Production In Cum/Day	O.B Production in Tonnes/Year	Production In Tons/Year	Prod. In Tons. /Day	Bench RL in meters
1st	33418	111	10682.00	90229	301	A-A' (121-115 m R.L)
2nd	42630	142	14014.00	115101	384	A-A' (121-115 m R.L)
3rd	33418	111	0.00	90229	301	A-A' (115-109 m R.L)
4 th	33418	111	0.00	90229	301	A-A' (115-109 m R.L)
5 th	33418	111	0.00	90229	301	A-A' (115-109 m R.L) & A-A' (109-103 m R.L)
Total	176302	-	24696.00	476017	-	18

LAND USE**Existing Land Use pattern**

Si. No.	Pattern of Utilization	Present/Existing land use pattern in (acres)
1	Mining Activities	0.48
2	Offices/ Store /crusher/ Magazine etc.	0.01
3	Dumping	0.07
4	Mining Road	0.04
5	Garland drain	0.08
6	Settling pond	0.02
6	Green belt/Safety Zone	0.94
7	Stone Stock yards	0.00
8	Unutilized	1.52
	Total	3.16

Land Use Pattern for Current Plan Period:

Si. No.	Pattern of Utilization	Proposed Land use for current plan period (acres)
1	Mining Activities	1.98
2	Offices/ Store /crusher/ Magazine etc.	0.01
3	Dumping	0.07
4	Mining Road	0.04
5	Garland drain	0.08
6	Settling pond	0.02
6	Green belt/Safety Zone	0.94
7	Stone Stock yards	0.00
8	Unutilized	0.02
	Total	3.16

Land Use Pattern after Life of the Mine:

Si. No.	Pattern of Utilization	Land used at the conceptual stage ie end of mine life in (acres)	Area to be converted in the conceptual period.
1	Mining Activities	1.98	Water body
2	Offices/ Store /crusher/ Magazine etc.	0.01	Plantation
3	Dumping	0.07	Plantation
4	Mining Road	0.04	
5	Garland drain	0.08	-
6	Settling Tank	0.02	-
6	Green belt/Safety Zone	0.94	Green Belt
7	Stone Stock yards	0.00	
8	Unutilized	0.02	Plantation
	Total	3.16	

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No of Trees
1	Green Belt & Other reclaimed area	:	0.36 Ha	900
2	Haul /Approach Road	:	0.11 Km.	73 Trees both side approach road.

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

A *UWA* *B* *CBZ* *S* *min*

Solid Waste Management

- There is only 24696 cum overburden will be generated in mining plan period which will be used in maintenance of mine road and village road. O.B. Dump of total area 0.04 Ha. has been proposed.

Water Pollution Control Measures:

- Mining operation will be restricted to the depth of 29m from surface level.
- Quality of dug well will be monitored, in order to ensure the quality of water is not affected.

Air and Noise Pollution Control Measures:

- Dust suppression measures like spraying / sprinkling of water to keep the surface wet.
- Overloading of the truck / tractor trolleys will not be done.

As the only impact is due to transportation of soil through village roads, emphasis will be given on the following points:

- Carts or tractor-trolleys will be developed on village roads.
- Tractors-trolleys will be well maintained and PUC certified.
- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Minimum use of horns in the village area and silence zone (if any) as applicable.

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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

RISK ASSESSMENT

HAZARD IDENTIFICATION & RISK ASSESSMENT (HIRA)

The entire mining operation will be done under the supervision of the Mines Engineer/Mines manager having second class mines manager's certificate of competency and supported by a team of competent persons. Nevertheless, the following natural/industrial problems may be encountered during the mining operation:

- Accident due to Blasting / Fly-rock generation
- Slope failure at Mine faces
- Accident due to sliding of Over Burden dumps
- Accident due to Transportation or movement of heavy machineries
- Operation of mining equipment
- Accident due to use of explosive
- Accident due to storage of Fuel
- Filling of Mine due to excessive rain

RISK AND MITIGATION MEASURES

BLASTING

Risk

- Most of the accidents from blasting occur due to the generation of fly-rocks, as they may sometimes go even beyond the danger zone, mainly due to overcharging of the shot-holes or as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations.
- Vibrations also lead to displacement of adjoining areas. Dust and noise are also problems commonly encountered during blasting operations.
- Risk associated with storage and use of explosive

Mitigation Measures

- Adequate charge per hole with delay blasting will be used to minimize fly-rock, vibration and noise
- Before starting charging, clear audible warning signals by Sirens will be given so that people nearby can take shelter.
- Blasting will be done during the lunch interval, i.e. from 1.00 to 2.00 pm.

- Holes will be drilled in square/scattered pattern.
- Shot firing will be usually done with the help of safety fuse & ordinary detonator/ electric shot firing with delay detonators as per requirement.
- Adequate shelters or other protective structures shall be provided to the workers at all times;
- The shot fired shall give sufficient warning by effective signal over the entire area falling within a radius of 500 m
- Proper, safe and careful handling and use of explosives by competent Blasters having Blaster's Certificate of Competency issued by DGMS
- Conventional explosives shall be used in their original cartridge packing and such cartridge shall not be cut to remove explosive for making cartridge of different size.
- Explosives shall be conveyed in special containers.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

OVER BURDEN

Risk

The overburden dumps may cause landslides. High overburden dumps created at the quarry edge may cause sliding of the overburden dump or may cause failure of the pit slope due to excessive loading, thereby causing loss of life and property. Siltation of surface water may also cause run-off from overburden dumps.

Mitigation Measures

- To prevent the failure of overburden slopes, especially during the rainy season, proper garland drain & bund are constructed around the dump.
- To prevent this, height of overburden dumps will be restricted. Further, no stone or loose rock or loose tree will be allowed to remain within 3 meters of the edge of the quarry. To prevent siltation of surface water, retaining wall will be constructed on the down side of each OB dump.

ACCIDENTS DUE TO TRANSPORTATION AND MOVEMENT OF MINING MACHINERIES

Risk

Most of the accidents occur during transportation by tippers/ trucks and movement of Mining machineries.

Operations of jackhammers are often attributable to mechanical failures and human errors.

Mitigation Measures

- This can be prevented by regular training of all vehicle/machinery drivers/operators, regular maintenance of equipment and ensuring safe operations.
- All safety precautions and provision of MMR 1961 shall be strictly followed during all mining operations.
- Regular maintenance and testing of all mining equipment as per manufacturer's guidelines.
- All transportation within the main working area should be carried out under the direct supervision and control of the management;
- The vehicles must be maintained in good repairs and checked thoroughly at least once a week by a competent person authorized for this purpose by the management;
- Broad signs should be provided at each and every turning point specially for the guidance of the drivers of vehicles.
- To avoid dangers while reversing the trackless vehicles, especially at the embankment and tripping points, all areas for reversing of lorries should, as far as possible, be made man free, and there should be a light and sound device to indicate reversing of trucks; and
- A statutory provision of the fence, constant education, training etc. will go a long way in reducing the incidence of such accidents.

FUEL STORAGE

No major storage of fuel envisaged in the mining lease area

WATER LOGGING

Risk

Filling of mine pit with excessive rain

Mitigation Measures

- Provision of adequate capacity pumps for pumping out water from the mining pit with standby arrangements.
- Checking and regular maintenance of garland drainage and earthen bunds to avoid any inflow of surface water into the mine pit.
- Proper drainage will be maintained to eliminate inundation of working pits during rains from run-off water. Suitable garland drain will be provided around pit along with sedimentation pits on each side.
- There is no danger of flood or inundation as the ground level is well below the plateau top, where mining will be carried out.

SAFETY MEASURES AT THE PROPOSED MINE

- The opencast mines have been planned for working with shovel tipper system which requires proper benching not only for slope stability but also for movement of tippers and other heavy machinery. The inclination of the quarry sides at the final stage i.e. at the dip most point will not exceed 40° to the

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

horizontal. (This angle is measured between the line joining the toe of the bottom most bench to the crest of the top most bench and the horizontal line);

- The gradient of the haul road inside the pit, access trench and on the dumps will not be steeper than 1 in 16
- The slope of the sides of the OB dump to the horizontal will not exceed 300, and the height of the OB dumps has been restricted to a max of 3 m;
- The quarries will be protected by garland drains around the periphery for storm water drainage;
- A minimum safe distance of 100-m will be kept between the surface edge of the quarry and the nearest public building, roads etc. When the surface edge of the quarry approaches within a limit of 300 m from any road, public building special permission from DGMS will be taken to conduct controlled blasting to prevent damage/injury to public life and property;
- All mining operations both within the quarry and outside will be conducted as per the conditions laid down by DGMS and under the strict supervision of competent persons appointed under Metalliferous Mines Regulations, 1961.

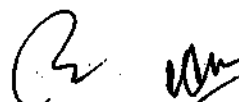
CARE AND MAINTENANCE DURING TEMPORARY DISCONTINUANCE:

In case of emergency arise as situation of temporary discontinuance due to court order or due to statutory requirements or any other unforeseen circumstances pit will be fenced and locked properly so as no one can enter in pit. All plantation will be protected with all due care for their survival. Maintenance and monitoring of discontinued mining operations i.e. maintenance of haul roads, will be done in view of re-open in near future.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 09, 10, 11, 12 & 13.10.2023, 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 conditions :

- I. As per OM F. no. IA3-22/10/2022-IA.III(E177258), dated 08.06.2022 of MoEF&CC, Govt. of India Project Authority will obtained certified compliance report from IRO (MoEF&CC), Ranchi and submit the same with EIA / EMP report.

A 







16. Amlagachhi Stone Mine of M/s Maa Durga Stone Works (Prop. : Shri Soumitro Ghosh), Village : Amlagachhi, Thana no. : 10, Thana : Maheshpur, Distt. : Pakur, Jharkhand (2.87 Ha).
(Proposal No. SIA/JH/MIN/444496 /2023).

Applied Area : 7.09 ACRES (2.87 Ha.)
Project Category :B1 – Application for ToR (Cluster)
EC Application for : 89152 cum / year (max)
Overburden: 0 cum. during plan period..
DG Set: NA
Crusher- Notproposed

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

This is a existing project which has been taken for appraisal on 09.10.2023.

PROJECT and LOCATION Details:

Sl.	Parameter	Details
1	Project Name	: Amlagachhi Stone Mine Project Type – Stone Mine
2	Lessee:	: Shri Soumitro Ghosh
3	Lease Address	: Village- Amlagachhi , Block Office .-Maheshpur, Thana- Maheshpur (10) ,District-Pakur , Jharkhand
4	Lease Area	: Ha: 2.87 Acres: 7.09
5	Type of Land	: Non-Forest – Raiyati Land
6	Project Cost	: 150.7 Lakhs
7	EMP Budget	: Capital: Rs. –6.665 Lakhs Recurring: Rs. 1.64 Lakhs/ year
8	CSR / CER Budget	: NA
9	New or Expansion	: New
10	Mineable Reserves	: Cu.M.: 713328 Tonnes: 1925985
11	Mine Life	: 6.61 Years say 7 years.
12	Manpower	: 30 Person
13	Water Requirement	: 11.11 KLD (Drinking:0.45 KLD, Dust Suppression: 4.0 KLD, Plantation:6.66 KLD)
14	Water Source	: Water will be sourced from 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.

[Handwritten signatures and marks at the bottom of the page]

15	DG Set / power	:	Nil.
16	Crusher	:	Not Applicable
17	Nearest Water Body	:	Ganges River – 34 km in East direction
18	Nearest Habitation	:	Amlagachhi Village
19	Nearest Rail Station	:	Pakur Railway Station – 15.85 Km in North-East direction
20	Nearest Airport	:	Ranchi Airport 325 Km in SW direction.
21	Nearest Forest	:	DFO Pakur Division letter no.- 835, Dated- 24.07.2019 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
22	Road & Highways	:	MDR (Maheshpur-Hiranpur Road) -0.68 KM in West Direction

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary (GPS Co-ordinates) Datum: WGS 84		
Corner Point	Latitude	Longitude
1	24°33'21.78" N	87°43'23.80" E
2	24°33'21.20" N	87°43'23.24" E
3	24°33'21.13" N	87°43'19.89" E
4	24°33'21.73" N	87°43'18.75" E
5	24°33'21.61" N	87°43'17.98" E
6	24°33'21.22" N	87°43'16.49" E
7	24°33'21.82" N	87°43'16.48" E
8	24°33'22.59" N	87°43'16.68" E
9	24°33'23.89" N	87°43'13.96" E
10	24°33'26.17" N	87°43'15.12" E
11	24°33'25.89" N	87°43'16.79" E
12	24°33'25.92" N	87°43'19.21" E

LAND DETAILS :

KHATA NO.	PLOT NO.
26	476
34	477
26	478

STATUTORY CLEARANCES

1	LOI / Lease docs	:	i. The Letter of Intent (LoI) has been issued by DMO, Pakur vide letter no. 1537/M, dated 13.09.2019. ii. Lease Deed : 07.01.2020 to 06.01.2030
2	CO	:	The CO, Maheshpur vide letter no. 511/Ra, dated 17.07.2019 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, Pakur vide memo no. 2058/M, dated 11.09.2023 certified that 04 other mining lease area (3.16 Acre, 6.57 Acre, 6.58 Acre & 6.88 Acre) exists within 500 m radius from proposed project site and total area is 30.28 Acre (12.25 Ha).
4	DFO Wild Life	:	DFO, Wildlife Hazaribagh vide letter no. 1435, dated 25.07.2019 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Pakur Forest Division vide letter no. 835, dated 24.07.2019 certified that the distance of notified forest is 500 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Pakur district.
7	Gram Sabha	:	Gram Sabha conducted on 05.08.2019.
8	Mine Plan Approval	:	Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Letter No. 413/DDM, dated 15.09.2023.
9	Production Report	:	Production figure issued by DMO, Pakur vide memo no. 2057/M, dated 11.09.2023.
10	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-7974674 /2020/283, dated 21.07.2020.
11	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. : JSPCB/RO/DMK/CTO-12531251 /2022/54, dated 24.03.2022.
12	Previous Environmental Clearance (EC)	:	Previous EC granted by SEIAA, Jharkhand vide letter no. EC/SEIAA/2018-19/2223/2019/678, dated 08.11.2019.
13	Compliance report of previous EC	:	Compliance report certified by Regional Office cum Laboratory, JSPCB, Dumka vide Ref. no. : 1943, dated 16.09.2023.

A VMA B WJ S

WORKING DETAILS

1	Mining Method	:	Opencast Mechanized Mining
2	Quarry Area	:	Plan period – 2.08 Ha. Conceptual stage –2.08 Ha.
3	Waste Generation	:	Plan Period : 0 Cum. Conceptual Stage –0 Cum.
4	Stripping Ratio	:	1:0.05
5	Working Days	:	300 days/year
6	Benches: size & No	:	6m x 6m, No. of benches -7
7	Elevation of Mine	:	177 AMSL
9	Ultimate Working Depth	:	133 AMSL
10	Water Table	:	111 MSL and
11	Topography of Mine	:	Gently sloping area
12	Explosive Requirement	:	80 Kg Slurry explosives/day
13	Diesel/Fuel requirement	:	HSD – 1060 liters / day (318 KL/year)

PRODUCTION DETAILS

SUMMARY OF YEARWISE OF PRODUCTION						
Years	Production In Cum/Year	Production In Cum/Day	O.B Production in Tonnes/Year	Production In Tons/Year	Prod. In Tons. /Day	Bench RL in meters
1st	81312	271	0	227674	759	113-101
2nd	88928	296	0	248998	830	107-101
3rd	84448	281	0	236454	788	101-95
4 th	88368	295	0	247430	825	101-89
5 th	89152	297	0	249626	832	95-83
Total	432208	288 (Avg.)	0	1210182	637 (Avg.)	30

LAND USE**Existing Land Use pattern**

Pattern of Utilization	Present/Existing land use pattern in (acres)	Present/Existing land use pattern in (Ha)
Mining Activities	5.13	2.08
Offices/ Store /crusher/ Magazine etc.	0.02	0.01
Dumping	0.14	0.06
Mining Road	0.06	0.02
Garland drain	0.17	0.07
Settling pond	0.06	0.02
Green belt/Safety Zone	1.18	0.48
Unutilized	0.33	0.13
Total	7.09	2.87

Land Use Pattern for Current Plan Period:

Pattern of Utilization	Present/Existing land use pattern in (acres)	Present/Existing land use pattern in (Ha)
Mining Activities	5.13	2.08
Offices/ Store /crusher/ Magazine etc.	0.02	0.01
Dumping	0.14	0.06
Mining Road	0.06	0.02
Garland drain	0.17	0.07
Settling pond	0.06	0.02
Green belt/Safety Zone	1.18	0.48
Unutilized	0.33	0.13
Total	7.09	2.87








Land Use Pattern after Life of the Mine:

Pattern of Utilization	Land used at the conceptual stage ie end of mine life in (acres)	Land used at the conceptual stage ie end of mine life in (Ha)	Area to be converted in the conceptual period.
Mining Activities	5.13	2.08	Water body
Offices/ Store /crusher/ Magazine etc.	0.02	0.01	Plantation
Dumping	0.14	0.06	Plantation
Mining Road	0.06	0.02	-
Garland drain	0.17	0.07	-
Settling pond	0.06	0.02	-
Green belt/Safety Zone	1.18	0.48	Green Belt
Unutilized	0.33	0.13	Plantation
Total	7.09	2.87	-

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION	Area/Length	No of Trees
1	Green Belt & Other reclaimed area	: 0.48 Ha	1200
2	Haul /Approach Road	: 0.20 Km.	133 Trees both side approach road.

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

A

W

Ch

by

by

Solid Waste Management

- No overburden will be generated in mining plan period which will be used in maintenance of mine road and village road. O.B. Dump of total area 0.04 Ha. has been proposed.

Water Pollution Control Measures:

- Mining operation will be restricted to the depth of 29m from surface level.
- Quality of dug well will be monitored, in order to ensure the quality of water is not affected.

Air and Noise Pollution Control Measures:

- Dust suppression measures like spraying / sprinkling of water to keep the surface wet.
- Overloading of the truck / tractor trolleys will not be done.

As the only impact is due to transportation of soil through village roads, emphasis will be given on the following points:

- Carts or tractor-trolleys will be developed on village roads.
- Tractors-trolleys will be well maintained and PUC certified.
- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Minimum use of horns in the village area and silence zone (if any) as applicable.

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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

RISK ASSESSMENT

HAZARD IDENTIFICATION & RISK ASSESSMENT (HIRA)

The entire mining operation will be done under the supervision of the Mines Engineer/Mines manager having second class mines manager's certificate of competency and supported by a team of competent persons. Nevertheless, the following natural/industrial problems may be encountered during the mining operation:

- Accident due to Blasting / Fly-rock generation
- Slope failure at Mine faces
- Accident due to sliding of Over Burden dumps
- Accident due to Transportation or movement of heavy machineries
- Operation of mining equipment
- Accident due to use of explosive
- Accident due to storage of Fuel
- Filling of Mine due to excessive rain

RISK AND MITIGATION MEASURES

BLASTING

Risk

- Most of the accidents from blasting occur due to the generation of fly-rocks, as they may sometimes go even beyond the danger zone, mainly due to overcharging of the shot-holes or as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations.
- Vibrations also lead to displacement of adjoining areas. Dust and noise are also problems commonly encountered during blasting operations.
- Risk associated with storage and use of explosive

Mitigation Measures

- Adequate charge per hole with delay blasting will be used to minimize fly-rock, vibration and noise
- Before starting charging, clear audible warning signals by Sirens will be given so that people nearby can take shelter.

A











- Blasting will be done during the lunch interval, i.e. from 1.00 to 2.00 pm.
- Holes will be drilled in square/scattered pattern.
- Shot firing will be usually done with the help of safety fuse & ordinary detonator/ electric shot firing with delay detonators as per requirement.
- Adequate shelters or other protective structures shall be provided to the workers at all times;
- The shot fired shall give sufficient warning by effective signal over the entire area falling within a radius of 500 m
- Proper, safe and careful handling and use of explosives by competent Blasters having Blaster's Certificate of Competency issued by DGMS
- Conventional explosives shall be used in their original cartridge packing and such cartridge shall not be cut to remove explosive for making cartridge of different size.
- Explosives shall be conveyed in special containers.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

OVER BURDEN

Risk

The overburden dumps may cause landslides. High overburden dumps created at the quarry edge may cause sliding of the overburden dump or may cause failure of the pit slope due to excessive loading, thereby causing loss of life and property. Siltation of surface water may also cause run-off from overburden dumps.

Mitigation Measures

- To prevent the failure of overburden slopes, especially during the rainy season, proper garland drain & bund are constructed around the dump.
- To prevent this, height of overburden dumps will be restricted. Further, no stone or loose rock or loose tree will be allowed to remain within 3 meters of the edge of the quarry. To prevent siltation of surface water, retaining wall will be constructed on the down side of each OB dump.

ACCIDENTS DUE TO TRANSPORTATION AND MOVEMENT OF MINING MACHINERIES

Risk

Most of the accidents occur during transportation by tippers/ trucks and movement of Mining machineries.

Operations of jackhammers are often attributable to mechanical failures and human errors.

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

Mitigation Measures

- This can be prevented by regular training of all vehicle/machinery drivers/operators, regular maintenance of equipment and ensuring safe operations.
- All safety precautions and provision of MMR 1961 shall be strictly followed during all mining operations.
- Regular maintenance and testing of all mining equipment as per manufacturer's guidelines.
- All transportation within the main working area should be carried out under the direct supervision and control of the management;
- The vehicles must be maintained in good repairs and checked thoroughly at least once a week by a competent person authorized for this purpose by the management;
- Broad signs should be provided at each and every turning point specially for the guidance of the drivers of vehicles.
- To avoid dangers while reversing the trackless vehicles, especially at the embankment and tripping points, all areas for reversing of lorries should, as far as possible, be made man free, and there should be a light and sound device to indicate reversing of trucks; and
- A statutory provision of the fence, constant education, training etc. will go a long way in reducing the incidence of such accidents.

FUEL STORAGE

No major storage of fuel envisaged in the mining lease area

WATER LOGGING

Risk

Filling of mine pit with excessive rain

Mitigation Measures

- Provision of adequate capacity pumps for pumping out water from the mining pit with standby arrangements.
- Checking and regular maintenance of garland drainage and earthen bunds to avoid any inflow of surface water into the mine pit.
- Proper drainage will be maintained to eliminate inundation of working pits during rains from run-off water. Suitable garland drain will be provided around pit along with sedimentation pits on each side.
- There is no danger of flood or inundation as the ground level is well below the plateau top, where mining will be carried out.

SAFETY MEASURES AT THE PROPOSED MINE

- The opencast mines have been planned for working with shovel tipper system which requires proper benching not only for slope stability but also for movement of tippers and other heavy machinery. The inclination of the quarry sides at the final stage i.e. at the dip most point will not exceed 40° to the

horizontal. (This angle is measured between the line joining the toe of the bottom most bench to the crest of the top most bench and the horizontal line);

- The gradient of the haul road inside the pit, access trench and on the dumps will not be steeper than 1 in 16
- The slope of the sides of the OB dump to the horizontal will not exceed 300, and the height of the OB dumps has been restricted to a max of 3 m;
- The quarries will be protected by garland drains around the periphery for storm water drainage;
- A minimum safe distance of 100-m will be kept between the surface edge of the quarry and the nearest public building, roads etc. When the surface edge of the quarry approaches within a limit of 300 m from any road, public building special permission from DGMS will be taken to conduct controlled blasting to prevent damage/injury to public life and property;
- All mining operations both within the quarry and outside will be conducted as per the conditions laid down by DGMS and under the strict supervision of competent persons appointed under Metalliferous Mines Regulations, 1961.

CARE AND MAINTENANCE DURING TEMPORARY DISCONTINUANCE:

In case of emergency arise as situation of temporary discontinuance due to court order or due to statutory requirements or any other unforeseen circumstances pit will be fenced and locked properly so as no one can enter in pit. All plantation will be protected with all due care for their survival. Maintenance and monitoring of discontinued mining operations i.e. maintenance of haul roads, will be done in view of re-open in near future.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 09, 10, 11, 12 & 13.10.2023, 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 conditions :

- I. As per OM F. no. IA3-22/10/2022-IA.III(E177258), dated 08.06.2022 of MoEF&CC, Govt. of India Project Authority will obtained certified compliance report from IRO (MoEF&CC), Ranchi and submit the same with EIA / EMP report.



17. Stone Mine of M/s Vineet Enterprises (Shri Vineet Kejriwal), Mouza : Bansjor, Thana : Bansjor, Distt. : Simdega, Jharkhand (2.217 Ha).

(Proposal No. SIA/JH/MIN/447311 /2023).

Applied Area : 5.48 ACRES (2.21 Ha.)

Project Category : B2 – Application for Environment Clearance (New EC)

EC Application for : 36120 cum / year (max)

Overburden: 0. during plan period.

DG Set: NA

Crusher- Not proposed

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

This is an existing project which has been taken for appraisal on 09.10.2023.

PROJECT and LOCATION Details:

Sl.	Parameter	Details
1	Project Name	Vineet Enterprises Stone Mine Project Type – Stone Mine
2	Lessee:	Sri Vineet Kejriwal
3	Lease Address	Mouza- Bansjor, Thana- Bansjor, District-Simdega, Jharkhand
4	Lease Area	Ha: 2.217 Acres:5.48
5	Type of Land	Non-Forest – Raiyati Land
6	Project Cost	90 Lakhs
7	EMP Budget	Capital: Rs. –6.096 Lakhs Recurring: Rs. 1.64 Lakhs/ year
8	CSR / CER Budget	NA
9	New or Expansion	New
10	Mineable Reserves	Cu.M.: 527620.5 Tonnes: 1424575.36
11	Mine Life	11.49 Years say 12 years.
12	Manpower	16 Person
13	Water Requirement	1 6.6 KLD (Drinking:0.24 KLD, Dust Suppression: 6.2 KLD, Plantation:10.16 KLD)
14	Water Source	Water will be sourced from 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.
15	DG Set / power	Nil.

16	Crusher	:	Not Applicable
17	Nearest Water Body	:	Koel River – 20.08 km in South direction
18	Nearest Habitation	:	Bansjor Village
19	Nearest Rail Station	:	Birmitrapur Railway Station – 4.15 Km in South-West direction
20	Nearest Airport	:	Rourkela Airport 23 Km in S direction.
21	Nearest Forest	:	DFO Ranchi Division letter no.-992 Dated- 12.11.2021 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
22	Road & Highways	:	Rourkela-Gumia-Ranchi Road -2.5 KM in South-West direction.

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary (GPS Co-ordinates) Datum: WGS 84		
Corner Point	Latitude	Longitude
1	22°26'11.79" N	84°44'26.40" E
To		
2	22°26'11.63" N	84°44'25.75" E

LAND DETAILS :

Khata No.	Plot No.
161	3480 & 3483
56	3482
15	3485
21	3487
164	3488, 3492 & 3493
69	3534

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by DMO, Simdega vide letter no. 310/Khanan, dated 01.11.2021.
2	CO	:	The CO, Bansjor vide letter no. 356 (ii), dated 18.10.2021 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatyan & Register II.

[Handwritten signatures and initials]

3	DMO	: DMO, Simdega vide memo no. 321/Khanan, dated 02.11.2021 certified that 01 other mining lease area (3.55 Acre) exists within 500 m radius from proposed project site and total area is 9.03 Acre.
4	DFO Wild Life	: DFO, Wildlife Ranchi vide letter no. 992, dated 12.11.2021 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	: Division Forest Officer, Simdega Forest Division vide letter no. 2387, dated 03.10.2020 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	: This project is mentioned in District Survey Report (DSR) of Simdega district.
7	Gram Sabha	: BDO, Bansjor vide letter no. 1853 (ii), dated 21.10.2021 informed that Gram Sabha conducted on 23.12.2020.
8	Mine Plan Approval	: Approved by DMO, Simdega vide Letter No. 511/Mining, dated 05.10.2023.

WORKING DETAILS

1	Mining Method	: Opencast Mechanized Mining
2	Quarry Area	: Plan period – 1.29Ha. Conceptual stage – 1.29 Ha.
3	Waste Generation	: Plan Period :0 Cum. Conceptual Stage –0 Cum.
4	Stripping Ratio	: 10:07
5	Working Days	: 300 days/year
6	Bench: size & No	: 5m x 5m, No. of benches -3
7	Topography of Mine	: Gently sloping area
8	Explosive Requirement	: 16.6 Kg Slurry explosives/day
9	Diesel/Fuel requirement	: 804 liters / day (241.2 KL/year)

PRODUCTION DETAILS

SUMMARY OF YEARWISE OF PRODUCTION						
Years	Production In Cum/Year	Production In Cum/Day	O.B Production in Cum/Year	Production In Tons/Year	Prod. In Tons. /Day	Bench RL in meters
1st	36120	120.4	0	97524	325.08	6
2nd	36120	120.4	0	97524	325.08	6

3rd	36120	120.4	0	97524	325.08	6
4 th	36120	120.4	0	97524	325.08	6
5 th	36120	120.4	0	97524	325.08	6
Total	180600	120.4 (Avg.)	0	487620	325.08 (Avg.)	30

LAND USE

Existing Land Use pattern

Type of land use	Existing (Acre)
Barren Land	5.48
Quarry	Nil
Road	Nil
Mining area converted into pond	Nil
Overburden dump	Nil
Crusher	Nil
Infrastructure	Nil
Approach roads	Nil
Garland drain	Nil
Green Belt	Nil
Settling Tank	Nil
Area which will remain untouched	Nil
Total	5.48

Land Use Pattern for Current Plan Period:

Type of land use	During Plan Period of Mines (Acre)
Barren Land	Nil
Quarry	3.20
Road	0.10
Mining area converted into pond	Nil
Overburden dump	Nil
Crusher	0.20
Infrastructure	0.04
Approach roads	Nil
Garland drain	0.10
Green Belt	1.80
Settling Tank	0.04
Area which will remain untouched	Nil
Total	5.48

A     

Land Use Pattern after Life of the Mine:

Type of land use	During Plan Period of Mines (Acre)	After mining Plan
Quarry	3.20	Waterbody
Road	0.10	-
Crusher	0.20	-
Infrastructure	0.04	-
Garland drain	0.10	-
Green Belt	1.80	Plantation
Settling Tank	0.04	Waterbody
Area which will remain untouched	Nil	
Total	5.48	

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION	Area/Length	No of Trees
1	Green Belt & Other reclaimed area	: 0.38 Ha.	1825
2	Haul /Approach Road	: 0.31 Km.	207 Trees both side approach road.

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

Solid Waste Management

- No overburden will be generated in mining plan period which will be used in maintenance of mine road and village road.

Water Pollution Control Measures:

- Mining operation will be restricted to the depth of 30 m from surface level.
- Quality of dug well will be monitored, in order to ensure the quality of water is not affected.

Air and Noise Pollution Control Measures:

- Dust suppression measures like spraying / sprinkling of water to keep the surface wet.

- Overloading of the truck / tractor trolleys will not be done.

As the only impact is due to transportation of soil through village roads, emphasis will be given on the following points:

- Carts or tractor-trolleys will be developed on village roads.
- Tractors-trolleys will be well maintained and PUC certified.
- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Minimum use of horns in the village area and silence zone (if any) as applicable.

Undertaking submitted affirming:

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

RISK ASSESSMENT

HAZARD IDENTIFICATION & RISK ASSESSMENT (HIRA)

The entire mining operation will be done under the supervision of the Mines Engineer/Mines manager having second class mines manager's certificate of competency and supported by a team of competent persons. Nevertheless, the following natural/industrial problems may be encountered during the mining operation:

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

- Accident due to Blasting / Fly-rock generation
- Slope failure at Mine faces
- Accident due to sliding of Over Burden dumps
- Accident due to Transportation or movement of heavy machineries
- Operation of mining equipment
- Accident due to use of explosive
- Accident due to storage of Fuel
- Filling of Mine due to excessive rain

RISK AND MITIGATION MEASURES

BLASTING

Risk

- Most of the accidents from blasting occur due to the generation of fly-rocks, as they may sometimes go even beyond the danger zone, mainly due to overcharging of the shot-holes or as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations.
- Vibrations also lead to displacement of adjoining areas. Dust and noise are also problems commonly encountered during blasting operations.
- Risk associated with storage and use of explosive

Mitigation Measures

- Adequate charge per hole with delay blasting will be used to minimize fly-rock, vibration and noise
- Before starting charging, clear audible warning signals by Sirens will be given so that people nearby can take shelter.
- Blasting will be done during the lunch interval, i.e. from 1.00 to 2.00 pm.
- Holes will be drilled in square/scattered pattern.
- Shot firing will be usually done with the help of safety fuse & ordinary detonator/ electric shot firing with delay detonators as per requirement.
- Adequate shelters or other protective structures shall be provided to the workers at all times;
- The shot fired shall give sufficient warning by effective signal over the entire area falling within a radius of 500 m
- Proper, safe and careful handling and use of explosives by competent Blasters having Blaster's Certificate of Competency issued by DGMS

A  182    

- Conventional explosives shall be used in their original cartridge packing and such cartridge shall not be cut to remove explosive for making cartridge of different size.
- Explosives shall be conveyed in special containers.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

OVER BURDEN

Risk

The overburden dumps may cause landslides. High overburden dumps created at the quarry edge may cause sliding of the overburden dump or may cause failure of the pit slope due to excessive loading, thereby causing loss of life and property. Siltation of surface water may also cause run-off from overburden dumps.

Mitigation Measures

- To prevent the failure of overburden slopes, especially during the rainy season, proper garland drain & bund are constructed around the dump.
- To prevent this, height of overburden dumps will be restricted. Further, no stone or loose rock or loose tree will be allowed to remain within 3 meters of the edge of the quarry. To prevent siltation of surface water, retaining wall will be constructed on the down side of each OB dump.

ACCIDENTS DUE TO TRANSPORTATION AND MOVEMENT OF MINING MACHINERIES

Risk

Most of the accidents occur during transportation by tippers/ trucks and movement of Mining machineries.

Operations of jackhammers are often attributable to mechanical failures and human errors.

Mitigation Measures

- This can be prevented by regular training of all vehicle/machinery drivers/operators, regular maintenance of equipment and ensuring safe operations.
- All safety precautions and provision of MMR 1961 shall be strictly followed during all mining operations.
- Regular maintenance and testing of all mining equipment as per manufacturer's guidelines.
- All transportation within the main working area should be carried out under the direct supervision and control of the management;

A     

- The vehicles must be maintained in good repairs and checked thoroughly at least once a week by a competent person authorized for this purpose by the management;
- Broad signs should be provided at each and every turning point specially for the guidance of the drivers of vehicles.
- To avoid dangers while reversing the trackless vehicles, especially at the embankment and tripping points, all areas for reversing of lorries should, as far as possible, be made man free, and there should be a light and sound device to indicate reversing of trucks; and
- A statutory provision of the fence, constant education, training etc. will go a long way in reducing the incidence of such accidents.

FUEL STORAGE

No major storage of fuel envisaged in the mining lease area

WATER LOGGING

Risk

Filling of mine pit with excessive rain

Mitigation Measures

- Provision of adequate capacity pumps for pumping out water from the mining pit with standby arrangements.
- Checking and regular maintenance of garland drainage and earthen bunds to avoid any inflow of surface water into the mine pit.
- Proper drainage will be maintained to eliminate inundation of working pits during rains from run-off water. Suitable garland drain will be provided around pit along with sedimentation pits on each side.
- There is no danger of flood or inundation as the ground level is well below the plateau top, where mining will be carried out.

SAFETY MEASURES AT THE PROPOSED MINE

- The opencast mines have been planned for working with shovel tipper system which requires proper benching not only for slope stability but also for movement of tippers and other heavy machinery. The inclination of the quarry sides at the final stage i.e. at the dip most point will not exceed 40° to the horizontal. (This angle is measured between the line joining the toe of the bottom most bench to the crest of the top most bench and the horizontal line);
- The gradient of the haul road inside the pit, access trench and on the dumps will not be steeper than 1 in 16

- The slope of the sides of the OB dump to the horizontal will not exceed 30°, and the height of the OB dumps has been restricted to a max of 3 m;
- The quarries will be protected by garland drains around the periphery for storm water drainage;
- A minimum safe distance of 100-m will be kept between the surface edge of the quarry and the nearest public building, roads etc. When the surface edge of the quarry approaches within a limit of 300 m from any road, public building special permission from DGMS will be taken to conduct controlled blasting to prevent damage/injury to public life and property;
- All mining operations both within the quarry and outside will be conducted as per the conditions laid down by DGMS and under the strict supervision of competent persons appointed under Metalliferous Mines Regulations, 1961.

CARE AND MAINTENANCE DURING TEMPORARY DISCONTINUANCE:

In case of emergency arise as situation of temporary discontinuance due to court order or due to statutory requirements or any other unforeseen circumstances pit will be fenced and locked properly so as no one can enter in pit. All plantation will be protected with all due care for their survival. Maintenance and monitoring of discontinued mining operations i.e. maintenance of haul roads, will be done in view of re-open in near future.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF & CC O.M dated 12.12.18 decided that the proposal for Stone Mine of M/s Vineet Enterprises (Shri Vineet Kejriwal), Mouza : Bansjor, Thana : Bansjor, Distt. : Simdega, Jharkhand (2.217 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

18. Kashmar Stone Mine of Shri Ashish Kumar Agarwal, Village : Kashmar, Thana : Ghatsila, Thana no. : 1629, Distt. : East Singhbhum, Jharkhand (2.65 Ha).

(Proposal No. SIA/JH/MIN/439971 /2023).

Applied Area : 6.56 ACRES (2.65 Ha.)

Project Category : B2 – Application for Environment Clearance (New EC)

EC Application for : 96401 cum / year (max)

Overburden: 37204 Cum. during plan period.

DG Set: NA

Crusher- Not proposed

Name of the consultant : Sathi Planners Private Limited, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 09.10.2023.

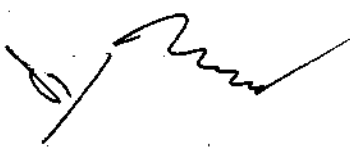
PROJECT and LOCATION Details:

Sl.	Parameter	Details
1	Project Name	Kashmar Stone Mine Project Type – Stone Mine
2	Lessee:	Ashish Kumar Agarwal
3	Lease Address	Village- Kashmar, Thana- Ghatsila, Thana No- 1629, Dist. – East singbhum, State – Jharkhand
4	Lease Area	Ha: 2.65 Acres:4.17
5	Type of Land	Non-Forest – Raiyati Land
6	Project Cost	122.10 Lakhs
7	EMP Budget	Capital: Rs. –4.275 Lakhs Recurring: Rs. 1.19 Lakhs/ year
8	CSR / CER Budget	NA
9	New or Expansion	New
10	Mineable Reserves	Cu.M.: 403866 Tonnes: 1090438
11	Mine Life	4.18 Years say 5 years.
12	Manpower	33 Person
13	Water Requirement	8.16 KLD (Drinking:0.49 KLD, Dust Suppression: 3.4 KLD, Plantation:4.27 KLD)
14	Water Source	Water will be sourced from 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.
15	DG Set / power	Nil.
16	Crusher	Not Applicable
17	Nearest Water Body	Sank Nala- 0.48 km in South direction
18	Nearest Habitation	Kashmarl Village
19	Nearest Rail Station	Ghatsila Railway Station – 18.74 Km in North-East direction
20	Nearest Airport	Birsa Munda Airport, Ranchi-125 Km in NW direction.

21	Nearest Forest	:	DFO letter no.-572 Dated- 15.04.2023 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
22	Road & Highways	:	MDR (Ghatsila-Baharagora road)– 5.63 KM in East direction.

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary (GPS Co-ordinates) Datum: WGS 84		
Corner Point	Latitude	Longitude
1	22°26'34.578" N	86°23'02.203" E
2	22°26'33.217" N	86°23'01.773" E
3	22°26'33.436" N	86°23'00.722" E
4	22°26'33.140" N	86°23'00.388" E
5	22°26'32.838" N	86°23'00.056" E
6	22°26'32.230" N	86°22'59.442" E
7	22°26'31.579" N	86°22'59.041" E
8	22°26'30.812" N	86°22'58.503" E
9	22°26'31.388" N	86°22'57.345" E
10	22°26'30.871" N	86°22'56.456" E
11	22°26'31.115" N	86°22'55.958" E
12	22°26'30.932" N	86°22'55.778" E
13	22°26'31.437" N	86°22'54.765" E
14	22°26'32.841" N	86°22'56.035" E
15	22°26'33.578" N	86°22'56.478" E
16	22°26'34.025" N	86°22'56.621" E
17	22°26'35.394" N	86°22'54.659" E
18	22°26'36.808" N	86°22'55.576" E
19	22°26'36.740" N	86°22'55.834" E
20	22°26'37.011" N	86°22'55.996" E
21	22°26'36.289" N	86°22'57.583" E
22	22°26'36.669" N	86°22'57.891" E
23	22°26'36.492" N	86°22'58.496" E
24	22°26'36.244" N	86°22'59.410" E
25	22°26'37.645" N	86°23'00.374" E
26	22°26'37.903" N	86°23'00.684" E
27	22°26'37.776" N	86°23'00.836" E
28	22°26'37.540" N	86°23'00.733" E
29	22°26'37.269" N	86°23'00.828" E
30	22°26'37.030" N	86°23'01.052" E
31	22°26'36.619" N	86°23'00.929" E

A    

32	22°26'35.959" N	86°23'01.869" E
33	22°26'35.106" N	86°23'01.343" E

LAND DETAILS :

Khata No.	Plot No.
177	403, 408, 567
178	383, 405, 406, 563, 561, 565, 566 & 411

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, East Singhbhum, Jamshedpur vide letter no. 619/Khanan, dated 06.06.2023.
2	CO	:	The CO, Dumaria, East Singhbhum vide letter no. 99, dated 10.03.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, East Singhbhum, Jamshedpur vide Letter no. 816/khanan, dated 12.08.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Dalma elephant project vide letter no. 572, dated 15.04.2023 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Jamshedpur Forest Division vide letter no. 542, dated 15.03.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	The DC – cum – District Magistrate, East Singhbhum, Jamshedpur vide letter no. 752/Khanan, dated 20.07.2023 has informed that this project is part of District Survey Report (DSR) of East Singhbhum district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	:	Gram Sabha conducted on 23.09.2023.
8	Mine Plan Approval	:	Approved by Assistant Director, Geology Saraikela-Kharsawan vide Letter No. 127, dated 16.09.2023.

A

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

WORKING DETAILS

1	Mining Method	:	Opencast Mechanized Mining
2	Quarry Area	:	Plan period – 1.91Ha. Conceptual stage – 1.91 Ha.
3	Waste Generation	:	Plan Period :37204 Cum. Conceptual Stage –0 Cum.
4	Stripping Ratio	:	10:07
5	Working Days	:	300 days/year
6	Benches: size & No	:	5m x 5m, No. of benches -3
7	Elevation of Mine	:	198-195 AMSL
8	Ground Level Elevation	:	195AMSL
9	Ultimate Working Depth	:	154 m
10	Water Table	:	70 AMSL
11	Topography of Mine	:	Gently sloping area
12	Explosive Requirement	:	88 Kg Slurry explosives/day
13	Diesel/Fuel requirement	:	792 liters / day (237.6 KL/year)

PRODUCTION DETAILS

SUMMARY OF YEARWISE OF PRODUCTION						
Years	Production In Cum/Year	Production In Cum/Day	O.B Production in Cum/Year	Production In Tons/Year	Prod. In Tons. /Day	Bench RL in meters
1st	82944	276	37204	223949	746	79-73 (C-C') 82-76 (B-B') 82-76 (A-A')
2nd	96401	321	0	260283	868	73-76 (C-C') 76-70 (B-B') 76-70 (A-A')
3rd	83308	278	0	224932	750	70-64 (B-B') 70-64 (A-A')
4th	69397	231	0	187372	625	64-58 (B-B') 64-58 (A-A')
5th	71513	238	0	193085	644	58-52 (B-B') 58-52 (A-A') 52-46 (B-B') 52-46 (A-A')
Total	403563	269	37204	1089620	726	Depth ~ 30 m

LAND USE

Existing Land Use pattern

Si. No.	Pattern of Utilization	Proposed Land use for current plan period (acres)
1	Mining Activities	0.00
2	Offices/ Store / Magazine etc.	0.00
3	Dumping	0.00
4	Mining Road	0.00
5	Garland drain	0.00
6	Settling Pond	0.00
7	Green belt/Safety Zone	0.00
9	Unutilized	6.56
Total		6.56

Land Use Pattern for Current Plan Period:

Si. No.	Pattern of Utilization	Proposed Land use for current plan period (acres)
1	Mining Activities	4.73
2	Offices/ Store / Magazine etc.	0.02
3	Dumping	0.19
4	Mining Road	0.04
5	Garland drain	0.20
6	Settling Pond	0.11
7	Green belt/Safety Zone	1.31
8	Unutilized	0.32
Total		6.56

Land Use Pattern after Life of the Mine:

Si. No.	Pattern of Utilization	Land used at the conceptual stage ie end of mine life in (acres)	Area to be converted in the conceptual period.
1	Mining Activities	4.37	Water body
2	Offices/ Store / Magazine etc.	0.02	Plantation
3	Dumping	0.19	Plantation -
4	Mining Road	0.04	Water body
5	Garland drain	0.20	-
6	Settling Pond	0.11	-
7	Green belt/Safety Zone	1.31	Green Belt
8	Unutilized	0.32	Green Belt
Total		6.56	

ENVIRONMENT MANAGEMENT**Green Belt Development**

SL	LOCATION		Area/Length	No of Trees
1	Green Belt & Other reclaimed area	:	0.57 Ha.	1425
2	Haul /Approach Road	:	0.17 Km.	113 Trees both side approach road.

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

A *~* *ma* *B* *clue* *h* *mm*

Solid Waste Management

- There is only 37204 cum overburden will be generated in mining plan period which will be used in maintenance of mine road and village road.

Water Pollution Control Measures:

- Mining operation will be restricted to the depth of 30 m from surface level.
- Quality of dug well will be monitored, in order to ensure the quality of water is not affected.

Air and Noise Pollution Control Measures:

- Dust suppression measures like spraying / sprinkling of water to keep the surface wet.
- Overloading of the truck / tractor trolleys will not be done.

As the only impact is due to transportation of soil through village roads, emphasis will be given on the following points:

- Carts or tractor-trolleys will be developed on village roads.
- Tractors-trolleys will be well maintained and PUC certified.
- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Minimum use of horns in the village area and silence zone (if any) as applicable.

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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

RISK ASSESSMENT

HAZARD IDENTIFICATION & RISK ASSESSMENT (HIRA)

The entire mining operation will be done under the supervision of the Mines Engineer/Mines manager having second class mines manager's certificate of competency and supported by a team of competent persons. Nevertheless, the following natural/industrial problems may be encountered during the mining operation:

- Accident due to Blasting / Fly-rock generation
- Slope failure at Mine faces
- Accident due to sliding of Over Burden dumps
- Accident due to Transportation or movement of heavy machineries
- Operation of mining equipment
- Accident due to use of explosive
- Accident due to storage of Fuel
- Filling of Mine due to excessive rain

RISK AND MITIGATION MEASURES

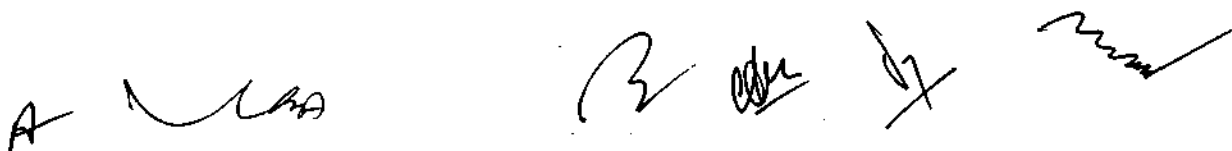
BLASTING

Risk

- Most of the accidents from blasting occur due to the generation of fly-rocks, as they may sometimes go even beyond the danger zone, mainly due to overcharging of the shot-holes or as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations.
- Vibrations also lead to displacement of adjoining areas. Dust and noise are also problems commonly encountered during blasting operations.
- Risk associated with storage and use of explosive

Mitigation Measures

- Adequate charge per hole with delay blasting will be used to minimize fly-rock, vibration and noise
- Before starting charging, clear audible warning signals by Sirens will be given so that people nearby can take shelter.

The bottom of the page features several handwritten signatures and initials in black ink. From left to right, there is a large 'A', a signature that appears to be 'M. A.', a signature that appears to be 'B.', a signature that appears to be 'adn', a signature that appears to be 'J.', and a signature that appears to be 'man'.

- Blasting will be done during the lunch interval, i.e. from 1.00 to 2.00 pm.
- Holes will be drilled in square/scattered pattern.
- Shot firing will be usually done with the help of safety fuse & ordinary detonator/ electric shot firing with delay detonators as per requirement.
- Adequate shelters or other protective structures shall be provided to the workers at all times;
- The shot fired shall give sufficient warning by effective signal over the entire area falling within a radius of 500 m
- Proper, safe and careful handling and use of explosives by competent Blasters having Blaster's Certificate of Competency issued by DGMS
- Conventional explosives shall be used in their original cartridge packing and such cartridge shall not be cut to remove explosive for making cartridge of different size.
- Explosives shall be conveyed in special containers.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

OVER BURDEN

Risk

The overburden dumps may cause landslides. High overburden dumps created at the quarry edge may cause sliding of the overburden dump or may cause failure of the pit slope due to excessive loading, thereby causing loss of life and property. Siltation of surface water may also cause run-off from overburden dumps.

Mitigation Measures

- To prevent the failure of overburden slopes, especially during the rainy season, proper garland drain & bund are constructed around the dump.
- To prevent this, height of overburden dumps will be restricted. Further, no stone or loose rock or loose tree will be allowed to remain within 3 meters of the edge of the quarry. To prevent siltation of surface water, retaining wall will be constructed on the down side of each OB dump.

ACCIDENTS DUE TO TRANSPORTATION AND MOVEMENT OF MINING MACHINERIES

Risk

Most of the accidents occur during transportation by tippers/ trucks and movement of Mining machineries.

Operations of jackhammers are often attributable to mechanical failures and human errors.

A  194    

Mitigation Measures

- This can be prevented by regular training of all vehicle/machinery drivers/operators, regular maintenance of equipment and ensuring safe operations.
- All safety precautions and provision of MMR 1961 shall be strictly followed during all mining operations.
- Regular maintenance and testing of all mining equipment as per manufacturer's guidelines.
- All transportation within the main working area should be carried out under the direct supervision and control of the management;
- The vehicles must be maintained in good repairs and checked thoroughly at least once a week by a competent person authorized for this purpose by the management;
- Broad signs should be provided at each and every turning point specially for the guidance of the drivers of vehicles.
- To avoid dangers while reversing the trackless vehicles, especially at the embankment and tripping points, all areas for reversing of lorries should, as far as possible, be made man free, and there should be a light and sound device to indicate reversing of trucks; and
- A statutory provision of the fence, constant education, training etc. will go a long way in reducing the incidence of such accidents.

FUEL STORAGE

No major storage of fuel envisaged in the mining lease area

WATER LOGGING

Risk

Filling of mine pit with excessive rain

Mitigation Measures

- Provision of adequate capacity pumps for pumping out water from the mining pit with standby arrangements.
- Checking and regular maintenance of garland drainage and earthen bunds to avoid any inflow of surface water into the mine pit.
- Proper drainage will be maintained to eliminate inundation of working pits during rains from run-off water. Suitable garland drain will be provided around pit along with sedimentation pits on each side.
- There is no danger of flood or inundation as the ground level is well below the plateau top, where mining will be carried out.

SAFETY MEASURES AT THE PROPOSED MINE

- The opencast mines have been planned for working with shovel tipper system which requires proper benching not only for slope stability but also for movement of tippers and other heavy machinery. The inclination of the quarry sides at the final stage i.e. at the dip most point will not exceed 40° to the horizontal. (This angle is measured between the line joining the toe of the bottom most bench to the crest of the top most bench and the horizontal line);
- The gradient of the haul road inside the pit, access trench and on the dumps will not be steeper than 1 in 16
- The slope of the sides of the OB dump to the horizontal will not exceed 30°, and the height of the OB dumps has been restricted to a max of 3 m;
- The quarries will be protected by garland drains around the periphery for storm water drainage;
- A minimum safe distance of 100-m will be kept between the surface edge of the quarry and the nearest public building, roads etc. When the surface edge of the quarry approaches within a limit of 300 m from any road, public building special permission from DGMS will be taken to conduct controlled blasting to prevent damage/injury to public life and property;
- All mining operations both within the quarry and outside will be conducted as per the conditions laid down by DGMS and under the strict supervision of competent persons appointed under Metalliferous Mines Regulations, 1961.

CARE AND MAINTENANCE DURING TEMPORARY DISCONTINUANCE:

In case of emergency arise as situation of temporary discontinuance due to court order or due to statutory requirements or any other unforeseen circumstances pit will be fenced and locked properly so as no one can enter in pit. All plantation will be protected with all due care for their survival. Maintenance and monitoring of discontinued mining operations i.e. maintenance of haul roads, will be done in view of re-open in near future.

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 Kashmar Stone Mine of Shri Ashish Kumar Agarwal, Village : Kashmar, Thana : Ghatsila, Thana no. : 1629, Distt. : East Singhbhum, Jharkhand (2.65 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I.

19. Tangratoli Stone Block of Shri Firoj Ali, Village : Tangratoli, Thana : Kolebira, Thana no. : 129, Distt. : Simdega, Jharkhand (0.61 Ha).

(Proposal No. SIA/JH/MIN/447215 /2023).

Applied Area : 1.50 ACRES (0.61 Ha.)

Project Category : B2 – Application for Environment Clearance (New EC)

EC Application for : 3240 cum / year (max)

Overburden: Na

DG Set: NA

Crusher- Not proposed

Name of the consultant : Sathi Planners Private Limited, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 09.10.2023.

PROJECT and LOCATION Details:

Sl.	Parameter	Details
1	Project Name	: Tangratoli Stone Block Project Type – Stone Mine
2	Lessee:	: Proprietor: Firoj Ali
3	Lease Address	: Village – Tangratoli, Thana – Kolebira, Thana No.- 129, District- Simdega Jharkhand
4	Lease Area	: Ha: 0.61 Acres: 1.50
5	Type of Land	: Non-Forest – Raiyati Land
6	Project Cost	: 84.8 Lakhs
7	EMP Budget	: Capital: Rs. –3.06 Lakhs Recurring: Rs. 1.64 Lakhs/ year
8	CSR / CER Budget	: NA
9	New or Expansion	: New
10	Mineable Reserves	: Cu.M.: 61538 Tonnes: 153845
11	Mine Life	: 18.99 Years say 19 years.
12	Manpower	: 16 Person
13	Water Requirement	: 5.9 KLD (Drinking:0.24 KLD, Dust Suppression: 2.6 KLD, Plantation:3.06 KLD)
14	Water Source	: Water will be sourced from 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.
15	DG Set / power	: Nil.
16	Crusher	: Not Applicable

[Handwritten signatures and initials at the bottom of the page]

17	Nearest Water Body	: Koel River- 12 km in North-East direction
18	Nearest Habitation	: Tangratoli Village
19	Nearest Rail Station	: Bano Railway Station – 18.88 Km in South-East direction
20	Nearest Airport	: Birsa Munda Airport, Ranchi-142 Km in NE direction.
21	Nearest Forest	: DFO Ranchi Division letter no.-167 Dated- 04.03.2023 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
22	Road & Highways	: NH-143 (Khuti-Simdega road)– 2.50 KM in West direction.

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary (GPS Co-ordinates) Datum: WGS 84		
Corner Point	Latitude	Longitude
1	22° 45' 25.814" N	084° 45' 38.012" E
2	22° 45' 25.822" N	084° 45' 38.926" E
3	22° 45' 25.832" N	084° 45' 40.042" E
4	22° 45' 25.842" N	084° 45' 41.157" E
5	22° 45' 24.949" N	084° 45' 41.252" E
6	22° 45' 24.057" N	084° 45' 41.348" E
7	22° 45' 23.895" N	084° 45' 40.516" E
8	22° 45' 23.724" N	084° 45' 39.643" E
9	22° 45' 23.557" N	084° 45' 38.791" E
10	22° 45' 23.390" N	084° 45' 37.939" E
11	22° 45' 24.089" N	084° 45' 37.960" E
12	22° 45' 24.951" N	084° 45' 37.986" E

LAND DETAILS :

Khata No.	Plot No.
67	702 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	: The Letter of Intent (LoI) has been issued by Directorate of Mines , Department of Mines & Geology, Government of Jharkhand vide letter no. 1997/M, dated 20.09.2022.

2	CO	:	The CO, Kalebira vide letter no. 114 (ii)/Ra, dated 09.02.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Simdega vide Letter no. 90/khanan, dated 03.02.2023 certified that 01 other mining lease area (2.00 Acre) exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 167, dated 04.03.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Simdega Forest Division vide letter no. 1941, dated 05.10.2015 certified that the distance of forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Simdega district.
7	Gram Sabha	:	Gram Sabha conducted on 02.10.2015.
8	Mine Plan Approval	:	Approved by DMO, Simdega vide letter no. 509/Mining, dated 04.10.2023.

WORKING DETAILS

1	Mining Method	:	Opencast Mechanized Mining
2	Quarry Area	:	Plan period – 0.39Ha. Conceptual stage – 0.40 Ha.
3	Waste Generation	:	Plan Period : 0 Conceptual Stage –0 Cum.
4	Stripping Ratio	:	10:07
5	Working Days	:	300 days/year
6	Bench: size & No	:	5m x 5m, No. of benches -1
7	Topography of Mine	:	Gently sloping area
8	Explosive Requirement	:	No Slurry explosives/day
9	Diesel/Fuel requirement	:	628 liters / day (188.4 KL/year)

A ~~~~~ B edw by ~~~~~

PRODUCTION DETAILS

SUMMARY OF YEARWISE OF PRODUCTION						
Years	Production In Cum/Year	Production In Cum/Day	O.B Production in Cum/Year	Production In Tons/Year	Prod. In Tons./Day	Bench RL in meters
1st	3240	10.8	0	8100	27	A-A' (576-573 m R.L)
2nd	3240	10.8	0	8100	27	A-A' (576-573 mR.L)
3rd	3240	10.8	0	8100	27	A-A' (576-573 m R.L)
4th	3240	10.8	0	8100	27	A-A' (576-573 m R.L)
5th	3240	10.8	0	8100	27	A-A' (576-573 mR.L), A-A' (573-570 m R.L)
Total	16200	10.8(Avg.)	0	40500	27(Avg.)	06

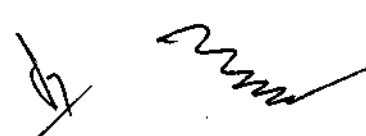
LAND USE

Existing Land Use pattern

SL	Pattern	Proposed Current Plan Period (Ha)
1	Mining Area	0.00
2	Road	0.00
3	Garland Drain	0.00
4	Safety Zone	
5	Settling Tank	
6	Unutilized	0.00
	TOTAL	0.61

A 





Land Use Pattern for Current Plan Period:

SL	Pattern	Proposed Current Plan Period (Ha)
1	Mining Area	0.39
2	Road	0.01
3	Garland Drain	0.21
4	Safety Zone	
5	Settling Tank	
6	Unutilized	0.00
	TOTAL	0.61

Land Use Pattern after Life of the Mine:

SL	Pattern	Proposed Land Use at End of Life of Mine (Ha)	Land Usage at Conceptual Stage
1	Mining Area	0.40	0.40 Ha Water Body
2	Road	0.000	-
3	Garland Drain	0.21	-
4	Safety Zone		
5	Settling Tank		
6	Unutilized	0.00	-
	TOTAL	0.61	-

ENVIRONMENT MANAGEMENT**Green Belt Development**

SL	LOCATION	Area/Length	No of Trees
1	Green Belt & Other reclaimed area	: 0.21 Ha	525
2	Haul /Approach Road	: 0.13 Km.	87 Trees both side approach road.

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

Solid Waste Management

- No overburden will be generated in mining plan period which will be used in maintenance of mine road and village road.

Water Pollution Control Measures:

- Mining operation will be restricted to the depth of 14 m from surface level.
- Quality of dug well will be monitored, in order to ensure the quality of water is not affected.

Air and Noise Pollution Control Measures:

- Dust suppression measures like spraying / sprinkling of water to keep the surface wet.
- Overloading of the truck / tractor trolleys will not be done.

As the only impact is due to transportation of soil through village roads, emphasis will be given on the following points:

- Carts or tractor-trolleys will be developed on village roads.
- Tractors-trolleys will be well maintained and PUC certified.
- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Minimum use of horns in the village area and silence zone (if any) as applicable.

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.

A U M 202 C E M J M

- 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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

RISK ASSESSMENT

HAZARD IDENTIFICATION & RISK ASSESSMENT (HIRA)

The entire mining operation will be done under the supervision of the Mines Engineer/Mines manager having second class mines manager's certificate of competency and supported by a team of competent persons. Nevertheless, the following natural/industrial problems may be encountered during the mining operation:

- Accident due to Blasting / Fly-rock generation
- Slope failure at Mine faces
- Accident due to sliding of Over Burden dumps
- Accident due to Transportation or movement of heavy machineries
- Operation of mining equipment
- Accident due to use of explosive
- Accident due to storage of Fuel
- Filling of Mine due to excessive rain

RISK AND MITIGATION MEASURES

BLASTING

Risk

- Most of the accidents from blasting occur due to the generation of fly-rocks, as they may sometimes go even beyond the danger zone, mainly due to overcharging of the shot-holes or as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations.
- Vibrations also lead to displacement of adjoining areas. Dust and noise are also problems commonly encountered during blasting operations.
- Risk associated with storage and use of explosive

Mitigation Measures

- Adequate charge per hole with delay blasting will be used to minimize fly-rock, vibration and noise

A 







- Before starting charging, clear audible warning signals by Sirens will be given so that people nearby can take shelter.
- Blasting will be done during the lunch interval, i.e. from 1.00 to 2.00 pm.
- Holes will be drilled in square/scattered pattern.
- Shot firing will be usually done with the help of safety fuse & ordinary detonator/ electric shot firing with delay detonators as per requirement.
- Adequate shelters or other protective structures shall be provided to the workers at all times;
- The shot fired shall give sufficient warning by effective signal over the entire area falling within a radius of 500 m
- Proper, safe and careful handling and use of explosives by competent Blasters having Blaster's Certificate of Competency issued by DGMS
- Conventional explosives shall be used in their original cartridge packing and such cartridge shall not be cut to remove explosive for making cartridge of different size.
- Explosives shall be conveyed in special containers.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

OVER BURDEN

Risk

The overburden dumps may cause landslides. High overburden dumps created at the quarry edge may cause sliding of the overburden dump or may cause failure of the pit slope due to excessive loading, thereby causing loss of life and property. Siltation of surface water may also cause run-off from overburden dumps.

Mitigation Measures

- To prevent the failure of overburden slopes, especially during the rainy season, proper garland drain & bund are constructed around the dump.
- To prevent this, height of overburden dumps will be restricted. Further, no stone or loose rock or loose tree will be allowed to remain within 3 meters of the edge of the quarry. To prevent siltation of surface water, retaining wall will be constructed on the down side of each OB dump.

ACCIDENTS DUE TO TRANSPORTATION AND MOVEMENT OF MINING MACHINERIES

Risk

Most of the accidents occur during transportation by tippers/ trucks and movement of Mining machineries.

A [Signature]

[Signature]

[Signature]

[Signature]

Operations of jackhammers are often attributable to mechanical failures and human errors.

Mitigation Measures

- This can be prevented by regular training of all vehicle/machinery drivers/operators, regular maintenance of equipment and ensuring safe operations.
- All safety precautions and provision of MMR 1961 shall be strictly followed during all mining operations.
- Regular maintenance and testing of all mining equipment as per manufacturer's guidelines.
- All transportation within the main working area should be carried out under the direct supervision and control of the management;
- The vehicles must be maintained in good repairs and checked thoroughly at least once a week by a competent person authorized for this purpose by the management;
- Broad signs should be provided at each and every turning point specially for the guidance of the drivers of vehicles.
- To avoid dangers while reversing the trackless vehicles, especially at the embankment and tripping points, all areas for reversing of lorries should, as far as possible, be made man free, and there should be a light and sound device to indicate reversing of trucks; and
- A statutory provision of the fence, constant education, training etc. will go a long way in reducing the incidence of such accidents.

FUEL STORAGE

No major storage of fuel envisaged in the mining lease area

WATER LOGGING

Risk

Filling of mine pit with excessive rain

Mitigation Measures

- Provision of adequate capacity pumps for pumping out water from the mining pit with standby arrangements.
- Checking and regular maintenance of garland drainage and earthen bunds to avoid any inflow of surface water into the mine pit.
- Proper drainage will be maintained to eliminate inundation of working pits during rains from run-off water. Suitable garland drain will be provided around pit along with sedimentation pits on each side.

- There is no danger of flood or inundation as the ground level is well below the plateau top, where mining will be carried out.

SAFETY MEASURES AT THE PROPOSED MINE

- The opencast mines have been planned for working with shovel tipper system which requires proper benching not only for slope stability but also for movement of tippers and other heavy machinery. The inclination of the quarry sides at the final stage i.e. at the dip most point will not exceed 40° to the horizontal. (This angle is measured between the line joining the toe of the bottom most bench to the crest of the top most bench and the horizontal line);
- The gradient of the haul road inside the pit, access trench and on the dumps will not be steeper than 1 in 16
- The slope of the sides of the OB dump to the horizontal will not exceed 30°, and the height of the OB dumps has been restricted to a max of 3 m;
- The quarries will be protected by garland drains around the periphery for storm water drainage;
- A minimum safe distance of 100-m will be kept between the surface edge of the quarry and the nearest public building, roads etc. When the surface edge of the quarry approaches within a limit of 300 m from any road, public building special permission from DGMS will be taken to conduct controlled blasting to prevent damage/injury to public life and property;
- All mining operations both within the quarry and outside will be conducted as per the conditions laid down by DGMS and under the strict supervision of competent persons appointed under Metalliferous Mines Regulations, 1961.

CARE AND MAINTENANCE DURING TEMPORARY DISCONTINUANCE:

In case of emergency arise as situation of temporary discontinuance due to court order or due to statutory requirements or any other unforeseen circumstances pit will be fenced and locked properly so as no one can enter in pit. All plantation will be protected with all due care for their survival. Maintenance and monitoring of discontinued mining operations i.e. maintenance of haul roads, will be done in view of re-open in near future.

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 Tangratoli Stone Block of Shri Firoj Ali, Village : Tangratoli, Thana : Kalebira, Thana no. : 129, Distt. : Simdega, Jharkhand (0.61 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I.

(Handwritten signatures and initials)

20. Hutap Brick Soil Mining of M/s Maa Utkarsini Construction & Mines Pvt. Ltd., Village : Hutap, Thana : Dumri, Thana no. : 25, Distt. : Gumla, Jharkhand (1.562 Ha).

(Proposal No. SIA/JH/MIN/447253 /2023).

Applied Area : 3.86 ACRES (1.562 Ha.)

Project Category : B2 – Application for Environment Clearance (New EC)

EC Application for : 1200 cum / 6 Lakh Bricks Per annum

DG Set: NA

Name of the consultant : Sathi Planners Private Limited, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 09.10.2023.

PROJECT and LOCATION Details:

Sl.	Parameter	Details
1	Project Name	Hutap Brick Soil Mining Project Type – Stone Mine
2	Lessee:	M/s Maa Utkarsini Construction & Mines Pvt.LTD Director- Himanshu Kumar Jaiswal
3	Lease Address	Village- Hutap, Thana-Dumri, Thana (No.) - 25, Dist- Gumla, State – Jharkhand
4	Lease Area	Ha: 1.562 Acres: 3.86
5	Type of Land	Non-Forest – Raiyati Land
6	Project Cost	16.35 Lakhs
7	EMP Budget	Capital: Rs. –6.50 Lakhs Recurring: Rs. 1.30 Lakhs/ year
8	CSR / CER Budget	NA
9	New or Expansion	New
10	Mineable Reserves	Cu.M.: 1200 Tonnes: NA
11	Mine Life	9.5 Years
12	Manpower	20 Person
13	Water Requirement	4.18 KLD
14	Water Source	Water will be sourced from 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.
15	DG Set / power	Nil.
16	Crusher	Not Applicable
17	Nearest Water Body	Sen Nadi- 6.65 km in South direction

(Handwritten signatures and marks at the bottom of the page)

18	Nearest Habitation	: Hutap Village
19	Nearest Rail Station	: Lohardaga Railway station- 59 km - NE
20	Nearest Airport	: Ranchi Airport 118 kms E.
21	Nearest Forest	: More than 250 m as per DFO Gumla Ref. No- 2459 Dated- 25-11-2021
22	Road & Highways	: Dumri-Gumla road (MDR) at 0.69 Km West

CO-ORDINATES

Geo-Coordinates of all corner points of Demarcated Block Boundary (GPS Co-ordinates) Datum: WGS 84		
Corner Point	Latitude	Longitude
1	23°19'28.63" N	84°09'06.28" E
2	23°19'28.56" N	84°09'04.16" E
3	23°19'29.05" N	84°09'02.01" E
4	23°19'31.72" N	84°09'02.77" E
5	23°19'32.35" N	84°09'03.13" E
6	23°19'31.93" N	84°09'05.38" E
7	23°19'33.42" N	84°09'06.16" E
8	23°19'33.06" N	84°09'06.96" E
9	23°19'32.36" N	84°09'08.11" E
10	23°19'31.51" N	84°09'07.83" E
11	23°19'30.47" N	84°09'07.29" E
12	23°19'29.60" N	84°09'06.67" E

LAND DETAILS :

Khata No.	Plot No.
47	67 & 68

STATUTORY CLEARANCES

1	LOI / Lease docs	: Land agreement made.
2	CO	: The CO, Dumri (Gumla) vide letter no. 402 (ii)/Ra, dated 16.08.2022 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II.
3	DMO	: DMO, Gumla vide memo no. 833/M, dated 22.09.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.

A U

R

Signature

4	DFO Wild Life	:	DFO, Ranchi, vide letter no. 1124, dated 14.12.2021 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division vide letter no. 2459, dated 25.11.2021 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.
7	Gram Sabha	:	Gram Sabha conducted on 25.11.2021.
8	Mine Plan Approval	:	Approved by District Mining Officer, Gumla, vide Letter No. 845/M, dated 27.09.2023.

WORKING DETAILS

1	Mining Method	:	Opencast mining
2	Quarry Area	:	Plan period – 0.86 acres Conceptual stage – 1.70 acres
3	Working Days	:	200 days/year
4	Topography of Mine	:	Gently sloping area

PRODUCTION DETAILS

Year	Production of Recoverable Soil in cum	Production of Bricks Block in no.
1st	1200	600000
2nd	1200	600000
3rd	1200	600000
4th	1200	600000
5th	1200	600000
Total	6000	3000000

[Handwritten signatures and marks]

LAND USE**Existing Land Use pattern**

Si. No.	Pattern of Utilization	Present/Existing land use pattern in (acres)
1	Mining Activities	0.00
2	Safety Zone (1m) / (Berm area)	0.00
3	Rest House/ road, other Infrastrurer etc/ Brick Kiln etc.	0.00
4	Unutilized	3.86
	Total	3.86

Land Use Pattern for Current Plan Period:

Si. No.	Pattern of Utilization	Proposed Land use for current plan period (acres)
1	Mining Activities	0.86
2	Safety Zone (1m) / (Berm area)	0.14
3	Rest House/ road, other Infrastrurer etc/ Brick Kiln etc.	2.02
4	Unutilized	0.84
	Total	3.86

Land Use Pattern after Life of the Mine:

Si. No.	Pattern of Utilization	Land used at the conceptual stage ie end of mine life in (acres)
1	Mining Activities	1.70
2	Safety Zone (1m) / (Berm area)	0.14
3	Rest House/ road, other Infrastrurer etc/ Brick Kiln etc.	2.02
4	Unutilized	0.00
	Total	3.86

A 



ENVIRONMENT MANAGEMENT

Green Belt Development

Total No of plants- 300+150=450

- 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 overburden will be generated in mining plan period which will be used in maintenance of mine road and village road.

Water Pollution Control Measures:

- Mining operation will be restricted to the depth of 30 m from surface level.
- Quality of dug well will be monitored, in order to ensure the quality of water is not affected.

Air and Noise Pollution Control Measures:

- Dust suppression measures like spraying / sprinkling of water to keep the surface wet.
- Overloading of the truck / tractor trolleys will not be done.

As the only impact is due to transportation of soil through village roads, emphasis will be given on the following points:

- Carts or tractor-trolleys will be developed on village roads.
- Tractors-trolleys will be well maintained and PUC certified.
- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Minimum use of horns in the village area and silence zone (if any) as applicable.

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 protecting 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 Hutap Brick Soil Mining of M/s Maa Utkarsini Construction & Mines Pvt. Ltd., Village : Hutap, Thana : Dumri, Thana no. : 25, Distt. : Gumla, Jharkhand (1.562 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

A 





Consideration of Proposals

1. Taranga Stone Deposit of M/s Maa Tara Stone Mines (Partners : Shri Tapeshe Kumar Pandey & Shri Amit Kumar Pandey), Village : Taranga, Thana : Chandrapura, Thana no. : 102, Distt. : Bokaro, Jharkhand (1.15 Ha).

(Proposal No. : SIA/JH/MIN/ 440423/2023).

Applied Area : 2.85 Acres (1.15 Ha)

Project Category : B2 – Application for Environment Clearance

EC Application for : Total Excavation – Stone – 111 TPD

Annual Production – 11,933 m³/33,412 TPA

Gritty soil – 585 m³ in production period (5 years)

Intercalated Waste – 3,129 m³ in production period (5 years)

DG Set - Not proposed

Crusher - Not proposed

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

This is a new project which has been taken for appraisal on 10.10.2023.

PROJECT & LOCATION DETAILS

Sl.	Parameter	Details
1	Project Name	: Taranga Stone Deposit
2	Lessee:	: M/s Maa Tara Stone Mines, Proprietor – Shri Tapeshe Kumsar Pandey & Shri Amit Kumar Pandey (Partners)
3	Lease Address	: Village – Taranga, Thana- Chandrapura, Thana No.- 102, District – Bokaro, State – Jharkhand.
4	Lease Area	: Ha: 1.15 Acres: 2.85
5	Type of Land	: Non-Forest – Rayati Barren Land
6	Project Cost	: Rs. 104.26 Lakhs
7	EMP Budget	: Capital: Rs. 16.908 Lakhs Recurring: Rs. 2.028 Lakhs/ year Monitoring cost: Rs. 0.90 Lakhs/year
8	CSR / CER Budget	: Rs. 2.6 Lakhs
9	New or Expansion	: New
10	Mineable Reserves	: 1,18,788 cum. Tonnes: 3,32,606
11	Mine Life	: 10 years only
12	Manpower	: 26 Person
13	Water Requirement	: 6.46 KLD (Drinking: 2.08 KLD, Dust Suppression & Plantation: 4.38 KLD)

14	Water Source	:	Authorized Supply Tankers
15	DG Set / power	:	Not Proposed/Not Applicable
16	Crusher	:	Not proposed/Not Applicable
17	Nearest Water Body	:	Jamuniya River at 0.85 km NE Damodar River at 7.57 km NW
18	Nearest Habitation	:	Taranga 0.02 km NE, Rehwa 0.36 km SW
19	Nearest Railway Station	:	Chandrapura Railway Station 5.21 km SW
20	Nearest Airport	:	Birsa Munda Airport, Ranchi 99.34 km (SW)
21	Nearest Forest	:	Dagdho PF 0.98 km E Baghmara PF 1.11 km E Narayanpur PF 2.72 km NE Bakitnr PF 4.42 km NW
22	Road & Highways	:	NH - 18, 8.56 km SE

CO-ORDINATES

1	Latitude	:	From 23°47'34.9429" N	To 23°47'39.3096" N
2	Longitude	:	From 86°9'02.7345" E	To 86°9'08.5231" E

LAND DETAILS :

Khata No.	Plot No.	Area (Acre)
02	1425, 1427 & 1429	2.85

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LOI) has been issued by District Mining Officer, Bokaro vide memo no. 460/Khanan, dated 04.03.2023.
2	CO	:	The CO, Chandrapura (Bokaro) vide letter no. 836/Ra, dated 01.09.2022 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyar.
3	DMO	:	DMO, Bokaro vide memo no. 935/Khanan, dated 06.05.2023 certified that 03 other mining lease area (3.50 Acre, 1.45 Acre & 3.00 Acre)

		exists within 500 m radius from proposed project site and total area is 10.80 Acre (less than 5 Ha).
4	DFO Wild Life	: DFO, Wildlife Hazaribagh vide letter no. 1763, dated 14.08.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Forest Distance	: Division Forest Officer, Bokaro Forest Division vide letter no. 3014, dated 22.10.2022 certified that the distance of notified forest is 600 meter from proposed project site.
6	DSR	: This project is mentioned in District Survey Report (DSR) of Bokaro district.
7	Gram Sabha	: Gram Sabha conducted on 20.10.2022.
8	Mine Plan Approval	: DMO, Bokaro vide Memo No. 1452/M, dated 11.08.2023.

WORKING DETAILS

1	Mining Method	: Opencast Mechanized Mining
2	Quarry Area	: 0.641 ha (Plan Period)
3	Waste Generation	: Gritty Soil – 585 cum (plan period) Intercalated Waste – 3,129 cum Life of Mine – 10 years (Proposed lease period is of 5 years)
4	Stripping Ratio	: 28:01 (T:m3)
5	Working Days	: 300 days/year
6	Benches: size & No	: 6m x 6m
7	Elevation of Mine (Maximum)	: In 220 m MSL
8	Elevation of Mine (Minimum)	: In 218 m MSL
9	Ultimate Working Depth	: In 196 m MSL
10	Water Table	: In 191 m MSL
11	Topography of Mine	: Gently sloping and Undulating
12	Explosive Requirement	: Slurry – 31.5 kg/day
13	Diesel/Fuel requirement	: Diesel - 50 liter/day

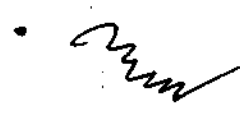
(Handwritten signatures and marks)

PRODUCTION DETAILS

Year	Production of Stone in Tonnes per Annum	Gritty Soil removable in cum for 5 years	Intercalated Waste removable in cum for 5 years
1 st	33,197	585	624
2 nd	33,293	-	626
3 rd	33,271	-	625
4 th	33,412	-	628
5 th	33,293	-	626
Total	1,66,466	585	3,129

LAND USE

Type of Land	Present Land Use (in Ha)	At the End of Plan Period (in Ha)	At the end of Mine (in Ha)	Conceptual Period (in Ha)		
				Public Use	Water Body	Plantation
Quarry	0.411 (including water logged)	0.641	0.763 (including backfilling 0.062 Ha)	-	0.715	0.048 (dead bench plantation)
Greenbelt within Safety Barrier	Nil	0.387	0.387	-	-	0.387
Approach Road	0.022	0.015	Nil	-	-	-
Parapet Wall	Nil	0.003	Nil	-	-	-
Garland Drain	Nil	0.005	Nil	-	-	-
Total Area in Use	0.433	1.075	1.150	-	0.715	0.435
Balanced Area unused	0.717	0.075	Nil	-	-	-
Total Applied Area	1.150	1.150	1.150	1.150		

A UHA 216    

ENVIRONMENT MANAGEMENT

Green Belt Development

Sl.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.387 Ha	970
2	Other Reclaimed Area	:	0.000	000
3	Haul /Approach Road	:	0.14 km	140 Trees both side approach road.

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

Solid Waste Management

- Overburden Generation will be in form of gritty soil 585 cum and intercalated waste of 3,129 cum. during the plan period. The gritty soil will be removed and will be simultaneously used in road dressing, plantation & maintenance and the rest will be backfilled in north – central portion of the mine pit.

Water Pollution Control Measures:

- Negligible impact envisaged on surface water and ground water due to mining, as no discharge of effluents or intersection of ground water.
- No major surface water body within 1 km radius of the project site.
- Post-project the quarry area will serve as a reservoir, which will be a source of water for the nearby areas.
- Garland drains shall be developed to divert storm water flowing into the mine pit.

Air and Noise Pollution Control Measures:

- Water sprinkling shall be done on the haul roads.
- Plantation to be done in the safety zone develop a green belt along the ML boundary.
- Sharp drill will be used and wet drilling will be followed.
- Controlled blasting – Nonel technology will be used.
- Overloading will be prohibited while transporting. Water sprinkling will be taken up.
- Plantation along transportation route will be done.
- Regular monitoring of Air quality & PUC for vehicle will be carried out.

Risk Assessment

Sl. No.	Activity	Hazard	Probabilit	Severity	Score
1	Temporary storage of Explosives	Unintended Explosions	Remote	Catastrophic	7
2	Charging of Explosives	Unintended explosion or	Remote	Catastrophic	7
3	Blasting	Hitby fly rock (bodily injuries)	Occasional	Major	8
4	Bench Formation	Rockfalls or slide due to lack of bench face stability (bodily	Occasional	Major	8
5	Transportation	Vehicle Accident (bodily injuries)	Probable	Major	5

The risk score lies between 5 to 8. Hence, the risk in stone quarry ranges from High to Medium and are "Acceptable".

Undertaking submitted affirming:

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

- 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 protecting 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 Taranga Stone Deposit of M/s Maa Tara Stone Mines (Partners : Shri Tapesk Kumar Pandey & Shri Amit Kumar Pandey), Village : Taranga, Thana : Chandrapura, Thana no. : 102, Distt. : Bokaro, Jharkhand (1.15 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

2. Nawadih Stone Deposit of M/s Jyoti Minerals (Prop. : Shri Mohan Lal Jain), Village : Nawadih, Tehsil : Peterwar, Distt. : Bokaro, Jharkhand (2.12 Ha).
(Proposal No. : SIA/JH/MIN/ 444670/2023).

The Project Authority with consultant requested for withdrawal of proposal. The Committee accepted the request for withdrawal.

3. Amainagar Stone Deposit of Md. Ishaque Ansari & M.G. Mustafa, Village : Amainagar, Tehsil : Chandankiyari, Distt. : Bokaro, Jharkhand (1.347 Ha).
(Proposal No. : SIA/JH/MIN/ 444711/2023).

Applied Area : 3.33 Acres (1.347 Ha)
Project Category : B2 – Application for Environment Clearance
EC Application for : Total Excavation – Stone – 111 TPD



Annual Production – 61,339 m³/1, 71,748 TPA

Gritty soil – 5,175 m³ in plan period (5 years)

Intercalated Waste – 1,6137 m³ in plan period (5 years)

DG Set – Not proposed

Crusher – Not proposed

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

This is a new project which has been taken for appraisal on 10.10.2023.

PROJECT & LOCATION DETAILS

Sl.	Parameter	Details
1	Project Name	: Amainagar Stone Deposit
2	Lessee:	: Md. Ishaque Ansari & M G Mustafa (Partners)
3	Lease Address	: Village – Amainagar, Thana- Chandankiyari Thana No.- 269, District – Bokaro, State – Jharkhand.
4	Lease Area	: Ha: 1.347 Acres: 3.33
5	Type of Land	: Non-Forest – Rayati Barren Land
6	Project Cost	: Rs. 105.357 Lakhs
7	EMP Budget	: Capital: Rs. 19.65 Lakhs Recurring: Rs. 1.97 Lakhs/ year Monitoring cost: Rs. 0.90 Lakhs/year
8	CSR / CER Budget	: Rs. 2.634 Lakhs
9	New or Expansion	: New
10	Mineable Reserves	: 3,06,688 cum. Tons: 8,58,728
11	Mine Life	: 5 years only (proposed lease period is of 5 years)
12	Manpower	: 39 Person
13	Water Requirement	: 8.864 KLD (Drinking: 3.12 KLD, Dust Suppression & Plantation: 5.744 KLD)
14	Water Source	: Supply Tankers
15	DG Set / power	: Not Proposed/Not Applicable
16	Crusher	: Not proposed/Not Applicable
17	Nearest Water Body	: Taragunia Nadi – 0.18 km NE Tasharkuan River – 0.50 km N
18	Nearest Habitation	: Amainagar – 1.0 km SW, Nadiha- 3.66 km NW
19	Nearest Railway Station	: Santaldih – Railway Station - 14.40 km (NE)
20	Nearest Airport	: Birsa Munda Airport, Ranchi- 108.44 km (SW)
21	Nearest Forest	: Galgaltanr PF 5.70 km NE Rakhtanr PF 0.27 km NE Amainagar PF 1.90 km NE Beratanr PF 4.28 km (NW) Banekdih PF 9.02 km (SW)

WORKING DETAILS

1	Mining Method	:	Opencast Mechanized Mining
2	Quarry Area	:	0.982 ha (Plan Period)
3	Waste Generation	:	Gritty Soil – 5,175 cum (plan period) Intercalated Waste – 16,137 cum
			Life of Mine – 5 years (Proposed lease period is of 5 years)
4	Stripping Ratio	:	27:1 (T:m3)
5	Working Days	:	300 days/year
6	Benches: size & No	:	6m x 6m
7	Elevation of Mine (Maximum)	:	In 180 m MSL
8	Elevation of Mine (Minimum)	:	In 178 m MSL
9	Ultimate Working Depth	:	In 144 m MSL
10	Water Table	:	In 139 m MSL
11	Topography of Mine	:	Gently sloping
12	Explosive Requirement	:	Slurry – 94.5 kg/day
13	Diesel/Fuel requirement	:	Diesel - 50 liter/day

PRODUCTION DETAILS

Year	Production of Stone in Tonnes per Annum	Gritty Soil removable in cum for 5 years	Intercalated Waste removable in cum for 5 years
1 st	61,338	3,075	3,228
2 nd	61,329	-	3,227
3 rd	61,339	525	3,228
4 th	61,298	1,575	3,226
5 th	61,339	-	3,228
Total	8,58,601	5,175	16,137

A

U

222

C

edu

12

man

LAND USE

Type of Land	Present Land Use (in Ha)	At the End of Plan Period (In Ha)	At the end of Mine (In Ha)	Conceptual Period (In Ha)			
				Public Use	Backfill	Water Body	Plantation
Quarry	Nil	0.982 (including backfilling 0.18 ha)	0.982 (including backfilling 0.18 ha)	-	0.047	0.935	-
Greenbelt within Safety Barrier	Nil	0.365	0.365	-	-	-	0.365
Approach Road	0.064	Nil	Nil	-	-	-	-
Total Area in Use	0.064	1.347	1.347	-	0.047	0.935	0.365
Balanced Area unused	1.283	Nil	Nil	-	-	-	-
Total Applied Area	1.347	1.347	1.347	1.347			

ENVIRONMENT MANAGEMENT

Green Belt Development

Sl.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.365 Ha	915
2	Other Reclaimed Area	:	0.000	000
3	Haul /Approach Road	:	0.65 km	650 Trees both side approach road.

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

A [Signature] [Signature] [Signature] [Signature] [Signature]

Solid Waste Management

- Overburden Generation will be in form of gritty soil 5,175 cum and intercalated waste of 16,137 cum. during the plan period. The gritty soil will be removed and will be simultaneously used in road dressing, plantation & maintenance of road.

Water Pollution Control Measures:

- Negligible impact envisaged on surface water and ground water due to mining, as no discharge of effluents or intersection of ground water.
- No major surface water body within 1 km radius of the project site.
- Post-project the quarry area will serve as a reservoir, which will be a source of water for the nearby areas.
- Garland drains shall be developed to divert storm water flowing into the mine pit.

Air and Noise Pollution Control Measures:

- Water sprinkling shall be done on the haul roads.
- Plantation to be done in the safety zone develop a green belt along the ML boundary.
- Sharp drill will be used and wet drilling will be followed.
- Controlled blasting – Nonel technology will be used.
- Overloading will be prohibited while transporting. Water sprinkling will be taken up.
- Plantation along transportation route will be done.
- Regular monitoring of Air quality & PUC for vehicle will be carried out.

Risk Assessment

Sl. No	Activity	Hazard	Probabilit	Severity	Score
1	Temporary storage of Explosives	Unintended Explosions	Remote	Catastrophic	7
2	Charging of Explosives	Unintended explosion or exposure	Remote	Catastrophic	7
3	Blasting	Hitby fly rock (bodily injuries)	Occasional	Major	8
4	Bench Formation	Rockfalls or slide due to lack of bench face stability (bodily injuries)	Occasional	Major	8
5	Transportation	Vehicle Accident (bodily injuries)	Probable	Major	5

The risk score lies between 5 to 8. Hence, the risk in stone quarry ranges from High to Medium and are "Acceptable".

A *[Signature]*

[Signature] *[Signature]*

[Signature] *[Signature]*

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 protecting 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 Amainagar Stone Deposit of Md. Ishaque Ansari & M.G. Mustafa, Village : Amainagar, Tehsil : Chandankiyari, Distt. : Bokaro, Jharkhand (1.347 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

A UMA B C D E

4. Lohanjara Brick Earth Deposit of M/s Gold Bricks (Prop. : Shri Lukman Ansari), Village Lohanjara, Circle : Sisai, Distt. : Gumla, Jharkhand (1.71 Ha).

(Proposal No. SIA/JH/MIN/446603 /2023).

Applied Area: 4.23 Acres (1.71 Ha)

Project Category: B2 – Application for Environment Clearance

EC Application for: Soil : 1200 m³/yr;
6000 m³ during plan period

Top soil : 768.80 m³ during plan period.

DG Set : Not proposed

Mobile Crusher : Not proposed

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

This is a new project which has been taken for appraisal on 10.10.2023.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	: Lohanjara Brick Clay Mining
2	Lessee:	: M/s Gold Bricks, Proprietor- Lukman Ansari
3	Lease Address	: Village- Lohanjara, P.O. – Sahijana, Panchayat –Larango, Thana - Sisai, District – Gumla , State – Jharkhand
4	Lease Area	: Ha:1.71 Acres:4.23
5	Type of Land	: Non Forest – Rayati Land
6	Project Cost	: Proposed: Rs. 15.52 Lakhs
7	EMP Budget	: Capital: Rs. 4.85 Lakhs Recurring: Rs. 1.47 Lakhs/ year Monitoring cost: Rs. 0.30 Lakhs/year
8	CSR / CER Budget	: Rs. 0.78 Lakhs
9	New or Expansion	: New
10	Mineable Reserves	: Cu.M.: 4983 Cu. M. Tonnes: Nil
11	Mine Life	: 25.30 years
12	Man power	: 13 Person
13	Water Requirement	: 3.71 KLD (Drinking: 0.20 KLD, Dust Suppression & Plantation: 2.31 KLD)
14	Water Source	: Through Water Tanker –near by spring/Nala & Wells
15	DG Set / power	: Not Applicable
16	Crusher	: Not Applicable
17	Nearest Water Body	: South Koel River – 4.03 km- W
18	Nearest Habitation	: Lohanjara Village – 0.30 km W direction from the mine site.
19	Nearest Rail Station	: Lohardaga Railway Station 19.54 Km NE direction from the mine site.

20	Nearest Air Port	:	Birsa munda Airport, Ranchi 68.84 km E direction from the mine site.
21	Nearest Forest	:	Dari PF -4.88 km – E
22	Road & Highways	:	SH 143A – 6.84 km -NW direction from the mine site.

CO-ORDINATES

1	Latitude	:	23° 16' 32.15" N	23° 16' 38.36" N
2	Longitude	:	84° 39' 09.71" E	84° 39' 14.37" E

LAND DETAILS :

Khata No.	Plot No.	Area in Acre
04	813 & 814	4.23

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease agreement made.
2	CO	:	The CO, Sisai vide letter no. 920, dated 14.12.2020 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Gumla vide memo no. 825/M, dated 21.09.2023 certified that 01 other mining lease area (1.18 Acre) exists within 500 m radius from proposed project site and total area is 5.41 Acre (2.49 Ha).
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 121, dated 15.02.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division vide letter no. 2420, dated 15.09.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.
7	Gram Sabha	:	Gram Sabha conducted on 27.12.2020.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 75/M, dated 19.01.2021.

A UHA

B

cdm

Sh mnd

WORKING DETAILS

1	Mining Method	:	Opencast Manual Mining
2	Quarry Area	:	5 years- 0.308 ha
3	Waste Generation	:	5 years- Nil
4	Stripping Ratio	:	NA
5	Working Days	:	200 days/year
6	Bench: size & No	:	1m x 1.5m
7	Elevation of Mine	:	In 633 MSL
8	Ground Level Elevation	:	In 631MSL
9	Ultimate Working Depth	:	In 630.5MSL
10	Water Table	:	In 625 MSL
11	Topography of Mine	:	Approx flat area
12	Explosive Requirement	:	Not applicable
13	Diesel/Fuel requirement	:	Not applicable due to manual mining

PRODUCTION DETAILS

Year	Production Bricks Clay in cum per Annum	Topsoil removable in cum for 5 years
1 st	1200	768.80
2 nd	1200	
3 rd	1200	
4 th	1200	
5 th	1200	
Total	6000	768.80

LAND USE

Sl. No.	Pattern of Utilization	Present/Existing land use pattern in (Ha)	Land at the end of the plan period(Ha)	Land at the conceptual period(Ha)
1	Mining Activities	0.00	0.308	1.184(Area reclaimed as cultivation land and handed over to rayat)
2	Safety Zone Green Belt	0.00	0.528	0.23
3	Storage of casted bricks	0.00	0.648	0.00

4	Kiln	0.00	0.182	0.50
5	Mine Road	0.00	0.044	0.00
	Total	1.71	1.71	1.71

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.528 Ha	000
2	Other Reclaimed Area	:	0.000	000
3	Haul /Approach Road	:	100 meter	66 Tree both side approach road.

- Gablon 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

- Topsoil Generation will be 768.80 Cu.M. during the plan period. The topsoil shall be used for progressive backfilling during mining operation.

Water Pollution Control Measures:

- Mining operation will be restricted to the depth of 2m from surface level.
- Quality of dug well will be monitored, in order to ensure the quality of water is not affected.

Air and Noise Pollution Control Measures:

- Dust suppression measures like spraying / sprinkling of water to keep the surface wet.
- Overloading of the truck / tractor trolleys will not be done.

As the only impact is due to transportation of soil through village roads, emphasis will be given on the following points:

- Carts or tractor-trolleys will be developed on village roads.
- Tractors-trolleys will be well maintained and PUC certified.

A U M B C M S

- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Minimum use of horns in the village area and silence zone (if any) as applicable.

Undertaking submitted affirming:

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

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 Lohanjara Brick Earth Deposit of M/s Gold Bricks (Prop. : Shri Lukman Ansari), Village : Lohanjara, Circle : Sisai, Distt. : Gumla, Jharkhand (1.71 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I.

A  230    

5. Khora Patratoli Brick Clay Deposit of M/s Rahul Traders (Prop. : Shri Rahul Kumar Agarwal), Village : Khora Patratoli, Thana : Gumla, Distt. : Gumla, Jharkhand (0.809 Ha).
(Proposal No. SIA/JH/MIN/446610 /2023).

Applied Area: 2.00 Acres (0.8097 Ha)

Project Category: B2 – Application for Environment Clearance

EC Application for: Soil: 1200 m³/yr;

6, 00,000 bricks /Annum

Top soil: 700 m³ during plan period.

DG Set: Not proposed

Mobile Crusher: Not proposed

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

This is a new project which has been taken for appraisal on 10.10.2023.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	: Khora Patratoli Brick Clay Deposit
2	Lessee:	: M/s Rahul Traders, Proprietor- Sri Rahul Kumar Agarwal
3	Lease Address	: At: Village–Khora Patratoli, Thana – Gumla, Thana No. – 77, District – Gumla, Jharkhand
4	Lease Area	: Ha:0.8097 Acres:2.00
5	Type of Land	: Non-Forest – Rayati Land
6	Project Cost	: Rs. 16.70 Lakhs
7	EMP Budget	: Capital: Rs. 2.15 Lakhs Recurring: Rs. 1.91 Lakhs/ year Monitoring cost: Rs. 0.30 Lakhs/year
8	CSR / CER Budget	: Rs. 0.83 Lakhs
9	New or Expansion	: New
10	Mineable Reserves	: Cu.M.: 7586.61 Cu. M. Tonnes: Nil
11	Mine Life	: 13 Years Only
12	Man power	: 20 Person
13	Water Requirement	: 3.23 KLD (Drinking: 0.30 KLD, Dust Suppression & Plantation: 1.15 KLD, Process Use: 1.20 KLD, Plantation-0.58 KLD)
14	Water Source	: Through Water Tanker –nearby spring/Nala & Wells
15	DG Set / power	: Not Applicable
16	Crusher	: Not Applicable
17	Nearest Water Body	: Paro nadi – 4.0 km N Khatwa Nadi– 7.88 km NE
18	Nearest Habitation	: Harua Toli – 0.55 km Edirection from the mine site.
19	Nearest Rail Station	: Lohardaga Railway Station 44.18 km NE direction from the mine site.
20	Nearest Air Port	: Birsa munda Airport, Ranchi 77.83 km NE direction from the mine

A Uman

B

X

		site.
21	Nearest Forest	: None within 10 km
22	Road & Highways	: NH-43 at 1.41 km NW direction from the mine site.

CO-ORDINATES

1	Latitude	: From 23°03'27.40" N	To 23°03'24.09" N
2	Longitude	: From 84°36'43.93" E	To 84°36'45.88" E

LAND DETAILS :

Khata No.	Plot No.	Area in Acre
417	6156 (P)	2.00

STATUTORY CLEARANCES

1	LOI / Lease docs	: Land agreement made.
2	CO	: The CO, Gumla (Sadar) vide letter no. 93, dated 22.01.2021 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatyan & Register II.
3	DMO	: DMO, Gumla vide memo no. 824/M, dated 21.09.2023 certified that 01 other mining lease area (3.26 Acre) exists within 500 m radius from proposed project site.
4	DFO Wild Life	: DFO, Wildlife Ranchi vide memo no. 767, dated 27.10.2020 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	: Division Forest Officer, Gumla Forest Division vide letter no. 1927, dated 03.10.2020 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	: This project is mentioned in District Survey Report (DSR) of Gumla district in Page No. 29 at Sl. No. 21).
7	Gram Sabha	: Gram Sabha conducted on 18.07.2020.
8	Mine Plan Approval	: Approved by DMO, Gumla vide Letter No. 890/M, dated 19.12.2020.

WORKING DETAILS

1	Mining Method	:	Opencast Manual Mining	
2	Quarry Area	:	5 years– 0.343 ha	Life of Mine – 0.485 ha
3	Waste Generation	:	5 years–Nil	Life of Mine –13 years
4	Stripping Ratio	:	10:1	
5	Working Days	:	200 days/year	
6	Bench: size & No	:	1m x 1.75 m	
7	Elevation of Mine	:	In 618 MSL	
8	Ground Level Elevation	:	In 618 MSL	
9	Ultimate Working Depth	:	In 618 m to 616 m MSL	
10	Water Table	:	In 608 MSL and also 5-8 m bgl	
11	Topography of Mine	:	Flat area	
12	Explosive Requirement	:	Not applicable	
13	Diesel/Fuel requirement	:	Not applicable due to manual mining	

PRODUCTION DETAILS

Year	Production Bricks Clay in cum per Annum	Topsoil removable in cum for 5 years
1 st	1200	700
2 nd	1200	
3 rd	1200	
4 th	1200	
5 th	1200	
Total	6000	700

LAND USE

Category	Existing (acres)	Proposed Land use for current plan period (acres)	Land used at the conceptual stage i.e., end of mine life in (acres)
Mining Activities	0.00	0.85	1.20
Topsoil storage, Road/ Infrastructure/etc.	0.00	0.18	0.18
Safety Zone(2m)/Green Belt	0.00	0.62	0.62
Unutilized	2.00	1.65	0.00
Total Area	2.00	2.00	2.00

A  B    

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.25 Ha	625
2	Other Reclaimed Area	:	0.000	000
3	Haul /Approach Road	:	100 meter	20 Tree both side approach road.

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

Solid Waste Management

- Top soil Generation will be 1825.87 Cu.M., during the life of Mine. The top soil shall be used for progressive backfilling during mining operation.

Water Pollution Control Measures:

- Mining operation will be restricted to the depth of 2m from surface level.
- Quality of dug well will be monitored, in order to ensure the quality of water is not affected.

Air and Noise Pollution Control Measures:

- Dust suppression measures like spraying / sprinkling of water to keep the surface wet.
- Overloading of the truck / tractor trolleys will not be done.

As the only impact is due to transportation of soil through village roads, emphasis will be given on the following points:

- Carts or tractor-trolleys will be developed on village roads.
- Tractors-trolleys will be well maintained and PUC certified.
- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Minimum use of horns in the village area and silence zone (if any) as applicable.

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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- m. It is proposed to remove topsoil before excavating soil for brick making. It will be used for raising plantation around the mining or leveling of land.

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 Khora Patratoli Brick Clay Deposit of M/s Rahul Traders (Prop. : Shri Rahul Kumar Agarwal), Village : Khora Patratoli, Thana : Gumla, Distt. : Gumla, Jharkhand (0.809 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

A 

G 

6. Jhargaon Brick Earth Mining of M/s Rani Bricks (Prop. : Shri Shahzad Alam), Village : Jhargaon, Thana : Gumla, Distt. : Gumla, Jharkhand (1.56 Ha).

(Proposal No. SIA/JH/MIN/446625 /2023).

Applied Area: 3.84 Acres (1.56 Ha)

Project Category: B2 – Application for Environment Clearance

EC Application for: Soil : 1200 m³/yr;

6000 m³ during plan period

Top soil : 1506 m³ during plan period.

DG Set :Not proposed

Mobile Crusher : Not proposed

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

This is a new project which has been taken for appraisal on 10.10.2023.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	: Jhargaon Brick Clay Mining
2	Lessee:	: M/s Rani Bricks, Proprietor- Shahzad Alam
3	Lease Address	: Village -Jhargaon, Thana - Gumla, District – Gumla, Jharkhand.
4	Lease Area	: Ha:1.56 Acres:3.84
5	Type of Land	: Non Forest – Rayati Land
6	Project Cost	: Proposed: Rs. 13.65 Lakhs
7	EMP Budget	: Capital: Rs. 3.00 Lakhs Recurring: Rs. 1.78 Lakhs/ year Monitoring cost: Rs. 0.30 Lakhs/year
8	CSR / CER Budget	: Rs. 0.68 Lakhs
9	New or Expansion	: New
10	Mineable Reserves	: Cu.M.: 29,580 Cu. M. Tonnes: Nil
11	Mine Life	: 20 years
12	Man power	: 16 Person
13	Water Requirement	: 2.64 KLD (Drinking: 0.16 KLD, Dust Suppression & Plantation: 1.282 KLD)
14	Water Source	: Through Water Tanker –nearby spring/Nala & Wells
15	DG Set / power	: Not Applicable
16	Crusher	: Not Applicable
17	Nearest Water Body	: Nagjua Railway Station – 23.20 km –NE
18	Nearest Habitation	: Jhargaon Village – 1.40 km NE direction from the mine site.
19	Nearest Rail Station	: Nagjua Railway station – 23.20 km NE direction from the mine site.
20	Nearest Air Port	: Birsa munda Airport, Ranchi 82.63 km NE direction from the mine site.

21	Nearest Forest	:	Nil
22	Road & Highways	:	NH-143 A – 0.57 km W direction from the mine site.

CO-ORDINATES

1	Latitude	:	23°08'50.20" N	N23°08'56.95"N
2	Longitude	:	84° 32' 06.25" E	84° 32' 12.27" E

LAND DETAILS :

Khata No.	Plot No.	Area in Acre
60	291 & 292	3.84

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease agreement made.
2	CO	:	The CO, Gumla (Sadar) vide letter no. 978, dated 01.10.2019 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Gumla vide memo no. 906/M, dated 09.10.2023 certified that 02 other mining lease area (2.50 Acre & 2.69 Acre) exists within 500 m radius from proposed project site and total area is 9.02 Acre (3.65 Ha).
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide memo no. 1148, dated 11.10.2019 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division vide letter no. 2364, dated 04.10.2019 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.
7	Gram Sabha	:	Gram Sabha conducted on 20.09.2019.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 684/M, dated 03.11.2020.

A ~ ~ ~

B ~ ~ ~

C ~ ~ ~

WORKING DETAILS

1	Mining Method	: Opencast Manual Mining
2	Quarry Area	: 5 years--0.75ha
3	Waste Generation	: 5 years--Nil
4	Stripping Ratio	: NA
5	Working Days	: 200 days/year
6	Benches: size & No	: 1m x 1.5m
7	Elevation of Mine	: In 618 MSL
8	Ground Level Elevation	: In 628MSL
9	Ultimate Working Depth	: In 626MSL
10	Water Table	: In 619 MSL
11	Topography of Mine	: Approx flat area
12	Explosive Requirement	: Not applicable
13	Diesel/Fuel requirement	: Not applicable due to manual mining

PRODUCTION DETAILS

Year	Production Bricks Clay in cum per Annum	Topsoil removable in cum for 5 years
1 st	1200	1506
2 nd	1200	
3 rd	1200	
4 th	1200	
5 th	1200	
Total	6000	1506

LAND USE

Category	Existing (ha)	Proposed Land use for current plan period (ha)	Land used at the conceptual stage i.e end of mine life in (ha)
Mining Activities	-	0.75	1.44
Topsoil storage, Road/ Infrastructure/etc.	-	-	-
Safety Zone(2m)/Green Belt	-	0.069	0.069
Unutilized	1.56	0.73	0.04
Total Area	1.56	1.56	1.56

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.069 Ha	000
2	Other Reclaimed Area	:	0.000	000
3	Haul /Approach Road	:	150 meter	100 Tree both side approach road.

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

Solid Waste Management

- Topsoil Generation will be 1506 Cu.M. during the plan period. The topsoil shall be used for progressive backfilling during mining operation.

Water Pollution Control Measures:

- Mining operation will be restricted to the depth of 2m from surface level.
- The quality of dug well will be monitored, to ensure the quality of water is not affected.

Air and Noise Pollution Control Measures:

- Dust suppression measures like spraying / sprinkling of water to keep the surface wet.
- Overloading of the truck / tractor trolleys will not be done.

As the only impact is due to transportation of soil through village roads, emphasis will be given on the following points:

- Carts or tractor-trolleys will be developed on village roads.
- Tractor trolleys will be well maintained, and PUC certified.
- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Minimum use of horns in the village area and silence zone (if any) as applicable.

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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- m. It is proposed to remove topsoil before excavating soil for brick making. It will be used for raising plantation around the mining or leveling of land.

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 Jhargaon Brick Earth Mining of M/s Rani Bricks (Prop. : Shri Shahzad Alam), Village : Jhargaon, Thana : Gumla, Distt. : Gumla, Jharkhand (1.56 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I.

7. Brick Soil Mining of M/s Babu Bricks (Prop. : Shri Taufik Alam), Village : Debidih, Thana : Gumla, Distt. : Gumla, Jharkhand (1.01 Ha).

(Proposal No. SIA/JH/MIN/446511 /2023).

Applied Area: 2.50 Acres (1.01 Ha)

Project Category: B2 – Application for Environment Clearance

EC Application for: Soil: 1200 m³/yr;

6, 00,000 bricks/Annum

Top soil: 700 m³ during plan period.

DG Set: Not proposed

Mobile Crusher: Not proposed

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

This is a new project which has been taken for appraisal on 10.10.2023.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	: Debidih Brick Earth Deposit
2	Lessee:	: M/s Babu Bricks Proprietor- Sri Taufik Alam
3	Lease Address	: At: Mouza - Debidih, Thana - Gumla, Thana No. – 27, District – Gumla, Jharkhand
4	Lease Area	: Ha:1.01 Acres:2.50
5	Type of Land	: Non-Forest – Rayati Land
6	Project Cost	: Rs. 13.50 Lakhs
7	EMP Budget	: Capital: Rs. 3.00 Lakhs Recurring: Rs. 1.40 Lakhs/ year Monitoring cost: Rs. 0.30 Lakhs/year
8	CSR / CER Budget	: Rs. 0.675 Lakhs
9	New or Expansion	: New
10	Mineable Reserves	: Cu.M.: 16,418 Cu. M. Tonnes: Nil
11	Mine Life	: 14 Years Only
12	Man power	: 10 Person
13	Water Requirement	: 2.54 KLD (Drinking: 0.15 KLD, Dust Suppression & Plantation: 0.96 KLD, Process Use:0.12 KLD, Plantation-0.23 KLD)
14	Water Source	: Through Water Tanker –nearby spring/Nala & Wells
15	DG Set / power	: Not Applicable
16	Crusher	: Not Applicable
17	Nearest Water Body	: Anriya Nadi at 1.17 Km in North
18	Nearest Habitation	: Debidih village 0.49 km W direction from the mine site.
19	Nearest Rail Station	: Lohardaga Railway Station 37 km NE direction from the mine site.
20	Nearest Air Port	: Birsa munda Airport, Ranchi 83 km SE direction from the mine site.

A U M

B

dx

21	Nearest Forest	:	Janna PF at 8 km SW direction from the mine site. Kuio PF at 7.95 km SW direction from the mine site. Gani PF at 7.96 km SW direction from the mine site. Anjan PF at 7.03 km W direction from the mine site. Kulhi PF at 6.29 km direction from the mine site.
22	Road & Highways	:	State Highway (Gulma to Ranchi) 0.58 km W direction from the mine site.

CO-ORDINATES

1	Latitude	:	From 23° 09' 02.24" N	To 23° 09' 07.86" N
2	Longitude	:	From 84° 32' 05.99" E	To 84° 32' 09.40" E

LAND DETAILS :

Khata No.	Plot No.	Area in Acre
51	1177 (P)	2.50

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease agreement made.
2	CO	:	The CO, Gumla (Sadar) vide letter no. 814, dated 28.06.2023. has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Gumla vide memo no. 905/M, dated 09.10.2023 certified that 02 other mining lease area (3.83 Acre & 2.69 Acre) exists within 500 m radius from proposed project site and total area is 9.02 Acre.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 900, dated 08.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division vide letter no. 1658, dated 04.07.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.

7	Gram Sabha	:	Gram Sabha conducted on 20.07.2023.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 644/M, dated 20.07.2023.

WORKING DETAILS

1	Mining Method	:	Opencast Manual Mining
2	Quarry Area	:	5 years– 0.357 ha Life of Mine – 0.959 ha
3	Waste Generation	:	5 years–Nil Life of Mine –14 years
4	Stripping Ratio	:	NA
5	Working Days	:	200 days/year
6	Bench: size & No	:	1m x 1.5 m
7	Elevation of Mine	:	In 621 MSL
8	Ground Level Elevation	:	In 621 MSL
9	Ultimate Working Depth	:	In 621 m to 619 m MRL
10	Water Table	:	In 611 MSL and also 5-8 m bgl
11	Topography of Mine	:	Flat area
12	Explosive Requirement	:	Not applicable
13	Diesel/Fuel requirement	:	Not applicable due to manual mining

PRODUCTION DETAILS

Year	Production Bricks Clay in cum per Annum	Topsoil removable in cum for 5 years
1 st	1200	700
2 nd	1200	
3 rd	1200	
4 th	1200	
5 th	1200	
Total	6000	700

A

B

LAND USE

Category	Existing (Acres)	Existing (ha.)	Proposed Plan Period (Acres)	Proposed Plan Period (ha.)	Conceptual Plan (ha.)
Quarry Area	0.00	0.00	0.88	0.357	0.959 (Converted to levelled land with topsoil spread)
Topsoil storage, Road/ Infrastructure/ etc.	0.02	0.008	0.09	0.035	
Berm Area & Plantation	0.00	0.00	0.13	0.053	0.052
Unutilized Area	2.48	1.00	1.40	0.565	0.00
Total Area	2.50	1.01	2.50	1.01	1.01

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION	Area/Length	No of Trees
1	Safety Zone	: 0.053 Ha	130
2	Other Reclaimed Area	: 0.000	000
3	Haul /Approach Road	: 100 meter	66 Tree both side approach road.

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

Solid Waste Management

- Top soil Generation will be 2020 Cu.M., during the life of Mine. The top soil shall be used for progressive backfilling during mining operation.

Water Pollution Control Measures:

- Mining operation will be restricted to the depth of 2m from surface level.

- Quality of dug well will be monitored, in order to ensure the quality of water is not affected.

Air and Noise Pollution Control Measures:

- Dust suppression measures like spraying / sprinkling of water to keep the surface wet.
- Overloading of the truck / tractor trolleys will not be done.

As the only impact is due to transportation of soil through village roads, emphasis will be given on the following points:

- Carts or tractor-trolleys will be developed on village roads.
- Tractors-trolleys will be well maintained and PUC certified.
- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Minimum use of horns in the village area and silence zone (if any) as applicable.

Undertaking submitted affirming:

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

The bottom of the page features several handwritten signatures and initials. On the left, there is a signature that appears to be 'A' followed by some illegible marks. In the center, there is a large, stylized signature that looks like 'R' or 'B'. To its right is another signature that appears to be 'M'. On the far right, there are two more signatures, one of which is a large, bold 'X' followed by a flourish.

- m. It is proposed to remove topsoil before excavating soil for brick making. It will be used for raising plantation around the mining or leveling of land.

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 Brick Soil Mining of M/s Babu Bricks (Prop. : Shri Taufik Alam), Village : Debidih, Thana : Gumla, Distt. : Gumla, Jharkhand (1.01 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

8. Brick Soil Mining of M/s Birla Int Udhyog (Partners : Md. Mustak & Md. Noushad Alam), Village : Dumri, Thana : Dumri, Distt. : Gumla, Jharkhand (0.90 Ha).

(Proposal No. SIA/JH/MIN/446596 /2023).

Applied Area: 2.23 Acres (0.90 Ha)

Project Category: B2 – Application for Environment Clearance

EC Application for: Soil: 1200 m³/yr;

6, 00,000 bricks /Annum

Top soil: 710 m³ during plan period.

DG Set: Not proposed

Mobile Crusher: Not proposed

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

This is a new project which has been taken for appraisal on 10.10.2023.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	: Dumri Brick Clay Earth Deposit
2	Lessee:	: M/s Birla Int Udhyog Proprietor- Partners – Md. Mustak & Md Noushad Alam
3	Lease Address	: At: Village Dumri, Thana– Dumri, District – Gumla, Jharkhand.
4	Lease Area	: Ha:0.90 Acres:2.23
5	Type of Land	: Non-Forest – Rayati Land
6	Project Cost	: Rs. 14.84 Lakhs
7	EMP Budget	: Capital: Rs. 3.39 Lakhs Recurring: Rs. 1.86 Lakhs/ year Monitoring cost: Rs. 0.30 Lakhs/year

8	CSR / CER Budget	:	Rs. 0.75 Lakhs
9	New or Expansion	:	New
10	Mineable Reserves	:	Cu.M.: 14,029 Cu. M. Tonnes: Nil
11	Mine Life	:	12 Years Only
12	Man power	:	10 Person
13	Water Requirement	:	2.92 KLD (Drinking: 0.15 KLD, Dust Suppression & Plantation: 0.85 KLD, Process Use:0.12 KLD, Plantation-0.72 KLD)
14	Water Source	:	Through Water Tanker –nearby spring/Nala & Wells
15	DG Set / power	:	Not Applicable
16	Crusher	:	Not Applicable
17	Nearest Water Body	:	Laphari Nadi at 0.25 Km in SW
18	Nearest Habitation	:	Jilintoli village 0.67 km NE direction from the mine site.
19	Nearest Rail Station	:	Lohardaga Railway Station 68.53 km NE direction from the mine site.
20	Nearest Air Port	:	Birsa munda Airport, Ranchi 125 km NE direction from the mine site.
21	Nearest Forest	:	Katari PF at 3.62 km NW direction from the mine site. Dauna Pahar (Open Sal Jungle) at 1.76 km SE direction from the mine site. Suali PF at 3.43 km SW direction from the mine site Lonhara PF at 4.35 SW direction from the mine site
22	Road & Highways	:	NH-143B at 1.7 km E direction from the mine site.

CO-ORDINATES

1	Latitude	:	From 23°09'16.55" N To 23°09'19.59" N
2	Longitude	:	From 84°06'49.77"E To 84°06'57.88"E

LAND DETAILS :

Khata No.	Plot No.	Area in Acre
161	2319 (P)	2.23

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Dumri vide letter no. 396, dated 21.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatian.

A UMA

B

WMA

Handwritten signature

3	DMO	:	DMO, Gumla vide memo no. 829/M, dated 22.09.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide memo no. 942, dated 18.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division vide letter no. 12, dated 03.01.2018 certified that the distance of notified forest is 3000 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.
7	Gram Sabha	:	Gram Sabha conducted on 20.08.2023.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 312/M, dated 16.09.2023.

WORKING DETAILS

1	Mining Method	:	Opencast Manual Mining	
2	Quarry Area	:	5 years– 0.354 ha	Life of Mine – 0.825 ha
3	Waste Generation	:	5 years–Nil	Life of Mine –12 years
4	Stripping Ratio	:	NA	
5	Working Days	:	200 days/year	
6	Bench: size & No	:	1m x 1.5 m	
7	Elevation of Mine	:	In 756 MSL	
8	Ground Level Elevation	:	In 756 MSL	
9	Ultimate Working Depth	:	In 756 m to 754 m MSL	
10	Water Table	:	In 736 MSL and also 12-18 m bgl	
11	Topography of Mine	:	Flat area	
12	Explosive Requirement	:	Not applicable	
13	Diesel/Fuel requirement	:	Not applicable due to manual mining	

PRODUCTION DETAILS

Year	Production Bricks Clay in cum per Annum	Topsoil removable in cum for 5 years
1 st	1200	710
2 nd	1200	
3 rd	1200	
4 th	1200	
5 th	1200	
Total	6000	710

LAND USE

Category	Existing (Acres)	Existing (ha.)	Proposed Plan Period (Acres)	Proposed Plan Period (ha.)	Conceptual Plan (ha.)
Quarry Area	0.00	0.00	0.874	0.354	0.825
Topsoil storage, Road/ Infrasturur./ etc.	0.044	0.018	0.00	0.00	(Converted to levelled land with topsoil spread)
Berm Area& Plantation	0.00	0.00	0.131	0.053	0.053
Blocked area due to well safety	0.054	0.022	0.054	0.022	0.022
Unutilized Area	2.125	0.860	1.163	0.471	0.00
Total Area	2.23	0.90	2.23	0.90	0.90

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.053 Ha	132
2	Other Reclaimed Area	:	0.000	000

A U A

R

LOS

g m

3	Haul /Approach Road	: 100 meter	14 Tree both side approach road.

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

Solid Waste Management

- Top soil Generation will be 2023 Cu.M., during the life of Mine. The top soil shall be used for progressive backfilling during mining operation.

Water Pollution Control Measures:

- Mining operation will be restricted to the depth of 2m from surface level.
- Quality of dug well will be monitored, in order to ensure the quality of water is not affected.

Air and Noise Pollution Control Measures:

- Dust suppression measures like spraying / sprinkling of water to keep the surface wet.
- Overloading of the truck / tractor trolleys will not be done.

As the only impact is due to transportation of soil through village roads, emphasis will be given on the following points:

- Carts or tractor-trolleys will be developed on village roads.
- Tractors-trolleys will be well maintained and PUC certified.
- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Minimum use of horns in the village area and silence zone (if any) as applicable.

Undertaking submitted affirming:

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

- 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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- m. It is proposed to remove topsoil before excavating soil for brick making. It will be used for raising plantation around the mining or leveling of land.

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 Brick Soil Mining of M/s Birla Int Udhyog (Partners : Md. Mustak & Md. Noushad Alam), Village : Dumri, Thana : Dumri, Distt. : Gumla, Jharkhand (0.90 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

9. Brick Soil Mining of M/s Bargaon Brick (Prop. : Shri Ravindra Sahu), Village : Bargaon, Thana : Sisai, Distt. : Gumla, Jharkhand (0.724 Ha).

(Proposal No. SIA/JH/MIN/446585 /2023).

Applied Area: 1.79 Acres (0.724 Ha)

Project Category: B2 – Application for Environment Clearance

EC Application for: Soil: 1200 m³/yr;

6000 m³ during plan period

Top soil: 735 m³ during plan period.

A U LAA

B

CDM

J

W

DG Set: Not proposed

Mobile Crusher: Not proposed

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

This is a new project which has been taken for appraisal on 10.10.2023.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	: Bargaon Brick Soil Mining
2	Lessee:	: M/s Bargaon Bricks, Proprietor- Shri Ravindra Sahu
3	Lease Address	: S/o – Late Sri Nan Lal Sahu At Village + P.O. – Bargaon, Thana - Sisai, District – Gumla, State – Jharkhand, Pin Code. – 835324
4	Lease Area	: Ha:0.724 Acres:1.79
5	Type of Land	: Non Forest – Rayati Land
6	Project Cost	: Rs. 14.75 Lakhs
7	EMP Budget	: Capital: Rs. 2.95 Lakhs Recurring: Rs. 1.68 Lakhs/ year Monitoring cost: Rs. 0.30 Lakhs/year
8	CSR / CER Budget	: Rs. 0.76 Lakhs
9	New or Expansion	: New
10	Mineable Reserves	: Cu.M.: 10692 Cu. M. Tonnes: Nil
11	Mine Life	: 9 years
12	Man power	: 10 Person
13	Water Requirement	: 2.73 KLD (Drinking: 0.15 KLD, Dust Suppression & Plantation: 1.38 KLD & Process Use: 1.20 KLD)
14	Water Source	: Through Water Tanker –near by spring/Nala & Wells
15	DG Set / power	: Not Applicable
16	Crusher	: Not Applicable
17	Nearest Water Body	: Kans Nadi at 2.36 Km in NE South Koel River at 4.36 in km W
18	Nearest Habitation	: Bargaon Village at 0.75 km in SW direction from the mine site.
19	Nearest Rail Station	: Nagjua Railway Station at 28.65 NE direction from the mine site.
20	Nearest Air Port	: Birsa munda Airport, Ranchi 64.40 km NE direction from the mine site.
21	Nearest Forest	: Open Mixed Jungle (Near Kans Nadi) at 1.94 Km N Open Mixed Jungle (Near Danrhtoli) at 2.62 Km NW
22	Road & Highways	: NH 43 at 3.40 km SE direction from the mine site.

CO-ORDINATES

1	Latitude	: From 23°11'09.71"N To 23°11'13.85"N
2	Longitude	: From 84°42'14.43"E To 84°42'21.65" E

LAND DETAILS :

Khata No.	Plot No.	Area in Acre
268	2353 (P), 2355 (P), 4877 (P), 4878 (P) & 4879 (P)	1.79

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Sisai vide letter no. 575 (ii), dated 06.12.2022 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Gumla vide memo no. 832/M, dated 22.09.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide memo no. 941, dated 18.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division vide letter no. 25, dated 06.01.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.
7	Gram Sabha	:	Gram Sabha conducted on 04.12.2022.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 814/M, dated 16.09.2023.

WORKING DETAILS

1	Mining Method	:	Opencast Manual Mining	
2	Quarry Area	:	5 years– 0.392 ha	Life of Mine – 9 years
3	Waste Generation	:	5 years–Nil	Life of Mine –9 years
4	Stripping Ratio	:	NA	
5	Working Days	:	200 days/year	
6	Benches: size & No	:	1m x 1.5m	
7	Elevation of Mine	:	In 612 MSL	
8	Ground Level	:	In 610MSL	

A

B

C

D

	Elevation		
9	Ultimate Working Depth	:	In 608 MSL
10	Water Table	:	In 601 MSL and also 5.0 – 7.0 m bgl
11	Topography of Mine	:	Flat area
12	Explosive Requirement	:	Not applicable
13	Diesel/Fuel requirement	:	Not applicable due to manual mining

PRODUCTION DETAILS

Year	Production Bricks Clay in cum per Annum	Topsoil removable in cum for 5 years
1 st	1200	735
2 nd	1200	
3 rd	1200	
4 th	1200	
5 th	1200	
Total	6000	735

LAND USE

Category	Existing (acres)	Proposed Land use for current plan period (acres)	Proposed Land use for current plan period (ha)	Land used at the conceptual stage i.e., end of mine life in (acres)
Mining Activities	-	0.96	0.392	2.37
Topsoil storage, Road/ Infrastructure/etc.	0.01	-	-	0.00
Safety Zone(2m)/Green Belt	-	0.18	0.071	0.13
Unutilized	1.78	0.65	0.261	0.00
Total Area	1.79	1.79	0.724	1.79

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	Location	Area/Length	No of Trees
1	Safety Zone	: 0.18 Ha	178
2	Other Reclaimed Area	: 0.000	000

3	Haul /Approach Road	:	100 meter	66 Tree both side approach road.

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

Solid Waste Management

- Top soil Generation will be 735 Cu.M. during the life of Mine. The fertile top soil will be preserved temporarily by dumping and then it will be spread concurrently over the excavated part of the land after the end of each year lifting up of brick soil and grass cultivation will be done on it

Water Pollution Control Measures:

- Mining operation will be restricted to the depth of 2m from surface level.
- Quality of dug well will be monitored, in order to ensure the quality of water is not affected.

Air and Noise Pollution Control Measures:

- Dust suppression measures like spraying / sprinkling of water to keep the surface wet.
- Overloading of the truck / tractor trolleys will not be done.

As the only impact is due to transportation of soil through village roads, emphasis will be given on the following points:

- Carts or tractor-trolleys will be developed on village roads.
- Tractors-trolleys will be well maintained and PUC certified.
- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Minimum use of horns in the village area and silence zone (if any) as applicable.

Undertaking submitted affirming:

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

- 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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- m. It is proposed to remove topsoil before excavating soil for brick making. It will be used for raising plantation around the mining or leveling of land.

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 Brick Soil Mining of M/s Bargaon Brick (Prop. : Shri Ravindra Sahu), Village : Bargaon, Thana : Sisai, Distt. : Gumla, Jharkhand (0.724 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure -- I.

10. Kulankeri Brick Clay Deposit of M/s Ekta Bricks (Prop. : Shri Ritesh Kumar Lal), Village : Kulankeri, Thana : Sisai, Distt. : Gumla, Jharkhand (0.8097 Ha).

(Proposal No. SIA/JH/MIN/446600 /2023).

Applied Area: 2.00 Acres (0.8097 Ha)
 Project Category: B2 – Application for Environment Clearance
 EC Application for: Soil: 1200 m³/year;
 6000 m³ during plan period
 Top soil: 1764.89 m³ during plan period.
 DG Set: Not proposed
 Mobile Crusher: Not proposed

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

This is a new project which has been taken for appraisal on 10.10.2023.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	: Kulangkeri Brick Clay Deposit
2	Lessee:	: M/s Ekta Bricks, Proprietor- Shri Ritesh Kumar Lal
3	Lease Address	: S/o – Late Kunjal Prasad At Village – Urmi, Post – Dumradih, Thana - Gumla, District – Gumla, State – Jharkhand, Pin Code. – 835207
4	Lease Area	: Ha:0.8097 Acres:2.00
5	Type of Land	: Non Forest – Rayati Land
6	Project Cost	: Rs. 14.05 Lakhs
7	FMP Budget	: Capital: Rs. 3.75 Lakhs Recurring: Rs. 1.25 Lakhs/ year Monitoring cost: Rs. 0.30 Lakhs/year
8	CSR / CER Budget	: Rs. 0.70 Lakhs
9	New or Expansion	: New
10	Mineable Reserves	: Cu.M.: 9028.02 Cu. M. Tones: Nil
11	Mine Life	: 5 years
12	Man power	: 16 Person
13	Water Requirement	: 3.22 KLD (Drinking: 0.24 KLD, Dust Suppression & Plantation: 1.78 KLD & Process Use: 1.20 KLD)
14	Water Source	: Through Water Tanker –nearby spring/Nala & Wells
15	DG Set / power	: Not Applicable
16	Crusher	: Not Applicable
17	Nearest Water Body	: South Koel River – 3.50 km NW
18	Nearest Habitation	: Kulangkeri Village – 0.942 km NE from the mine site.
19	Nearest Rail Station	: Lohardaga Railway station - 28.15 km N direction from the mine site.
20	Nearest Air Port	: Birsa Munda Airport – 64.30 km NE direction from the mine site.
21	Nearest Forest	: Nil within 10km radius
22	Road & Highways	: NH 43 – 3.57 km -SE direction from the mine site.

CO-ORDINATES

1	Latitude	: From 23° 11' 33.05"N To o 23° 11' 28.83 "N
2	Longitude	: From 84° 42' 40.21 "E To 84° 42' 39.31 " E

A U M A

B C H

g m

LAND DETAILS :

Khata No.	Plot No.	Area in Acre
48	1275 (P)	2.00

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease agreement made.
2	CO	:	The CO, Sisai vide letter no. 843, dated 18.11.2020 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Gumla vide memo no. 828/M, dated 22.09.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide memo no. 768, dated 27.10.2020 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division vide letter no. 1928, dated 03.10.2020 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.
7	Gram Sabha	:	Gram Sabha conducted on 06.08.2020.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 73/M, dated 19.01.2021.

WORKING DETAILS

1	Mining Method	:	Opencast Manual Mining	
2	Quarry Area	:	5 years– 0.344 ha	Life of Mine – 5 years
3	Waste Generation	:	5 years–Nil	Life of Mine –5 years
4	Stripping Ratio	:	10:1	
5	Working Days	:	200 days/year	
6	Benches: size & No	:	1m x 1.75m	
7	Elevation of Mine	:	In 600 MSL	

8	Ground Level Elevation		In 600 MSL
9	Ultimate Working Depth	:	In 597 MSL
10	Water Table	:	In 590 MSL and also 5.0 – 7.0 m bgl
11	Topography of Mine	:	Flat area
12	Explosive Requirement	:	Not applicable
13	Diesel/Fuel requirement	:	Not applicable due to manual mining

PRODUCTION DETAILS

Year	Production Bricks Clay in cum per Annum	Topsoil removable in cum for 5 years
1 st	1200	1764.89
2 nd	1200	
3 rd	1200	
4 th	1200	
5 th	1200	
Total	6000	1764.89

LAND USE

Category	Existing (acres)	Proposed Land use for current plan period (acres)	Proposed Land use for current plan period (ha)	Land used at the conceptual stage i.e., end of mine life in (acres)
Mining Activities	-	0.85	0.3440	1.3
Topsoil storage, Road/ Infrastructure/etc.	0.00	0.5	0.2023	0.5
Safety Zone(2m)/Green Belt	-	0.23	0.0931	0.23
Unutilized	2.00	0.42	0.1700	0
Total Area	2.00	2.00	0.8097	2.00

A UMA B C D E F G H I J K L M N O P Q R S T U V W X Y Z

ENVIRONMENT MANAGEMENT
Green Belt Development

SL	Location		Area/Length	No of Trees
1	Safety Zone	:	0.9031 Ha	233
2	Other Reclaimed Area	:	0.000	000
3	Haul /Approach Road	:	100 meter	168 Tree both side approach road.

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

Solid Waste Management

- Top soil Generation will be 1764.89 Cu.M. during the life of Mine. The fertile top soil will be preserved temporarily by dumping and then it will be spread concurrently over the excavated part of the land after the end of each year lifting up of brick soil and grass cultivation will be done on it

Water Pollution Control Measures:

- Mining operation will be restricted to the depth of 2m from surface level.
- Quality of dug well will be monitored, in order to ensure the quality of water is not affected.

Air and Noise Pollution Control Measures:

- Dust suppression measures like spraying / sprinkling of water to keep the surface wet.
- Overloading of the truck / tractor trolleys will not be done.

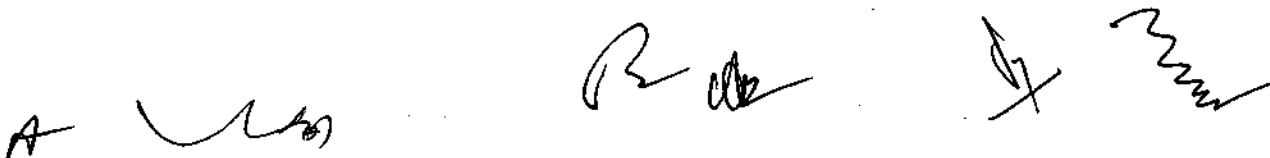
As the only impact is due to transportation of soil through village roads, emphasis will be given on the following points:

- Carts or tractor-trolleys will be developed on village roads.
- Tractors-trolleys will be well maintained and PUC certified.
- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Minimum use of horns in the village area and silence zone (if any) as applicable.

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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- m. It is proposed to remove topsoil before excavating soil for brick making. It will be used for raising plantation around the mining or leveling of land.

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 Kulankeri Brick Clay Deposit of M/s Ekta Bricks (Prop. : Shri Ritesh Kumar Lal), Village : Kulankeri, Thana : Sisai, Distt. : Gumla, Jharkhand (0.8097 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I.

The bottom of the page features several handwritten signatures and initials. On the left, there is a signature that appears to start with 'A'. In the center, there is a signature that looks like 'R' followed by some scribbles. On the right, there are two more signatures, one of which is a stylized 'J' or 'I' followed by a wavy line.

11. Brick Soil Mining of M/s Moti Brick (Prop. : Shri Narayan Sahu), Village : Kumhariya, Thana : Gumla, Distt. : Gumla, Jharkhand (1.01 Ha).

(Proposal No. SIA/JH/MIN/447022 /2023).

Applied Area: 2.50 Acres (1.01 Ha)

Project Category: B2 – Application for Environment Clearance

EC Application for: Soil: 1200 m³/yr;

6, 00,000 bricks /Annum

Top soil: 700 m³ during plan period.

DG Set: Not proposed

Mobile Crusher: Not proposed

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

This is a new project which has been taken for appraisal on 10.10.2023.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	: Kumhariya Brick Clay Earth Deposit
2	Lessee:	: M/s Moti Bricks Proprietor- Sri Narayan Sahu
3	Lease Address	: At: Village-Kumhariya, Thana – Gumla, Thana No. – 87, District – Gumla, Jharkhand.
4	Lease Area	: Ha:1.01 Acres:2.50
5	Type of Land	: Non-Forest – Rayati Land
6	Project Cost	: Rs. 12.32 Lakhs
7	EMP Budget	: Capital: Rs. 2.45 Lakhs Recurring: Rs. 1.76 Lakhs/ year Monitoring cost: Rs. 0.30 Lakhs/year
8	CSR / CER Budget	: Rs. 0.64 Lakhs
9	New or Expansion	: New
10	Mineable Reserves	: Cu.M.: 15,896 Cu. M. Tonnes: Nil
11	Mine Life	: 13 Years Only
12	Man power	: 10 Person
13	Water Requirement	: 2.83 KLD (Drinking: 0.15 KLD, Dust Suppression & Plantation: 0.80 KLD, Process Use:0.12 KLD, Plantation-0.68 KLD)
14	Water Source	: Through Water Tanker –nearby spring/Nala & Wells
15	DG Set / power	: Not Applicable
16	Crusher	: Not Applicable
17	Nearest Water Body	: Kulabira Nadi at 4.53 Km in East Parro Nadi at 5.73 km in North
18	Nearest Habitation	: Kumhariya village 0.24 km SW direction from the mine site.
19	Nearest Rail Station	: Bakaspur Railway Station 34.37 km NE direction from the mine site.
20	Nearest Air Port	: Birsa munda Airport, Ranchi 77.69 km NE direction from the mine site.

21	Nearest Forest	:	Dense Mixed Jungle at 3.13 km NE direction from the mine site.
22	Road & Highways	:	NH-43 at 3.06 km NW direction from the mine site.

CO-ORDINATES

1	Latitude	:	From 23°02'45.82" N	To 23°02'51.00" N
2	Longitude	:	From 84°37'30.65" E	To 84°37'36.05"E

LAND DETAILS :

Khata No.	Plot No.	Area in Acre
148	903 (P), 1154 & 1155	2.50

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Gumla (Sadar) vide letter no. 1184, dated 16.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Gumla vide memo no. 834/M, dated 22.09.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 1021, dated 05.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division vide letter no. 696, dated 04.03.2021 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.
7	Gram Sabha	:	Gram Sabha conducted on 06.11.2022.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 816/M, dated 16.09.2023.

[Handwritten signatures and marks at the bottom of the page]

WORKING DETAILS

1	Mining Method	:	Opencast Manual Mining	
2	Quarry Area	:	5 years– 0.349 ha	Life of Mine – 0.925 ha
3	Waste Generation	:	5 years–Nil	Life of Mine –13 years
4	Stripping Ratio	:	NA	
5	Working Days	:	200 days/year	
6	Benches: size & No	:	1m x 1.5 m	
7	Elevation of Mine	:	In 618 MSL	
8	Ground Level Elevation	:	In 618 MSL	
9	Ultimate Working Depth	:	In 618 m to 616 m MSL	
10	Water Table	:	In 608 MSL and also 5-8 m bgl	
11	Topography of Mine	:	Flat area	
12	Explosive Requirement	:	Not applicable	
13	Diesel/Fuel requirement	:	Not applicable due to manual mining	

PRODUCTION DETAILS

Year	Production Bricks Clay in cum per Annum	Topsoil removable in cum for 5 years
1 st	1200	700
2 nd	1200	
3 rd	1200	
4 th	1200	
5 th	1200	
Total	6000	700

LAND USE

Category	Existing (Acres)	Existing (ha.)	Proposed Plan Period (Acres)	Proposed Plan Period (ha.)	Conceptual Plan (ha.)
Quarry Area	0.00	0.00	0.862	0.349	0.925
Topsoil storage, Road/ Infrasturer./ etc.	0.027	0.011	0.00	0.00	(Converted to levelled land with topsoil spread)

Berm Area& Plantation	0.00	0.00	0.133	0.054	0.054
Blocked area due to well safety	0.077	0.031	0.077	0.031	0.031
Unutilized Area	2.39	0.968	1.423	0.576	0.00
Total Area	2.50	1.010	2.50	1.010	1.010

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.054 Ha	136
2	Other Reclaimed Area	:	0.000	000
3	Haul /Approach Road	:	100 meter	66 Tree both side approach road.

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

Solid Waste Management

- Top soil Generation will be 2023 Cu.M., during the life of Mine. The top soil shall be used for progressive backfilling during mining operation.

Water Pollution Control Measures:

- Mining operation will be restricted to the depth of 2m from surface level.
- Quality of dug well will be monitored, in order to ensure the quality of water is not affected.

Air and Noise Pollution Control Measures:

- Dust suppression measures like spraying / sprinkling of water to keep the surface wet.
- Overloading of the truck / tractor trolleys will not be done.

As the only impact is due to transportation of soil through village roads, emphasis will be given on the following points:

- Carts or tractor-trolleys will be developed on village roads.
- Tractors-trolleys will be well maintained and PUC certified.
- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Minimum use of horns in the village area and silence zone (if any) as applicable.

Undertaking submitted affirming:

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

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 Brick Soil Mining of M/s Moti Brick (Prop. : Shri Narayan Sahu), Village : Kumhariya, Thana : Gumla, Distt. : Gumla, Jharkhand (1.01 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I.

A 









12. Brick Soil Mining of M/s Mariya Enterprises (Prop. : Shri Nasim Ansari), Village : Longa, Thana : Bharno, Distt. : Gumla, Jharkhand (0.465 Ha).

(Proposal No. SIA/JH/MIN/447080 /2023).

Applied Area: 1.15 Acres (0.465 Ha)

Project Category: B2 – Application for Environment Clearance

EC Application for: Soil: 1200 m³/yr;

6, 00,000 bricks /Annum

Top soil: 715 m³ during plan period.

DG Set: Not proposed

Mobile Crusher: Not proposed

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

This is a new project which has been taken for appraisal on 10.10.2023.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	: Longa Brick Clay Earth Deposit
2	Lessee:	: M/s Mariya Enterprises, Proprietor- Mr. Nasim Ansari
3	Lease Address	: At: Village: Longa, Thana: Bharno, Thana No. – 95, District: Gumla, State: Jharkhand
4	Lease Area	: Ha:0.465 Acres:1.15
5	Type of Land	: Non-Forest – Rayati Land
6	Project Cost	: Rs. 14.50 Lakhs
7	EMP Budget	: Capital: Rs. 2.95 Lakhs Recurring: Rs. 1.68 Lakhs/ year Monitoring cost: Rs. 0.30 Lakhs/year
8	CSR / CER Budget	: Rs. 0.83 Lakhs
9	New or Expansion	: New
10	Mineable Reserves	: Cu.M.: 6001 Cu. M. Tonnes: Nil
11	Mine Life	: 5 Years Only
12	Man power	: 10 Person
13	Water Requirement	: 2.52 KLD (Drinking: 0.15 KLD, Dust Suppression & Plantation: 0.80 KLD, Process Use:0.12 KLD, Plantation-0.37 KLD)
14	Water Source	: Through Water Tanker –nearby spring/Nala & Wells
15	DG Set / power	: Not Applicable
16	Crusher	: Not Applicable
17	Nearest Water Body	: Anriya Nadi – 0.23 km N Kans Nadi– 2.24 km E
18	Nearest Habitation	: Bharno - 7.56 km SE direction from the mine site.
19	Nearest Rail Station	: Nagjua Railway Station 15.68 km NE direction from the mine site.
20	Nearest Air Port	: Birsa munda Airport, Ranchi 77.69 km NE direction from the mine site.

A UHA

B

g

mm

21	Nearest Forest	:	Anriya PF at 6.06 km SE direction from the mine site. Karanjtoli PF at 8.09 km E direction from the mine site. Amliyatoli PF at 6.59 km SE direction from the mine site.
22	Road & Highways	:	NH-43 at 6.73 km SE direction from the mine site.

CO-ORDINATES

1	Latitude	:	From 23°15'29.51" N	To 23°15'32.70" N
2	Longitude	:	From 84°48'58.64"E	To 84°48'58.85"E

LAND DETAILS :

Khata No.	Plot No.	Area in Acre
25	1280 (P)	1.15

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Bharno vide letter no. 364 (ii)/Ra, dated 13.07.2021 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Gumla vide memo no. 851/M, dated 27.09.2023 certified that 01 other mining lease area (6.22 Acre) exists within 500 m radius from proposed project site and total area is 7.37 Acre (2.98 Ha).
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 898, dated 08.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division vide letter no. 1728, dated 22.06.2018 certified that the distance of notified forest is 700 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.
7	Gram Sabha	:	Gram Sabha conducted on 29.05.2018.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 815/M, dated 16.09.2023.

WORKING DETAILS

1	Mining Method	:	Opencast Manual Mining	
2	Quarry Area	:	5 years– 0.358 ha	Life of Mine – 0.358 ha
3	Waste Generation	:	5 years–Nil	Life of Mine –5 years
4	Stripping Ratio	:	NA	
5	Working Days	:	200 days/year	
6	Benches: size & No	:	1m x 1.5 m	
7	Elevation of Mine	:	In 661 MSL	
8	Ground Level Elevation	:	In 659 MSL	
9	Ultimate Working Depth	:	In 661 m to 659 m MSL	
10	Water Table	:	In 651 MSL and also 5-8 m bgl	
11	Topography of Mine	:	Flat area	
12	Explosive Requirement	:	Not applicable	
13	Diesel/Fuel requirement	:	Not applicable due to manual mining	

PRODUCTION DETAILS

Year	Production Bricks Clay in cum per Annum	Topsoil removable in cum for 5 years
1 st	1200	715
2 nd	1200	
3 rd	1200	
4 th	1200	
5 th	1200	
Total	6000	715

LAND USE

Category	Existing (Acres)	Existing (ha.)	Proposed Plan Period (Acres)	Proposed Plan Period (ha.)	Conceptual Plan (ha.)
Quarry Area	0.00	0.00	0.884	0.358	0.358 (Converted to levelled land with topsoil spread)
Topsoil storage, Road/ Infrasturur./ etc.	0.039	0.016	0.00	0.00	

A UHA

R. K.

S. K.

Berm Area & Plantation	0.00	0.00	0.064	0.026	0.026
Blocked area due to well safety	0.088	0.036	0.088	0.036	0.036
Blocked area due to labour shed safety	0.111	0.045	0.111	0.045	0.045
Unutilized Area	0.909	0.368	0.00	0.00	0.00
Total Area	1.15	0.465	1.15	0.465	0.465

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION	Area/Length	No of Trees
1	Safety Zone	: 0.026 Ha	65
2	Other Reclaimed Area	: 0.000	000
3	Haul /Approach Road	: 100 meter	66 Tree both side approach road.

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

Solid Waste Management

- Top soil Generation will be 931 Cu.M., during the life of Mine. The top soil shall be used for progressive backfilling during mining operation.

Water Pollution Control Measures:

- Mining operation will be restricted to the depth of 2m from surface level.
- Quality of dug well will be monitored, in order to ensure the quality of water is not affected.

Air and Noise Pollution Control Measures:

- Dust suppression measures like spraying / sprinkling of water to keep the surface wet.
- Overloading of the truck / tractor trolleys will not be done.

A

UVA

Ch

eds

h

Mural

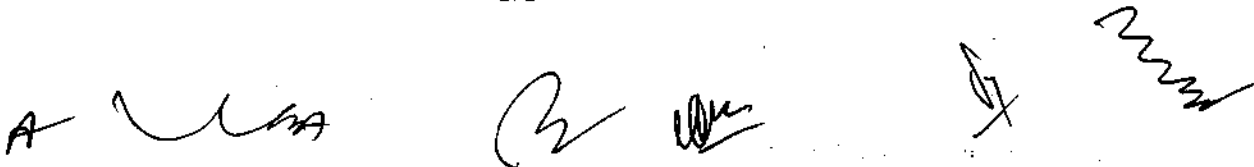
As the only impact is due to transportation of soil through village roads, emphasis will be given on the following points:

- Carts or tractor-trolleys will be developed on village roads.
- Tractors-trolleys will be well maintained and PUC certified.
- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Minimum use of horns in the village area and silence zone (if any) as applicable.

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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- m. It is proposed to remove topsoil before excavating soil for brick making. It will be used for raising plantation around the mining or leveling of land.

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 Brick Soil Mining of M/s Mariya Enterprises (Prop. : Shri Nasim Ansari), Village : Longa, Thana : Bharno, Distt. : Gumla, Jharkhand (0.465 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.



13. Brick Soil Mining of M/s Gunja Bricks (Prop. : Shri Vishwanath Mahto), Village : Kasir, Thana : Raidih, Distt. : Gumla, Jharkhand (0.40 Ha).

(Proposal No. SIA/JH/MIN/447351/2023).

Applied Area: 1.00 Acres (0.40 Ha)

Project Category: B2 – Application for Environment Clearance

EC Application for: Soil : 1200 m³/yr;

6000 m³ during plan period

Top soil : 800 m³ during plan period.

DG Set : Not proposed

Mobile Crusher : Not proposed

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

This is a new project which has been taken for appraisal on 10.10.2023.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	: Kasir Brick Clay Mining
2	Lessee:	: M/s Gunja Bricks, Proprietor- Sri Vishwanath Mahto
3	Lease Address	: Village + P.O. – Kasir, Thana - Raidih District – Gumla, State – Jharkhand
4	Lease Area	: Ha:0.40 Acres:1.00
5	Type of Land	: Non Forest – Rayati Land
6	Project Cost	: Proposed: Rs. 13.00 Lakhs
7	EMP Budget	: Capital: Rs. 3.00 Lakhs Recurring: Rs. 1.78 Lakhs/ year Monitoring cost: Rs. 0.30 Lakhs/year
8	CSR / CER Budget	: Rs. 0.65 Lakhs
9	New or Expansion	: New
10	Mineable Reserves	: Cu.M.: 6075 Cu. M. Tonnes: Nil
11	Mine Life	: 5 years
12	Man power	: 10 Person
13	Water Requirement	: 2.63 KLD (Drinking: 0.10 KLD, Dust Suppression & Plantation: 1.33 KLD)
14	Water Source	: Through Water Tanker –nearby spring/Nala & Wells
15	DG Set / power	: Not Applicable
16	Crusher	: Not Applicable
17	Nearest Water Body	: Shankh Nadi – 1.65 km SW direction from the mine site.
18	Nearest Habitation	: Kasir Village – 0.46 km NE direction from the mine site.
19	Nearest Rail Station	: Lohardaga Railway Station 57.6 Km NE direction from the mine site.

20	Nearest Airport	:	Birsa munda Airport, Ranchi 104.61 km NE direction from the mine site.
21	Nearest Forest	:	Kasir PF -0.77 km – NE direction from the mine site.
22	Road & Highways	:	SH Tongo Road Connecting NH-143B – 0.12 km E

CO-ORDINATES

1	Latitude	:	23° 03' 05.34" N	23° 03' 08.18" N
2	Longitude	:	84° 20' 18.68" E	84° 20' 21.79" E

LAND DETAILS :

Khata No.	Plot No.	Area in Acre
57	2734 (P)	1.00

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Raidih vide letter no. 244, dated 04.03.2021 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Gumla vide memo no. 846/M, dated 27.09.2023 certified that no other mining lease area exists within 500 m radius from proposed project site and total area is 7.37 Acre (2.98 Ha).
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 943, dated 18.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division vide letter no. 450, dated 11.02.2019 certified that the distance of notified forest is 1400 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.
7	Gram Sabha	:	Gram Sabha conducted on 06.09.2023.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 850/M, dated 27.09.2023.

(Handwritten signatures and marks)

WORKING DETAILS

1	Mining Method	:	Opencast Manual Mining
2	Quarry Area	:	5 years- 0.37ha
3	Waste Generation	:	5 years- Nil
4	Stripping Ratio	:	NA
5	Working Days	:	200 days/year
6	Benchs: size & No	:	1m x 1.5m
7	Elevation of Mine	:	In 681 MSL
8	Ground Level Elevation	:	In 680MSL
9	Ultimate Working Depth	:	In 679MSL
10	Water Table	:	In 675 MSL
11	Topography of Mine	:	Approx flat area
12	Explosive Requirement	:	Not applicable
13	Diesel/Fuel requirement	:	Not applicable due to manual mining

PRODUCTION DETAILS

Year	Production Bricks Clay in cum per Annum	Topsoil removable in cum for 5 years
1 st	1200	800
2 nd	1200	
3 rd	1200	
4 th	1200	
5 th	1200	
Total	6000	800

LAND USE

Category	Existing (Acres)	Proposed Land use for current plan period (acres)	Proposed Land use for current plan period (ha)	Land used at the conceptual stage i.e end of mine life in (acres)
Mining Activities	-	0.93	0.37	0.93
Topsoil storage, Road/ Infrastructure/etc.	0.009	-	-	-

Safety Zone(2m)/Green Belt	-	0.07	0.03	0.07
Unutilized	0.991	-	-	Nil
Total Area	1.0	1.0	0.40	1.00

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.03 Ha	000
2	Other Reclaimed Area	:	0.000	000
3	Haul /Approach Road	:	130 meter	87 Tree both side approach road.

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

Solid Waste Management

- Topsoil Generation will be 800 Cu.M. during the plan period. The topsoil shall be used for progressive backfilling during mining operation.

Water Pollution Control Measures:

- Mining operation will be restricted to the depth of 2m from surface level.
- Quality of dug well will be monitored, to ensure the quality of water is not affected.

Air and Noise Pollution Control Measures:

- Dust suppression measures like spraying / sprinkling of water to keep the surface wet.
- Overloading of the truck / tractor trolleys will not be done.

As the only impact is due to transportation of soil through village roads, emphasis will be given on the following points:

- Carts or tractor-trolleys will be developed on village roads.
- Tractors-trolleys will be well maintained, and PUC certified.

A UAA

B eke

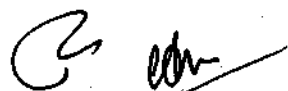
g mmm

- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Minimum use of horns in the village area and silence zone (if any) as applicable.

Undertaking submitted affirming:

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

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 Brick Soil Mining of M/s Gunja Bricks (Prop. : Shri Vishwanath Mahto), Village : Kasir, Thana : Raidih, Distt. : Gumla, Jharkhand (0.40 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I.

A  276   

14. Sehal Brick Clay Deposit of M/s Sona Bricks (Prop. : Shri Nitesh Prajapati), Village : Sehal, Circle : Ghaghra, Distt. : Gumla, Jharkhand (0.55 Ha).

(Proposal No. SIA/JH/MIN/447170 /2023).

Applied Area: 1.37 Acres (0.55 Ha)

Project Category: B2 – Application for Environment Clearance

EC Application for: Soil :1200 m³/yr;

6000 m³ during plan period

Top soil:600 m³ during plan period.

DG Set :Not proposed

Mobile Crusher : Not proposed

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

This is a new project which has been taken for appraisal on 10.10.2023.

PROJECT and LOCATION Details:

SI	Parameter	Details
1	Project Name	: Sehal Brick Clay Mining
2	Lessee:	: M/s Sona Bricks, Proprietor- Sri Nitesh Prajapati
3	Lease Address	: Village- Sehal Bartoli, P.O. – Shivsereng, Thana - Ghaghra, District – Gumla , State – Jharkhand
4	Lease Area	: Ha:0.55 Acres:1.37
5	Type of Land	: Non Forest – Rayati Land
6	Project Cost	: Proposed: Rs. 13.94 Lakhs
7	EMP Budget	: Capital: Rs. 3.94Lakhs Recurring: Rs. 1.29Lakhs/ year Monitoring cost: Rs. 0.30 Lakhs/year
8	CSR / CER Budget	: Rs. 0.70Lakhs
9	New or Expansion	: New
10	Mineable Reserves	: Cu.M.:10490Cu. M. Tonnes: Nil
11	Mine Life	: 8.74 years
12	Man power	: 12 Person
13	Water Requirement	: 2.83KLD (Drinking: 0.18KLD, Dust Suppression & Plantation:1.45KLD)
14	Water Source	: Through Water Tanker –nearbyspring/Nala&Wells
15	DG Set / power	: Not Applicable
16	Crusher	: Not Applicable
17	Nearest Water Body	: Barka Nala – 0.50 km- SW
18	Nearest Habitation	: Sehal Village – 0.70 km NEdirection from the mine site.
19	Nearest Rail Station	: Lohardaga Railway Station 32.92 Km NE direction from the mine site.
20	Nearest Air Port	: Birsa munda Airport, Ranchi 88.08 km NE direction from the mine site.

A V m *B e m* *h m*

21	Nearest Forest	:	Tetartoli PF -0.66 km – SW
22	Road & Highways	:	SH 143A – 6.84 km -Edirection from the mine site.

CO-ORDINATES

1	Latitude	:	23° 13' 57.55" N	23° 14' 00.60" N
2	Longitude	:	84° 28' 07.10" E	84° 28' 10.69" E

LAND DETAILS :

Khata No.	Plot No.	Area in Acre
181	1379 (P)	1.37

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Ghaghra (Gumla) vide letter no. 403 (ii), dated 02.08.2022 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, Gumla vide memo no. 849/M, dated 27.09.2023 certified that no other mining lease area exists within 500 m radius from proposed project site and total area is 7.37 Acre (2.98 Ha).
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 985, dated 30.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division in his revised certificate issued vide letter no. 2654, dated 13.10.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.
7	Gram Sabha	:	Gram Sabha conducted on 24.09.2023.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 852/M, dated 27.09.2023.

WORKING DETAILS

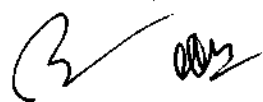
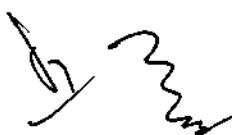
1	Mining Method	:	Opencast Manual Mining
2	Quarry Area	:	5 years– 0.30ha
3	Waste Generation	:	5 years–Nil
4	Stripping Ratio	:	NA
5	Working Days	:	200 days/year
6	Bench: size & No	:	1m x 1.5m
7	Elevation of Mine	:	In 700 MSL
8	Ground Level Elevation	:	In 699MSL
9	Ultimate Working Depth	:	In 673MSL
10	Water Table	:	In 668MSL
11	Topography of Mine	:	Approx flat area
12	Explosive Requirement	:	Not applicable
13	Diesel/Fuel requirement	:	Not applicable due to manual mining

PRODUCTION DETAILS

Year	Production Bricks Clay in cum per Annum	Topsoil removable in cum for 5 years
1 st	1200	600
2 nd	1200	
3 rd	1200	
4 th	1200	
5 th	1200	
Total	6000	600

LAND USE

Sl. No.	Pattern of Utilization	Present/Existing land use pattern in (Ha)	Land at the end of the plan period (Ha)	Land at the conceptual period (Ha)
1	Mining Activities	0.00	0.30	0.524 (Area reclaimed as cultivation land and handed over to rayat)

2	SafetyZone GreenBelt	0.00	0.03	0.030
3	Storage of casted bricks	0.00	0.162	0.00
4	Kiln	0.00	0.06	0.00
5	Mine Road	0.00	0.002	0.00
	Total	0.55	0.55	0.55

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION	Area/Length	No of Trees
1	Safety Zone	: 0.03 Ha	000
2	Other Reclaimed Area	: 0.000	000
3	Haul /Approach Road	: 130 meter	87 Tree both side approach road.

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

Solid Waste Management

- Topsoil Generation will be 600Cu.M. during the plan period. The topsoil shall be used for progressive backfilling during mining operation.

Water Pollution Control Measures:

- Mining operation will be restricted to the depth of 2m from surface level.
- Quality of dug well will be monitored, to ensure the quality of water is not affected.

Air and Noise Pollution Control Measures:

- Dust suppression measures like spraying / sprinkling of water to keep the surface wet.
- Overloading of the truck / tractor trolleys will not be done.

As the only impact is due to transportation of soil through village roads, emphasis will be given on the following points:

A  280    

- Carts or tractor-trolleys will be developed on village roads.
- Tractors-trolleys will be well maintained and PUC certified.
- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Minimum use of horns in the village area and silence zone (if any) as applicable.

Undertaking submitted affirming:

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

During the appraisal there were some discrepancies observed in the letter issued by DFO, Territorial Gumla. The Project Authorities have been directed to obtain revised certificate from DFO.

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

The revised certificate of DFO, Territorial Gumla letter no. 2654, dated 13.10.2023 has been submitted by Project Authority.

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 Sehal Brick Clay Deposit of M/s Sona Bricks (Prop. : Shri Nitesh Prajapati), Village : Sehal, Circle : Ghaghra, Distt. : Gumla, Jharkhand (0.55 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I.

15. Pali Stone Deposit of M/s Hanumant Lal Stone Mines (Partners : Shri Kamal Kishore Bedia & Shri Ram Krishna Singh), Village : Pali, Thana : Patratu, Distt. : Ramgarh, Jharkhand (0.67 Ha).
(Proposal No. SIA/JH/MIN/445734 /2023).

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

This is a new project which has been taken for appraisal on 10.10.2023.

Project Category: B2 – Application for Environment Clearance

EC Application for: Proposed Capacity- 5553 cum/annum or 15548 TPA

Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Pali Stone Deposit
2	Lessee:	: M/s Hanumant Lal Stone Mines Partners- 1) Sri Kamal Kishore Bedia 2) Sri Ram Krishna Singh
3	Lease Address	:) Sri Kamal Kishore Bedia Address- At Vill - Pali, PO - Pali, PS - Patratu, Ramgarh, Jharkhand 2) Sri Ram Krishna Singh Address- At Vill - Pali, PO - Pali, PS - Patratu, Ramgarh, Jharkhand.
4	Lease Area	: 0.67ha Acres- 1.66 Acre
5	Type of Land	: Non- Forest (Raiyati Land)
6	Project Cost	: Rs. 20 Lakhs
7	EMP Budget	: Capital: 2.41Lakhs Recurring: 4.27Lakh / year
8	New or Expansion	: New
9	Mineable	: cum.: 55480cum Tonnes: 155344tons

	Reserves		
10	Mine Life	:	5.0 years
11	Man power	:	21
12	Water Requirement	:	4.64 ~ 4.70 KLD (Drinking: 0.20 KLD, Dust Suppression: 2.48 KLD, Plantation: 1.96KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	200 KVA
15	Crusher	:	Yes
16	Nearest Water Body	:	Damodar River- Approx. 4.20 km towards North direction of mine site.
17	Nearest Habitation	:	Tola Mahudar, Approx. 0.58 km towards SSW direction..
18	Nearest Rail Station	:	Bhurkunda Railway station, approx. 2.25 km towards NNW direction.
19	Nearest Air Port	:	Birsa Munda Airport, approx. 34.0 km towards South direction.
20	Nearest Forest	:	Fairly dense jungle mainly sal - Approx 2.0 km towards East direction of mine site. Ghaghra PF - Approx 2.50 km towards SW direction of mine site. Hariharpur PF - Approx 3.80 km towards SW direction of mine site.
21	Road & Highways	:	SH-2, Approx. 2.25 km. in North direction

CO-ORDINATES

1	Latitude	From 23°37'07.01" N	To 23°37'11.57" N
2	Longitude	From - 85°22'54.96" E	To 85°22'59.06" E

LAND DETAILS :

Khata No.	Plot No.
10	39 (P), 40 (P), 41 (P) & 45 (P)
46	43 (P) & 44 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (Loi) has been issued by District Mining Officer, Ramgarh vide letter no. 39/Khanan, dated 17.01.2023.

A *UAA* *B* *AK* *h* *W*

2	CO	: The CO, Patratu vide letter no. 2761, dated 29.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	: DMO, Ramgarh vide memo no. 748/Khanan, dated 06.07.2023 certified that 01 other mining lease area (2.15 Acre) exists within 500 m radius from proposed project site.
4	DFO Wild Life	: DFO, Wildlife Hazaribagh vide letter no. 207, dated 28.01.2023 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribagh Wildlife Sanctuary.
5	DFO Forest Distance	: Division Forest Officer, Ramgarh Forest Division vide letter no. 2326, dated 03.12.2022 certified that the distance of demarcated forest is 800 meter from proposed project site.
6	DSR	: The DC - cum - District Magistrate, Ramgarh vide letter no. 750/Khanan, dated 08.07.2023 has informed that this project is part of District Survey Report (DSR) of Ramgarh district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	: Gram Sabha conducted on 12.01.2023.
8	Mine Plan Approval	: Approved by DMO, Ramgarh vide Letter No. 952/Mining, dated 14.09.2023.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	0.67 Ha	Life of Mine –10 years
3	Waste Generation	:	1878 cum or 5258.4tons	
4	Stripping Ratio	:	1: 0.02	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	392 AMSLto 394 AMSL	
8	Ground Level Elevation	:	up to 360 AMSL	
9	Ultimate Working Depth	:	Up to 374 AMSL	
10	Water Table	:	360 to 265 AMSL	
11	Topography of Mine	:	Area represents undulating topography.	
12	Explosive Requirement	:	70 kg/day	
13	Diesel/Fuel requirement	:	70 litre/day	

A UDA 284 CB dh 7

Production Details

Year	Production of stone in cum	Production of stone in Tonnes	Intercalated waste in Cum	Removal of Gritty Soil in Cum
1 st Year	5553	15548	292	420
2 nd Year	5520	15456	291	-
3 rd Year	5553	15548	292	-
4 th Year	5553	15548	292	-
5 th Year	5520	15456	291	-
Total	27699	77556	1458	420

Land Use

Pattern of Utilization	Existing (ha)	During Plan Period (ha)	During Conceptual Period/after closure of mines (ha)
Excavation	0.24	0.32	0.39 (0.39 ha. area left as water reservoir for rain water harvesting).
Road	0.01	--	--
Waste Dump	--	0.02	--
Safety Zone	--	0.28 (Plantation)	0.28 (Plantation)
Total	0.25	0.62	0.67
Untouched Area	0.42	0.05	--
Total Lease Hold Area	0.67	0.67	0.67

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.28 ha	700
2	Along Approach Road	0.180 km	180
3	In consulting local authorities	-	980

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

Solid Waste Management

Total 1878 cum or 5258.4 tons waste shall be generated during this plan period. It has been calculated that total 9924.65 cum total waste shall be generated during the plan period. 50% of the waste shall be utilized for maintenances of the village road and making of approach road, haul road etc. and rest 50% of the waste shall be temporary dump in the SW side of the applied 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

A

U

B

CD

17

Am

- 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

A *U* *MA* *B* *apu* *g* *mm*

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

A UMA

B

↓

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

A [Signature] 292 [Signature] [Signature] [Signature]

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 protecting 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 Pali Stone Deposit of M/s Hanumant Lal Stone Mines (Partners : Shri Kamal Kishore Bedia & Shri Ram Krishna Singh), Village : Pali, Thana : Patratu, Distt. : Ramgarh, Jharkhand (0.67 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

A     

16. Kori Stone Deposit of M/s Maa Tara Stone Mines (Partners : Shri Hiralal Munda & Shri Rohan Ram Bedia), Village : Kori, Thana : Patratu, Distt. : Ramgarh, Jharkhand (1.21 Ha).

(Proposal No. SIA/JH/MIN/445333 /2023).

Project Category: B2 – Application for Environment Clearance

EC Application for: Proposed Capacity- 13504 cum/annum or 37811 TPA

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

This is a new project which has been taken for appraisal on 10.10.2023.

Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Kori Stone Deposit
2	Lessee:	: M/s Maa Tara Stone Mines Partners- 1) Sri Hiralal Munda 2) Sri Rohan Ram Bedia
3	Lease Address	: M/s Maa Tara Stone Mines Partners- 1) Sri Hiralal Munda Address- At Village - Kori, PO - Pali, PS - Patratu, Ramgarh, Jharkhand 2) Sri Rohan Ram Bedia Address- At Vill - Pali, PO - Pali, PS - Patratu, Ramgarh, Jharkhand
4	Lease Area	: 1.21 ha Acres- 3.00 Acre
5	Type of Land	: Non Forest Ralyati Land
6	Project Cost	: Rs. 20 Lakhs
7	EMP Budget	: Capital: 3.39 Lakhs Recurring: 4.27 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 13504 cum Tonnes: 37811 tons
10	Mine Life	: 10 years
11	Man power	: 23
12	Water Requirement	: 6.60 KLD(Drinking: 0.23 KLD, Dust Suppression: 3.52 KLD, Plantation: 2.48 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 200 KVA
15	Crusher	: No crusher
16	Nearest Water Body	: Gomti Nala - Approx 3.90 km towards South direction of mine site
17	Nearest Habitation	: Kori Dori, at 920 meters

18	Nearest Rail Station	:	Hehal Railway station, approx. 0.85 km towards NE direction.
19	Nearest Air Port	:	Birsa Munda Airport, approx. 31.0 km towards SSW direction.
20	Nearest Forest	:	Protected Forest - Approx 1.0 km towards North direction of mine site.
21	Road & Highways	:	SH-2 , Approx. 4.9 km. in North direction.

CO-ORDINATES

1	Latitude	From 23°34'49.09" N	To 23°34'55.48" N
2	Longitude	From 85°25'39.68" E	To 85°25'45.44" E

LAND DETAILS :

Khata No.	Plot No.
25	983 (P) & 790 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Ramgarh vide letter no. 281/Khanan, dated 22.03.2023.
2	CO	:	The CO, Patratu vide letter no. 10, dated 04.01.2022 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. 747/Khanan, dated 06.07.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Hazaribagh vide letter no. 136, dated 21.01.2023 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribagh Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Ramgarh Forest Division vide letter no. 2075, dated 21.10.2022 certified that the distance of demarcated forest is 1000 meter from proposed project site.
6	DSR	:	The DC - cum - District Magistrate, Ramgarh vide letter no. 751/Khanan, dated 08.07.2023 has informed that this project is part of District Survey Report (DSR) of Ramgarh district and accordingly necessary action with regard to Environmental Clearance can be taken.

A U M A

B C M

J M

7	Gram Sabha	:	Gram Sabha conducted on 10.01.2023.
8	Mine Plan Approval	:	Approved by DMO, Ramgarh vide Letter No. 953/Mining, dated 14.09.2023.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method
2	Quarry Area	:	1.21 Ha / 3.00 Acre
3	Waste Generation	:	7845 cum or 21966 tons
4	Stripping Ratio	:	01: 10
5	Working Days	:	300
6	Benchs: size & No	:	6m to 6m
7	Elevation of Mine	:	440 AMSL to 442 AMSL
8	Ground Level Elevation	:	401 AMSL
9	Ultimate Working Depth	:	418 AMSL
10	Water Table	:	401 to 404 AMSL
11	Topography of Mine	:	Area represents almost flat land with rock mass of Granite Gneiss
12	Explosive Requirement	:	110kg/day
13	Diesel/Fuel requirement	:	110 litre/day

Production Details

Year	Production of stone (cum)	Production of stone (tons)	Bench RL in Meters
1 st	13503	37808	442mRL - 436mRL
2 nd	13504	37811	442mRL - 436mRL
3 rd	13501	37802	442mRL - 430mRL
4 th	13504	37811	436mRL - 430mRL
5 th	13503	37808	436mRL - 430mRL
Total	67515	189040	

Land Use

Pattern of Utilization	Existing (ha)	During Plan Period (ha)	During Conceptual Period/after closure of mines (ha)
Excavation	--	0.54	0.77 (0.77 ha. area left as water reservoir for rain water harvesting).

Road	0.01	--	--
Waste Dump	--	0.08	--
Proposed Crusher	--	0.06	--
Safety Zone	--	0.44 (Plantation)	0.44 (Plantation)
Total	0.01	1.12	1.21
Untouched Area	1.20	0.09	--
Total Lease Hold Area	1.21	1.21	1.21

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.44ha	1420
2	Along Approach Road	0.22 km	220

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

Solid Waste Management

Total 4290 cum gritty soil and 3555 cum intercalated waste shall be generated during this plan period During quarry advancement gritty soil & intercalated waste will be removed and this will be temporarily dumped within the applied area and in conceptual period backfilled within the exhausted quarry.

Water Quality Management

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

[Handwritten signatures and marks at the bottom of the page]

prevent water flowing into the lease area from outside or from inside the lease area to the outside

- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

S.No.	Rating	Scale
1	High Risk	1-4

A *UWA* *B* *com* *12* *Wend*

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°

A

300

300

B

CDH

h

mm

- 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.

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

- 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.

A

UAA

B

WAA

W

W

- 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.

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

- 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 protecting 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 Kori Stone Deposit of M/s Maa Tara Stone Mines (Partners : Shri Hiralal Munda & Shri Rohan Ram Bedia), Village : Kori, Thana : Patratu, Distt. : Ramgarh, Jharkhand (1.21 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

17. Kutlu Stone Deposit of M/s Priya Stone Mines (Partners : Shri Sitaram Prasad & Smt. Bindu Devi), Village : Kutlu, Thana : Dumri, Distt. : Gumla, Jharkhand (1.222 Ha).

(Proposal No. SIA/JH/MIN/446422 /2023).

Project Category: B2 – Application for Environment Clearance

EC Application for: Proposed Capacity- 42,066 cum/annum, 1,21,991.40 TPA

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

This is a new project which has been taken for appraisal on 10.10.2023.

PROJECT and LOCATION Details:

S. No.	Parameter	Details
1	Project Name	: Kutlu Stone Deposit
2	Lessee:	: M/s Priya Stone Mines Partner- Sri Sita Ram Prasad & Smt. Bindu Devi.
3	Lease Address	: Kutlu, Thana no.- 23, Thana- Dumri, District – Gumla, Jharkhand.
4	Lease Area	: 1.222 ha Acres- 3.02 Acres
5	Type of Land	: Non Forest – Raiyati Land
6	Project Cost	: Rs. 20 Lakhs
7	EMP Budget	: Capital: 4.756 Lakhs Recurring: 4.27 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 250207.2 cum, Tonnes: 725600.88 tonnes
10	Mine Life	: 6 years

A *U* *Ch* *W* *h* *M*

11	Man power	:	23
12	Water Requirement	:	8.941~ 8.95 KLD(Drinking: 0.23 KLD, Dust Suppression: 5.455 KLD, Plantation: 3.256 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	200 kVA
15	Crusher	:	No crusher
16	Nearest Water Body	:	Sankh River Dam, at approx. 9.0 km towards ESE direction of mine site.
17	Nearest Habitation	:	Kutulu At 900 meters from mine Site.
18	Nearest Rail Station	:	Lohardaga Railway station, approx. 58.50 km towards ENE direction
19	Nearest Air Port	:	Ambikapur City Airport, approx. 104 km towards WSW direction
20	Nearest Forest	:	Kutlu Protected Forest, at approx. 0.53 Km in West direction
21	Road & Highways	:	NH- 143B, at approx. 0.44 km in West direction.

CO-ORDINATES

1	Latitude	From 23°19'7.8697" N	To 23°19'11.6923" N
2	Longitude	From 84°09'2.2324" E	To 84°09'8.5841" E

LAND DETAILS :

Khata No.	Plot No.
22	938

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by Deputy Commissioner, Gumla vide letter no. 1586/M, dated 29.12.2022.
2	CO	:	The CO, Dumri vide letter no. 406 (ii)Ra, dated 17.08.2022 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, Gumla vide memo no. 855/M, dated 27.09.2023 certified that 02 other mining lease area (4.34 Acre & 2.04 Acre) exists within 500 m radius from proposed project site and total area is 9.40 Acre (3.80 Ha).
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 739, dated 24.08.2022 certified that the proposed project site is outside Eco Sensitive Zone of Palkot

			Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division vide letter no. 1717, dated 27.08.2022 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.
7	Gram Sabha	:	Gram Sabha conducted on 02.09.2022.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 856/M, dated 27.09.2023.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Mining method
2	Quarry Area	:	0.81 ha. Life of Mine – 9.63 years
3	Waste Generation	:	5 years– 0.00 cu.m
4	Stripping Ratio	:	1: 02
5	Working Days	:	300
6	Benches: size & No	:	6m to 6m
7	Elevation of Mine	:	831 AMSL to 852 AMSL
8	Ground Level Elevation	:	812 AMSL
9	Ultimate Working Depth	:	832 AMSL
10	Water Table	:	825AMSL
11	Topography of Mine	:	Area represents small hillocks
12	Explosive Requirement	:	110 Kg/day
13	Diesel/Fuel requirement	:	110 L/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	38936.70	112916.43	9306.00	2049.30	11355.30
2nd	39689.10	115098.39	1584.00	2088.90	3672.90
3rd	41570.10	120553.29	4158.00	2187.90	6345.90
4th	41706.90	120950.01	1080.00	2195.10	3275.10
5th	42066.00	121991.40	6120.00	2214.00	8334.00
Total	203968.80	591509.52	22248.00	10735.20	32983.20

A *U* *C* *AK* *by* *M*

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	After life of mine (Ha)
Quarry	0.00	0.833 (0.176 ha area shall be backfilled)	0.851 (0.176 ha area shall be Backfilled, 0.675 ha Converted into water reservoir)
Road	0.00	0.011	Nil
WAST DUMP	0.00	(waste dump to be removed and backfilled)	Nil (waste dump to be removed and backfilled)
S. Z. PLANTATION	0.00	0.371	0.371
Total	0.00	1.215	1.222
UNUSED AREA	1.222	0.007	0.00
LEASE HOLD AREA	1.222	1.222	1.222

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No of Trees
1	Safety Zone	:	0.371 ha	1628
2	Along Approach Road	:	0.60 km	600
3	Plants distributed in village	:	--	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

It has been calculated that total 32983.20 cum in-situ, 41229.00cum loose and 35044.65 cum compact waste shall be generated during this plan period. The waste generated during the first three year of plan period shall be proposed to temporary dumped in the south eastern part of the applied lease area. During the fourth & fifth year the generated waste and waste material of temporary dump shall used for backfilling of exhausted quarry at western side and it will cover 0.176 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 suspendedparticles in the pit. Pump having required capacity will be installed to liftaccumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall becollected in garland drain and allowed to settle in a small pit for settling suspendedparticles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, dischargefrom Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and goodsanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.

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

- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone Mining operation

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

[Handwritten signatures and marks at the bottom of the page]

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 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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

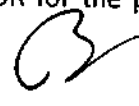
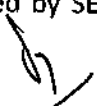
Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF & CC O.M dated 12.12.18 decided that the proposal Kutlu Stone Deposit of M/s Priya Stone Mines (Partners : Shri Sitaram Prasad & Smt. Bindu Devi), Village : Kutlu, Thana : Dumri, Distt. : Gumla, Jharkhand (1.222 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

18. Pipaljori Stone Mine of M/s Pakur Mining (Partners : Shri Gyan Prakash Singh & Shri Sunil Tudu), Village : Pipaljori, P.S. : Malpahari OP, Distt.: Pakur, Jharkhand (2.467 Ha).

(Proposal no. : SIA/JH/MIN/446265/2023)

Project Category: B1 – The State Expert Appraisal Committee, Jharkhand deliberated the project during its 104th meeting held on 22-26.05.2023 and SEIAA, Jharkhand has approved the ToRs in 105th meeting held on 28th & 29th May, 2023. TOR for the project was issued by SEIAA,

A 

Jharkhand vide letter no. EC/SEIAA/2023-24/2811/2023/124, dated 05.06.2023. The final EIA / EMP submitted by PP to SEIAA on 03.10.2023 and which was forwarded to SEAC on 05.10.2023.

EC Application for: Proposed Capacity- 29204 cum/annum or 81771 TPA.

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

This is a new project which has been taken for appraisal on 10.10.2023.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Pipaljori Stone Deposit
2	Lessee:	: M/S Pakur Mining, (Partners- Sri Gyan Prakash Singh & Sri Sunil Tudu)
3	Lease Address	: Village – Pipaljori, P.S- Malpahari OP, District – Pakur, State :- Jharkhand
4	Lease Area	: 2.467ha Acres- 6.094Acres
5	Type of Land	: Non Forest – Raiyati Land
6	Project Cost	: Rs. 70 Lakhs
7	EMP Budget	: Capital: 5.82 Lakhs Recurring: 4.77 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 325800.0 cum Tonnes: 912240.0 tonnes
10	Mine Life	: 11 years
11	Man power	: 33
12	Water Requirement	: 9.71 ~10.00KLD(Drinking: 0.33 KLD, Dust Suppression: 5.21 KLD, Plantation: 4.17KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 200 KVA
15	Crusher	: No crusher
16	Nearest Water Body	: Basloi River About 10 Km towards South Direction
17	Nearest Habitation	: Pipaljori, at approx 0.60 km towards West direction.
18	Nearest Rail Station	: Nagarnabi Railway station, approx. 1.60 km toward ENE direction.
19	Nearest Air Port	: Deoghar Airport, approx. 118.10 km towards WSW direction.direction
20	Nearest Forest	: Approx. 5.60 km towards West direction of mine site. Approx. 3.10 km towards SW direction of mine site.
21	Road & Highways	: NH-133A, Approx. 5.45 km. in North direction.

[Handwritten signatures and marks at the bottom of the page]

CO-ORDINATES

1	Latitude	From 24°35'17.12" N	To 24°35'15.61" N
2	Longitude	From 87°51'5.39" E	To 87°51'4.05" E

LAND DETAILS :

Khata No.	Plot No.
02	511, 512, 476, 510, 489 (P), 478, 484, 483, 488
16	513
17	498, 487, 482, 485 & 516 (P)
19	499
25	481, 479 & 480

STATUTORY CLEARANCES :

1	LOI/Lease docs	:	The Letter of Intent (LOI) has been issued by DMO, Pakur vide letter no. 653/M, dated 11.04.2022.
2	CO	:	The CO, Pakur vide letter no. : 18/Ra, dated 08.01.2022 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, Pakur vide memo no. 716/M, dated 12.04.2023 certified that 04 other mining lease area (4.75 Acre, 4.42 Acre, 6.60 Acre & 4.094 Acre) exists within 500 m radius from proposed project site and total area is 10.50 Ha.
4	DFO Wildlife	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. : 2204, dated 24.08.2022 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	DFO, Pakur Forest Division vide letter no. : 162, dated 24.01.2022 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
6	DSR	:	The DC-cum-District Magistrate, Pakur vide letter no. 573/M, dated 18.03.2023 has informed that this project is part of District Survey Report (DSR) of Pakur district and accordingly necessary action with regard to Environmental Clearance can be taken.

7	Gram Sabha	:	BDO, Pakur vide letter no. 142/Vi, dated 20.01.2022 informed that Gram Sabha conducted on 12.01.2022.
8	Mine Plan Approval	:	Approved by DMO, Pakur vide memo no. 879/M, dated 10.05.2022.
9	Public Hearing	:	JSPCB, Regional Office –cum-Laboratory, Dumka vide letter no. 1966, dated 21.09.2023 informed that Public Hearing conducted on 05.09.2023.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method	
2	Quarry Area	:	2.467ha. Or 6.094Acres	Life of Mine – 11 Years
3	Waste Generation	:	9093 cum or 25460.4 tonnes	
4	Stripping Ratio	:	1: 0.007	
5	Working Days	:	300	
6	Bench: size & No	:	6m to 6m	
7	Elevation of Mine	:	105AMSL to106 AMSL	
8	Ground Level Elevation	:	104AMSL	
9	Ultimate Working Depth	:	85 AMSL	
10	Water Table	:	69AMSL (35mbgl)	
11	Topography of Mine	:	Area represents undulating topography	
12	Explosive Requirement	:	80kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details

Year	Production of Stone		Waste (cum)	Bench RL in Meters
	(in Tones)	(in cum)		
1st	81446	29088	5242	105mRL – 99mRL
2nd	81452	29090	3851	106mRL – 93 mRL
3rd	81771	29204	00	99mRL – 93mRL
4th	81396	29070	00	99mRL – 93mRL

A URA (2) 2023 12

5th	81480	29100	00	93mRL – 87mRL
Total	407545	145552	9093	

Land Use

Pattern of Utilization	Existing (Ha)	During Plan Period (ha)	After Life of Mine (ha)
Quarry	--	0.87	1.73
Haul Road	--	0.03	0.007
Proposed Crusher	--	--	--
Greenbelt in Safety Zone	--	0.73	0.73
Dump with Parapet wall & Garland Drain	--	0.11	Nil (Waste dump to be removed and backfilled)
Total area in use	--	1.74	2.467
Unused Area	2.467	0.727	--
Lease hold area	2.467	2.467	2.467

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.73 ha	1825
2	Along Approach Road	0.26 km	260

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

Solid Waste Management

Total 9093 cum or 25460.4 tonnes waste during the plan period will be generated. Part of the waste shall be utilized for maintenances of the village road and making of approach road, haul road etc. and part of the waste shall be temporary dump in the western side of the applied 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 suspendedparticles in the pit. Pump having required capacity will be installed to liftaccumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall becollected in garland drain and allowed to settle in a small pit for settling suspendedparticles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, dischargefrom Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and goodsanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask 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.

[Handwritten signatures and marks at the bottom of the page]

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

A UMA *B* *edu* *h* *mm*

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.

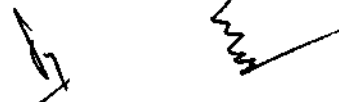
Dust generation during drilling

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

A 





- 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.

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

- 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 protecting 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 Pipaljori Stone Mine of M/s Pakur Mining (Partners : Shri Gyan Prakash Singh & Shri Sunil Tudu), Village : Pipaljori, P.S. : Maipahari OP, Distt.: Pakur, Jharkhand (2.467 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I).

19. Shankardih Stone Deposit of M/s Maa Bhawani Stone Minerals, Village : Shankardih, Thana : Dumri, Distt.: Giridih, Jharkhand (2.384 Ha).

(Proposal no. : SIA/JH/MIN/ 446735/2023)

Project Category: B1 – The State Expert Appraisal Committee, Jharkhand deliberated the project during its 104th meeting held on 22-26.05.2023 and SEIAA, Jharkhand has approved the ToRs in 105th meeting held on 28th & 29th May, 2023. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2023-24/2830/2023/120, dated 08.06.2023. The final EIA / EMP submitted by PP to SEIAA on 06.10.2023 and which was forwarded to SEAC on 06.10.2023.

EC Application for: Proposed Capacity- 42291.15 cum/annum or 114186.11 TPA

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

This is a new project which has been taken for appraisal on 10.10.2023.

Project and Location Details :

S. No.	Parameter		Details
1	Project Name	:	Shankardih Stone Deposit
2	Lessee:	:	M/S Maa Bhawani Stone Minerals (Partners- 1. Sri. Dashrath Mandal & 2. Sri Sunil Kumar)
3	Lease Address	:	Village – Shankardih, Thana- Dumri, District – Giridih, State- Jharkhand
4	Lease Area	:	2.384 ha Acres- 5.89 Acres
5	Type of Land	:	Non Forest – Raiyati Land
6	Project Cost	:	Rs. 25 Lakhs
7	EMP Budget	:	Capital: 4.16 Lakhs Recurring: 3.77 Lakhs / year

8	New or Expansion	:	New
9	Mineable Reserves	:	cum.: 420483.30 cum Tonnes: 1135304.91 tons
10	Mine Life	:	10 years
11	Man power	:	26
12	Water Requirement	:	7.90 ~ 8.0 KLD (Drinking: 0.26 KLD, Dust Suppression: 4.18 KLD, Plantation: 3.46 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	500 KVA
15	Crusher	:	No crusher
16	Nearest Water Body	:	Jamuniya Nadi, Approx. 3.82 km towards SW direction of mine site Paraiya Nadi, Approx. 8.51 km towards NW direction of mine site
17	Nearest Habitation	:	Shankardih, at approx 0.500 km.
18	Nearest Rail Station	:	Bholidih Railway station, approx. 2.40 km towards SSW direction.
19	Nearest Air Port	:	Birsa Munda Airport, approx. 106.10 km towards SW direction.
20	Nearest Forest	:	Parasnath Protected Forest - Approx. 1.94 km towards North direction of mine site. Protected Forest- Approx. 2.48 km towards SE direction of mine site.
21	Road & Highways	:	NH- 19, Approx. 0.71 km. in NE direction.

CO-ORDINATES

1	Latitude	From 23°54'59.93" N	To 23°55'11.49" N
2	Longitude	From 86°07'33.15" E	To 86°07'43.55" E

LAND DETAILS :

Khata No	Plot No
47	823(P)
70	798(P)
71	822(P), 1388(P)

STATUTORY CLEARANCES :

1	LOI/Lease docs	:	The Letter of Intent (LoI) issued by DMO, Giridih vide letter no. 174/M, dated 14.02.2022.
2	CO	:	The CO, Dumri (Giridih) vide letter no. : 465, dated 28.07.2022 has mentioned the plot no. of the project is not recorded as "Jungle

(Handwritten signatures and marks)

		Jhari" in Khatiyar.
3	DMO	: DMO, Giridih vide memo no. 323/M, dated 23.03.2023 certified that 04 other mining lease area (2.64 acre, 2.5825 acre, 3.19 acre & 3.69 Acre) exists within 500 m radius from proposed project site and total area is 17.9925 Acre.
4	DFO Wild Life	: DFO, Wildlife Hazaribagh vide letter no. : 254, dated 18.02.2022 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Forest Distance	: DFO, Giridih East Forest Division vide letter no. : 560, dated 18.02.2022 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
6	DSR	: The DC – cum – District Magistrate, Giridih vide letter no. 431/M, dated 25.04.2023 has informed that this project is part of District Survey Report (DSR) of Giridih district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	: Gram Sabha conducted on 04.08.2022.
8	Mine Plan Approval	: Approved by DMO, Koderma vide letter no. 857, dated 02.05.2023.
9	Public Hearing	: Regional Office –cum-Laboratory, JSPCB, Hazaribagh vide letter no. 1042, dated 28.09.2023 informed that Public Hearing conducted on 22.09.2023.

Working Details

1	Mining Method	:	Opencast semi mechanized Method	
2	Quarry Area	:	2.384 ha. Or 5.89 Acres	Life of Mine – 10 Years
3	Waste Generation	:	25667.92 cum or 69303.384 tons	
4	Stripping Ratio	:	1: 0.06	
5	Working Days	:	300	
6	Bench: size & No	:	6m to 6m	
7	Elevation of Mine	:	264 AMSL to 270 AMSL	
8	Ground Level Elevation	:	264 AMSL	
9	Ultimate Working Depth	:	242 AMSL	

10	Water Table	:	225 AMSL (20 mbgl)
11	Topography of Mine	:	Area represents small hillock topography
12	Explosive Requirement	:	90 kg/day
13	Diesel/Fuel requirement	:	110 litre/day

Production Details

Year	Production of stone (cum)	Production of stone (tons)	Total Waste in (cum)	Bench RL in Meters
1 st	42088.80	113639.76	8980.08	266 mRL – 260 mRL
2 nd	42088.80	113639.76	3016.08	266 mRL – 254 mRL
3 rd	42291.15	114186.11	4937.34	266 mRL – 254 mRL
4 th	42291.15	114186.11	1955.34	254 mRL – 248 mRL
5 th	42088.80	113639.76	6779.08	254 mRL – 248 mRL
Total	210848.70	569291.49	25667.92	

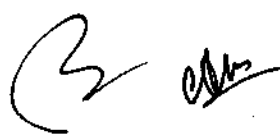
Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
Quarry	-	0.928	1.884
Road	-	0.045	-
Waste Dump	-	0.325	-
Safety Zone Plantation	-	0.500	0.500
Total	-	1.798	2.384
Balance	-	0.586	-
Lease Hold Area	2.384	2.384	2.384

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.500 ha	1250
2	Along Approach Road	0.280 km	280

A    

- 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 generation of 25667.92 cum or 69303.384 tons waste during 1st to 5th year of the plan period, out of which 50% of loose waste material i.e.- 13636.1 cum shall be used for making and maintenance of mine road and 50% of loose waste material i.e.- 13636.1 cum shall be dumped in the southern side of the applied lease area with overall height of 4.5m which will cover 0.325ha.

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

A  332   

- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

A U M C O B J M

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

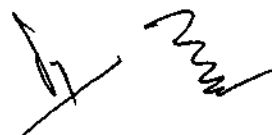
Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- 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

A  B  

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.

A

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

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.

The bottom of the page features several handwritten signatures and initials in black ink. From left to right, there is a signature that appears to start with 'A', followed by a signature that looks like 'U. Sharma', then a signature that starts with 'C' and ends with 'Sharma', and finally two more signatures on the right side, one of which is a stylized 'S'.

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- Personal protective equipments such as protecting 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 Shankardih Stone Deposit of M/s Maa Bhawani Stone Minerals, Village : Shankardih, Thana : Dumri, Distt.: Giridih, Jharkhand (2.384 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – 1.

(Handwritten signatures and initials)

20. Dhowadangal & Bhimpur Stone Deposit of M/s M.M. Mining (Partners : (1) Sri Kader Hossain (2) Sri Uday Kumar Singh (3) Sri Parwez Alam), Village : Dhowadangal & Bhimpur, Thana : Maheshpur, Distt. : Pakur, Jharkhand (2.97 Ha).

(Proposal No. : SIA/JH/MIN/447119/2023).

Project Category: B1 – The State Expert Appraisal Committee, Jharkhand deliberated the project during its 103rd meeting held on 14-18.04.2023 and SEIAA, Jharkhand has approved the ToRs in 104th meeting held on 27th & 28th April, 2023. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2023-24/2804/2023/83, dated 03.05.2023. The final EIA / EMP submitted by PP to SEIAA on 06.10.2023 and which was forwarded to SEAC on 08.10.2023.

EC Application for: Proposed Capacity- 70,110.00 cu.m/annum or 2,10,330.00 TPA

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

This is a new project which has been taken for appraisal on 10.10.2023.

Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Dhowadangal & Bhimpur Stone Deposit
2	Lessee:	: M/S M.M. Mining Partners - Kader Hossain, Sri Uday Kumar Singh & Parwez Alam
3	Lease Address	: Village – Dhowadangal & Bhimpur, Thana - Maheshpur, District- Pakur, Jharkhand
4	Lease Area	: 2.97 ha Acres- 7.35 Acres
5	Type of Land	: Non Forest – Raiyati Land
6	Project Cost	: Rs. 50 Lakhs
7	EMP Budget	: Capital: 5.07 Lakhs Recurring: 3.27 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 698970.0 cum Tonnes: 2096910.0 tons
10	Mine Life	: 9.96 ~10 years
11	Man power	: 20
12	Water Requirement	: 9.89 ~ 10.0 KLD (Drinking: 0.20 KLD, Dust Suppression: 4.79 KLD, Plantation: 4.90 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 500 KVA
15	Crusher	: With crusher
16	Nearest Water Body	: Bansoli River, Approx. 10.0 km towards S direction of mine site.
17	Nearest Habitation	: Dowadangal, Approx. 1.0 km towards W direction.
18	Nearest Rail Station	: Ngarnabi Railway station, approx. 14.38 km toward ENE direction.

19	Nearest Air Port	:	Deoghar Airport, approx. 104.50 km towards W direction.
20	Nearest Forest	:	Protected Forest at approx. 2.30 km towards E direction of mine site. Protected Forest at approx. 2.50 km towards W direction of mine site Protected Forest at approx. 3.4 km towards NE direction of mine site. Open Scrub at approx. 4.50 km towards N direction of mine site.
21	Road & Highways	:	NH-133 A, Approx. 8.60 km. in North direction. SH-18, Approx. 14.00 km. in WNW direction.

CO-ORDINATES

1	Latitude	From 24°34'42.37"N	To 24°34'54.10"N
2	Longitude	From 87°43'29.75"E	To 87°43'42.72"E

LAND DETAILS :

Khata No.	Plot No.
13	622(P), 657(P), 658
24	661
29	03, 04, 05, 06, 07, 08, 09 (P), 10(P), 11(P), 12, 13, 17 (P), 24(P), 25, 26, 27, 28, 29(P)

STATUTORY CLEARANCES :

1	LOI/Lease docs	:	The LOI has been issued by DMO, Pakur vide letter no. 527/M, dated 25.03.2022.
2	CO	:	The CO, Maheshpur vide letter no. 481/Ra, dated 05.08.2021 has mentioned the plot no. of the project is not recorded as "Jangle Jhari" in Khatiyan.
3	DMO	:	DMO, Pakur vide memo no. 1319/M, dated 12.07.2022 certified that 04 other mining lease area (3.50 acre, 6.47 acre, 3.71 acre & 5.71 acre) exists within 500 m radius from proposed project area and total area is 10.82 Ha or 26.74 Acres.

A    

4	DFO Wildlife	: DFO, Wildlife Hazaribag vide letter no. 1882, dated 01.11.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Forest Distance	: DFO, Pakur Forest Division vide letter no. 1313, dated 27.08.2021 certified that the distance of reserved / protected forest is more than 250 m from the project site.
6	DSR	: The DC-cum-District Magistrate, Pakur vide letter no 573/M, dated 18.03.2023 has informed that this project is part of District Survey Report (DSR) of Pakur district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	: BDO, Maheshpur vide letter no. 859/Vi, dated 19.07.2021 informed that Gram Sabha conducted on 17.07.2021.
8	Mine Plan Approval	: Deputy Director Mines, Santhal Pargana Circle, Dumka vide letter no. 432/DDM, dated 04.10.2023.
9	Public Hearing	: JSPCB, Regional Office –cum-Laboratory, Dumka vide letter no. 2012, dated 29.09.2023 informed that Public Hearing conducted on 15.09.2023.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method	
2	Quarry Area	:	2.096 ha or 5.17 Acres	Life of Mine – 9.96 ~10 years
3	Waste Generation	:	2810.00 cum or 8430.0 tons	
4	Stripping Ratio	:	1:0.002	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	135 AMSL to 132 AMSL	
8	Ground Level Elevation	:	132 AMSL	
9	Ultimate Working Depth	:	105 AMSL	
10	Water Table	:	100 AMSL (15 mbgl)	
11	Topography of Mine	:	Undulating topography	
12	Explosive Requirement	:	80 kg/day	
13	Diesel/Fuel requirement	:	100 litre/day	

Production Details

Year	Production of stone (cum)	Production of stone (tons)	Waste (cum) in plan period	Bench RL in Meters
1 st	67050.00	201150.00	1401	129mRL - 135mRL
2 nd	68850.00	206550.00	1409	129mRL - 135mRL
3 rd	69300.00	207900.00	-	123mRL - 129mRL
4 th	70110.00	210330.00	-	123mRL - 129mRL
5 th	70110.00	210330.00	-	117mRL - 123mRL
Total	345420.00	1036260.00	2810	

Land Use

Pattern of Utilization	Existing (Ha)	Plan period (Ha)	Conceptual stage (Ha)
Quarry	-	1.368	2.096
Road	0.013	-	-
Safety Zone Plantation	-	0.874	0.874
Total	0.013	2.242	2.97
Unused Area	2.957	0.728	-
Lease hold area	2.97	2.97	2.97

ENVIRONMENT MANAGEMENT**Green Belt Development**

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.874 ha	2185
2	Along Approach Road	0.070 km	70

- 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.

A UBA B ESH

Solid Waste Management

Total 2810.00 cum or 8430.0 tons waste during the plan period will be generated. Part of the waste shall be utilized for maintenances of the village road and making of approach road, haul road etc. and part of the waste shall be temporary dump in the western side of the applied 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

A UBA 344    

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

A [Signature] [Signature] [Signature] [Signature] [Signature]

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 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:

A *U* *C* *W* *H* *M*

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

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

Transportation

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

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

Undertaking submitted affirming:

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

- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- 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 protecting 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 Dhowadangal & Bhimpur Stone Deposit of M/s M.M. Mining (Partners : (1) Sri Kader Hossain (2) Sri Uday Kumar Singh (3) Sri Parwez Alam), Village : Dhowadangal & Bhimpur, Thana : Maheshpur, Distt. : Pakur, Jharkhand (2.97 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

21. Jhaljamira Stone Block of Shri Hiralal Sahu, Village : Jhaljamira, Thana no. : 173, Distt. : Lohardaga, Jharkhand (0.81 Ha).

(Proposal No. SIA/JH/MIN/402792 /2022).

Project Category: B2 – Application for Environment Clearance.

EC Application for: Proposed Capacity-5341.11 cum/annum or 14,421.00 TPA.

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

This is a new project which has been taken for appraisal on 10.10.2023.

PROJECT and LOCATION Details:

S. No.	Parameter	Details
1	Project Name	: JhaljamiraStone Block

A     

2	Lessee:	:	Sri Hiralal Sahu At Kumhairya, PO- Akashi, PS- Bhandra, District- Lohardaga, Jharkhand
3	Lease Address	:	Village – Jhaljamira, Thana No.- 173 , District – Lohardaga, Jharkhand
4	Lease Area	:	0.81ha Acres- 2.00 Acres
5	Type of Land	:	Non Forest – Raiyati Land
6	Project Cost	:	Rs. 60 Lakhs
7	EMP Budget	:	Capital: 3.17Lakhs Recurring: 4.27 Lakh / year
8	New or Expansion	:	New
9	Mineable Reserves	:	cum.: 51472.2 cum Tonnes: 138974.94 tons
10	Mine Life	:	9.63 years
11	Man power	:	10
12	Water Requirement	:	5.88 ~ 6.0 KLD(Drinking: 0.10 KLD, Dust Suppression: 3.51 KLD, Plantation: 2.27 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	200 kVA
15	Crusher	:	No crusher
16	Nearest Water Body	:	South Koel River, at approx. 0.78 km, NW direction
17	Nearest Habitation	:	Jhaljamira village, at 880 meters
18	Nearest Rail Station	:	Lohardaga Railway station, approx. 9.94 km towards N direction.
19	Nearest Air Port	:	Birsa Munda Airport, approx. 62.90 km towards ESE direction.
20	Nearest Forest	:	Raikera-Bandhtoli Forest, at approx. 9.08 km towards ESE direction of mine site. Protected Forest, at approx 1.28 km towards SE direction of mine site. Open Scrub Jungle, at approx 2.16 km towards SSE direction of mine site. Open Mixed Jungle, at approx 4.65 km towards SW direction of mine site.
21	Road & Highways	:	NH- 143A, at approx. 7.62 km. in East direction.

CO-ORDINATES

1	Latitude	From 23°21'22.33"N	To 23°21'25.09"N
2	Longitude	From 84°42'35.79"E	To 84°42'41.01"E

A

Handwritten signature and initials.

Handwritten signature.

Handwritten signature.

Handwritten signature.

LAND DETAILS :

Khata No.	Plot No.
New : 364	New : 2676 (P)
Old : 267	Old : 2539 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by Director of Mines, Deptt. of Mines & Geology, Govt. of Jharkhand vide letter no. Kha.Ni(Nilami)-06/2022/1475, dated 15.07.2022.
2	CO	:	The CO, Senha (Lohardaga) vide letter no. 607, dated 08.09.2022 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Lohardaga vide memo no. 423/M, dated 10.09.2022 certified that 01 other mining lease area (1.00 Acre) exists within 500 m radius from proposed project site and total area is 3.00 acre.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 873, dated 21.09.2022 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. 2544, dated 10.09.2022 certified that the distance of reserved / protected forest is 500 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Lohardaga district.
7	Gram Sabha	:	BDO, Senha (Lohardaga) vide letter no. 990, dated 10.09.2023 informed that Gram Sabha conducted on 28.08.2022.
8	Mine Plan Approval	:	Approved by DMO, Lohardaga vide Memo No. 1147/M, dated 30.09.2023.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Mining method
2	Quarry Area	:	0.81 ha. Life of Mine – 9.63 years
3	Waste Generation	:	5 years–0.00 cu.m
4	Stripping Ratio	:	1: 00

A

LMA

G am

J

5	Working Days	:	300
6	Benches: size & No	:	6m to 6m
7	Elevation of Mine	:	641AMSL to 657AMSL
8	Ground Level Elevation	:	641 AMSL
9	Ultimate Working Depth	:	627 AMSL (14mbgl)
10	Water Table	:	621 AMSL (20mbgl)
11	Topography of Mine	:	Area represents small hillocks
12	Explosive Requirement	:	70 Kg/day
13	Diesel/Fuel requirement	:	70 L/day

Production Details

Year	Production of stone (cum)	Production of stone (tons)	Bench RL in Meters
1 st	5341.11	14421.00	655mRL - 649mRL
2 nd	5341.11	14421.00	649mRL - 643mRL
3 rd	5341.11	14421.00	649mRL - 643mRL
4 th	5341.11	14421.00	643mRL - 637mRL
5 th	5341.11	14421.00	643mRL - 637mRL
Total	26705.55	72105.00	

Land Use

Type of Land Use	Existing (ha)	During Plan Period (ha)	During Conceptual Period/after closure of mines (ha)
Quarry	0.05	0.45	0.53 (Entire area converted as water body)
Crusher	--	--	--
Overburden Dump	--	--	--
Infrastructure	--	0.01	--
Approach roads	0.01	0.01	0.01
Garland Drain	--	0.03	--
Safety Zone	--	0.27 (Plantation)	0.27 (Plantation)
Settling Tank	--	0.01	--

Total	0.33	0.78	0.81
Area which will remain untouched	0.81	0.03	--
Total Lease Hold Area	0.81	0.81	0.81

ENVIRONMENT MANAGEMENT

Green Belt Development

S.No.	Location		Area/Length	No of Trees
1	Safety Zone	:	0.270ha	675
2	Along Approach Road	:	0.360 km	360
3	Plants distributed in village	:	--	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

- Only small amount of waste will be generated, which shall be used in making and maintenance of haul road and village road, so there is no requirement of waste dumping Plan for this mining plan period.

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 liftaccumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall 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

A     

- 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 '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 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.

A 356

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

A

1/1/14

✓

AS

✓

✓

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.

A

MA

G

X

MA

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.

A

MA

362

edw

By

- 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 protecting 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 Jhaljamira Stone Block of Shri Hiralal Sahu, Village : Jhaljamira, Thana no. : 173, Distt. : Lohardaga, Jharkhand (0.81 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

22. Jhaljamira Stone Block - A of Shri Hiralal Sahu, Village : Jhaljamira, Thana no. : 173, Distt. : Lohardaga, Jharkhand (0.405 Ha).

(Proposal No. SIA/JH/MIN/402787 /2022).

Project Category: B2 – Application for Environment Clearance

EC Application for: Proposed Capacity-1777.77 cum/annum or 4800.0 TPA

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

This is a new project which has been taken for appraisal on 10.10.2023.

PROJECT and LOCATION Details:

S. No.	Parameter	Details
1	Project Name	: Jhaljamira Stone Block - A
2	Lessee:	: Sri Hiralal Sahu At Kumhairya, PO- Akashi, PS- Bhandra, District- Lohardaga, Jharkhand
3	Lease Address	: Village – Jhaljamira, Thana No.- 173 , District – Lohardaga, Jharkhand
4	Lease Area	: 0.405 ha Acres- 1.00 Acres
5	Type of Land	: Non Forest – Raiyati Land
6	Project Cost	: Rs. 40 Lakhs
7	EMP Budget	: Capital: 3.42Lakhs Recurring: 4.27 Lakh / year

A

8	New or Expansion	:	New
9	Mineable Reserves	:	cum.: 17517.03 cum Tonnes: 47296.00 tons
10	Mine Life	:	6.76 years
11	Man power	:	8
12	Water Requirement	:	6.16 ~ 6.20 KLD (Drinking: 0.08 KLD, Dust Suppression: 4.06 KLD, Plantation: 2.02 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	200 k VA
15	Crusher	:	No crusher
16	Nearest Water Body	:	South Koel River, at approx. 0.75 km, NW direction
17	Nearest Habitation	:	Jhaljamira village, at 710 meters
18	Nearest Rail Station	:	Lohardaga Railway station, approx. 9.92 km towards N direction.
19	Nearest Air Port	:	Birsa Munda Airport, approx. 63.20 km towards ESE direction.
20	Nearest Forest	:	Raikera-Bandhtoli Forest, at approx. 9.10 km towards ESE direction of mine site. Protected Forest, at approx 1.30 km towards SE direction of mine site. Open Scrub Jungle, at approx 2.20 km towards SSE direction of mine site. Open Mixed Jungle, at approx 4.60 km towards SW direction of mine site.
21	Road & Highways	:	NH- 143A, at approx. 7.19 km. in East direction.

CO-ORDINATES

1	Latitude	From 23°21'23.83"N	To 23°21'25.55"N
2	Longitude	From 84°42'26.86"E	To 84°42'30.54"E

LAND DETAILS :

Khata No.	Plot No.
New : 364	New : 2676 (P)
Old : 267	Old : 2539 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by Director of Mines, Deptt. of Mines & Geology, Govt. of Jharkhand vide letter no. Kha.Ni(Nilami)-08/2022/1478, dated 15.07.2022.
2	CO	:	The CO, Senha (Lohardaga) vide letter no. 608, dated 08.09.2022 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Lohardaga vide memo no. 422/M, dated 10.09.2022 certified that 01 other mining lease area (1.00 Acre) exists within 500 m radius from proposed project site and total area is 3.00 acre.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 877, dated 21.09.2022 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. 2543, dated 10.09.2022 certified that the distance of reserved / protected forest is 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Lohardaga district.
7	Gram Sabha	:	BDO, Senha (Lohardaga) vide letter no. 990, dated 10.09.2022 informed that Gram Sabha conducted on 28.08.2022.
8	Mine Plan Approval	:	Approved by DMO, Lohardaga vide Memo No. 1148/M, dated 30.09.2023.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Mining method
2	Quarry Area	:	0.405 ha. Life of Mine – 6.76 years
3	Waste Generation	:	5 years–0.00 cum
4	Stripping Ratio	:	1: 00
5	Working Days	:	300
6	Benches: size & No	:	6m to 6m
7	Elevation of Mine	:	642AMSL to 657AMSL
8	Ground Level Elevation	:	642AMSL
9	Ultimate Working Depth	:	628 AMSL (14mbgl)
10	Water Table	:	622 AMSL (20mbgl)
11	Topography of Mine	:	Area represents small hillocks

12	Explosive Requirement	:	70 Kg/day
13	Diesel/Fuel requirement	:	70 L/day

Production Details

Year	Production of stone (cum)	Production of stone (tons)	Bench RL in Meters
1 st	1777.77	4800.00	652mRL - 649mRL
2 nd	1777.77	4800.00	649mRL - 646mRL
3 rd	1777.77	4800.00	649mRL - 646mRL
4 th	1777.77	4800.00	646mRL - 643mRL
5 th	1777.77	4800.00	646mRL - 643mRL
Total	8888.85	24000.00	

Land Use

Type of Land Use	Existing (ha)	During Plan Period (ha)	During Conceptual Period/after closure of mines (ha)
Quarry	0.02	0.21	0.25 (Entire area converted as water body)
Crusher	--	--	--
Overburden Dump	--	--	--
Infrastructure	--	0.01	--
Approach roads	0.015	0.015	0.015
Garland Drain	--	0.02	--
Safety Zone	--	0.14 (Plantation)	0.14 (Plantation)
Settling Tank	--	0.01	--
Total	0.035	0.405	0.405
Area which will remain untouched	0.37	--	--
Total Lease Hold Area	0.405	0.405	0.405

ENVIRONMENT MANAGEMENT

Green Belt Development

S.No.	Location		Area/Length	No of Trees
1	Safety Zone	:	0.140 ha	350
2	Along Approach Road	:	0.560 km	560
3	Plants distributed in village	:	--	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

- Only small amount of waste will be generated, which shall be used in making and maintenance of haul road and village road, so there is no requirement of waste dumping Plan for this mining plan period.

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 shall be made around the Waste dump and the rain water shall becollected in garland drain and allowed to settle in a small pit for settling suspendedparticles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, dischargefrom Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and goodsanitation system shall be made available.

A     

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 '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 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

A

MA.

CV

AM

17

mm

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

A

[Signature]

370

[Signature]

[Signature]

[Signature]

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.

A

✓

B

✓

✓

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

A  372    

- 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.

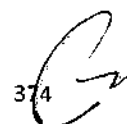
A    

- 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 protecting 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 Jhaljamira Stone Block - A of Shri Hiralal Sahu, Village : Jhaljamira, Thana no. : 173, Distt. : Lohardaga, Jharkhand (0.405 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I.

A     

23. Jajgunda Stone Block of Shri Samim Ahmad Khan, Village : Jajgunda, P.S. : Kuru, Distt. : Lohardaga, Jharkhand (0.81 Ha).

(Proposal No. SIA/JH/MIN/447395 /2023).

Project Category: B2 – Application for Environment Clearance

EC Application for: Proposed Capacity-5424.30 cum/annum or 15188.04 TPA

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

This is a new project which has been taken for appraisal on 10.10.2023.

PROJECT and LOCATION Details:

S. No.	Parameter	Details
1	Project Name	: Jajgunda Stone Block
2	Lessee:	: Samim Ahmad Khan At Chandwa Road Near, Bus Stand, Kuru Dist. – Lohardaga, Jharkhand
3	Lease Address	: At Chandwa Road Near, Bus Stand, Kuru Dist. – Lohardaga, Jharkhand
4	Lease Area	: 0.81ha Acres- 2.00 Acres
5	Type of Land	: Non Forest – Raiyati Land
6	Project Cost	: Rs. 20Lakhs
7	EMP Budget	: Capital: 3.00Lakhs Recurring: 4.27 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 52442.83cum Tonnes: 146839.95 tons
10	Mine Life	: 10 years
11	Man power	: 17
12	Water Requirement	: 5.67 ~ 6.00 KLD (Drinking: 0.17 KLD, Dust Suppression: 3.25 KLD, Plantation: 2.25KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 200 KVA
15	Crusher	: No crusher
16	Nearest Water Body	: South Koel River, at Approx 3.97 km towards South direction of mine site
17	Nearest Habitation	: -
18	Nearest Rail Station	: Akashi Railway station, approx. 13.42 km towards SW direction.
19	Nearest Air Port	: Birsa Munda Airport, approx. 47.92 km towards ESE direction.
20	Nearest Forest	: Open Mixed Jungle Approx. 2.90 km towards SWW direction of mine site.

A

UJA

B

am

17

mm

		Open Jungle Manly Sal Approx 3.37 km towards E direction of mine site. Open Jungle Manly Sal Approx. 3.60 km towards E direction of mine site.
21	Road & Highways	: NH- 39, at approx. 7.22 km. in East direction.

CO-ORDINATES

1	Latitude	From 23°30'22.944" N	To 23°30'25.747" N
2	Longitude	From 84°54'9.100" E	To 84°54'14.027" E

LAND DETAILS :

Khata No.	Plot No.
42	200 (P)

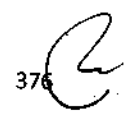
STATUTORY CLEARANCES

1	LOI / Lease docs	: The Letter of Intent (LoI) has been issued by Director of Mines, Deptt. of Mines & Geology, Govt. of Jharkhand vide memo no. 1890/M, dated 06.09.2023.
2	CO	: The CO, Kudu vide letter no. 1047, dated 21.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	: DMO, Lohardaga vide memo no. 1146/M, dated 30.09.2022 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	: DFO, Wildlife Ranchi vide letter no. 979, dated 30.09.2023 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. 1738, dated 30.09.2023 certified that the distance of reserved / protected forest is 250 meter from proposed project site.
6	DSR	: This project is mentioned in District Survey Report (DSR) of Lohardaga district.
7	Gram Sabha	: BDO, Kudu (Lohardaga) vide letter no. 1139/Sa, dated 21.09.2023 informed that Gram Sabha conducted on 20.09.2022.

A



376









8	Mine Plan Approval	:	Approved by DMO, Lohardaga vide Memo No. 1181/M, dated 05.10.2023.

Working Details

1	Mining Method	:	Opencast Semi Mechanized method
2	Quarry Area	:	0.81 ha. Life of Mine – 10 years
3	Waste Generation	:	534.88 cum or 1497.66 tons
4	Stripping Ratio	:	1: 00
5	Working Days	:	300
6	Benches: size & No	:	6m to 6m
7	Elevation of Mine	:	695AMSL to 710AMSL
8	Ground Level Elevation	:	-
9	Ultimate Working Depth	:	680 AMSL
10	Water Table	:	up to 660 AMSL (20 mbgl)
11	Topography of Mine	:	Area represents small hillocks
12	Explosive Requirement	:	70 Kg/day
13	Diesel/Fuel requirement	:	70 L/day

Production Details

Year	Production of Stone		Waste (cum)
	(in Tones)	(in cum)	
1st	15188.04	5424.30	108.48
2nd	14718.82	5256.72	105.13
3rd	14850.53	5303.76	106.11
4th	15059.72	5378.24	107.56
5th	15064.56	5380.20	107.60
Total	74881.67	26743.22	534.88

A









Land Use

Type of Land Use	Existing (ha)	At the end of plan period (Ha)	During Conceptual Period/after closure of mines (ha)
Excavation	0.00	0.415	0.52 (0.19 ha area shall be left as water reservoir & 0.33 ha shall be dead benches).
Waste Dump	0.00	0.00	0.00
Road	0.00	0.004	0.00
Safety Zone	0.00	0.290 (Plantation)	0.290 (Plantation)
Total	0.00	0.709	0.810
Unused Area	0.81	0.101	0.0
Total Lease Area	0.810		

ENVIRONMENT MANAGEMENT

Green Belt Development

S.No.	Location		Area/Length	No of Trees
1	Safety Zone	:	0.290ha	725
2	Along Approach Road	:	0.300 km	300
3	Plants distributed in village	:	--	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.

A

[Signature]

37

[Signature]

[Signature]

[Signature]

[Signature]

Solid Waste Management

- Only small amount of waste will be generated, which shall be used in making and maintenance of haul road and village road, so there is no requirement of waste dumping Plan for this mining plan period.

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 '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 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

A

WMA

380

E

WMA

X

WMA

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

A



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

A

U.M.

382

edu

fx

- 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.

A

U

3

asm

h

mm

- 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.

A  384   

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 protecting 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 Jajgunda Stone Block of Shri Samim Ahmad Khan, Village : Jajgunda, P.S. : Kuru, Distt. : Lohardaga, Jharkhand (0.81 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I.

24. Barmasia Stone Mine of Md. Mukhtar Momin, Village : Barmasia, Distt. : Pakur, Jharkhand (3.180 Ha).

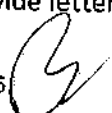
(Proposal No. SIA/JH/MIN/446250 /2023).

Project Category: B2 – Application for Environment Clearance (re-appraisal of Environment Clearance issued by DEIAA, Pakur)

EC Application for: Proposed Capacity- 156427 TPA

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

The project has been granted EC by DEIAA, Pakur vide letter no. 24/DEIAA, dated 16.02.2017.

A  386    

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, Pakur which has been taken up for consideration on 23.09.2023. 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 -85.9 µg/m³ PM_{2.5} -48.4 µg/m³ SO₂ -21.7 NO₂ - 42.3 µg/m³. All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Plantation has been done all along the mine lease area.

Production detail as per letter no. 2036/ M dated 09.09.2023 by D.M.O, Pakur is within the permissible limit of EC.

The compliance report of previous EC has been certified by Regional Office cum Laboratory, JSPCB, Dumka vide Ref. no. : 1932, dated 13.09.2023.

Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Barmasia Stone Mine
2	Lessee:	: Md. Mukhtar Momin At-Rampur, P.O.-Torai, P.S.-Hiranpur, District-Pakur Jharkhand
3	Lease Address	: At-Rampur, P.O.-Torai, P.S.-Hiranpur, District-Pakur.
4	Lease Area	: 3.180 ha Acres- 7.85 Acre
5	Type of Land	: Non- Forest (Raiyati Land)
6	Project Cost	: Rs. 50Lakhs
7	EMP Budget	: Capital: 5.35Lakhs Recurring: 4.27Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: Tonnes: 462789 tonne
10	Mine Life	: 5.0 years
11	Man power	: 21
12	Water Requirement	: 10.60 KLD (Drinking: 0.21 KLD, Dust Suppression: 5.45 KLD, Plantation:4.85 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 500 KVA
15	Crusher	: No
16	Nearest Water Body	: Torai Nadi-Approx. 3.40 km towards South direction of mine site.
17	Nearest Habitation	: Barmasia, Approx. 0.31 km towards SE direction.
18	Nearest Rail Station	: Kotalpukur Railway station, approx. 11.21 km towards ENE direction.

A UMA C EME

19	Nearest Air Port	:	Deoghar Airport, approx. 108.60 km towards SW direction.
20	Nearest Forest	:	Protected Forest-Approx 2.30 Km in ENE direction Protected Forest-Approx 3.46 Km in SE direction Open Scrub protected Forest-Approx 3.77 Km in NW direction
21	Road & Highways	:	NH-133A, Approx. 0.24 km in SW direction.

CO-ORDINATES

1	Latitude	From 24° 43' 20.20" N	To 23° 43' 28.54" N
2	Longitude	From 87° 42' 46.28" E	To 87° 42' 55.06" E

LAND DETAILS :

Khata No	Plot No
7	7
12	17, 38, 39, 40, 41, 42, 44, 35
22	18, 19, 20, 21, 22, 23, 37
40	33
64	34, 45, 46, 47

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed 25.09.2017 to 24.09.2027.
2	CO	:	The CO, Hiranpur vide memo no. 311/Ra, dated 27.06.2023 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. 2018/M, dated 06.09.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO-cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1412, dated 28.07.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Pakur Forest Division vide letter no. 667, dated 07.05.2016 certified that the distance of notified forest is more than 250 meter from proposed project site.

6	DSR	:	This project is mentioned in District Survey Report (DSR) of Pakur district.
7	Gram Sabha	:	Gram Sabha conducted on 05.05.2016.
8	Mine Plan Approval	:	Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Memo No. 425/DDM, dated 08.11.2016.
9	Production Report	:	Production figure issued by DMO, Pakur vide memo no. 2036/M, dated 09.09.2023.
10	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-2080680 /2018/494, dated 10.05.2018.
11	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. : JSPCB/RO/DMK/CTO-2566850 /2018/161, dated 13.06.2018.
12	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Pakur vide letter no. 24/DEIAA , dated 16.02.2017.
13	Compliance report of previous EC	:	Compliance report certified by Regional Office cum Laboratory, JSPCB, Dumka vide Ref. no. : 1932, dated 13.09.2023.

Working Details

1	Mining Method	:	Opencast Semi Mechanized Method	
2	Quarry Area	:	3.180 Ha	Life of Mine –5 years
3	Waste Generation	:	9924.65 cum or 26796.555 tons	
4	Stripping Ratio	:	1: 0.02	
5	Working Days	:	300	
6	Bench: size & No	:	6m to 6m	
7	Elevation of Mine	:	56MRL to 55MRL	
8	Ground Level Elevation	:	40 MRL	
9	Ultimate Working Depth	:	up to 32mRL	
10	Water Table	:	up to 20mRL (20 mbgl)	
11	Topography of Mine	:	Area represents undulating topography.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

A     

Production Details

Year	Production of Stone in tonnes	Total Waste in Cum
1st	00	1974.40
2nd	94017	1969.60
3rd	123638	1968.70
4th	156427	2005.15
5th	141475	2006.80
Total	515557	9924.65

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	After life of mine (Ha)
Quarry	1.602	2.330	2.330 (Entire area shall be left as water reservoir)
Road	0.004	Nil	0.0
Waste Dump	-	Nil (waste dump to be removed and backfilled)	Nil (waste dump to be removed and backfilled)
S.Z Plantation	0.00	0.850	0.850
Total	1.606	3.180	3.180
Balance	1.574	0.000	0.000
Lease Hold Area	3.180	3.180	3.180

A

[Signature]

390

[Signature]

[Signature]

[Signature]

[Signature]

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.850 .ha	2125
2	Along Approach Road	0.20km	200
3	In consulting local authorities	-	100

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

Solid Waste Management

Total 9924.65 cum or 26796.555 tons waste shall be generated during this plan period. It has been calculated that total 9924.65 cum total waste shall be generated during the plan period. 50% of the waste shall be utilized for maintenances of the village road and making of approach road, haul road etc. and rest 50% of the waste shall be temporary dump in the SW side of the applied 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 suspendedparticles in the pit. Pump having required capacity will be installed to liftaccumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall becollected in garland drain and allowed to settle in a small pit for settling suspendedparticles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, dischargefrom Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and goodsanitation system shall be made available.

A

✓

✓

✓

✓

✓

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

A   3927   

		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

A

UWA

G

edw

g

mm

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

A

[Signature]

394

[Signature]

[Signature]

[Signature]

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.

A




396







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 point stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- Personal protective equipments such as protecting 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 Barmasia Stone Mine of Md. Mukhtar Momin, Village : Barmasia, Distt. : Pakur, Jharkhand (3.180 Ha) is recommended for grant of EC. During the appraisal the Committee observed that present status of greenbelt, Dust Suppression measures and use of PPE's was not upto the mark. The various conditions for grant of EC is enclosed as Annexure - I alongwith following specific conditions for improving the environmental performance :

- Trees 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.

A

[Signature]

398

[Signature]

[Signature]

[Signature]

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

25. Hathigarh Stone Mine of M/s Jharkhand Minor Minerals Works (Prop. : Md. Tipu Ansari), Village : Hathigarh, Distt. : Pakur, Jharkhand (2.37 Ha).

(Proposal No. SIA/JH/MIN/446269 /2023).

Project Category: B2 – Application for Environment Clearance (re-appraisal of Environment Clearance issued by DEIAA, Pakur)

EC Application for: Proposed Capacity- 40709.31 cum/year or 118057 TPA

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

The project has been granted EC by DEIAA, Pakur vide letter no. 147/DEIAA , dated 19.08.2017.

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, Pakur which has been taken up for consideration on 23.09.2023. 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 -85.9 µg/m³ PM_{2.5} -48.4 µg/m³ SO₂ -21.7 NO₂ - 42.3 µg/m³ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Plantation has been done.

Production detail as per letter no. 2079/ M dated 12.09.2023 by D.M.O, Pakur is within the permissible limit of EC.

A

U.M.

B

1/

W

The compliance report of previous EC has been certified by Regional Office cum Laboratory, JSPCB, Dumka vide Ref. no. : 1980, dated 21.09.2023.

Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Hathigarh Stone Mine
2	Lessee:	: M/s Jharkhand Minor Minerals Works Prop. - Md. Tipu Ansari
3	Lease Address	: M/s Jharkhand Minor Minerals Works Prop. - Md. Tipu Ansari At- Harindanga Bazar, P.S.- Pakur , Dist.- Pakur, Jharkhand
4	Lease Area	: 2.37 ha Acres- 5.86 Acre
5	Type of Land	: Non Forest – Raiyati Land
6	Project Cost	: Rs. 50 Lakhs
7	EMP Budget	: Capital: 3.60 Lakhs Recurring: 4.27 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: Tonnes : 2173301
10	Mine Life	: 10.02 years
11	Man power	: 29
12	Water Requirement	: 7.30 KLD(Drinking: 0.29 KLD, Dust Suppression: 3.455 KLD, Plantation: 3.50 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 200 KVA
15	Crusher	: No crusher
16	Nearest Water Body	: Torai Nadi- Approx 4.50 km towards South direction of mine site
17	Nearest Habitation	: Hathigarh, at 520 meters
18	Nearest Rail Station	: Kotalpukur Railway station, approx. 11.66 km towards ENE direction.
19	Nearest Air Port	: Deoghar Airport, approx. 106.90 km towards SW direction.
20	Nearest Forest	: GumaPaharProtected Forest - Approx 6.0 km. in NW direction of mine site.
21	Road & Highways	: NH- 133A, Approx. 0.03 km in East direction.

CO-ORDINATES

1	Latitude	From 24°43'38.24" N To 24°43'44.29" N

[Handwritten signatures and marks at the bottom of the page]

2	Longitude	From 87°42'24.69" E	To 87°42'35.16" E

LAND DETAILS :

Khata No.	Plot No.
41	1043 P
56	1044
57	1045
44	1046 P
27	1054, 1055, 1056, 1057, 1058

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed 07.11.2017 to 06.11.2027.
2	CO	:	The CO, Littipara vide memo no. 01/Ra, dated 08.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 2075/M, dated 12.09.2023 certified that 01 other mining lease area (5.85 Acre) exists within 500 m radius from proposed project site and total area is 11.71 Acre (4.73 Ha).
4	DFO Wild Life	:	DFO-cum-Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1282, dated 15.07.2023 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. 1369, dated 03.09.2016 certified that the distance of notified forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Pakur district.
7	Gram Sabha	:	BDO, Littipara vide letter no. 309/Ra, dated 11.07.2017 informed that Gram Sabha conducted on 26.07.2017.
8	Mine Plan Approval	:	Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Memo No. 72/DDM, dated 06.02.2017.

(Handwritten signatures and initials)

9	Production Report	:	Production figure issued by DMO, Pakur vide memo no. 2079/M, dated 12.09.2023.
10	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-2024648 /2018 /448, dated 27.04.2018.
11	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. : JSPCB/RO/DMK/CTO-2495571 /2018/123, dated 10.05.2018.
12	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Pakur vide letter no. 147/DEIAA , dated 19.08.2017.
13	Compliance report of previous EC	:	Compliance report certified by Regional Office cum Laboratory, JSPCB, Dumka vide Ref. no. : 1980, dated 21.09.2023.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method
2	Quarry Area	:	2.37 Ha / 5.86 Acre
3	Waste Generation	:	17766 cum or 51521.4 tons
4	Stripping Ratio	:	1: 0.01
5	Working Days	:	300
6	Bench: size & No	:	5m to 5m
7	Elevation of Mine	:	82 AMSL to 87 AMSL
8	Ground Level Elevation	:	49 AMSL
9	Ultimate Working Depth	:	54 AMSL
10	Water Table	:	209 AMSL (10mbgl)
11	Topography of Mine	:	Area represents the major part of the region is covered with continuous chain of hills
12	Explosive Requirement	:	110kg/day
13	Diesel/Fuel requirement	:	110 litre/day

Production Details

Year	Production of stone (cum)	Production of stone (tons)	Bench RL in Meters
1 st	35177.93	102016	84mRL - 69mRL
2 nd	40279.31	116810	84mRL - 64mRL
3 rd	40431.03	117250	84mRL - 69mRL

A V 402 C W

4 th	40645.17	117871	84mRL - 59mRL
5 th	40709.31	118057	86mRL - 54mRL
Total	197242.75	572004	

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	After life of mine (Ha)
Test Pit	0.004	-	-
Overburden dump	-	0.186	-
Mining	-	1.197	-
Water Reservoir	-	-	1.068
Backfilled & Plantation area	-	-	0.344
Mineral storage	-	0.040	-
Infrastructure	-	0.040	-
Public road	-	-	0.315
Green belt	-	0.457	0.643
Approach roads	0.020	0.093	-
Total	0.024	2.013	2.37
Balanced Area	2.346	0.357	-
Total Area	2.37	2.37	2.37

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.643ha	1750
2	Along Approach Road	0.04 km	40

- 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.

A     

Solid Waste Management

Total 17766 cum or 51521.4 TPA waste will be generated during the Plan Period. During the five years of proposed working it is not possible to reclaim the worked out area as the stone is continuing in depth. So, it is proposed to create external dump in the area and for this an area near the northwestern corner near pillar P4 is chosen for dumping waste. During the first three years of the plan period, first layer of dump will be created. Fourth and fifth years of working the waste will be dumped over the first layer of the dump created during the first three years. Parapet wall and garland drain will be made at the toe of the dump

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:

A



404





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

A

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

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

A

[Signature]

406

[Signature]

[Signature]

[Signature]

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.

A   

- 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.

A

[Handwritten signature]

408

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

- 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:

A

Uman

C

adm

17

mm

- 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.

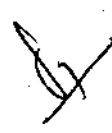
A



410









- 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 protecting 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 Hathigarh Stone Mine of M/s Jharkhand Minor Minerals Works (Prop. : Md. Tipu Ansari), Village : Hathigarh, Distt. : Pakur, Jharkhand (2.37 Ha) is recommended for grant of EC. During the appraisal the Committee observed that present status of greenbelt, Dust Suppression measures and use of PPE's was not upto the mark. The various conditions for grant of EC is enclosed as Annexure – I alongwith following specific conditions for improving the environmental performance :

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

A    

26. Dhobapahari Stone Mine of M/s Mili Stone Works (Prop. : Shri Namajul Shekh), Village : Dhobapahari, Thana : Hiranpur, Distt. : Pakur, Jharkhand (2.20 Ha).

(Proposal No. SIA/JH/MIN/446101 /2023).

Project Category: B2 – Application for Environment Clearance (re-appraisal of Environment Clearance Issued by DEIAA, Pakur).

EC Application for: Proposed Capacity- 1,02,274 TPA.

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

The project has been granted EC by DEIAA, Pakur vide letter no. 183/DEIAA, dated 26.09.2017.

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, Pakur which has been taken up for consideration on 23.09.2023. 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 -85.9 µg/m³ PM_{2.5} -48.4 µg/m³ SO₂ -21.7 NO₂ - 42.3 µg/m³. All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Plantation has been done all along the mine lease area.

Production detail as per letter no. 1530/ M dated 14.07.2023 by D.M.O, Pakur is within the permissible limit of EC.

The compliance report of previous EC has been certified by Regional Office cum Laboratory, JSPCB, Dumka vide Ref. no. : 2020, dated 29.09.2023.

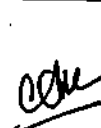
Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Dhobapahari Stone Mine
2	Lessee:	: M/s Mili Stone Works Prop. - Namajul Shekh, S/o Abdul Salam Shekh
3	Lease Address	: M/s Mili Stone Works Prop. - Namajul Shekh, S/o Abdul Salam Shekh Address- At- Janki Nagar, Pakur, P.o- Prithvinagar, Thana- Pakur, (M), Dist- Pakur (Jharkhand) Pin-816107
4	Lease Area	: 2.20ha Acres- 5.43 Acre
5	Type of Land	: Non Forest Raiyati Land
6	Project Cost	: Rs. 35 Lakhs
7	EMP Budget	: Capital: 5.70 Lakhs Recurring: 3.27 Lakh / year
8	New or Expansion	: New

A



412







9	Mineable Reserves	:	Tonnes : 990610
10	Mine Life	:	10.59 years
11	Man power	:	37
12	Water Requirement	:	11.00 KLD (Drinking: 0.37 KLD, Dust Suppression: 6.51 KLD, Plantation: 4.03 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	-
15	Crusher	:	No crusher
16	Nearest Water Body	:	Torai Nadi- Approx 0.56 km in WSW direction.
17	Nearest Habitation	:	Chagarjani, at 530 meters
18	Nearest Rail Station	:	Kotalpukur Railway station, approx. 9.88 km towards ENE direction.
19	Nearest Air Port	:	Cochin International Airport, approx. 31.73km towards NW direction
20	Nearest Forest	:	Tungi Pahar Protected Forest - Approx 2.14 Km in SSE direction
21	Road & Highways	:	NH-133A, Approx. 0.56 km in WSW direction.

CO-ORDINATES

1	Latitude	From 24°41'23.52" N	To 24°41'28.74" N
2	Longitude	From 87°44'30.59" E	To 87°44'39.71" E

LAND DETAILS :

Khata No.	Plot No.
19	37
25	20, 36 & 38

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 31.10.2019 to 30.10.2029.
2	CO	:	The CO, Hiranpur (Pakur) vide letter no. 01/Ra, dated 06.01.2017 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari"

[Handwritten signatures and initials]

		in R.S. Khatiyani & Register II.
3	DMO	: DMO, Pakur vide memo no. 2015/M, dated 06.09.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	: DFO, Wildlife Hazaribagh vide letter no. 328, dated 10.02.2020 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Forest Distance	: Division Forest Officer, Pakur Forest Division vide letter no. 1837, dated 23.12.2016 certified that the distance of notified forest is more than 250 meter from proposed project site.
6	DSR	: This project is mentioned in District Survey Report (DSR) of Pakur district.
7	Gram Sabha	: Gram Sabha conducted on 25.08.2017.
8	Mine Plan Approval	: Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Memo No. 394/DDM, dated 17.08.2017.
9	Production Report	: Production figure issued by DMO, Pakur vide memo no. 1530/M, dated 14.07.2023.
10	Consent to Establish (CTE)	: CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-7443847 /2020 /289, dated 24.07.2020.
11	Consent to Operate (CTO)	: CTO issued by JSPCB vide Ref. no. : JSPCB/RO/DMK/CTO-8626879 /2020/126, dated 23.09.2020.
12	Previous Environmental Clearance (EC)	: Previous EC granted by DEIAA, Pakur vide letter no. 183/DEIAA, dated 26.09.2017.
13	Compliance report of previous EC	: Compliance report certified by Regional Office cum Laboratory, JSPCB, Dumka vide Ref. no. : 2020, dated 29.09.2023.

Working Details

1	Mining Method	: Opencast other than fully mechanized (OTFM) Method
2	Quarry Area	: 2.20 Ha / 5.43 Acre
3	Waste Generation	: 14922 cum or 43273.8 tons
4	Stripping Ratio	: 01: 1-0
5	Working Days	: 300

A

[Signature]

[Signature]

[Signature]

[Signature]

[Signature]

6	Benches: size & No	:	5m to 5m
7	Elevation of Mine	:	59 AMSL to 70AMSL
8	Ground Level Elevation	:	29 AMSL m RL (30mbgl)
9	Ultimate Working Depth	:	59 AMSL
10	Water Table	:	30 to 39.36m
11	Topography of Mine	:	Area represents the major part of the region is covered with continuous chain of hills
12	Explosive Requirement	:	110kg/day
13	Diesel/Fuel requirement	:	110 litre/day

Production Details :

Year	Production of Stone in tonnes	Total Waste in Cum
1st	97114	3608
2nd	102274	3435
3rd	95142	2247
4th	97943	2971
5th	97103	2661
Total	489576	14922

Land Use :

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	After life of mine (Ha)
Test pit	0.00809	-	-
Overburden dump	0	0.254	0.00
Mineral storage	0.00	0.080	-
Infrastructure	0.00	0.060	0.00
Approach roads	0.0283	0.080	-
Mining	-	1.116	-
Water Reservoir	-	-	1.247
Backfilled & plantain area	-	-	0.454
Green Belt etc	-	0.493	0.498
Public road	-	-	0
Total	0.0364	2.088	2.20

[Handwritten signatures and initials at the bottom of the page]

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.498ha	2015
2	Along Approach Road	0.67 km	670

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

Solid Waste Management

It has been calculated that Pit layout has been shown in development plan & section and there is 360.00 cum waste generated during this scheme period, so there is no requirement of waste dumping plan for this mining scheme but it will be used for approach road and village road maintenance.

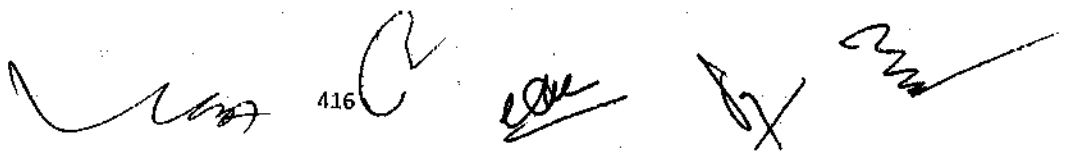
Water Quality Management

- 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

A

 416

- 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

A

WMA

✓

✓

C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone Mining operation

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

A     

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

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

A   

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.

A

UMA

420

CDU

✓

✓

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.

A

UAA

CS

W

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

A

WCA

22

edu

12

WCA

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 protecting 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 Dhobapahari Stone Mine of M/s Mili Stone Works (Prop. : Shri Namajul Shekh), Village : Dhobapahari, Thana : Hiranpur, Distt. : Pakur, Jharkhand (2.20 Ha) is recommended for grant of EC. During the appraisal the Committee observed that present status of greenbelt, Dust Suppression measures and use of PPE's was not upto the mark. The various conditions for grant of EC is enclosed as Annexure – I alongwith following specific conditions for improving the environmental performance :

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

- III. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- IV. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- V. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VI. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

Day 3 : October 11th, 2023 [Wednesday]

Consideration of Proposals

1. Affordable Housing Project "Prahla Pinnacle" of M/s Prahla Builders & Associates Pvt. Ltd.,
Mauza : Gutua, Tehsil : Nagri, Distt. : Ranchi, Jharkhand.
(Proposal No. SIA/JH/INFRA2/447287 /2023).

Project Category: 8(a) Category B2 – Application for Environment Clearance

EC Application for: Affordable Group Housing Project "Prahla Pinnacle": Total built-up area 22456.62 sq m.

Project Category: 8(a) Category B2 as per EIA Notification as the built-up area is less than 1,50,000 sqm. and development area is less than 50 ha.

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

This is a new project which has been taken for appraisal on 11.10.2023.

PROJECT and LOCATION Details:

Parameters	Description
Plot Area	4685.85 sq.m (0.468 ha/1.157 acres)
Project Cost	INR 35Crores
Built-up Area (@3.5 F.A.R)	22456.62 sq. m.

A

42

42

42

42

42

Green Area (@ 20% of plot area)	937.178sq m
Population	837
Water Requirement	90KLD
Fresh Water Requirement	56 KLD
Wastewater Generation	69 KLD
STP Capacity	75 KLD
Total Municipal Waste	408kg/day
Power Requirement	Maximum power demand for the project during operation phase is estimated to be 1500 kVA respectively. Source of power will be Jharkhand State Electricity Board.
DG Sets	1 nos. of DG set of 400 kVA
RWH Pits	2nos.
Parking Area	For 150 nos. of cars.
Connecting road	Project site abuts a road in West direction which connects the site to Itki Road at 600 m in West direction.
National/State Highway	NH 39 (2.01km, WSW)
Nearest Railway Station	Argora Junction (6.46 km, E)
Airport	Birsa Munda Airport (6.9 km, ESE)
Nearest Hospitals	Ranchi City Hospital (6.11 km, E)
Nearest Water Bodies	Pond (near Saparom)-2.03 km, WSW Kanke Dam (6.767 km, NW)

CO-ORDINATES

Point in Image	Latitude	Longitude
A	23°21'26.96"N	85°15'7.82"E
B	23°21'24.59"N	85°15'10.17"E
C	23°21'25.76"N	85°15'10.28"E
D	23°21'25.65"N	85°15'11.54"E
E	23°21'26.11"N	85°15'11.95"E
F	23°21'26.57"N	85°15'11.89"E

A

✓ LSA

✓

✓

✓

✓

G	23°21'26.80"N	85°15'12.16"E
H	23°21'28.58"N	85°15'9.78"E
Centre	23°21'26.73"N	85°15'10.16"E

Khata no.& Plot no. of the project :

Khata no.	Plot no.
04	1455

AREA STATEMENT

S. No.	Description	Area (sq. m)
1.	Plot Area	4685.85
2.	Permissible Ground Coverage (@35% of plot area)	1640.66
3.	Proposed Ground Coverage (@33% of plot area)	1546.297
4.	Permissible FAR (@3.5 of plot area)	16406.59
5.	Proposed FAR (@3.505 of plot area)	16424.641
6.	Proposed Non-FAR area	6,031.979
	Basement	3508.39
	Stilt	768.47
	Blocks	1,755.119
7.	Built-up Area	22456.62
8.	Green Area (@ 20% of plot area)	937.178
9.	Nos. of Dwelling units	136
	General	88
	LIG	12
	EWS	36
10.	Height (m)	36 m
11.	Floor details	
	Block 1-General	B+G+11
	Block 2-EWS & LIG	G+11

A

426

426

426

426

426

STATUTORY CLEARANCES :

1	DFO Forest Distance	:	DFO, Ranchi Forest division vide memo no. 3936, dated 11.10.2023 certified that the distance of notified forest is 220 meter from proposed project site.
2	DFO wildlife	:	DFO, Wildlife Ranchi vide letter no. 981, dated 30.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
3	CO certificate	:	The CO, Nagri, Ranchi vide letter no. 1268 (ii), dated 06.10.2023 has mentioned the plot no. of the project is not recorded as "Jangle Jhari" in R.S. Khatiyan & Register II.
4	Building Plan approval	:	Conceptual Plan submitted.
5	AAI	:	Airport Authority of India issued a height clearance NOC vide its NOC ID -RANC/EAST/B/083023/782072, dated 25.09.2023 valid up to 24.09.2031.

Water Requirement Details

Category	Population/Area (sq m)/Capacity	Standard (LPCD)	Water Requirement-KLD	Fresh Water Requirement-KLD	Recycled Water requirement-KLD
Domestic					
Residents	781	100	78	55	23
Staff	16	45	1	0.3	0.7
Visitors	40	15	1	0.7	0.3
Total Domestic Water Demand			80	56	24
Landscape	937.178 sq m	6 l/sq m	6	0	6
DG cooling	400 kVA	0.9/L/KVA/hr	3	0	3
Fire fighting			1	0	1
Total	--	-	90	56	34

(D.G. sets operation period is 8 hrs.)

Wastewater Calculations

Category	Total Quantity (KLD)
Fresh water Req.(Domestic)	56
Flushing water Req.	24
Sewage generation (@80% of the fresh water consumption(domestic) + 100% flushing water)	69

A

UHA

Ch

↓

~

Capacity of STP	75
Recovered water from STP (90% of Waste water)	62
1. Flushing	24
2. Landscaping	6
3. DG cooling	3
4. Firefighting	1
5. Discharge to Sewer	28

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	781	0.5	391	313	78
2.	Staff	16	0.25	4	3	1
3.	Visitors	40	0.15	6	5	1
4.	Landscape waste	0.23 acres	~0.2	1	1	0
5.	STP sludge	75 KLD	--	6	6	0
Total Waste Generated				408	328	80

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 937.178 sq m (20% of the plot area) which will enhance the beauty of the site and help combat air and noise pollution.
- The plant species will be selected on the basis of Guidelines for Developing Green Belts, CPCB March 2000.

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. 75KLD 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. 56 KLD of fresh water is required during operational phase of the project.

Air Quality Management

- Warehouse/stock yard will be provided for storage of construction material
- Covering of stored construction materials with tarpaulin covers which will be resold to authorized construction material handling agency for reuse.
- Covering of trucks carrying construction materials.
- Dust suppression by water sprinkling.
- Adequate maintenance of construction equipment & vehicles.
- Wheel wash facility at the entry/exit of the site to prevent dust emissions.
- Periodical Ambient Air Quality Monitoring.
- PUC Certified vehicles.
- Glow signs Speed Limits to 20 kmph to reduce emissions on site will be displayed at the important junctions.

Energy conservation

- Energy will be conserved via solar power & LED of at least 12% of the total power requirement.

Undertaking

1. An affidavit stating that no construction work.

The bottom of the page features several handwritten signatures and initials. From left to right, there is a large capital letter 'A', a cursive signature, a stylized signature that looks like 'E', another signature, a signature with a large 'X' or checkmark, and a final wavy signature.

2. An undertaking that 62m³/day recycles waste water generated at Affordable Group Housing Project "Prahla Pinnacle" at Plot No. 1455 P, Khata No. 04, Thana No. 138, Mauza - Gutua, Tehsil - Nagri, District - Ranchi, Jharkhand.
3. An undertaking that 1500 kVA Power requirement in Affordable Group Housing Project "Prahla Pinnacle" at Plot No. 1455 P, Khata No. 04, Thana No. 138, Mauza - Gutua, Tehsil - Nagri, District - Ranchi, Jharkhand.

Based on the presentation made and information provided, the Committee decided that the proposal for Affordable Housing Project "Prahla Pinnacle" of M/s Prahla Builders & Associates Pvt. Ltd., Mauza : Gutua, Tehsil : Nagri, Distt. : Ranchi, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - III.

2. Margaro Stone Deposit of M/s DRM Associate Pvt. Ltd., Village : Margaro, Thana : Barhait, Distt. : Sahibganj, Jharkhand (2.946 Ha).

(Proposal No. SIA/JH/MIN/443317 /2023).

Project Category: B2 – Application for Environment Clearance

EC Application for: Proposed Capacity- 82849.50 cum/annum or 223693.65 TPA

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

This is a new project which has been taken for appraisal on 11.10.2023.

Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Margaro Stone Deposit
2	Lessee:	: M/s DRM Associate Pvt. Ltd. Directors- 1) Sri Shivyogi Balkai 2) Sri Subrato Paul.
3	Lease Address	: Village : Margaro, Thana : Barhait, Distt. : Sahibganj, Jharkhand
4	Lease Area	: 2.946 ha Acres- 7.28Acre
5	Type of Land	: Non Forest Raiyati Land
6	Project Cost	: Rs. 30 Lakhs
7	EMP Budget	: Capital: 10.79 Lakhs Recurring: 4.27 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 830702.8 Tonnes: 2242897.56 tons

10	Mine Life	:	10 years
11	Man power	:	25
12	Water Requirement	:	19.83 ~ 20.00 KLD (Drinking: 0.25 KLD, Dust Suppression: 13.29 KLD, Plantation: 6.29 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	500KVA
15	Crusher	:	No crusher
16	Nearest Water Body	:	Gumani Nadi - Approx. 3.53 km towards NNE direction of mine site.
17	Nearest Habitation	:	Lakiapata - Approx 0.40 km towards SE direction from the mine site.
18	Nearest Rail Station	:	Barharwa Railway Station, approx. 13.62 km in East direction.
19	Nearest Air Port	:	Deoghar Airport, approx. 64.76 km towards SW direction..
20	Nearest Forest	:	Protected Forest - Approx. 1.6 km towards WSW direction of mine site. Protected Forest - Approx 2.9 km towards SW direction of mine site. Protected Forest - Approx 2.28 km towards SW direction of mine site.
21	Road & Highways	:	SH-18, Approx. 3.63 km. in NW direction.

CO-ORDINATES

1	Latitude	From N 24° 52'00.9258"	To N 24° 52'06.9583"
2	Longitude	From E 87° 38'14.1239"	To E 87° 38' 24.0010"

LAND DETAILS :

Khata No.	Plot No.
15	115 (P)
04	116 (P) & 117
10	118 (P)
07	119 (P)

(Handwritten signatures and marks)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Sahibganj vide letter no. 789/M, dated 04.08.2023.
2	CO	:	The CO, Barhait vide letter no. 49/Ra, dated 03.02.2022 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 808/M, dated 11.08.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 477, dated 18.02.2022 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Sahibganj Forest Division vide letter no. 221, dated 31.01.2022 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	The DC – cum – District Magistrate, Sahibganj vide letter no. 939/M, dated 09.09.2023 has informed that this project is part of District Survey Report (DSR) of Sahibganj district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	:	Gram Sabha conducted on 31.01.2022.
8	Mine Plan Approval	:	DMO, Sahibganj vide Letter No. 891, dated 22.08.2023.
9	DMO (Grid certificate)	:	DMO, Sahibganj vide memo no. 961/M, dated 22.09.2023 confirmed that proposed project is outside of Grid 1, 3, 4 and 7 as decided by Hon'ble NGT in the matter of Sayed Arshad Nasar vs State of Jharkhand & Ors.

Working Details

1	Mining Method	:	Opencast Semi- Mechanized Method	
2	Quarry Area	:	2.946 ha. or 7.28Acre	Life of Mine – 10 Years
3	Waste Generation	:	49759 cum or 134349.3 tons	
4	Stripping Ratio	:	01: 0.07	
5	Working Days	:	300	
6	Bench: size & No	:	6m to 6m	
7	Elevation of Mine	:	279mRL to 239 mRL	
8	Ground Level	:	227mRL	

	Elevation		
9	Ultimate Working Depth	:	up to 234mRL
10	Water Table	:	219.37mRL
11	Topography of Mine	:	Area represents a small hillock
12	Explosive Requirement	:	110kg/day
13	Diesel/Fuel requirement	:	110 litre/day

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Waste (cum) in plan period
1st	80750.00	218025.00	14764.50
2nd	81396.00	219769.20	12444.00
3rd	82849.50	223693.65	8610.50
4th	82042.00	221513.40	4318.00
5th	82688.00	223257.60	9622.00
Total	409725.50	1106258.85	49759.00

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
Quarry	0.0	1.348	2.448 (0.261 ha area shall be backfilled, 1.403 ha area shall be left as water reservoir & 0.784 ha shall be left as dead benches)
Road	0.0	0.044	0.0
Safety Zone	0.0	0.498 (Plantation)	0.498 (Plantation)
Waste Dump	-	0.481	0.0 (to be removed & backfilled)
Total	0.0	2.371	2.946

A

WMA

C

Don

g

WMA

UNUSED AREA	0.0	0.575	0.00
Lease Hold Area	2.946	2.946	2.946

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.498ha	1245
2	Along Approach Road	1.8km	1800
3	No. of plants distributed in Schools, Anganwadi or village Panchayat	--	100

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

Solid Waste Management

Total 49759 cum or 134349.3 tons waste shall be generated during this plan period During quarry advancement gritty soil & intercalated waste will be removed and this will be temporarily dumped within the applied area and in conceptual period backfilled within the exhausted quarry.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 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 shall be made around the Waste dump and the rain water shall becollected in garland drain and allowed to settle in a small pit for settling suspendedparticles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, dischargefrom Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and goodsanitation system shall be made available.

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.

C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard Identification & Risk Analysis in Stone Mining operation

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

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

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

A *U* *CB* *OS* *67* *M*

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.

A.  B.    

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

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

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- Personal protective equipments such as protecting 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 Margaro Stone Deposit of M/s DRM Associate Pvt. Ltd., Village : Margaro, Thana : Barhait, Distt. : Sahibganj, Jharkhand (2.946 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

A











3. Baliapatra Stone Deposit of Shri Abhinash Kumar Bhagat, Village : Baliapatra, P.S. : Maheshpur, Distt. : Pakur, Jharkhand (2.343 Ha).

(Proposal No. SIA/JH/MIN/425665 /2023).

Name of the consultant : P&M Soulation Pvt. Ltd., Noida, Delhi.

This is an expansion project which has been taken for appraisal on 11.10.2023.

Project Category: B2 – Application for Environment Clearance (Expansion)

EC Application for: Existing Capacity - 27189 cum/annum or 78848.10 TPA

After Expansion Capacity- 62073.90 cum/annum or 180014.31 TPA

The Baliapatra Stone Deposit has been previously granted for Environment clearance by SEIAA vide letter no. EC/SEIAA/2021-22/2322/2021/33, dated 14.07.2021 with production capacity 27189 cum/annum or 78848.10 TPA. Now, the proposal has been applied for the Environment clearance (Expansion, Category B2) under production capacity of 62073.90 cum/annum or 180014.31 TPA within same mining lease area.

Details :

Sl	Parameter	Details
1	Project Name	: Baliapatra Stone Deposit
2	Lessee:	: Sri Abhinash Kumar Bhagat
3	Lease Address	: At Dhulyan Road, Harindanga Bazar, District– Pakur , State – Jharkhand
4	Lease Area	: 2.343 Ha Acres- 5.79 Acre
5	Type of Land	: Non Forest Raiyati Land
6	Project Cost	: Rs. 40 Lakhs
7	EMP Budget	: Capital: 4.10Lakhs Recurring: 4.00 Lakh / year
8	New or Expansion	: Expansion
9	Mineable Reserves	: cum.: 620750 cum Tonnes: 1800175.00 tons
10	Mine Life	: 10 years
11	Man power	: 20
12	Water Requirement	: 7.79 ~ 8.0 KLD (Drinking: 0.20KLD, Dust Suppression: 3.69 KLD, Plantation: 3.90KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 500KVA
15	Crusher	: No crusher
16	Nearest Water Body	: Triaghana Nadi - Approx. 6.80 km towards S direction of mine site.
17	Nearest Habitation	: Baliapatra– Approx 0.27km towards W direction from the mine site.

18	Nearest Rail Station	:	Chatra Railway station, approx. 10.75 km toward East direction.
19	Nearest Air Port	:	Birsa Munda Airport, approx. 272 km towards SW direction.
20	Nearest Forest	:	Open Eucalyptus Jungle RF - Approx. 9.24 km towards S direction of mine site. Open Mixed Jungle - Approx. 4.95 km towards E direction of mine site. Reserved Forest near Madhupur Village - Approx. 9.66 km towards S direction of mine site
21	Road & Highways	:	SH-7, Approx. 10.80 km. in East direction

CO-ORDINATES

1	Latitude	From 24°22'15.89"N	To 24°22'23.13"N
2	Longitude	From 87°44'28.46"E	To 87°44'38.16"E

LAND DETAILS :

Khata No.	Plot No.
15, 21 & 22	419, 693, 694, 695, 701, 702, 703, 704, 708, 709, 710, 711, 716, 717, 718, 719, 720, 721 & 722

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed 18.12.2021 to 17.12.2031
2	CO	:	The CO, Maheshpur vide letter no. 838 dated 23.10.2019 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Pakur vide memo no.2052/M, dated 11.09.2023 certified that 01 other mining lease area (4.63 Acre) exists within 500 m radius from proposed project site and total area is 10.42 Acre.
4	DFO Wild Life	:	DFO, Wildlife Hazaribagh vide letter no. 2470, dated 09.11.2019 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.

A

USA

C

USA

USA

USA

5	DFO Forest Distance	: Division Forest Officer, Pakur Forest Division vide letter no. 1333, dated 31.10.2019 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	: This project is mentioned in District Survey Report (DSR) of Pakur district.
7	Gram Sabha	: BDO, Maheshpur Vide Letter no 1534/vi, dated-22.10.2029 informed that Gram Sabha conducted on 22.10.2019.
8	Mine Plan Approval	: Deputy Director Mines Santhal Pargana Circle, Dumka vide Letter No. 373/DDM, dated 01.08.2023.
9	Production Report	: Priveious Production Report issued by DMO, Pakur vide memo no-1277/M, dated-07.07.2023.
10	Consent to Estblish (CTE)	: CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-12157040/2022/155, dated 28.03.2022.
11	Consent to Operate (CTO)	: CTO issued by JSPCB vide Ref. no. : JSPCB/RO/DMK/CTO-15481283/2023/56, dated 25.03.2023.
12	Previous Environmental Clearance (EC)	: Previous EC granted by SEIAA, Jharkhand vide letter no. EC/SEIAA/2021-22/2322/2021/33, dated 14.07.2021.
13	Compliance report of previous EC	: Compliance report certified by Regional Office –cum- Laboratory, JSPCB, Dumka vide Ref. no. : 1912, dated 12.09.2023.

Working Details

1	Mining Method	:	Opencast Semi- Mechanized Method	
2	Quarry Area	:	2.343 hectares or 5.79 Acres	Life of Mine – 10 Years
3	Waste Generation	:	1917.0 cum or 5559.3Tons	
4	Stripping Ratio	:	01: 0.002	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	73mRL to 84 mRL	
8	Ground Level Elevation	:	73 mRL	
9	Ultimate Working Depth	:	up to 50mRL	
10	Water Table	:	Up to 40 mRL	
11	Topography of Mine	:	Undulating topography	

12	Explosive Requirement	:	110kg/day
13	Diesel/Fuel requirement	:	110 litre/day

Production Details

Year	Production of stone in (cum)	Production of stone in (tons)	Waste in Plan Period (cum)	Waste in Ultimate Period (cum)
1st	59500.00	172550.00	--	3387.00
2nd	59850.00	173565.00	657.00	
3rd	60970.00	176813.00	1260.00	
4th	62073.90	180014.31	--	
5th	62073.90	180014.31	--	
Total	304467.80	882956.62	1917.00	3387.00

Land Use

Pattern of Utilization	Existing (Ha)	Plan period(Ha)	Conceptual stage (Ha)
Quarry	0.490	0.714	1.701
Road	0.048	0.048	(comes under quarry)
Safety Zone Plantation	0.000	0.642	0.642
Total	0.538	1.404	2.343
Unused Area	1.805	0.939	0.000
Total Applied Area	2.343	2.343	2.343

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.642ha	1605
2	Along Approach Road	0.8km	100
3	No. of plants	--	245

A     

	distributed in Schools, Anganwadi or village Panchayat			

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

Solid Waste Management

- Total 1917.0 cum or 5559.3Tons waste shall be generated during this plan period During quarry advancement gritty soil & intercalated waste will be removed and this will be temporarily dumped within the applied area and in conceptual period backfilled within the exhausted quarry.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.

- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

A

LAH

B

✓

✓

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard Identification & Risk Analysis in Stone Mining operation

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

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

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

While others may need to work at or near the edge of a working bench the person most at risk

A [Signature] B [Signature] [Signature] [Signature]

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 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 equipments 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)

A

[Signature]

452 *[Signature]*

[Signature]

[Signature]

[Signature]

- 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 protecting 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 Baliapatra Stone Deposit of Shri Abhinash Kumar Bhagat, Village : Baliapatra, P.S. : Maheshpur, Distt. : Pakur, Jharkhand (2.343 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

A







4. Mansinghpur Stone Mine of M/s Jay Guru Stone Works, Village : Mansinghpur, Thana : Hiranpur, Distt. : Pakur, Jharkhand (2.98 Ha).

(Proposal No. SIA/JH/MIN/447289 /2023).

Project Category: B2 – Application for Environment Clearance (re-appraisal of Environment Clearance issued by DEIAA, Pakur)

EC Application for: Proposed Capacity- 60416.66 cum/year or 163125 TPA

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

The project has been granted EC by DEIAA, Pakur vide letter no. 151/DEIAA, dated 19.08.2017.

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, Pakur which has been taken up for consideration on 23.09.2023. 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 -85.9 $\mu\text{g}/\text{m}^3$ PM 2.5-48.4 $\mu\text{g}/\text{m}^3$ SO2-21.7 NO2- 42.3 $\mu\text{g}/\text{m}^3$ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

Production detail as per letter no. 1690/M dated 20.07.2023 by D.M.O, Pakur is within the permissible limit of EC.

The compliance report of previous EC has been certified by Regional Office cum Laboratory, JSPCB, Dumka vide Ref. no. : 1982, dated 21.09.2023.

Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Mansinghpur Stone Mine
2	Lessee:	: M/s Jay Guru Stone Works Partner – Sri Jiyaul Sheikh Vill. Jankinagar, P.S.- Pakur, Dist.- Pakur, State - Jharkhand
3	Lease Address	: Village – Mansinghpur, Thana- Hiranpur, District – Pakur, State - Jharkhand
4	Lease Area	: 2.98 ha Acres- 7.35 Acres
5	Type of Land	: Non Forest – Raiyati Land
6	Project Cost	: Rs. 60 Lakhs
7	EMP Budget	: Capital: 7.80 Lakhs Recurring: 4.27 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 253384.44 cum Tonnes: 684138 tons

10	Mine Life	:	12 years
11	Man power	:	38
12	Water Requirement	:	15.08 ~ 15 KLD (Drinking: 0.38 KLD, Dust Suppression: 8.65 KLD, Plantation: 6.05 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	500 k VA
15	Crusher	:	No crusher
16	Nearest Water Body	:	Torai Nadi, Approx. 4.50 km towards South direction of mine site.
17	Nearest Habitation	:	Mansinghpur village, at 520 meters
18	Nearest Rail Station	:	Tilbhita Railway station, approx. 7.60 km towards East direction.
19	Nearest Air Port	:	Deoghar Airport, approx. 111.50 km towards WSW directions.
20	Nearest Forest	:	Protected Forest, Approx. 3.0 km. in WNW direction of mine site. Protected forest, Approx. 4.0 km. in WNW direction of mine site
21	Road & Highways	:	NH- 133A, Approx. 4.10 km in South direction.

CO-ORDINATES

1	Latitude	From 24°41'30.2" N	To 24°41'23.5" N
2	Longitude	From 87°46'11.6" E	To 87°46'04.4" E

LAND DETAILS :

Khata No.	Plot No.
2	382, 383 (P)
9	384 (P)
98	369, 390 (P)
51	380
60	379
68	387 (P), 389(P)

A

U

✓

✓

✓

STATUTORY CLEARANCES

1	LOI / Lease docs	: Lease deed 22.09.2017 to 21.09.2027.
2	CO	: The CO, Hiranpur vide memo no. 365/Ra dated 18.07.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	: DMO, Pakur vide memo no. 1687/M, dated 20.07.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	: DFO-Cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1283, dated 15.07.2023 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. 1175, dated 01.08.2016 certified that the distance of notified forest is more than 250 meter from proposed project site.
6	DSR	: This project is mentioned in District Survey Report (DSR) of Pakur district.
7	Gram Sabha	: Gram Sabha conducted on 11.07.2016.
8	Mine Plan Approval	: Additional Director, Geology, Dumka vide memo no. 424/DDM, dated 08.11.2016.
9	Production Report	: Previous Production Report issued by DMO, Pakur vide memo no. 1690/M, dated- 20.07.2023.
10	Consent to Establish (CTE)	: CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-1972508/2018/277, dated 22.03.2018.
11	Consent to Operate (CTO)	: CTO issued by JSPCB vide Ref. no. JSPCB/RO/DMK/CTO-14512668/2022/185, dated 29.11.2022.
12	Previous Environmental Clearance (EC)	: Previous EC granted by DEIAA, Jharkhand vide letter no. EC/DEIAA/151, dated 19.08.2017.
13	Compliance report of previous EC	: Compliance report certified by Regional Office cum Laboratory, JSPCB, Dumka vide Ref. no. : 1982, dated 21.09.2023.

A

[Signature]

150

[Signature]

[Signature]

[Signature]

Working Details

1	Mining Method	:	Opencast semi mechanized method
2	Quarry Area	:	2.98 ha. Life of Mine – 12 years
3	Waste Generation	:	41922 cum or 113189.4 tons
4	Stripping Ratio	:	1: 0.15
5	Working Days	:	300
6	Bench size & No	:	3m to 3m
7	Elevation of Mine	:	49 AMSL to 56 AMSL
8	Ground Level Elevation	:	49 AMSL
9	Ultimate Working Depth	:	34 AMSL
10	Water Table	:	(15-20 mbgl)
11	Topography of Mine	:	Area represents almost plain with minor undulations
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	110 litre/day

Production Details

Year	Production of stone (cum)	Production of stone (tons)	Bench RL in Meters
1 st	60416.66	163125	49 mRL – 46 mRL
2 nd	57950.74	156467	46 mRL – 43 mRL
3 rd	55484.81	149809	43 mRL – 40 mRL
4 th	53018.88	143151	40 mRL – 37 mRL
5 th	50552.96	136493	37 mRL – 34 mRL
Total	277424.05	749045	

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	During Conceptual Period/after closure of mines (ha)
Mining Activities	0.00	1.91	1.91 (Entire area converted as water body)
Offices/ Store/ Crusher/ Magazine	0.00	0.02	0.02

A

Dumping	0.00	0.06	0.06
Mining Road	0.00	0.04	0.04
Garland drain	0.00	0.03	0.03
Safety Zone	0.00	0.89 (Plantation)	0.89 (Plantation)
Stone Stock yards	0.00	0.02	0.02
Total	0.00	2.97	2.97
Balanced Area	2.98	0.01	0.01
Total Area	2.98	2.98	2.98

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.89 ha	2225
2	Along Approach Road	0.70 km	700
3	Plants distributed in schools, Anganwadi or in Panchayat Bhawan	--	100

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

Solid Waste Management

Total 41922 cum or 113189.4 tones waste will be generated during the Plan Period. Top soil will be generated or removed from the mine. The O.B. will be removed and stacked/ dumped on the OB dump yard of M.L. 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.

A

[Signature]

458

[Signature]

[Signature]

- 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.

A

UAA

G

↓

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

A

USA

460

CDK

Signature

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.

A

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

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 equipments 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.

A   484   

- 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.

A









- 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 protecting 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 Mansinghpur Stone Mine of M/s Jay Guru Stone Works, Village : Mansinghpur, Thana : Hiranpur, Distt. : Pakur, Jharkhand (2.98 Ha) is recommended for grant of EC. During the appraisal the Committee observed that present status of greenbelt, Dust Suppression measures and use of PPE's was not upto the mark. The various conditions for grant of EC is enclosed as Annexure - I alongwith following specific conditions for improving the environmental performance :

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

A

466

466

edk

466

466

5. Mansinghpur Stone Mine of M/s Three Star Stone Works, Village : Mansinghpur, Thana : Hiranpur, Distt. : Pakur, Jharkhand (2.35 Ha).

(Proposal No. SIA/JH/MIN/447306 /2023).

Project Category: B2 – Application for Environment Clearance (re-appraisal of Environment Clearance issued by DEIAA, Pakur)

EC Application for: Proposed Capacity- 53435.92 cum/year or 144277 TPA

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

The project has been granted EC by DEIAA, Pakur vide letter no. 150/DEIAA, dated 19.08.2017.

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, Pakur which has been taken up for consideration on 23.09.2023. 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 -85.9 $\mu\text{g}/\text{m}^3$ PM 2.5-48.4 $\mu\text{g}/\text{m}^3$ SO₂-21.7 NO₂- 42.3 $\mu\text{g}/\text{m}^3$. All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

Production detail as per letter no. 1706/ M dated 22.07.2023 by D.M.O. Pakur is within the permissible limit of EC.

The compliance report of previous EC has been certified by Regional Office cum Laboratory, JSPCB, Dumka vide Ref. no. : 1981, dated 21.09.2023.

Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Mansinghpur Stone Mine
2	Lessee:	: M/s Three Star Stone Works Partner – Sri Jiyaul Sheikh Vill. Jankinagar, P.S.- Pakur, Dist.- Pakur, State - Jharkhand
3	Lease Address	: Village – Mansinghpur, Thana- Hiranpur, District – Pakur, State - Jharkhand
4	Lease Area	: 2.35 ha Acres- 5.81 Acres
5	Type of Land	: Non Forest – Raiyati Land
6	Project Cost	: Rs. 60 Lakhs
7	EMP Budget	: Capital: 3.78 Lakhs Recurring: 4.27 Lakh / year
8	New or Expansion	: New
9	Mineable	: cum.: 175549.62 cum Tonnes: 473984 tons

	Reserves		
10	Mine Life	:	12 years
11	Man power	:	36
12	Water Requirement	:	7.68 ~ 7.70 KLD (Drinking: 0.36 KLD, Dust Suppression: 3.64 KLD, Plantation: 3.68 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	500 k VA
15	Crusher	:	No crusher
16	Nearest Water Body	:	Torai Nadi, Approx. 4.50 km towards South direction of mine site.
17	Nearest Habitation	:	Partappur village, at 700 meters
18	Nearest Rail Station	:	Tilbhita Railway station, approx. 7.70 km towards East direction.
19	Nearest Air Port	:	Deoghar Airport, approx. 111.60 km towards WSW directions.
20	Nearest Forest	:	Protected Forest, Approx. 3.0 km. in WNW direction of mine site. Protected forest, Approx. 4.0 km. in WNW direction of mine site
21	Road & Highways	:	NH- 133A, Approx. 3.20 km in WSW direction.

CO-ORDINATES

1	Latitude	From 24°41'41.4" N	To 24°41'35.8" N
2	Longitude	From 87°46'09.2" E	To 87°46'03.3" E

LAND DETAILS :

Khata No.	Plot No.
48	180, 170, 168, 169, 181, 182, 179
24	185
40	184
17	178

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed 19.09.2017 to 18.09.2027.
2	CO	:	The CO, Hiranpur vide memo no. 366/Ra, dated 18.07.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyar & Register II.
3	DMO	:	DMO, Pakur vide memo no.1707/M, dated 22.07.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO -Cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1285, dated 15.07.2023 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. 1111, dated 20.07.2016 certified that the distance of notified forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Pakur district.
7	Gram Sabha	:	Gram Sabha conducted on 11.07.2016.
8	Mine Plan Approval	:	Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide memo No. 34/DDM, dated 11.01.2017..
9	Production Report	:	Priveious Production Report issued by DMO, Pakur vide memo no. 1706/M, dated- 22.07.2023.
10	Consent to Estblish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-2080607 /2018/446, dated 27.04.2018.
11	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. JSPCB/RO/DMK/CTO-10180298 /2021/89, dated 25.03.2021.
12	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Jharkhand vide letter no. 150/DEIAA, dated 19.08.2017.
13	Compliance report of previous EC	:	Compliance report certified by Regional Office cum Laboratory, JSPCB, Dumka vide Ref. no. : 1981, dated 21.09.2023.

A

[Signature]

[Signature]

[Signature]

[Signature]

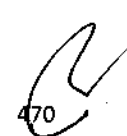
Working Details

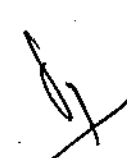
1	Mining Method	:	Opencast semi mechanized method
2	Quarry Area	:	2.35 ha. Life of Mine – 12 years
3	Waste Generation	:	35624 cum or 96184.8 tons
4	Stripping Ratio	:	1: 0.14
5	Working Days	:	300
6	Benchs: size & No	:	3m to 3m
7	Elevation of Mine	:	48 AMSL to 52 AMSL
8	Ground Level Elevation	:	48 AMSL
9	Ultimate Working Depth	:	35 AMSL
10	Water Table	:	(15-20 mbgl)
11	Topography of Mine	:	Area represents almost plain with minor undulations
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	110 litre/day

Production Details

Year	Production of stone (cum)	Production of stone (tons)	Bench RL in Meters
1 st	53435.92	144277	49 mRL – 46 mRL
2 nd	51240	138348	46 mRL – 43 mRL
3 rd	49043.70	132418	43 mRL – 40 mRL
4 th	46847.77	126489	40 mRL – 37 mRL
5 th	44651.85	120560	37 mRL – 34 mRL
Total	245219.24	662092	








Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	During Conceptual Period/after closure of mines (ha)
Mining Activities	0.00	1.52	1.52 (Entire area converted as water body)
Offices/ Store/ Crusher/ Magazine	0.00	0.02	0.02
Dumping	0.00	0.04	0.04
Mining Road	0.00	0.04	0.04
Garland drain	0.00	0.02	0.02
Safety Zone	0.00	0.68 (Plantation)	0.68 (Plantation)
Stone Stock yards	0.00	0.01	0.01
Total	0.00	2.33	2.33
Balanced Area	2.35	0.02	0.02
Total Area	2.35	2.35	2.35

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.68 ha	1700
2	Along Approach Road	0.04 km	40
3	Plants distributed in schools, Anganwadi or in Panchayat Bhawan	--	100

A

WHA

G

edm

17

mm

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

Solid Waste Management

Total 35624 cum or 96184.8 tones waste will be generated during the Plan Period. Top soil will be generated or removed from the mine. The O.B. will be removed and stacked/ dumped on the OB dump yard of M.L. 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

A

1 100

472

- 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

A

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone Mining operation

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

A

WMA

474

B

car

by

WMA

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.

A

USA

B. cam

12

W

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:

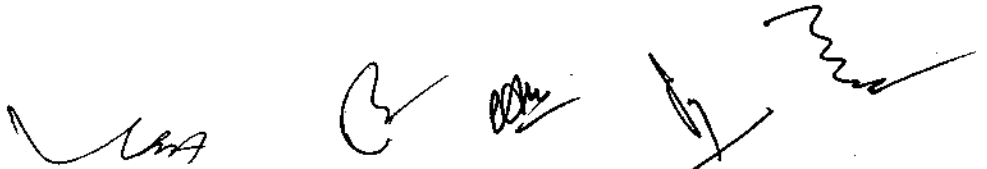
- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
-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

A



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 equipments 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.

A



478







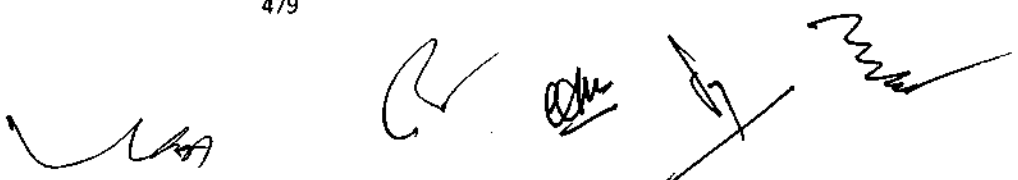


- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease 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 protecting 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 Mansinghpur Stone Mine of M/s Three Star Stone Works, Village : Mansinghpur, Thana : Hiranpur, Distt. : Pakur, Jharkhand (2.35 Ha) is recommended for grant of EC. During the appraisal the Committee observed that present status of greenbelt, Dust Suppression measures and use of PPE's was not upto the mark. The various conditions for grant of EC is enclosed as Annexure – I alongwith following specific conditions for improving the environmental performance :

- I. Trees 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.
- II. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- III. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- IV. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

A



- V. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VI. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

6. Hehal Stone Quarry of M/s Maa Chhinmastike Enterprises (Prop. : Shri Rabindra Munda), Village : Hehal, P.S. : Patratu, P.O. : Chaingada, Distt. : Ramgarh, Jharkhand (0.63 Ha).

(Proposal No. SIA/JH/MIN/446739 /2023).

Project Category: B2 – Application for Environment Clearance

EC Application for: Proposed Capacity- 9063.92 cum/annum or 25379.0 TPA

Name of the consultant : P & M Soulation Pvt. Ltd., Noida, U.P.

This is a new project which has been taken for appraisal on 09.10.2023.

Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Hehal Stone Quarry
2	Lessee:	: M/S Maa Chhinmastike Enterprises (Proprietor- Sri Rabindra Munda)
3	Lease Address	: Village – Hehal, PO - Chaingada, PS - Patratu, District – Ramgarh, Jharkhand
4	Lease Area	: 0.63 ha Acres- 1.55 Acres
5	Type of Land	: Non Forest – Raiyati Land
6	Project Cost	: Rs. 50 Lakhs
7	EMP Budget	: Capital: 1.49 Lakhs Recurring: 4.27 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 90762.14 cum Tonnes: 254134 tons
10	Mine Life	: 10 years.
11	Man power	: 49
12	Water Requirement	: 3.20 KLD(Drinking: 0.49 KLD, Dust Suppression: 1.47 KLD, Plantation: 1.19 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 200 k VA
15	Crusher	: with crusher

A

460

CAU

By

Mud

16	Nearest Water Body	:	Damodar River - Approx 2.70 km towards North direction of mine site.
17	Nearest Habitation	:	Hehal village, at 330 meters
18	Nearest Rail Station	:	Barkakana Junction Railway station, approx. 3.85 km towards NE direction.
19	Nearest Air Port	:	Birsa Munda Airport, approx. 35.50 km towards S direction.
20	Nearest Forest	:	Protected Forest - Approx 0.440 km towards SW direction of mine site. Fairly Dense Mixed Jungle - Approx 3.80 km towards West direction of mine site. Protected Forest - Approx 4.50 km towards SW direction of mine site. Protected Forest - Approx 2.70 km towards North direction of mine site
21	Road & Highways	:	SH- 2, Approx. 1.45 km. in North direction.

CO-ORDINATES

1	Latitude	From 23°36'41.08" N	To 23°36'39.96" N
2	Longitude	From 85°25'59.46" E	To 85°25'58.73" E

LAND DETAILS :

Khata No.	Plot No.
26	980 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Ramgarh vide letter no. 693/M, dated 25.06.2019.
2	CO	:	The CO, Patratu, vide letter no. 97 dated 17.01.2019 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. 1041/M, dated 11.10.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.

A

UAA

Cu

eeh

h

W

4	DFO Wild Life	: DFO, Wildlife Hazaribagh vide letter no. 2270, dated 26.10.2019 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Forest Distance	: Division Forest Officer, Ramgarh Forest Division vide letter no. 3141, dated 17.12.2018 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	: The DC - cum - District Magistrate, Ramgarh vide letter no. 1406/khanan, dated 14.12.2021 has informed that this project is part of District Survey Report (DSR) of Sahibganj district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	: BDO, Ramgarh Vide Letter no 1523/ dated-29.12.2018 Gram Sabha conducted on 12.12.2018.
8	Mine Plan Approval	: Approved by Additional Director Mines, Ranchi vide memo No. 163, dated 03.09.2019.

Working Details

1	Mining Method	: Opencast semi mechanized method
2	Quarry Area	: 0.63 ha. or 1.55 Acre
3	Waste Generation	: 869.28 cum or 2434 tons Gritty soil
4	Stripping Ratio	: 1: 0.01
5	Working Days	: 300
6	Bench: size & No	: 3m to 3m
7	Elevation of Mine	: 362 AMSL to 360 AMSL
8	Ground Level Elevation	: 360 AMSL
9	Ultimate Working Depth	: 349 AMSL
10	Water Table	: 335 AMSL (25-30 mbgl)
11	Topography of Mine	: Area represents gently sloping land with rock mass of Granite-Gneiss
12	Explosive Requirement	: 70 kg/day
13	Diesel/Fuel requirement	: 70 litre/day

Production Details

Year	Production of stone (cum)	Production of stone (tons)	Bench RL in Meters
1 st	9046.07	25329	361mRL - 358mRL

A

482

2 nd	8993.92	25183	361mRL - 358mRL
3 rd	9036.07	25301	358mRL - 352mRL
4 th	9003.92	25211	352mRL - 349mRL
5 th	9063.92	25379	352mRL - 349mRL
Total	45143.90	126403	

Land Use

Pattern of Utilization	Existing (ha)
Road	0.01
Total	0.01
Untouched Area	0.62
Total Lease Hold Area	0.63

Pattern of Utilization	During Plan Period (ha)
Mined out Land + Road	0.28
Dump	0.02
Crusher	0.01
Greenbelt (Within Safety Zone)	0.15
Total	0.46
Untouched Area	0.17
Total Lease Hold Area	0.63

Pattern of Utilization	During Conceptual Period/after closure of mines (ha)
Mined out Land + Reservoir	0.33 ha. (Entire area left as water reservoir)
Greenbelt (Within Safety Zone) + Road	0.30
Total	0.63
Untouched Area	--
Total Lease Hold Area	0.63

A

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

ENVIRONMENT MANAGEMENT
Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.150 ha	375
2	Along Approach Road	0.120 km	120
3	Plants distributed in schools, Anganwadi or in Panchayat Bhawan	--	100

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

Solid Waste Management

Total 869.28 cum or 2434 tons Gritty soil shall be generated during this plan period. At the stage of mining operation, some extent of gritty soil will be removed and would be dumped at north side of the applied area. Later on the generated gritty soil would be used for road dressing and green belt development. As there is no generation of waste during course of mining. Hence, there is no requirement of waste dumping Plan for this mining plan period.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.

C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, 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

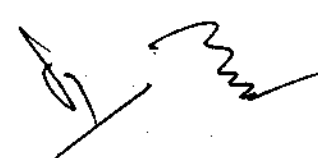
Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- 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

A   

- 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.

A

488

488

edu

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

The bottom of the page features several handwritten signatures and initials in black ink. From left to right, there is a single letter 'A', a signature that appears to be 'S. K. Singh', a signature that appears to be 'C. S.', a signature that appears to be 'M. S.', a signature that appears to be 'D. S.', and a signature that appears to be 'R. S.'.

- 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 equipments 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.

A

Ums

B

can

By

Wm

- 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 protecting 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 Hehal Stone Quarry of M/s Maa Chhinnamastike Enterprises (Prop. : Shri Rabindra Munda), Village : Hehal, P.S. : Patratu, P.O. : Chaingada, Distt. : Ramgarh, Jharkhand (0.63 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

A     

7. Kulkupi Stone Deposit of Smt. Sulekha Devi, Village : Kulkupi, Thana : Sisai, Distt. : Gumla Jharkhand (2.525 Ha).

(Proposal No. SIA/JH/MIN/447232 /2023).

Project Category: B2 – Application for Environment Clearance

EC Application for: Proposed Capacity- 55651 cum/year or 150257.70 TPA

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

The project has been granted EC by DEIAA, Gumla vide letter no. EC/DEIAA/2017-18/19/2017...GML, dated 22.06.2017.

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 23.09.2023. 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 -85.9 µg/m³ PM_{2.5} -48.4 µg/m³ SO₂ -21.7 NO₂ - 42.3 µg/m³. All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

Production detail as per letter no. 886/ M dated 05.10.2023 by D.M.O. Gumla is within the permissible limit of EC.

The compliance report of previous EC has been certified by Regional Office cum Laboratory, JSPCB, Ranchi vide Ref. no. : 474, dated 30.09.2023.

Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Kulkupi Stone Deposit
2	Lessee:	: Smt. Sulekha Devi
3	Lease Address	: Village- Kulkupi, Thana- Sisai, District – Gumla, Jharkhand
4	Lease Area	: 2.525 Ha Acres- 6.24 Acre
5	Type of Land	: Non Forest – Raiyati Land
6	Project Cost	: Rs. 30 Lakhs
7	EMP Budget	: Capital: 4.70 Lakhs Recurring: 4.27 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: Tonnes: 1273073.6
10	Mine Life	: 10 years
11	Man power	: 28
12	Water	: 9.08 KLD(Drinking: 0.28 KLD, Dust Suppression: 5.1 KLD,

A

492

492

492

492

	Requirement		Plantation: 3.7 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	500 k VA
15	Crusher	:	No crusher
16	Nearest Water Body	:	South Koel River- Approx. 5.21 km towards WNW direction of mine site.
17	Nearest Habitation	:	Sisai village, at 280 meterstowards ESE direction of mine site.
18	Nearest Rail Station	:	Lohardag Railway station, approx. 16.26 km towards N direction.
19	Nearest Air Port	:	Birsa Munda Airport, approx. 66.30 km towards ENE direction
20	Nearest Forest	:	Open Jungle Protected Forest, Approx. 4.15 km. in NNW direction of mine site. Reserve Forest, Approx. 4.50 km. in NNW direction of mine site.
21	Road & Highways	:	NH-143 A, Approx. 7.05 km in WNW direction.

CO-ORDINATES

1	Latitude	From 23°18'03.43" N	To 23°18'12.13" N
2	Longitude	From 84°40'34.30" E	To 84°40'41.88" E

LAND DETAILS :

Khata No.	Plot No.
76	672 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed 04.11.2017 to 03.11.2027.
2	CO	:	The CO, Sisai, vide letter no. 633 dated 20.12.2016 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Gumla vide memo no.865/M, dated 30.09.2023 certified that 01 mining lease area exists within 500 m radius from proposed project site.

A

[Handwritten signatures and marks]

4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 986, dated 30.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division in his revised certificate issued vide letter no. 2649, dated 12.10.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.
7	Gram Sabha	:	Gram Sabha conducted on 13.11.2018.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide letter No. 66/M, dated 07.01.2017.
9	Production Report	:	Previous Production Report issued by DMO, Gumla vide memo no-886/M, dated-05.10.2023.
10	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-2007687/2018/243, dated 08.03.2018.
11	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. : JSPCB/RO/RNC/CTO-4953135/2019/77, dated 26.03.2019.
12	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Gumla vide letter no. EC/DEIAA/2017-18/19/2017/...GML, dated 22.06.2017.
13	Compliance report of previous EC	:	Compliance report certified by Regional Office cum Laboratory, JSPCB, Ranchi vide Ref. no. : 474, dated 30.09.2023.

Working Details

1	Mining Method	:	Opencast semi mechanized method	
2	Quarry Area	:	2.525 Ha	Life of Mine – 10 years
3	Waste Generation	:	13505.75 cum or 36465.52 tons	
4	Stripping Ratio	:	1: 0.01	
5	Working Days	:	300	
6	Benches: size & No	:	3m to 5m	
7	Elevation of Mine	:	680 AMSL to 645 AMSL	
8	Ground Level Elevation	:	645 AMSL	

A     

9	Ultimate Working Depth	:	630 AMSL
10	Water Table	:	615 AMSL (25mbgl)
11	Topography of Mine	:	Area depicts the minimum and maximum elevations.
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	110 litre/day

Production Details

Year	Production of Stone in cum	Production of Stone in tonnes	Bench RL in Meters
1st	556177.75	150167.93	677mRL - 665mRL
2nd	556177.75	150167.93	670mRL - 658mRL
3rd	55608.24	150142.27	667mRL - 655mRL
4th	55651	150257.70	664mRL - 655mRL
5th	55594	150103.80	661mRL - 658mRL
Total	1279208.74	750839.63	

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	After life of mine (Ha)
Quarry	0.00	1.980	1.98 (1.687 ha area shall be left as waterreservoir for Rain Water Harvesting and 0.293 ha area will be left for Dead Bench Plantation)
Road	Nil	0.005	0.005
Safety Zone	Nil	0.540(Plantation)	0.540(Plantation)
Total Used Area	0.00	2.525	2.525
Unused Area	2.525	0.00	0.00

A

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.540 ha	1350
2	Along Approach Road	0.400 km	400
3	Plants distributed in schools, Anganwadi or in Panchayat Bhawan	--	100

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

Solid Waste Management

Total 13505.75 cum or 36465.52 TPA waste will be generated during the course of mining. The applicant has planned to partly reclaim the area by rehandling the waste material to fill the mined out quarry. The Plantation shall be done in parts of the back filled 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.

A  B    

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	Unwanted	Very Unlikely	Catastrophic	5

	Explosives	Explosion			
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

A

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

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.

A



500







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.

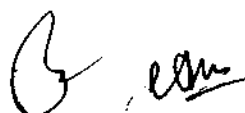
- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary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

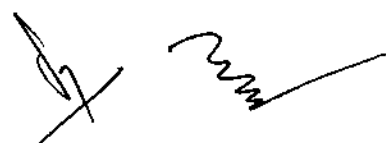
The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- 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.

A







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)

A

U A

502

edme

by

- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- Personal protective equipments such as protecting 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 Kulkupi Stone Deposit of Smt. Sulekha Devi, Village : Kulkupi, Thana : Sisai, Distt. : Gumla, Jharkhand (2.525 Ha) is recommended for grant of EC. During the appraisal the Committee observed that present status of greenbelt, Dust Suppression measures and use of PPE's was not upto the mark. The various conditions for grant of EC is enclosed as Annexure – I alongwith following specific conditions for improving the environmental performance :

- Trees 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.

A











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

8. Ramakunda Stone Deposit of M/s Ram Stone Mining (Prop. : Shri Ashish Kumar Verma), Village : Ramkunda, Thana : Topchanchi, Distt. : Dhanbad, Jharkhand (1.55 Ha).

(Proposal No. SIA/JH/MIN/444742 /2023).

Project Category: B2 – Application for EC

Application for: Proposed Capacity- 37430.00cum/annum or 101061.00 TPA

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

This is a new project which has been taken for appraisal on 11.10.2023.

Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Ramakunda Stone Deposit
2	Lessee:	: M/S Ram Stone Mining (Prop. -Sri Ashish Kumar Verma) Address- Village- Baghra, P.O.-Motileda, Thana-Bengabad, District-Giridih, State-Jharkhand
3	Lease Address	: Village- Ramkunda, Thana- Topchanchi, District - Dhanbad, Jharkhand
4	Lease Area	: 1.55 ha Acres- 3.84 Acres
5	Type of Land	: Non Forest – Raiyati Land

A

W

504

W

W

W

6	Project Cost	:	Rs. 20 Lakhs
7	EMP Budget	:	Capital: 2.94 Lakhs Recurring: 3.27 Lakh / year
8	New or Expansion	:	New
9	Mineable Reserves	:	cum.: 380380 cum Tonnes: 1027026tonnes
10	Mine Life	:	10.16years
11	Man power	:	21
12	Water Requirement	:	7.00 KLD(Drinking: 0.21 KLD, Dust Suppression: 3.89 KLD, Plantation: 2.89 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	200 k VA
15	Crusher	:	No crusher
16	Nearest Water Body	:	Jamunia River, approx. 3.80 km towards SW direction
17	Nearest Habitation	:	Ramakundavillage, at 470 meters
18	Nearest Rail Station	:	Gomoh Junction, approx. 5.40 km towards West direction
19	Nearest Air Port	:	Dhandbad Airport, approx. 22.20 km towards East direction.
20	Nearest Forest	:	Protected Forest - Approx. 0.51 km. in N direction of mine site.
21	Road & Highways	:	NH-19, Approx. 3.96km in NNE direction.

CO-ORDINATES

1	Latitude	From 23° 51' 55.99" N	To 23° 52' 01.03" N
2	Longitude	From 86° 12' 18.27" E	To 86° 12' 23.86" E

LAND DETAILS :

Khata No.	Plot No.
54	832, 833
102	827 (P)
419	834
450	835 (P)

A

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dhanbad vide letter no. 1176/M, dated 24.07.2023.
2	CO	:	The CO, Topchanchi, (Dhanbad) vide letter no. 350, dated 23.06.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Dhanbad, vide memo no.1450/M, dated 12.09.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Hazaribagh, vide letter no. 695, dated 05.04.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Dhanbad, Forest Division vide letter no. 1855, dated 03.07.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	The DC, Dhanbad vide letter no. 1572/M, dated 06.10.2023 has informed that this project is part of District Survey Report (DSR) of Sahibganj district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	:	Gram Sabha conducted on 28.06.2023.
8	Mine Plan Approval	:	District Mining Officer, Dhanbad vide letter No. 1480, dated 15.09.2023.

Working Details

1	Mining Method	:	Opencast semi mechanized method
2	Quarry Area	:	1.55 Ha / 3.84 Acre
3	Waste Generation	:	4741.00 cum or 12800.7 TPA
4	Stripping Ratio	:	1:0.03
5	Working Days	:	300
6	Bench: size & No	:	6m to 6m
7	Elevation of Mine	:	250 AMSL to 251 AMSL
8	Ground Level Elevation	:	220 AMSL
9	Ultimate Working Depth	:	220AMSL
10	Water Table	:	200 AMSL (20mbgl)

A

U

506

edu

7

3

11	Topography of Mine	:	Area represents an undulating topography
12	Explosive Requirement	:	90kg/day
13	Diesel/Fuel requirement	:	90 litre/day

Production Details

Year	Production of stone (cum)	Production of stone (tons)	Bench RL in Meters
1 st	33067.60	89282.52	238mRL - 232mRL
2 nd	37430.00	101061.00	238mRL - 232mRL
3 rd	35963.89	97102.50	238mRL - 232mRL
4 th	15041.10	40610.98	238mRL - 232mRL
5 th	21157.79	57126.04	238mRL - 232mRL
Total	142660.38	385183.04	

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	After life of mine (Ha)
Quarry	--	0.931	1.132
Road	0.006	0.003	Nil (comes under quarry)
Proposed Dump	--	0.138	Nil (waste dump to be removed and backfilled)
S Z Plantation (Greenbelt)	--	0.418	0.418
Total	-	1.490	2.780
Balanced Area	1.544	0.060	0
Total Area	1.550	1.550	1.550

A

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

ENVIRONMENT MANAGEMENT
Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.418 ha	1045
2	Along Approach Road	0.30 km	300
3	Plants distributed in schools, Anganwadi or in Panchayat Bhawan	--	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 13327.04 cum waste generated during this plan period and 15469.38 cum in ultimate stage. 9529.00 cum (4788.00 intercalated waste+4741.00 overburden) waste out of 13327.04 cum intercalated waste of first to second year and overburden of the plan period which is used for village & haul road maintenance and rest in third to fifth year 3798.04 cum or 4035.42 cum compact waste is which shall be proposed to dump (Average area 1382 m² and height 3.40m) temporarily on the southern side of the applied area and after that in ultimate stage there is 15469.38 cum (11433.96+4035.42) waste is backfilling with an average area 861.50 m² and depth 18m in southern side.

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.

A  508  

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

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask 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.

A *[Signature]* *[Signature]* *[Signature]* *[Signature]* *[Signature]*

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

A

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

- 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.

A

512

code

↓

mm

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.

A

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

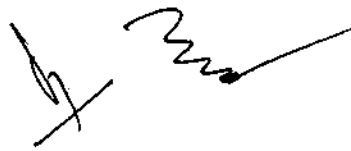
[Handwritten signature]

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

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- Personal protective equipments such as protecting 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 Ramakunda Stone Deposit of M/s Ram Stone Mining (Prop. : Shri Ashish Kumar Verma), Village : Ramkunda, Thana : Topchanchi, Distt. : Dhanbad, Jharkhand (1.55 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

A   

9. Kuchu Stone Deposit of M/s Damodar Minerals Pvt. Ltd., Village : Kuchu, Thana : Angara, Distt. : Ranchi, Jharkhand (2.48 Ha).

(Proposal No. SIA/JH/MIN/446849 /2023).

Project Category: B2 – Application for Environment Clearance

EC Application for: Proposed Capacity- 135401 cum/annum or 379122 TPA

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

This is a new project which has been taken for appraisal on 11.10.2023.

Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Kuchu Stone Deposit
2	Lessee:	: Sri Abhinash Kumar Bhagat
3	Lease Address	: M/s Damodar Minerals Pvt. Ltd Director - Shri Gajanand Prasad
4	Lease Area	: 2.48 Ha Acres- 6.13Acre
5	Type of Land	: Non Forest Raiyati Land
6	Project Cost	: Rs. 50 Lakhs
7	EMP Budget	: Capital: 6.08 Lakhs Recurring: 4.27 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 676958 cum Tonnes: 1895485 tons
10	Mine Life	: 4 years, 11 months or 5 years
11	Man power	: 20
12	Water Requirement	: 11.86 ~ 11.90 KLD (Drinking: 0.64 KLD, Dust Suppression: 6.99 KLD, Plantation: 4.23 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 500 KVA
15	Crusher	: No crusher
16	Nearest Water Body	: Subarnarekha River Approx 1.70 km towards N direction of mine site.
17	Nearest Habitation	: Kuchu- Approx 0.43 km towards W direction from the mine site.
18	Nearest Rail Station	: Jonha Railway station, approx. 9.50 km towards SSW direction.
19	Nearest Air Port	: Birsa Munda Airport, Ranchi, approx. 35.40 km towards WSW direction.
20	Nearest Forest	: Dense Jungle mainly Sal- Approx. 4.5 km towards SSW direction of mine site.

A

		Dense mixed jungle - Approx. 3.0 km towards E direction of mine site. Open Mixed Jungle - Approx 4.0 km towards WSW direction of mine site.
21	Road & Highways	: NH-320- NH-320 at Approx. 5.50 km. in NW direction. SH-1SH-1 at Approx. 8.20 km. in S direction.

CO-ORDINATES

1	Latitude	From 23°26'09.55"N	To 23°26'14.87"N
2	Longitude	From 85°38'40.75"E	To 85°38'48.46"E

LAND DETAILS :

Khata No.	Plot No.
93	269 (P), 271, 272, 275, 277, 278, 279 (P), 280, 282, & 297

STATUTORY CLEARANCES

1	LOI / Lease docs	: The Letter of Intent (LoI) has been issued by District Mining Officer, Ranchi vide letter no. 636/M, dated 22.05.2023.
2	CO	: The CO, Ranchi, vide letter no. 215 (ii) dated 16.03.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II.
3	DMO	: DMO, Ranchi vide memo no.1124/M, dated 23.09.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	: DFO, Wildlife Ranchi, vide letter no. 568, dated 23.06.2023 certified that the proposed project site is outside Eco Sensitive Zone of palkot Wildlife Sanctuary.
5	DFO Forest Distance	: Division Forest Officer, Ranchi, Forest Division vide letter no. 984, dated 16.03.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.

A

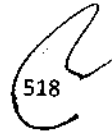
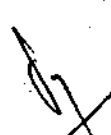
6	DSR	:	The DC – cum – District Magistrate, Ranchi vide letter no. 1111/M dated 15.09.2023 has informed that this project is part of District Survey Report (DSR) of Ranchi district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	:	BDO, Angara vide letter no. 297 (ii) dated 23.02.2023 informed that Gram Sabha conducted on 22.02.2023.
8	Mine Plan Approval	:	District Mining Officer, Ranchi, vide memo No. 976, dated 03.08.2023.

Working Details

1	Mining Method	:	Opencast mechanized Method	
2	Quarry Area	:	2.48 hectare or 6.13 acre	Life of Mine – 4 years, 11 months or 5 years.
3	Waste Generation	:	37341 cum or 100820Tons	
4	Stripping Ratio	:	01: 0.02	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	490 AMSL TO 500 AMSL	
8	Ground Level Elevation	:	490 AMSL	
9	Ultimate Working Depth	:	up to 440 AMSL	
10	Water Table	:	up to 428 AMSL	
11	Topography of Mine	:	gently sloping land with rock mass of Granite - gneiss	
12	Explosive Requirement	:	110kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details

Year	Production of stone in cum	Production of stone in Tonnes	Intercalated waste in Cum	Removal of Gritty Soil in Cum
1 st Year	135401	379122	7127	1710
2 nd Year	135392	379097	7126	

A   518   

3 rd Year	135401	379122	7127	-
4 th Year	135392	379097	7126	-
5 th Year	135371	379038	7125	-
Total	676957	1895476	35631	1710

Land Use

Pattern of Utilization	Existing (ha)	During Plan Period (ha)	During Conceptual Period/after closure of mines (ha)
Excavation	--	1.97	1.97 (1.76 area left as water reservoir for rain water harvesting, 0.08 backfilling & 0.13 dead bench plantation)
Road	0.008	--	--
Safety Zone	--	0.51 (Plantation)	0.51 (Plantation)
Total	0.008	2.48	2.48
Untouched Area	2.472	--	--
Total Lease Hold Area	2.480	2.48	2.48

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.51ha	1275
2	Along Approach Road	740m	740
3	No. of plants distributed in Schools, Anganwadi or 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 &

A

[Signature]

[Signature]

[Signature]

Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Solid Waste Management

Total 1710 cum of gritty soil and 35631 cum intercalated waste shall be generated during this plan period. During quarry advancement gritty soil & intercalated waste will be removed and this will be temporarily dumped within the applied area and in conceptual period backfilled within the exhausted quarry.

Water Quality Management

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

A



530





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.

A

W

R

↓

W

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.

A  524    

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.

A

WMA

G

adm

12

WMA

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 equipments 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)

A

526

526

526

526

- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- Personal protective equipments such as protecting 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 Kuchu Stone Deposit of M/s Damodar Minerals Pvt. Ltd., Village : Kuchu, Thana : Angara, Distt. : Ranchi, Jharkhand (2.48 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

A     

10. Dhowadangal Stone Deposit of Md. Najimuddin, Village : Dhowadangal, Thana : Maheshpur, Distt. : Pakur, Jharkhand (1.42 Ha).

(Proposal No. SIA/JH/MIN/447462 /2023).

Project Category: B2 – Application for Environment Clearance (Expansion)

EC Application for: Existing Capacity - 33768.0 cum/year or 84420.0 TPA

After Expansion Capacity- 53340.0 cum/year or 144018.0 TPA

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

This is an expansion project which has been taken for appraisal on 11.10.2023.

The Dhowadangal Stone Deposit has been previously granted for Environment clearance by SEIAA vide letter no. EC/SEIAA/ 2021-22/2407/2021/149, dated 23.09.2021 with production capacity 33768.0 cum/year or 84420.0 TPA. Now, the proposal has been applied for the Environment clearance (Expansion, Category B2) under production capacity of 53340.0 cum/year or 144018.0 TPA within same mining lease area.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	: Dhowadangal Stone Deposit
2	Lessee:	: Md. Najimuddin At+P.O. - Kashimnagar, District- Birbhum, West Bengal
3	Lease Address	: Village – Dhowadangal, District – Pakur, Jharkhand
4	Lease Area	: 1.42ha Acres-3.50Acres
5	Type of Land	: Non Forest – Raiyati Land
6	Project Cost	: Rs. 50Lakhs
7	EMP Budget	: Capital: 3.72Lakhs Recurring: 4.27Lakh / year
8	New or Expansion	: Expansion
9	Mineable Reserves	: Cu.m.: 533680.0 cum Tonnes: 1440936.00 tons
10	Mine Life	: 10 years
11	Man power	: 20
12	Water Requirement	: 7.10 KLD (Drinking: 0.20 KLD, Dust Suppression: 4.115 KLD, Plantation: 2.72 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 200 k VA
15	Crusher	: No Crusher
16	Nearest Water Body	: Bansoli River, Approx. 10.0 km towards S direction of mine site
17	Nearest Habitation	: Approx. 210 metres

18	Nearest Rail Station	:	Nagarnabi Railway station, approx. 14.65 km toward ENE direction.
19	Nearest Air Port	:	Deoghar Airport, approx. 105.10 km towards W direction.
20	Nearest Forest	:	Protected Forest, Approx. 2.40 km towards E direction of mine site. Protected Forest, Approx. 3.40 km towards NE direction of mine site. Open Scrub, Approx. 4.60 km towards N direction of mine site. Protected Forest, Approx. 5.40 km towards NW direction of mine site.
21	Road & Highways	:	NH-133 A, Approx. 8.50 km. in NNE direction.

CO-ORDINATES

1	Latitude	From 24°34'59.70"N	To 24°35'03.83"N
2	Longitude	From 87°43'19.90"E	To 87°43'26.30"E

LAND DETAILS :

Khata No.	Plot No.
12	554 & 556
13	555

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed 29.12.2021 to 28.12.2031.
2	CO	:	The CO, Maheshpur vide letter no. 182/Ra, dated 08.03.2021 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, Pakur vide memo no. 1043/M, dated 03.07.2021 certified that 02 other mining lease area (3.47 Acre & 3.71 Acre) exists within 500 m radius from proposed project site and total area is 10.68 Acre (4.32 Ha).
4	DFO Wild Life	:	DFO, Wildlife Hazaribagh vide letter no. 516, dated 19.03.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Pakur Forest Division vide letter no. 328, dated 17.02.2021 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.

A

6	DSR	:	This project is mentioned in District Survey Report (DSR) of Pakur district.
7	Gram Sabha	:	BDO, Maheshpur vide letter no. 361/Vi, dated 12.03.2021 informed that Gram Sabha conducted on 09.03.2021.
8	Mine Plan Approval	:	Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide letter No. 437/DDM, dated 06.10.2023.
9	Production Report	:	Previous Production Report issued by DMO, Pakur vide memo no. 1228/M, dated 27.06.2023.
10	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-12262959/2022/1413, dated 21.03.2022.
11	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. : JSPCB/RO/DMK/CTO-15768142/2023/54, dated 25.03.2023.
12	Previous Environmental Clearance (EC)	:	Previous EC granted by SEIAA, Jharkhand vide letter no. EC/SEIAA/2021-22/2407/2021/149, dated 23.09.2021.
13	Compliance report of previous EC	:	Compliance report certified by Regional Office cum Laboratory, JSPCB, Dumka vide Ref. no. : 2023, dated 29.09.2023.

WORKING DETAILS

1	Mining Method	:	Opencast semi mechanized method
2	Quarry Area	:	1.42 Ha or 3.50 Acres
3	Waste Generation	:	5 years-6052.0 cum or 16340.40 tons
4	Stripping Ratio	:	1: 0.02
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Elevation of Mine	:	130AMSL to 128AMSL
8	Ground Level Elevation	:	128AMSL
9	Ultimate Working Depth	:	100AMSL
10	Water Table	:	80 AMSL (20 mbgl)
11	Topography of Mine	:	Area represents an undulating topography
12	Explosive Requirement	:	90 kg/day
13	Diesel/Fuel requirement	:	90 litre/day

PRODUCTION DETAILS

Year	Production of stone (Tonnes)	Production of stone (Cum)	Waste Generation (CuM)	Bench RL in Meters
1 st	141372.00	52360.00	6052.00	130mRL - 124mRL
2 nd	142506.00	52780.00	--	128mRL - 124mRL
3 rd	143262.00	53060.00	--	124mRL - 118mRL
4 th	144018.00	53340.00	--	124mRL - 118mRL
5 th	144018.00	53340.00	--	124mRL - 118mRL
Total	715176.00	264880.00	6052.00	

LAND USE

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
QUARRY	--	1.077	1.077 (Entire area Rain water Harvesting)
ROAD	0.013	(Comes under quarry)	(Comes under quarry)
PLANTATION	--	0.343	0.343
Total	0.013	1.42	1.42
UNUSED AREA	1.407	--	--
LEASE HOLD AREA	1.42	1.42	1.42

ENVIRONMENT MANAGEMENT

Green Belt Development

S.No.	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.343 ha	860
2	Haul /Approach Road	:	0.400km	400
3	Plants distributed in schools, Panchayat Bhawan or in Anganwadi	:	--	100

A

[Handwritten signatures and marks]

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

Solid Waste Management

- Total 6052.0 cum or 16340.40 tons waste generated during this plan period which is used for village & haul road maintenance.

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

A

Uman

532

C

ade

SX

man

- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

A

WMA

B

X

WMA

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone Mining operation

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

A

Ula

534

Ch

by

Mund

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:

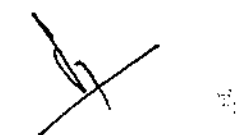
- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

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.

A    

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.

A

W

C

W

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 equipments 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.

A

UWA

538

agw

b

3

- 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 protecting 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 Dhowadangal Stone Deposit of Md. Najimuddin, Village : Dhowadangal, Thana : Maheshpur, Distt. : Pakur, Jharkhand (1.42 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

11. Shimaldhab Stone Mine of Shri Kali Shankar Bhagat, Village : Shimaldhab, Thana : Hiranpur, Distt. : Pakur, Jharkhand (2.62 Ha).

(Proposal No. SIA/JH/MIN/447388 /2023).

Project Category: B2 – Application for Environment Clearance

EC Application for: Proposed Capacity- 40761.37 cum/year or 118208 TPA

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

The project has been granted EC by DEIAA, Pakur vide letter no. 154/DEIAA, dated 19.08.2017.

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, Pakur which has been taken up for consideration on 23.09.2023. 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 -85.9 µg/m³ PM_{2.5} -48.4 µg/m³ SO₂ -21.7 NO₂ - 42.3 µg/m³. All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

Production detail as per letter no. 2154/ M dated 26.09.2023 by D.M.O. Pakur is within the permissible limit of EC.

The compliance report of previous EC has been certified by Regional Office cum Laboratory, JSPCB, Dumka vide Ref. no. : 1975, dated 21.09.2023.

Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Shimaldhab Stone Mine With Crushing Unit
2	Lessee:	: Sri Kali Shankar Bhagat Address - R/O At- Torai, Thana- Hiranpur, District- Pakur, Jharkhand
3	Lease Address	: Village- Shimaldhab, Thana- Hiranpur , District – Pakur, Jharkhand
4	Lease Area	: 2.62 ha Acres- 6.47 Acres
5	Type of Land	: Non Forest – Raiyati Land
6	Project Cost	: Rs. 50 Lakhs
7	EMP Budget	: Capital: 3.075 Lakhs Recurring: 4.27 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: Tonnes: 2275595
10	Mine Life	: 8 years 8 month
11	Man power	: 34
12	Water Requirement	: 6.30 KLD (Drinking: 0.34 KLD, Dust Suppression: 2.95 KLD, Plantation: 2.95 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 500 k VA
15	Crusher	: Yes
16	Nearest Water Body	: Bansoli Nadi- Approx 9.90 km towards South direction of mine site.
17	Nearest Habitation	: Shimaldhab village, at 280 meters

18	Nearest Rail Station	:	Pakur Railway station, approx. 14.10 km towards NE direction
19	Nearest Air Port	:	Deoghar Airport, approx. 106.20 km towards WSW direction.
20	Nearest Forest	:	Protected Forest - Approx 2.30 km towards E direction of mine site. Protected Forest - Approx 0.30 km towards NNW direction of mine site. Protected Forest - Approx 2.55 km towards W direction of mine site. Protected Forest - Approx 5.20 km towards NNE direction of mine site.
21	Road & Highways	:	NH-133A, Approx.8.0 km. in NNE direction.

CO-ORDINATES

1	Latitude	From 24°35'6.064" N	To 24°35'7.355" N
2	Longitude	From 87°43'45.674" E	To 87°43'44.456" E

LAND DETAILS :

Khata No.	Plot No.
01	202 (P)
04	195
05	203 & 204
14	196
15	197

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 25.10.2017 to 24.10.2027.
2	CO	:	The CO, Hiranpur vide memo no. 424/Ra, dated 08.08.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.

A

~ LMA

Q

LOI

~

3	DMO	: DMO, Pakur vide memo no. 2153/M, dated 26.09.2023 certified that 01 other mining lease area (3.71 Acre) exists within 500 m radius from proposed project site and total area is 10.17 Acre (4.11 Ha).
4	DFO Wild Life	: DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1592, dated 28.08.2023 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. 1365, dated 03.09.2016 certified that the distance of notified forest is more than 250 meter from proposed project site.
6	DSR	: This project is mentioned in District Survey Report (DSR) of Pakur district.
7	Gram Sabha	: Gram Sabha conducted on 03.08.2016.
8	Mine Plan Approval	: Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Memo No. 125/DDM, dated 01.03.2017.
9	Production Report	: Previous Production Report issued by DMO, Pakur vide memo no. 2154/M, dated 26.09.2023.
10	Consent to Establish (CTE)	: CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-5634491/2019/451, dated 30.07.2019.
11	Consent to Operate (CTO)	: CTO issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTO-16011186/2023/1306, dated 20.07.2023.
12	Previous Environmental Clearance (EC)	: Previous EC granted by DEIAA, Pakur vide letter no. 154/DEIAA, dated 19.08.2017.
13	Compliance report of previous EC	: Compliance report certified by Regional Office cum Laboratory, JSPCB, Dumka vide Ref. no. : 1975, dated 21.09.2023.

Working Details

1	Mining Method	: Opencast mechanized method
2	Quarry Area	: 2.62 Ha / 6.47 Acre
3	Waste Generation	: --
4	Stripping Ratio	: 1: 0.0
5	Working Days	: 300
6	Bench: size & No	: 6m to 6m
7	Elevation of Mine	: 117 AMSL to 116 AMSL

A

542

542

542

8	Ground Level Elevation	:	116 AMSL
9	Ultimate Working Depth	:	93 AMSL
10	Water Table	:	76 AMSL (40mbgl)
11	Topography of Mine	:	Area represents undulatory topography
12	Explosive Requirement	:	110kg/day
13	Diesel/Fuel requirement	:	110 litre/day

Production Details

Year	Production of stone (cum)	Production of stone (tons)	Bench RL in Meters
1 st	38752.75	112383	119mRL - 113mRL
2 nd	40483.79	117403	113mRL - 107mRL
3 rd	40452.06	117311	107mRL - 101mRL
4 th	40499.31	117448	105mRL - 99mRL
5 th	40761.37	118208	105mRL - 99mRL
Total	200949.31	582753	

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
Quarry	0.91	2.03	2.09 (Rain Water Harvesting)
Haul Road	0.01	0.01	0.00
Proposed Crusher	0.05	0.05	Remove from lease area
Greenbelt in Safety Barrier	0.53	0.53	0.53
Dump with Parapet wall & Garland Drain	0.00	0.00	Nil (Waste dump to be removed and backfilled)
Total	1.50	2.62	2.62
Unused Area	1.12	0.00	0.00
Lease Hold Area	2.62	2.62	2.62

A

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.530 ha	1325
2	Along Approach Road	0.050 km	50
3	Plants distributed in schools, Anganwadi or in Panchayat Bhawan	—	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

The produced boulder stone from the mine will be entirely used as building material. Thus no waste will be generated. During Plan period gritty soil removed will be dumped at eastern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining 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 NO_x emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.

C3	Moderate	Minor injury to personnel or environment.
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone Mining operation

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

A

[Handwritten signature]

346

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

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

A

Umm

C

can

by

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

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

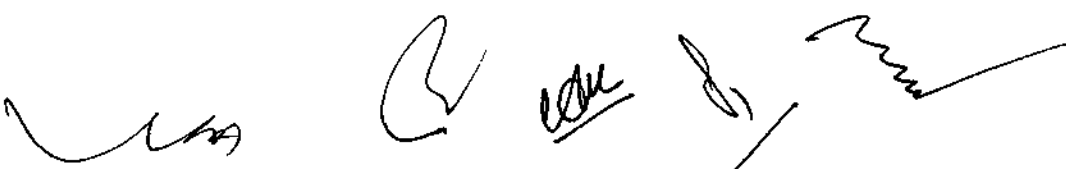
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger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

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- Personal protective equipments such as protecting 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 Shimaldhab Stone Mine of Shri Kali Shankar Bhagat, Village : Shimaldhab, Thana : Hiranpur, Distt. : Pakur, Jharkhand (2.62 Ha) is recommended for grant of EC. During the appraisal the Committee observed that present status of greenbelt, Dust Suppression measures and use of PPE's was not upto the mark. The various conditions for grant of EC is enclosed as Annexure – I alongwith following specific conditions for improving the environmental performance :

A



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

12. Korambe Stone Block of Shri Hiralal Sahu, Village : Korambe, Thana : Senha, Distt. : Lohardaga, Jharkhand (1.214 Ha).

(Proposal No. SIA/JH/MIN/447251 /2023).

Project Category: B2 ~ Application for Environment Clearance

EC Application for: Proposed Capacity-15615.60 cu.m/annum or 39039.00 TPA

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

This is a new project which has been taken for appraisal on 11.10.2023.

PROJECT and LOCATION Details:

S. No.	Parameter	Details
1	Project Name	: Korambe Stone Block
2	Lessee:	: Shri Hiralal Sahu At- Kumhairya, PO- Akashi, PS- Bhandra, District- Lohardaga, State - Jharkhand

3	Lease Address	:	Village – Korambe , Thana - Senha District- Lohardaga, State - Jharkhand
4	Lease Area	:	1.214ha Acres- 3.0Acres
5	Type of Land	:	Non Forest – Raiyati Land
6	Project Cost	:	Rs. 40 Lakhs
7	EMP Budget	:	Capital: 3.60Lakhs Recurring: 4.27 Lakh / year
8	New or Expansion	:	New
9	Mineable Reserves	:	cum.: 1263425cum Tonnes: 505370 tons
10	Mine Life	:	11.62years
11	Man power	:	10
12	Water Requirement	:	6.70 KLD(Drinking: 0.10 KLD, Dust Suppression: 4.0 KLD, Plantation: 2.6 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	200 kVA
15	Crusher	:	No crusher
16	Nearest Water Body	:	South Koel River, approx. 1.10 km towards South direction.
17	Nearest Habitation	:	Korambe village, at 600 meters
18	Nearest Rail Station	:	Lohardaga Railway station, approx. 12.68 km towards N direction.
19	Nearest Air Port	:	Birsa Munda Airport, approx. 60.54 km towards E direction.
20	Nearest Forest	:	Raikera-Bandhtoli Forest, approx. 6.37 km towards WNW direction.
21	Road & Highways	:	NH- 143A, Approx. 2.44 km. in West direction.

CO-ORDINATES

1	Latitude	From 23°19'22.91"N	To 23°19'27.50"N
2	Longitude	From 84°38'38.08" E	To 84°38'44.13" E

LAND DETAILS

Khata no.	Plot no.
350 (Old : 115)	862 (P) (Old : 810)

A

[Handwritten signatures and marks]

STATUTORY CLEARANCES

1	LOI / Lease docs	: The Letter of Intent (LoI) has been issued by Director of Mines, Deptt. of Mines & Geology, Govt. of Jharkhand vide letter no. Kha.Ni.(Nilami)-09/2022/1994, dated 20.09.2022.
2	CO	: The CO, Senha (Lohardaga) vide letter no. 661, dated 30.09.2022 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II.
3	DMO	: DMO, Lohardaga vide memo no. 1143/M, dated 30.09.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	: DFO, Wildlife Ranchi vide letter no. 909, dated 01.10.2022 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. 2716, dated 14.10.2022 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	: The project is mentioned in District Survey Report of Lohardaga District.
7	Gram Sabha	: BDO, Senha (Lohardaga) vide letter no. 1003, dated 03.08.2023 informed that Gram Sabha conducted on 18.04.2023.
8	Mine Plan Approval	: Approved by DMO, Lohardaga vide Letter No. 470, dated 08.10.2022.

Working Details

1	Mining Method	:	Opencast semi mechanized method	
2	Quarry Area	:	1.214 ha.	Life of Mine – 11.62 years
3	Waste Generation	:	5 years–0.00 cu.m	
4	Stripping Ratio	:	0.01	
5	Working Days	:	300	
6	Bench: size & No	:	6m to 6m	
7	Elevation of Mine	:	640AMSL to 646AMSL	
8	Ground Level Elevation	:	640 AMSL	
9	Ultimate Working Depth	:	633 AMSL	

10	Water Table	:	621 AMSL
11	Topography of Mine	:	Area represents small hillocks
12	Explosive Requirement	:	90 Kg/day
13	Diesel/Fuel requirement	:	90 L/day

Production Details

Year	Production of stone (cum)	Production of stone (tons)	Bench RL in Meters
1 st	15615.60	39039.00	646mRL - 639mRL
2 nd	15615.60	39039.00	646mRL - 639mRL
3 rd	15615.60	39039.00	639mRL - 633mRL
4 th	15615.60	39039.00	639mRL - 633mRL
5 th	15615.60	39039.00	633mRL - 627mRL
Total	78078.00	195195.00	

Land Use

Type of Land Use	Existing (ha)	At the end of plan period (Ha)	During Conceptual Period/after closure of mines (ha)
Quarry	Nil	0.82	0.88 (Entire area converted as water body)
Crusher	Nil	Nil	Nil
Overburden Dump	Nil	Nil	Nil
Infrastructure	Nil	0.01	Nil
Approach Road	Nil	0.01	0.01
Garland Roads	Nil	0.04	Nil
Safety Zone	Nil	0.32 (Plantation)	0.32 (Plantation)

A

U

C

EDM

↓

mm

Settling Tank	Nil	0.01	Nil
Total	0.0	1.21	1.21
Area which will remain untouched	1.21	Nil	Nil
Total Lease Hold Area	1.21	1.21	1.21

ENVIRONMENT MANAGEMENT Green Belt Development

S.No.	Location		Area/Length	No of Trees
1	Safety Zone	:	0.32ha	800
2	Along Approach Road	:	0.40 km	400
3	Plants distributed in village	:	--	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

- Only small amount of waste will be generated, which shall be used in making and maintenance of haul road and village road, so there is no requirement of waste dumping Plan for this mining plan period.

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 '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 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.

A

[Signature]

[Signature]

[Signature]

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 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.

A

U

C

CDM

J

W

- 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.

A

UWA

B

X

W

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipments 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 protecting 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 Korambe Stone Block of Shri Hiralal Sahu, Village : Korambe, Thana : Senha, Distt. : Lohardaga, Jharkhand (1.214 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I

13. Brick Soil Mining of M/s T.S. Bricks (Prop. : Shri Yadunath Singh), Village : Pataryachotag, Thana : Latehar, Thana no. : 225, Distt. : Latehar, Jharkhand (1.22 Ha).

(Proposal No. SIA/JH/MIN/447149 /2023).

Project Category: B2 – Application for Environment Clearance

EC Application for: Soil: 1200 Cu.M. / Year i.e. Bricks 6,00,000 Numbers / year.

Name of the consultant: M/s P & M SOLUTION, NOIDA, UP 201301.

This is a new project which has been taken for appraisal on 11.10.2023

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Brick Soil Mining For M/s T.S. Bricks
2	Applicant Address:	: M/s T.S. Bricks Proprietor: Sri Yadunath Singh At Manan Chotag, Latehar Rsso, District - Latehar, State – Jharkhand, Pin No. – 829207.
3	Lease Address :	: In Mouza – Pataryachotag, Thana – Latehar, Thana No. – 225, District – Latehar, Jharkhand
4	Applied Area	: Ha: 1.22 Hectares Acres: 3.02 Acres
5	Type of Land	: Non Forest – Rayati Land
6	Project Cost	: 16 Lakhs
7	EMP Budget	: Capital: 8.24 Lakhs Recurring: 5.81 Lakh / year

8	CSR / CER Budget	:	Rs. 0.32 Lakhs
9	New or Expansion	:	New
10	Mineable Reserves	:	Cu.M.: 14010 Cu. M.
11	Mine Life	:	12 years
12	Man power	:	10
13	Water Requirement	:	11.92 KLD (Drinking: 0.10 KLD, Dust Suppression: 6.02 KLD, Plantation: 5.80 KLD)
14	Water Source	:	From nearby authorized sources.
15	DG Set / power	:	No
16	Crusher	:	No
17	Nearest Water Body	:	Khirkhir Nadi is flowing from South- to North direction. The nearest distance from the applied area to Khirkhir Nadi is 282m in South East direction.
18	Nearest Habitation	:	Manan Chotag village is situated approx. 1.42 Km aerial distance away in South East direction.
19	Nearest Rail Station	:	Latehar Railway Station is situated approx. 1.65 Km aerial distance away towards North West direction.
20	Nearest Air Port	:	Birsa Munda Airport, Ranchi is situated approx. 97.40 Km aerial distance away towards South East direction.
21	Nearest Forest	:	Approx 562m away from the proposed project.
22	Road & Highways	:	Approach Road: Tawatanr – Bajkum Road is approx 0.67 Km away from the applied area in West direction. Highway: NH-39 is near about 4.61 Km away in North East direction.

CO-ORDINATES

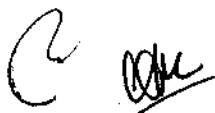
1	Latitude	From N23°42'33.19"	To N23°42'38.40"
2	Longitude	From E84°28'13.47"	To E84°28'18.13"

LAND DETAILS

Khata No. -	34	64
Plot Nos. -	936	958

A









STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Latehar vide letter no. 191, dated 17.05.2019 has mentioned the plot no. of the project is not recorded as "Jangle Jhari" in R.S. Khatiyan or Register II.
3	DMO	:	DMO, Latehar vide memo no. 701/M, dated 25.09.2018 certified that no other lease area exists within 500 m radius from proposed project site & total lease area is less than 5 Ha.
4	DFO Wild Life	:	Deputy Director, Palamu Tiger Reserve, North division Medninagar, vide letter no. 782, dated 22.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palamu Wildlife Sanctuary, Betla National Park and Mahuadanr Wolf Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Latehar Forest Division vide letter no. 1467, dated 02.08.2018 certified that the distance of notified forest is 562 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey report (DSR) Latehar District.
7	Gram Sabha	:	Gram conducted on 01.09.2018.
8	Mine Plan Approval	:	Approved by the District Mining officer, Latehar vide memo no. 749, dated 03.11.2018.

Working Details

1	Mining Method	:	Opencast Manual Mining and transportation by tippers.
2	Quarry Area	:	5 years – 0.35 Ha
3	Waste Generation	:	5 years – 700 Cu.M (Top Soil)
4	Stripping Ratio	:	1 : 0.12
5	Working Days	:	200 Days
6	Bench: size & No	:	Size: 1m X 1.5m, No. - 2
7	Elevation of Mine	:	Highest RL 387m AMSL, Lowest RL 386m AMSL
8	Ground Level Elevation	:	386m AMSL
9	Ultimate Working Depth	:	384m AMSL
10	Water Table	:	375m AMSL
11	Topography of Mine	:	Flat Land.

12	Explosive Requirement	:	No
13	Diesel/Fuel requirement	:	4 KL/year (20 Litres/day)

Production Details

Year	Production of Sub Soil (Cum)	Production of Bricks (Numbers)	Top Soil Generation (CuM)	Bench RL in Meters
1st Year	1200	6,00,000	140	387m – 385m
2nd Year	1200	6,00,000	140	387m – 385m
3rd Year	1200	6,00,000	140	387m – 385m
4th Year	1200	6,00,000	140	387m – 385m
5th Year	1200	6,00,000	140	387m – 385m
Total	6000	30,00,000	700	

Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Current Plan Period (Ha)	Proposed Land Use at End of Life of Mine (Ha)	Proposed Land Use at End of Life of Mine (Ha)	Land Usage at Conceptual Stage
1	Mining Area (Quarry)	Nil	0.35	0.82	0.82	Grass cultivation will be done on it
2	Green Belt Within Safety Barrier	Nil	0.40	0.40	0.40	Plantation
3	Road	0.001	--	--	--	
4	Unutilized	1.219	0.47	Nil	Nil	
	TOTAL	1.22	1.22	1.22	1.22	

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	Location		Area/Length	No of Trees
1	Safety Zone	:	0.40 Ha	1000 trees @ 2500 trees per Ha
2	Haul /Approach Road	:	0.67 i.e. Length 670m width 2m and both side	448 trees on both sides in single row – 3m distance

A

WMA

CB

↓

WMA

- Gabion Plantation work in the safety zone (7.5m 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

- Waste (Top soil) Generation will be 1680 Cu.M. during the life of Mine.
The fertile top soil will be preserved temporarily by dumping and then it will be spread concurrently over the excavated part of the land after the end of each year lifting up of brick soil and grass cultivation will be done on it.

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

- No drilling and blasting is proposed.
- 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

Top Soil Waste Management

- The fertile top soil will be preserved temporarily by dumping and grass plantation will be done over it to maintain the top soil fertility. This top soil will be spread over the land after removal of brick soil to use for further crop cultivation.

A



568









Risk & Hazards

- Fall of animal in to abundant pit.

Risk & Hazards Mitigation Measures

- Opencast mechanized method of mining will be adopted.
- Working will be carried out in one shift of 8 hours during day time only.
- All applicable rules of MMR 1961, Mines Act-1952, Mines Rules 1955, MCR-1960, MCDR-1988 will be followed for safe, scientific & systematic working.
- The height and width of the benches maintain properly.
- Working of mine will be done as per approved plans.
- Permanent fencing will be provided at the top edge of opencast working.
- All protective equipment of a type approved by the DGMS will be provided to the workers viz, foot wear, helmets, ear plug, dust mask, gloves, goggles, shin guards etc.
- Proper Barbed wire fencing will be done all around the project site to restrict the common animals to enter into the area.

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. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- c. The water required for the mining activities shall be supplied by the tanker from nearby authorized sources.
- d. The District Survey Report (DSR) is issued by the competent authority. I will abide by any directives issued by any court of law in future.
- e. 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 us and all necessary steps will be taken in this regard
- f. The Boundary Pillars of the proposed mine applied area will be maintained properly.
- g. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- h. 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.
- i. Sufficient water spray using water tankers will be done for effective dust suppression within the mine applied area and on haul roads.
- j. All the mining equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- k. If any tree felling than necessary permission shall be taken from the competent authority.
- l. Proper Barbed wire fencing will be done all around the project site to restrict the common animals to enter into the area.

A    

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF & CC O.M dated 12.12.18 decided that the proposal for Brick Soil Mining of M/s T.S. Bricks (Prop. : Shri Yadunath Singh), Village : Pataryachotag, Thana : Latehar, Thana no. : 225, Distt. : Latehar, Jharkhand (1.22 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

14. Kutlu Brick Clay Deposit of M/s Shubham Bricks (Partners : Shri Shubham Prasad & Shri Sitaram Prasad), Village : Kutlu, P.O. : Jairagi, P.S. : Dumri, Distt. : Gumla, Jharkhand (2.04 Ha).
(Proposal No. SIA/JH/MIN/446496 /2023).

Project Category: B2 – Application for Environment Clearance

EC Application for: Proposed Capacity-3,480 Cum Soil/season or 4,524 tonnes Soil/season.

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

This is a new project which has been taken for appraisal on 11.10.2023.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1.	Project Name	: Kutlu Brick Clay Deposit
2.	Lessee:	: M/S Shubham Bricks (Partner- Sri Shubham Prasad & Sri Sitaram Prasad)
3.	Lease Address	: At- Semarburhni, P.O- Akshi, P.S- Mahuadanr, District- Latehar, State- Jharkhand.
4.	Lease Area	: 2.04 ha Acres-5.03 Acres
5.	Type of Land	: Non Forest – Raiyati Land
6.	Project Cost	: Rs. 20 Lakhs
7.	EMP Budget	: Capital: 5.981 Lakhs Recurring: 4.27 Lakh / year
8.	New or Expansion	: New
9.	Mineable Reserves	: Cu.m.: 31420.0 Cum Tonnes: 40,846 tons

10.	Mine Life	:	9.02 Seasons
11.	Man power	:	21
12.	Water Requirement	:	11.206 KLD(Drinking: 0.21 KLD, Dust Suppression: 6.94 KLD, Plantation: 4.056 KLD)
13.	Water Source	:	From Nearby villages by tankers
14.	DG Set / power	:	-
15.	Crusher	:	No crusher
16.	Nearest Water Body	:	Sen Nadi, approx. 6.45 km S direction.
17.	Nearest Habitation	:	Approx. 222 meters, South direction.
18.	Nearest Rail Station	:	Latehar Railway Station at a distance of 55.30 km towards NE direction from site.
19.	Nearest Air Port	:	Birsa Munda Airport, Ranchi at a distance of 119.50 km in East direction from mine site.
20.	Nearest Forest	:	Jairagi Protected Forest, Approx 2.54 km towards SSE direction Hotap Protected Forest, Approx 2.70 km towards East direction Sohar Protected Forest, Approx 3.70 km towards NE direction Kokawal Protected Forest, Approx. 4.40 km towards NW direction. Chirotoli Protected Forest, Approx 4.80 km towards West direction Kultu Protected Forest, Approx 1.10 km towards NW direction Hisri Protected Forest, Approx 2.70 km towards NW direction Katabil Protected Forest, Approx 4.80 km towards ENE direction.
21.	Road & Highways	:	NH-143B, approx, 0.75 km towards West direction.

CO-ORDINATES

1	Latitude	From 23°19'01.09"N	To 23°19'08.05"N
2	Longitude	From 84°09'10.12"E	To 84°09'15.15"N

LAND DETAILS :

Khata No.	Plot No.
26	1133, 1139 & 1141

A    

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Dumri vide letter no. 267, dated 04.10.2021 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Gumla vide memo no. 854/M, dated 27.09.2023 certified that 02 other mining lease area (4.34 Acre & 3.02 Acre) exists within 500 m radius from proposed project site and total area is 9.40 Acre (3.80 Ha).
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 838, dated 25.09.2021 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division vide letter no. 2067, dated 27.09.2021 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.
7	Gram Sabha	:	Gram Sabha conducted on 09.09.2021.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 1122/M, dated 28.10.2021.

Working Details

1	Mining Method	:	Opencast Manual Mining method
2	Quarry Area	:	2.04 ha
3	Waste Generation	:	0.0 cu.m
4	Stripping Ratio	:	1: 0
5	Working Days	:	150
6	Benches: size & No	:	--
7	Elevation of Mine	:	845 AMSL
8	Ground Level Elevation	:	845 AMSL
9	Ultimate Working Depth	:	From top surface upto a depth of 2.00m
10	Water Table	:	825 AMSL (15mbgl)
11	Topography of Mine	:	Area represents almost flat land
12	Explosive Requirement	:	--
13	Diesel/Fuel requirement	:	90 litre/day

Production Details

Total excavation of brick earth in cum/Season	Number of bricks/Season	Total excavation of brick earth
		MT=Cum x 1.3
3480	1200000	4524
3480	1200000	4524
3480	1200000	4524
3480	1200000	4524
3480	1200000	4524

Land Use

Pattern of Utilization	Existing (Ha)	At the end of Plan Period (ha)
Quarrying	Nil	0.857
Storage of casted bricks	Nil	Comes under Excavation
Safety Zone	Nil	0.463(Plantation)
Road	0.006	0.003 (comes under mining)
Used Area	0.006	1.323
Balanced Area	2.034	0.717
Total Applied Area	2.04	2.04

ENVIRONMENT MANAGEMENT

Green Belt Development

S.No.	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.463 ha	1158
2	Haul /Approach Road	:	0.770 km	770
3	No. of Plants distributed in Anganwadi, Panchayat Bhawan or in schools	:	--	100

A

UAA

Ch

By

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) 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

- It is proposed that the total wastes will be dumped at site & will be used in maintenance of 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.
- 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.
- 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

Undertaking submitted affirming:

- 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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- m. It is proposed to remove topsoil before excavating soil for brick making. It will be used for raising plantation around the mining or leveling of land.

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 Kutlu Brick Clay Deposit of M/s Shubham Bricks (Partners : Shri Shubham Prasad & Shri Sitaram Prasad), Village : Kutlu, P.O. : Jairagi, P.S. : Dumri, Distt. : Gumla, Jharkhand (2.04 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

A

✓

C

edk

✓

✓

15. Tigra Brick Clay Mine of M/s Bricks 555 (Prop. : Shri Enamul Ansari), Village : Tigra, Thana : Lohardaga, Distt. : Lohardaga, Jharkhand (0.99 Ha).

(Proposal No. SIA/JH/MIN/447012 /2023).

Project Category: B2 – Application for Environment Clearance

EC Application for: Proposed Capacity-1584.00 cum/season or 2376 tons/season

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

This is a new project which has been taken for appraisal on 11.10.2023.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1.	Project Name	: Tigra Brick Clay Mine
2.	Lessee:	: M/S Bricks 555 (Prop.- Enamul Ansari)
3.	Lease Address	: Village - Tigra, P.O.- Arkosa, District- Lohardaga, Jharkhand.
4.	Lease Area	: 0.99 ha Acres-2.45 Acres
5.	Type of Land	: Non Forest – Raiyati Land
6.	Project Cost	: Rs. 25 Lakhs
7.	EMP Budget	: Capital: 3.005 Lakhs Recurring: 4.72 Lakh / year
8.	New or Expansion	: New
9.	Mineable Reserves	: Cu.m.: 19830.0 Cum Tonnes: 29,745 tons
10.	Mine Life	: More than 5 seasons.
11.	Man power	: 15
12.	Water Requirement	: 5.625 KLD(Drinking: 0.15 KLD, Dust Suppression: 3.295 KLD, Plantation: 2.18 KLD)
13.	Water Source	: From Nearby villages by tankers.
14.	DG Set / power	: -
15.	Crusher	: No crusher
16.	Nearest Water Body	: South Koel River, Approx. 2.30 km West direction.
17.	Nearest Habitation	: Approx. 50 meters
18.	Nearest Rail Station	: Lohardaga Railway Station at a distance of 4.95 km towards NW direction from site.
19.	Nearest Air Port	: Birsa Munda Airport, Ranchi at a distance of 60.85 km in ESE direction from mine site.
20.	Nearest Forest	: Dense Mix Jungle, Approx. 1.80 km towards ESE direction. Dense Mix Jungle, Approx 3.90 km towards ESE direction.

21.	Road & Highways	:	NH-143 A, approx, 6.10 km towards WNW direction.

CO-ORDINATES

1	Latitude		From 23°24'46.9"N	To 23°24'43.4"N
2	Longitude		From 84°44'22.3"E	To 84°44'29.5"E

LAND DETAILS :

Khata No.	Plot No.
110	1630
113	1631
130	1637 & 1638

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Lohardaga (Sadar) vide letter no. 240, dated 13.03.2020 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Lohardaga vide memo no. 1159/M, dated 03.10.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide memo no. 1197, dated 26.10.2019 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. 2751, dated 20.10.2022 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Lohardaga district.
7	Gram Sabha	:	Gram Sabha conducted on 03.08.2017.
8	Mine Plan Approval	:	Approved by AMO, Lohardaga vide Memo No. 1215/M, dated 03.11.2017.

A

Working Details

1	Mining Method	:	Opencast Manual Mining method	
2	Quarry Area	:	0.393ha	Life of Mine – More than 5 seasons.
3	Waste Generation	:	0.0 cu.m	
4	Stripping Ratio	:	1: 0	
5	Working Days	:	225	
6	Benchs: size & No	:	--	
7	Elevation of Mine	:	691 AMSL	
8	Ground Level Elevation	:	691 AMSL	
9	Ultimate Working Depth	:	From top surface upto a depth of 2.00m	
10	Water Table	:	675 AMSL	
11	Topography of Mine	:	Area represents almost flat land	
12	Explosive Requirement	:	--	
13	Diesel/Fuel requirement	:	70 litre/day	

Production Details

Production	Quantity (cum)	Number of bricks Proposed	Total excavation of brick earth
			MT=Cum x 1.5
1st	1584.00	600000	2376.00
2nd	1584.00	600000	2376.00
3rd	1584.00	600000	2376.00
4th	1584.00	600000	2376.00
5th	1584.00	600000	2376.00
Total	7920.00	3000000.0	11880.00

Land Use

Pattern of Utilization	Existing (Ha)	At the End of the Plan Period (ha.)
Quarrying	Nil	0.393
Storage of casted bricks	Nil	Comes under excavation
Safety Zone	Nil	0.263(Plantation)
Road	0.021	0.004
Unused Area	0.021	0.66
Balanced Area	0.969	0.33
Total Applied Area	0.99	0.99

ENVIRONMENT MANAGEMENT

Green Belt Development

S.No.	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.263 ha	660
2	Haul /Approach Road	:	0.330 km	330
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

- It is proposed that the total wastes will be dumped at site & will be used in maintenance of road.

A

UWA

Ch

ade

↓

mm

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.
- 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.
- 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.

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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- m. It is proposed to remove topsoil before excavating soil for brick making. It will be used for raising plantation around the mining or leveling of land.

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 Tigra Brick Clay Mine of M/s Bricks 555 (Prop. : Shri Enamul Ansari), Village : Tigra, Thana : Lohardaga, Distt. : Lohardaga, Jharkhand (0.99 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

16. Nari Brick Clay Deposit of M/s Moti Bricks (Prop. : Shri Uday Kumar Gupta), Village : Nari, P.O. : Nawadih, P.S. : Kisko, Distt. : Lohardaga, Jharkhand (0.85 Ha).

(Proposal No. SIA/JH/MIN/447428 /2023).

Project Category: B2 – Application for Environment Clearance

EC Application for: Proposed Capacity-1200.00 cum soil/season or 1800 tons/season

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

This is a new project which has been taken for appraisal on 11.10.2023.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1.	Project Name	: Nari Brick Clay Deposit
2.	Lessee:	: M/s Moti Bricks (Prop. - Sri Uday Kumar Gupta)
3.	Lease Address	: Village : Nari, P.O. : Nawadih, P.S. : Kisko, Distt. : Lohardaga, Jharkhand
4.	Lease Area	: 0.85 ha. Acres-2.10 Acres
5.	Type of Land	: Non Forest – Raiyati Land
6.	Project Cost	: Rs. 20 Lakhs

[Handwritten signatures and initials at the bottom of the page]

7.	EMP Budget	:	Capital: 3.489Lakhs	Recurring: 4.27 Lakh / year
8.	New or Expansion	:	New	
9.	Mineable Reserves	:	Cu.m.:10634.00 Cum	Tonnes: 15,951tons
10.	Mine Life	:	8.86 Seasons	
11.	Man power	:	23	
12.	Water Requirement	:	6.63KLD(Drinking: 0.23KLD,Dust Suppression: 3.84 KLD, Plantation: 2.56 KLD)	
13.	Water Source	:	From Nearby villages by tankers	
14.	DG Set / power	:	-	
15.	Crusher	:	No crusher	
16.	Nearest Water Body	:	Shankh Nadi,Approx. 0.50 km East direction. Kisko Nadi,Approx. 2.50 km East direction.	
17.	Nearest Habitation	:	Approx. 700 meters, towards SSW direction.	
18.	Nearest Rail Station	:	Barkichanpi Railway Station at a distance of 4.80 km towards ENE direction from site.	
19.	Nearest Air Port	:	Birsamunda Airport, Ranchi at a distance of 69.50 km in ESE direction from mine site.	
20.	Nearest Forest	:	Salaiya Protected Forest, Approx. 3.20 km towards NW direction. Protected Forest, Approx 2.0 km towards NE direction Protected Forest, Approx 4.8 km towards NE direction.	
21.	Road & Highways	:	NH-143A , approx. 6.90 km towards ESE direction.	

CO-ORDINATES

1	Latitude	From 23° 32' 14.29"N	To 23° 32' 19.95" N
2	Longitude	From 84° 41' 19.18"E	To 84° 41' 22.99" E

LAND DETAILS :

Khata No.	Plot No.
188	1093

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Kisko (Lohardaga) vide letter no. 695, dated 03.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, Lohardaga vide memo no. 1192/M, dated 06.10.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 993, dated 03.10.2023 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. 1755, dated 05.10.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Lohardaga district.
7	Gram Sabha	:	Gram Sabha conducted on 03.10.2023.
8	Mine Plan Approval	:	Approved by DMO, Lohardaga vide Memo No. 1193/M, dated 06.09.2023.

Working Details

1	Mining Method	:	Opencast Manual Mining method	
2	Quarry Area	:	0.300 ha	Life of Mine – 8.86 Seasons.
3	Waste Generation	:	0.0cu.m	
4	Stripping Ratio	:	1: 0	
5	Working Days	:	150	
6	Bench: size & No	:	--	
7	Elevation of Mine	:	660 AMSL	
8	Ground Level Elevation	:	660AMSL	
9	Ultimate Working Depth	:	From top surface upto a depth of 2.00m	
10	Water Table	:	645AMSL (15mbgl)	
11	Topography of Mine	:	Area represents almost flat land	
12	Explosive Requirement	:	--	
13	Diesel/Fuel requirement	:	70 litre/day	

A

LMA

R

edhe

J

M

Production Details

Total excavation of brick earth in cum/season	Number of bricks/season	Total excavation of brick earth
		MT=Cum x 1.5
1200.00	600000	1800
1200.00	600000	1800
1200.00	600000	1800
1200.00	600000	1800
1200.00	600000	1800

Land Use

Pattern of Utilization	Existing (Ha)	At the end of Plan Period (ha)
Quarrying	Nil	0.300
Storage of casted bricks	Nil	Comes under excavation
Safety Zone	Nil	0.325(Plantation)
Road	0.010	0.003(comes under excavation)
Total Area	0.010	0.628
Balanced Area	0.84	0.222

ENVIRONMENT MANAGEMENT

Green Belt Development

S.No.	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.325ha	812
2	Haul /Approach Road	:	0.370 km	370
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

- It is proposed that the total wastes will be dumped at site & will be used in maintenance of 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.
- 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

A

✓ LMA

✓ edmc

✓

✓

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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- m. It is proposed to remove topsoil before excavating soil for brick making. It will be used for raising plantation around the mining or leveling of land.

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 Deposit of M/s Moti Bricks (Prop. : Shri Uday Kumar Gupta), Village : Nari, P.O. : Nawadih, P.S. : Kisko, Distt. : Lohardaga, Jharkhand (0.85 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I.

17. Barkichanpi Brick Clay Deposit of M/s Moti Bricks (Prop. : Shri Uday Kumar Gupta) , Village : Barkichanpi, P.O. : Barkichanpi, P.S. : Kuru, Distt. : Lohardaga, Jharkhand (1.424 Ha).

(Proposal No. SIA/JH/MIN/447201 /2023).

Project Category: B2 – Application for Environment Clearance

EC Application for: Proposed Capacity-1200.00 cum soil/season or 1800 tons/season

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

This is a new project which has been taken for appraisal on 11.10.2023.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1.	Project Name	: Barkichanpi Brick Clay Deposit
2.	Lessee:	: M/s Moti Bricks Prop. - Sri Uday Kumar Gupta.
3.	Lease Address	: Village – Barkichanpi, P.O.- Barkichanpi, P.S.- Kuru, District- Lohardaga, State- Jharkhand.
4.	Lease Area	: 1.424 ha Acres-3.52 Acres
5.	Type of Land	: Non Forest – Raiyati Land
6.	Project Cost	: Rs. 40 Lakhs
7.	EMP Budget	: Capital: 3.96 Lakhs Recurring: 4.27 Lakh / year
8.	New or Expansion	: New
9.	Mineable Reserves	: Cu.m.: 20040.00 Cum Tonnes: 30,060 tons
10.	Mine Life	: 16.70 seasons
11.	Man power	: 23
12.	Water Requirement	: 7.59 KLD(Drinking: 0.23 KLD, Dust Suppression: 4.32 KLD, Plantation: 3.04 KLD)
13.	Water Source	: From Nearby villages by tankers.
14.	DG Set / power	: NA
15.	Crusher	: No crusher
16.	Nearest Water Body	: Mugaldaha Nadi, Approx. 4.38 km North direction.
17.	Nearest Habitation	: Approx. 50 meters
18.	Nearest Rail Station	: Barkichanpi Railway Station at a distance of 3.18 km towards SSW direction from site.
19.	Nearest Air Port	: Birsa Munda Airport, Ranchi at a distance of 65.77 km in ESE direction from mine site.

A

20.	Nearest Forest	:	Bandhua Protected Forest, Approx. 1.02 km towards ENE direction. Protected Forest, Approx 1.38 km towards West direction. Pirdag Protected Forest, Approx 3.25 km towards ENE direction. Protected Forest, Approx 2.89 km towards WSW direction. Kundgada Reserve Forest, Approx. 1.08 km NW direction.
21.	Road & Highways	:	NH-39, Approx, 3.85 km towards NE direction.

CO-ORDINATES

1	Latitude	From 23° 34' 38.24"N	To 23° 34' 44.81" N
2	Longitude	From 84° 44' 46.54"E	To 84° 44' 50.67" E

LAND DETAILS :

Khata No.	Plot No.
75	97 (P) & 98 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Kudu vide letter no. 1045, dated 21.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Lohardaga vide memo no. 1152/M, dated 03.10.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 983, dated 30.09.2023 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. 1692, dated 21.09.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Lohardaga district.
7	Gram Sabha	:	Gram Sabha conducted on 20.09.2023.

8	Mine Plan Approval	:	Approved by DMO, Lohardaga vide Memo No. 1151/M, dated 03.10.2023.

Working Details

1	Mining Method	:	Opencast Manual Mining method	
2	Quarry Area	:	0.300 ha	Life of Mine – 16.70 seasons.
3	Waste Generation	:	0.0 cu.m	
4	Stripping Ratio	:	1: 0	
5	Working Days	:	150	
6	Benchs: size & No	:	NA	
7	Elevation of Mine	:	680 AMSL	
8	Ground Level Elevation	:	678 AMSL	
9	Ultimate Working Depth	:	From top surface upto a depth of 2.00m	
10	Water Table	:	665 AMSL (10-15 mbgl)	
11	Topography of Mine	:	Area represents almost flat land	
12	Explosive Requirement	:	--	
13	Diesel/Fuel requirement	:	90 litre/day	

Production Details

Total excavation of brick earth in cum/season	Number of bricks/season	Total excavation of brick earth
		MT=Cum x 1.5
1200.00	600000	1800
1200.00	600000	1800
1200.00	600000	1800
1200.00	600000	1800
1200.00	600000	1800

A

UWA

Ge

7

Handwritten signature

Land Use

Pattern of Utilization	Existing (Ha)	At the end of Plan Period (ha)
Quarrying	Nil	0.300
Storage of casted bricks	Nil	Comes under excavation
Plantation at safety Zone	Nil	0.420
Road	0.018	0.003 (comes under excavation)
Total Area	0.018	0.723
Balanced Area	1.406	0.701
Total Applied area	1.424	1.424

ENVIRONMENT MANAGEMENT

Green Belt Development

S.No.	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.420 ha	1050
2	Haul /Approach Road	:	0.370 km	370
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

- It is proposed that the total wastes will be dumped at site & will be used in maintenance of 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.
- 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.
- 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

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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- m. It is proposed to remove topsoil before excavating soil for brick making. It will be used for raising plantation around the mining or leveling of land.

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 Barkichanpi Brick Clay Deposit of M/s Moti Bricks (Prop. : Shri Uday Kumar Gupta) , Village : Barkichanpi, P.O. : Barkichanpi, P.S. : Kuru, Distt. : Lohardaga, Jharkhand (1.424 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

18. Kanas Brick Earth Deposit of M/s Star Bricks (Prop. : Shri Gurudev Mahato), Village : Kanas, Thana : Dhalbhumgarh, Distt. : East Singhbhum, Jharkhand (1.950 Ha).

(Proposal No. SIA/JH/MIN/444088 /2023).

Project Category: B2 – Application for Environment Clearance

EC Application for: Proposed Capacity-1200.00 cum/season or 2160 tons/season

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

This is a new project which has been taken for appraisal on 11.10.2023.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1.	Project Name	: Kanas Brick Earth Deposit
2.	Lessee:	: M/s Star Bricks (Prop- Sri Gurudev Mahato),
3.	Lease Address	: Village - Kanas, Circle-Dhalbhumgarh, District- East Singhbhum, Jharkhand.
4.	Lease Area	: 1.950 ha Acres-4.82 Acres
5.	Type of Land	: Non Forest – Raiyati Land
6.	Project Cost	: Rs. 20.0 Lakhs

7.	EMP Budget	:	Capital: 4.09 Lakhs	Recurring: 3.82 Lakh / year
8.	New or Expansion	:	New	
9.	Mineable Reserves	:	Cu.m.: 26472.0 Cum	Tonnes: 47649 tons
10.	Mine Life	:	22 seasons/year.	
11.	Man power	:	10	
12.	Water Requirement	:	9.37~ 9.40 KLD (Drinking: 0.10 KLD, Dust Suppression: 4.4 KLD, Plantation: 4.86 KLD)	
13.	Water Source	:	From Nearby villages by tankers.	
14.	DG Set / power	:	-	
15.	Crusher	:	No crusher	
16.	Nearest Water Body	:	Subarnarekha River, Approx. 0.69 km SW direction.	
17.	Nearest Habitation	:	Approx. 70 meters, towards South direction.	
18.	Nearest Rail Station	:	Dhalbhumgarh Railway Station at a distance of 3.73 km towards East direction from site.	
19.	Nearest Air Port	:	Birsa Munda Airport, Ranchi at a distance of 151.81 km in NW direction from mine site.	
20.	Nearest Forest	:	Open Mixed Jungle mainly Sal, Approx. 2.52 km towards SW direction.	
21.	Road & Highways	:	NH-18, approx, 3.63 km towards ENE direction.	

CO-ORDINATES

1	Latitude		From 22°30'10.66"N	To 22°30'17.45"N
2	Longitude		From 86°30'56.24"E	To 86°31'03.17"E

LAND DETAILS :

Khata No.	Plot No.
51	708
52	709, 293 (P), 294 (P), 296
55	707

A

STATUTORY CLEARANCES

1	LOI / Lease docs	: Land agreement made.
2	CO	: The CO, Dhalbhumgarh vide letter no. 612, dated 08.08.2022 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in Khatiyani.
3	DMO	: DMO, East Singhbhum, Jamshedpur vide letter no. 39/Khanan, dated 07.01.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	: DFO, Dalma Elephant Project vide letter no. 1812, dated 13.12.2022 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Forest Distance	: Division Forest Officer, Jamshedpur Forest Division vide letter no. 1384, dated 04.07.2022 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	: The District Magistrate – cum - DC, East Singhbhum, Jamshedpur vide letter no. 29/Khanan, dated 05.01.2023 has informed that this project is part of District Survey Report (DSR) at East Singhbhum district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	: Kanas Gram Panchayat vide letter no. 68/K.G.P./23, dated 22.04.2023 informed that Gram Sabha conducted on 22.04.2023.
8	Mine Plan Approval	: Approved by AMO, West Singhbhum, Chaibasa vide Letter No. Camp 3/M, dated 03.10.2023.

Working Details

1	Mining Method	: Opencast Manual Mining method
2	Quarry Area	: 1.950 ha
3	Waste Generation	: 0.0 cu.m
4	Stripping Ratio	: 1: 0
5	Working Days	: 150
6	Bench: size & No	: --
7	Elevation of Mine	: 83 AMSL -87 AMSL
8	Ground Level Elevation	: 83 AMSL
9	Ultimate Working Depth	: From top surface upto a depth of 2.00m

10	Water Table	:	73 AMSL
11	Topography of Mine	:	Area represents almost flat land
12	Explosive Requirement	:	--
13	Diesel/Fuel requirement	:	90 litre/day

Production Details

Production	Quantity (cum)	Number of bricks Proposed	Total excavation of brick earth
			MT=Cum x 1.5
1st	1200.00	600000	2160
2nd	1200.00	600000	2160
3rd	1200.00	600000	2160
4th	1200.00	600000	2160
5th	1200.00	600000	2160
Total	6000.00	3000000.00	10800

Land Use

Pattern of Utilization	Existing (Ha)	Plan period (Ha)	at Conceptual period (Ha)
Quarrying	Nil	0.300	1.056 (area shall be reclaimed as cultivated land and handed over to the concern rayat).
Proposed Kiln	Nil	0.182	0.182
Storage of casted bricks	Nil	0.060	Storage of casted bricks within quarry
Plantation at safety Zone	Nil	0.472	0.472
Road Barrier	Nil	0.190	0.190
Mine road	Nil	0.050	0.050
Total Area	Nil	1.254	1.950

ENVIRONMENT MANAGEMENT

Green Belt Development

A

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

S.No.	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.472 ha	1180
2	Haul /Approach Road	:	0.340 km	340
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

- It is proposed that the total wastes will be dumped at site & will be used in maintenance of road.

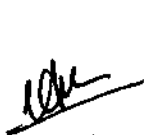
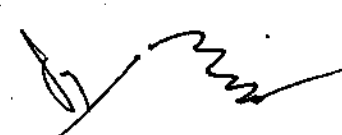
Water Quality Management

- 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.
- 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.
- 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.

A

596    

- 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

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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- m. It is proposed to remove topsoil before excavating soil for brick making. It will be used for raising plantation around the mining or leveling of land.

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 Kanas Brick Earth Deposit of M/s Star Bricks (Prop. : Shri Gurudev Mahato), Village : Kanas, Thana : Dhalbhumgarh, Distt. : East Singhbhum, Jharkhand (1.950 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

(Handwritten signatures and initials)

19. Barai Brick Clay Deposit of M/s Balee Bricks (Prop. : Shri Pradeep Kumar Sahu), Village : Barai, P.O. : Lungtu, P.S. : Basia, Distt. : Gumla, Jharkhand (0.971 Ha).

(Proposal No. SIA/JH/MIN/446714 /2023).

Project Category: B2 – Application for Environment Clearance

EC Application for: Proposed Capacity-1714.30 cum/season or 2228.59 tons/season

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

This is a new project which has been taken for appraisal on 11.10.2023.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1.	Project Name	: Barai Brick Clay Deposit
2.	Lessee:	: Balee Bricks (Prop. - Sri Pradeep Kumar Sahu)
3.	Lease Address	: Village – Barai, P.O.- Lungtu, P.S.- Basia, District- Gumla, Jharkhand.
4.	Lease Area	: 0.971 ha Acres-2.40 Acres
5.	Type of Land	: Non Forest – Raiyati Land
6.	Project Cost	: Rs. 20.0 Lakhs
7.	EMP Budget	: Capital: 2.466 Lakhs Recurring: 4.27 Lakh / year
8.	New or Expansion	: New
9.	Mineable Reserves	: Cu.m.: 13916.00 Cum Tonnes: 18,090.8 tons
10.	Mine Life	: 8.11 or 8.50 seasons.
11.	Man power	: 16
12.	Water Requirement	: 4.696~4.70 KLD(Drinking: 0.16 KLD, Dust Suppression: 2.57 KLD, Plantation: 1.966 KLD)
13.	Water Source	: From Nearby villages by tankers.
14.	DG Set / power	: -
15.	Crusher	: No crusher
16.	Nearest Water Body	: Koel River, Approx. 3.40 km West direction.
17.	Nearest Habitation	: Approx. 327 meters, towards West direction.
18.	Nearest Rail Station	: Pokla Railway Station at a distance of 18.60 km towards East direction from site.
19.	Nearest Air Port	: Birsa Munda Airport, Ranchi at a distance of 69.0 km in NE direction from mine site.
20.	Nearest Forest	: Open Jungle Approx 0.60 km towards West direction

A

598

10/11/23

2/11/23

			Fairly dense Jungle Approx 3.70 km towards SW direction Open Mixed Jungle Approx 3.56 km towards South direction
21.	Road & Highways	:	NH-143D, Approx, 10.74 km towards SE direction.

CO-ORDINATES :

1	Latitude	From 22°57'21.70"N	To 22°57'25.04"N
2	Longitude	From 84°46'27.12"E	To 84°46'31.79"E

Land Details :

Khata no.	Plot no.
01	203 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Basia vide letter no. 358, dated 10.08.2020 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. 831/M, dated 22.09.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide memo no. 82, dated 22.01.2021 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division vide letter no. 915, dated 19.06.2020 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.
7	Gram Sabha	:	Gram Sabha conducted on 21.10.2020.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 249/M, dated 23.02.2021.

A     

- 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.

Working Details

1	Mining Method	:	Opencast Manual Mining method
2	Quarry Area	:	0.971 ha
			Life of Mine – 8.11 or 8.50 seasons.
3	Waste Generation	:	0.0 cu.m
4	Stripping Ratio	:	1: 0
5	Working Days	:	150
6	Benches: size & No	:	--
7	Elevation of Mine	:	560 AMSL
8	Ground Level Elevation	:	560 AMSL
9	Ultimate Working Depth	:	From top surface upto a depth of 2.00m
10	Water Table	:	545 AMSL
11	Topography of Mine	:	Area represents almost flat land
12	Explosive Requirement	:	--
13	Diesel/Fuel requirement	:	90 litre/day

Production Details

Production	Quantity (cum)	Number of bricks Proposed	Total excavation of brick earth
			MT=Cum x 1.3
1st	1714.30	600000	2228.59
2nd	1714.30	600000	2228.59
3rd	1714.30	600000	2228.59
4th	1714.30	600000	2228.59
5th	1714.30	600000	2228.59
Total	8571.5	3000000	11142.95

Land Use

Description	Existing (Ha)	At the end of Plan Period (ha)
Quarrying	Nil	0.428
Storage of casted bricks	Nil	Comes under Excavation
Plantation at safety Zone	Nil	0.273
Road	0.006	0.003 (Comes under mining)
Used Area	0.006	0.704
Balanced Area	0.965	0.267

ENVIRONMENT MANAGEMENT

Green Belt Development

S.No.	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.273 ha	683
2	Haul /Approach Road	:	0.20 km	200
3	No. of Plants distributed in Anganwadi, Panchayat Bhawan or in schools	:	--	100

Solid Waste Management

- It is proposed that the total wastes will be dumped at site & will be used in maintenance of 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.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

A     

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on '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

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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- m. It is proposed to remove topsoil before excavating soil for brick making. It will be used for raising plantation around the mining or leveling of land.

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 Barai Brick Clay Deposit of M/s Balee Bricks (Prop. : Shri Pradeep Kumar Sahu), Village : Barai, P.O. : Lungtu, P.S. : Basia, Distt. : Gumla, Jharkhand (0.971 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

20. Kori Brick Clay Deposit of M/s R.K. Bricks (Prop. : Shri Dhananjay Kumar Gupta), Village : Kori, P.O. : Chainpur, P.S. : Jari, Distt. : Gumla, Jharkhand (0.914 Ha).

(Proposal No. SIA/JH/MIN/446400 /2023).

Project Category: B2 – Application for Environment Clearance

EC Application for: Proposed Capacity- 1714.30 cum soil/season or 2228.59 tons/season

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

This is a new project which has been taken for appraisal on 11.10.2023.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1.	Project Name	: Kori Brick Clay Deposit
2.	Lessee:	: R.K. Bricks Prop. - Sri Dhananjay Kumar Gupta
3.	Lease Address	: Village – Kori, P.O.- Chainpur, P.S.- Jari, District- Gumla, State- Jharkhand
4.	Lease Area	: 0.914 ha Acres- 2.26 Acres
5.	Type of Land	: Non Forest – Raiyati Land
6.	Project Cost	: Rs. 25 Lakhs
7.	EMP Budget	: Capital: 2.30 Lakhs Recurring: 4.27 Lakh / year
8.	New or Expansion	: New

A

9.	Mineable Reserves	:	Cu.m.: 12626.0 Cum	Tonnes: 16413.8 tons
10.	Mine Life	:	7.50 Seasons	
11.	Man power	:	15	
12.	Water Requirement	:	4.50 KLD (Drinking: 0.15 KLD, Dust Suppression: 2.37 KLD, Plantation: 1.85 KLD)	
13.	Water Source	:	From Nearby villages by tankers	
14.	DG Set / power	:	-	
15.	Crusher	:	No crusher	
16.	Nearest Water Body	:	Sankh River, approx. 1.30 km East direction.	
17.	Nearest Habitation	:	Santra Alias Srinagar village, Approx. 560 meters, West direction.	
18.	Nearest Rail Station	:	Lohardaga Railway Station at a distance of 110.50 km towards NE direction from site.	
19.	Nearest Air Port	:	Birsa Munda Airport, Ranchi at a distance of 225.60 km in East direction from mine site.	
20.	Nearest Forest	:	Kori Protected Forest, Approx 0.90 km towards NE direction Shrinagar Protected Forest, Approx 3.10 km towards North direction Rengari Protected Forest, Approx 4.10 km towards West direction Bumtel Protected Forest, Approx. 4.80 km towards South direction	
21.	Road & Highways	:	NH-143B, approx, 6.60 km towards West direction.	

CO-ORDINATES

1	Latitude	From 23°05'05.66"N	To 23°05'09.57"N
2	Longitude	From 84°14'11.43"E	To 84°14'16.15"E

LAND DETAILS

Khata no.	Plot no.
46	07

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.

A

WMA

604

B

WMA

WMA

2	CO	:	The CO, Paramveer Albart Akka Jari vide letter no. 152, dated 14.12.2020 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. 853/M, dated 27.09.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide memo no. 875, dated 05.12.2020 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division vide letter no. 2344, dated 16.12.2020 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.
7	Gram Sabha	:	Gram Sabha conducted on 07.09.2020.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 11/M, dated 04.01.2021.

Working Details

1	Mining Method	:	Opencast Manual Mining method	
2	Quarry Area	:	0.914 ha	Life of Mine – 7.50 Seasons.
3	Waste Generation	:	0.0 cu.m	
4	Stripping Ratio	:	1: 0	
5	Working Days	:	150	
6	Bench: size & No	:	--	
7	Elevation of Mine	:	678 - 680 AMSL	
8	Ground Level Elevation	:	678 AMSL	
9	Ultimate Working Depth	:	From top surface up to a depth of 2.00 m	
10	Water Table	:	665 AMSL (12-15mbgl)	
11	Topography of Mine	:	Area represents almost flat and plain	
12	Explosive Requirement	:	--	
13	Diesel/Fuel requirement	:	70 litre/day	

A

✓

✓

✓

✓

✓

Production Details

Total excavation of brick earth in cum/season	Number of bricks/season	Total excavation of brick earth MT=Cum x 1.3
1714.30	600000	2228.59
1714.30	600000	2228.59
1714.30	600000	2228.59
1714.30	600000	2228.59
1714.30	600000	2228.59

Land Use

Pattern of Utilization	Existing (Ha)	At the end of Plan Period (ha)
Quarrying	Nil	0.428
Storage of casted bricks	Nil	Comes under Excavation
Plantation at safety Zone	Nil	0.258
Road	0.009	0.003 (0.003 comes under mining)
Used Area	0.009	0.689
Balanced Area	0.905	0.225
Total Applied Area	0.914	0.914

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.258 ha	645
2	Haul /Approach Road	:	0.180 km	180
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

- It is proposed that the waste will be used in maintenance of 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.
- 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.
- 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

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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- m. It is proposed to remove topsoil before excavating soil for brick making. It will be used for raising plantation around the mining or leveling of land.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF & CC O.M dated 12.12.18 decided that the proposal for Kori Brick Clay Deposit of M/s R.K. Bricks (Prop. : Shri Dhananjay Kumar Gupta), Village : Kori, P.O. : Chainpur, P.S. : Jari, Distt. : Gumla, Jharkhand (0.914 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

21. Kiringloya Brick Clay Deposit of M/s Naman Bricks (Prop. : Smt. Parwati Devi), Village : Kiringloya, P.O. : Marda, P.S. : Palkot, Distt. : Gumla, Jharkhand (0.971 Ha).

(Proposal No. SIA/JH/MIN/447403 /2023).

Project Category: B2 – Application for Environment Clearance

EC Application for: Proposed Capacity-1715.10 cum/season or 2572.65 tons/season

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

This is a new project which has been taken for appraisal on 11.10.2023.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1.	Project Name	: Kiringloya Brick Clay Deposit
2.	Lessee:	: M/S Naman Bricks Proponent- Smt. Parwati Devi W/O Sri Ravindra Choudhary

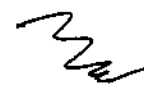
3.	Lease Address	:	At- Village- Kiringloya, P.O.- Lungtu, P.S.- Basia, District- Gumla, State- Jharkhand.
4.	Lease Area	:	0.971ha. Acres-2.40 Acres
5.	Type of Land	:	Non Forest – Raiyati Land
6.	Project Cost	:	Rs. 30 Lakhs
7.	EMP Budget	:	Capital: 4.86 Lakhs Recurring: 3.27 Lakh / year
8.	New or Expansion	:	New
9.	Mineable Reserves	:	Cu.m.: 1715.10 Cum Tonnes: 2572.65 tons
10.	Mine Life	:	7.50 Seasons
11.	Man power	:	16
12.	Water Requirement	:	8.94 KLD(Drinking: 0.16 KLD, Dust Suppression: 5.66 KLD, Plantation: 3.21 KLD)
13.	Water Source	:	From Nearby villages by tankers
14.	DG Set / power	:	-
15.	Crusher	:	No crusher
16.	Nearest Water Body	:	Pokta River ,Approx. 1.53 Km in north direction..
17.	Nearest Habitation	:	Approx. 670 meters, towards East direction.
18.	Nearest Rail Station	:	Bakaspur Railway Station at a distance of 18.48km towards ENE direction from site.
19.	Nearest Air Port	:	Birsa Munda Airport, Ranchi at a distance of 68.09km in NE direction from mine site.
20.	Nearest Forest	:	Open Jungle, Approx. 1.69Km in North Direction
21.	Road & Highways	:	Basia road, approx. 1.06 km towards ENE direction..

CO-ORDINATES

1	Latitude	From 22°57'58.79"N	To 22°58'04.83"N
2	Longitude	From 84°46'27.48"E	To 84°46'32.48"E

LAND DETAILS

Khata no.	Plot no.
02	162 (P)

A     

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Basia vide letter no. 552 (ii), dated 11.12.2020 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyar.
3	DMO	:	DMO, Gumla vide memo no. 882/M, dated 04.10.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 1014, dated 05.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Gumla Forest Division vide letter no. 2233, dated 01.12.2020 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Gumla district.
7	Gram Sabha	:	Gram Sabha conducted on 25.06.2020.
8	Mine Plan Approval	:	Approved by DMO, Gumla vide Letter No. 891/M, dated 19.12.2020.

Working Details

1	Mining Method	:	Opencast Manual Mining method
2	Quarry Area	:	0.971 ha
3	Waste Generation	:	0.0 cu.m
4	Stripping Ratio	:	1: 0
5	Working Days	:	150
6	Bench: size & No	:	--
7	Elevation of Mine	:	540 AMSL
8	Ground Level Elevation	:	525 AMSL
9	Ultimate Working Depth	:	From top surface upto a depth of 2.00m
10	Water Table	:	525 AMSL (12- 15mbgl)
11	Topography of Mine	:	Area represents almost flat land
12	Explosive Requirement	:	--
13	Diesel/Fuel requirement	:	70 litre/day

Production Details

Total excavation of brick earth in cum/season	Number of bricks/season	Total excavation of brick earth
		MT=Cum x 1.5
1715.10	600000	2572.65
1715.10	600000	2572.65
1715.10	600000	2572.65
1715.10	600000	2572.65
1715.10	600000	2572.65

Land Use

Pattern of Utilization	Existing (Ha)	At the end of Plan Period (ha)
Quarrying	Nil	0.428(Entire area will be converted into water reservoir)
Storage of casted bricks	Nil	Comes under Excavation
Safety Zone	Nil	0.338(Plantation)
Approaching Road	0.008	0.003 (0.003 comes under mining)
Total Area	0.008	0.769
Balanced Area	0.963	0.202

ENVIRONMENT MANAGEMENT

Green Belt Development

S.No.	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.338 ha	845
2	Haul /Approach Road	:	0.66 km	660
3	No. of Plants distributed in Anganwadi, Panchayat Bhawan or in schools	:	--	100

A

[Signature]

[Signature]

[Signature]

[Signature]

[Signature]

- 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

- It is proposed that the total wastes will be dumped at site & will be used in maintenance of 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.
- 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.
- 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

A

UWA

612

✓

edu

✓

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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- m. It is proposed to remove topsoil before excavating soil for brick making. It will be used for raising plantation around the mining or leveling of land.

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 Kiringloya Brick Clay Deposit of M/s Naman Bricks (Prop. : Smt. Parwati Devi), Village : Kiringloya, P.O. : Marda, P.S. : Palkot, Distt. : Gumla, Jharkhand (0.971 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I.

A











22. Amdanda Pahar Stone Mine of M/s K.P. & G. Sons (Partner : Shri Vishal Makhija), Village : Amdanda Pahar, P.S. : Pathna, Distt. : Sahibganj, Jharkhand (3.17 Ha).

(Proposal No. SIA/JH/MIN/444570 /2023).

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

Project Category: B1 – Application for Terms of Reference (re-appraisal of Environment Clearance issued by DEIAA, Sahibganj).

Application for: Proposed Capacity- 131370 TPA

The project has been granted EC by DEIAA, Sahibganj vide letter no. EC/DEIAA/2017-18/37, dated 18.07.2017.

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

This is re-appraisal of the EC issued by DEIAA, Sahibganj which has been taken up for consideration on 23.09.2023. 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 85.9 µg/m³ PM 2.5-48.4 µg/m³ SO₂-21.7 NO₂- 42.3 µg/m³. All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

Production detail as per letter no. 1017/ M dated 05.10.2023 by D.M.O, Sahibganj is within the permissible limit of EC.

The compliance report of previous EC has been certified by JSPCB, Regional Office –cum- Laboratory, Dumka vide Ref. no. : 1964, dated 20.09.2023.

Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Amdanda Pahar Stone Mine
2	Lessee:	: M/S K.P. & G Sons Partner - Sri Vishal Makhija At - South Dhadka, near Shani Mandir, Mahangu Shaw More, Asansol, District- Bardhaman, West Bengal.
3	Lease Address	: Village – Amdanda, P.S. – Pathna, District – Sahibganj, State- Jharkhand.
4	Lease Area	: 3.17 Ha Acres- 7.84 Acre
5	Type of Land	: Non Forest – Raiyati Land
6	Project Cost	: Rs. 90 Lakhs
7	EMP Budget	: Capital: 4.70 Lakhs Recurring: 3.68 Lakh / year
8	New or Expansion	: New
9	Mineable	: Tonnes: 1313160

	Reserves		
10	Mine Life	:	7.87 years
11	Man power	:	27
12	Water Requirement	:	9.27 KLD (Drinking: 0.27 KLD, Dust Suppression: 4.80 KLD, Plantation: 4.20 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	500 k VA
15	Crusher	:	No crusher
16	Nearest Water Body	:	Gumani River - Approx 1.75 km towards SSW direction of mine site.
17	Nearest Habitation	:	Amdanda village, at 0.43 meters owards west direction of mine site.
18	Nearest Rail Station	:	Barharwa Railway station, approx. 6.50 km towards SE direction
19	Nearest Air Port	:	Deoghar Airport, Deoghar approx. 115.10 km towards SW direction
20	Nearest Forest	:	Open Mixed Jungle- Approx. 5.90 km. in NW direction of mine site.
21	Road & Highways	:	NH- 33, Approx. 5.45 km. in East direction.

CO-ORDINATES

1	Latitude	From 24°53'42.41" N	To 24°53'53.16" N
2	Longitude	From 87°43'29.18" E	To 87°43'40.56" E

LAND DETAILS :

Plot No.
225 (P), 239 (P), 240 (P), 241 (P) & 244 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : date 29.10.2022 to 28.11.2027.
2	CO	:	The CO, Patna vide memo no. 01/Ra, dated 15.05.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, Sahibganj vide memo no. 905/M, dated 28.08.2023 certified that 01 other mining lease area (7.82 Acre) exists within 500 m radius from proposed project site.

A

4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 937, dated 15.05.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	:	Division Forest Officer, Sahebganj Forest Division vide memo no. 1593, dated 24.11.2016 certified that the distance of forest is 255 meter from proposed project site.
6	DSR	:	The DC – cum – District Magistrate, Sahibganj vide letter no. 939/M, dated 09.09.2023 has informed that this project is part of District Survey Report (DSR) of Sahibganj district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	:	Gram Sabha conducted on 23.09.2022.
8	Mine Plan Approval	:	Approved by DMO, Sahibganj vide Letter No. 3261 dated 22.12.2016.
9	Production Report	:	Production figure issued by DMO, Sahibganj vide memo no. 1017/M, dated 05.10.2023.
10	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-1996193/2018/339, dated 02.04.2018.
11	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. : JSPCB/RO/DMK/CTO-15712343/2023/119, dated 17.06.2023.
12	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2017-18/37, dated 18.07.2017.
13	Transfer of Environmental Clearance (EC)	:	Transfer of EC granted by SEIAA vide letter no. 188, dated 13.07.2023.
14	Compliance report of previous EC	:	Compliance report certified by JSPCB, Regional Office –cum- Laboratory, Dumka vide Ref. no. : 1964, dated 20.09.2023 and also certified that the proposed project site situated outside of negative supporting carrying capacity Grid no. 1, 3, 4 and 7.

Working Details

1	Mining Method	:	Opencast (OTFM) Mining Method
2	Quarry Area	:	3.17 Ha / 7.84 Acre
3	Waste Generation	:	Nil
4	Stripping Ratio	:	1: 0.00

5	Working Days	:	270
6	Benches: size & No	:	6m to 6m
7	Elevation of Mine	:	146 AMSL to 140 AMSL
8	Ground Level Elevation	:	140 AMSL
9	Ultimate Working Depth	:	126 AMSL
10	Water Table	:	100 AMSL
11	Topography of Mine	:	Area represents hill track with characteristics flat topped or terrace.
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	110 litre/day

Production Details

Year	Production of Stone in Tonnes
1st	131364
2nd	131370
3rd	131322
4th	131334
5th	131025
Total	656415

Land Use

Pattern of Utilization	Existing (Acre)	During Plan Period (Acre)	After Life of Mine (Acre)
Quarry	4.15	5.53	5.53
Road	0.22	0.22	0.22
Waste Dump/Rest Shed	0.30	0.30	--
Plantation (Greenbelt)	1.78	1.78 (Within 7.5 m Safety barrier beside road)	1.78 (Within 7.5 m Safety barrier beside road)
Total area in use	6.45	7.83	7.53

Balanced Area	1.39	0.01	0.31
Lease hold area	7.84	7.84	7.84

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.720 ha	1800
2	Along Approach Road	0.200 km	200
3	Plants distributed in schools, Anganwadi or in Panchayat Bhawan	--	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 will not be generation of Waste during the plan period. Therefore, as such there is no requirement of waste dumping Plan for this mining plan period.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

A 618

Air Quality Management

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

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate

		corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

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

Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

A

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

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.

A

9 MHA

622

CB

edu

Signature

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.

A

624

624

624

624

624

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

Undertaking submitted affirming:

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 09, 10, 11, 12 & 13.10.2023, 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 conditions :

A











- I. As per OM F. no. IA3-22/10/2022-IA.III(E177258), dated 08.06.2022 of MoEF&CC, Govt. of India Project Authority will obtained certified compliance report from IRO (MoEF&CC), Ranchi and submit the same with EIA / EMP report.

23. Karondajor Stone Deposit of Shri Sudhir Kumar Ohdar, Village : Karondajor, Thana : Bharno, Distt. : Gumla, Jharkhand (2.023 Ha).

(Proposal No. SIA/JH/MIN/447312 /2023).

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

Project Category: B1 – Application for Terms of Reference (re-appraisal of Environment Clearance issued by DEIAA, Gumla).

Application for: Proposed Capacity- 26144.0 cum/year or 65360.0 TPA

The project has been granted EC by DEIAA, Gumla vide letter no. EC/DEIAA/2016-17/0019/2017/15/EC, dated 25.03.2017.

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

This is re-appraisal of the EC issued by DEIAA, Gumla which has been taken up for consideration on 23.09.2023. 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 -85.9 $\mu\text{g}/\text{m}^3$ PM 2.5-48.4 $\mu\text{g}/\text{m}^3$ SO2-21.7 NO2- 42.3 $\mu\text{g}/\text{m}^3$. All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

Production detail as per letter no. 859/ M dated 29.09.2023 by D.M.O. Gumla is within the permissible limit of EC.

The compliance report of previous EC has been certified by JSPCB, Regional Office Ranchi vide Ref. no. : 473, dated 30.09.2023.

Project and Location Details :

Sl	Parameter	Details

1	Project Name	:	Karondajor Stone Deposit	
2	Lessee:	:	Sudhir Kumar Ohdar, Address- Village- Karondajor, Thana- Bharno, District- Gumla, Jharkhand	
3	Lease Address	:	Village- Karondajor, Thana- Bharno, District – Gumla, Jharkhand	
4	Lease Area	:	2.023 ha	Acres- 5.0 Acres
5	Type of Land	:	Non Forest – Raiyati Land	
6	Project Cost	:	Rs. 50 Lakhs	
7	EMP Budget	:	Capital: 5.26 Lakhs	Recurring: 4.27 Lakh / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	Tonnes: 604580.0	
10	Mine Life	:	14.25 or 14.0 years	
11	Man power	:	21	
12	Water Requirement	:	10.0 KLD (Drinking: 0.21 KLD, Dust Suppression: 6.26 KLD, Plantation: 3.26 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	500 k VA	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Paras River - Approx 6.70 km towards North direction of mine site.	
17	Nearest Habitation	:	Karondajor village, at 710 meters	
18	Nearest Rail Station	:	Bakaspur Railway station, approx. 19.70 km towards SE direction.	
19	Nearest Air Port	:	Birsu Munda Airport, approx. 56.75 km towards NE direction.	
20	Nearest Forest	:	Protected Forest - Approx. 4.0 km. in NE direction of mine site.	
21	Road & Highways	:	NH-43, Approx. 8.15 km in NW direction.	

CO-ORDINATES

1	Latitude	From 23°05'58.05" N	To 23°06'04.4" N
2	Longitude	From 84°48'44.2" E	To 84°44'50.7" E

LAND DETAILS :

Khata no.	Plot No.
167	1826 (P)

A

[Signature]

[Signature]

[Signature]

[Signature]

[Signature]

STATUTORY CLEARANCES

1	LOI / Lease docs	: Lease deed : date 09.11.2017 to 09.10.2027.
2	CO	: The CO, Bharno vide letter no. 499 (ii), dated 20.10.2014 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	: DMO, Gumla vide memo no. 874/M, dated 03.10.2023 certified that 05 other mining lease area (2.00 Acre, 1.00 Acre, 9.00 Acre, 11.50 Acre & 11.50 Acre) exists within 500 m radius from proposed project site and total area is 40.00 Acre (16.18 Ha).
4	DFO Wild Life	: DFO, Wildlife Ranchi vide letter no. 944, dated 18.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Forest Distance	: Division Forest Officer, Gumla Forest Division vide memo no. 2502, dated 16.12.2014 certified that the distance of forest is 04 KM from proposed project site.
6	DSR	: This project is mentioned in District Survey Report (DSR) of Gumla District.
7	Gram Sabha	: BDO, Bharno (Gumla) vide letter no. 663 (ii), dated 10.10.2014 informed that Gram Sabha conducted on 07.10.2014.
8	Mine Plan Approval	: Approved by DMO, Gumla vide Letter No. 1112/M, dated 26.11.2016.
9	Production Report	: Production figure issued by DMO, Gumla vide memo no. 859/M, dated 29.09.2023.
10	Consent to Establish (CTE)	: CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-2030256 /2018/235, dated 07.03.2018.
11	Consent to Operate (CTO)	: CTO issued by JSPCB vide Ref. no. : JSPCB/RO/RNC/CTO-4682114 /2019/71, dated 18.03.2019.
12	Previous Environmental Clearance (EC)	: Previous EC granted by DEIAA, Gumla vide letter no. EC/DEIAA/2016-17/0019/2017/15/EC, dated 25.03.2017.
13	Compliance report of previous EC	: Compliance report certified by JSPCB, Regional Office Ranchi vide Ref. no. : 473, dated 30.09.2023.

Working Details

1	Mining Method	:	Opencast semi mechanized method	
2	Quarry Area	:	2.023 Ha / 5.0 Acre	Life of Mine – 14.25 or 14.0 years
3	Waste Generation	:	6536.0 cum or 16340.0 TPA	
4	Stripping Ratio	:	1: 0.05	
5	Working Days	:	300	
6	Bench: size & No	:	6m to 6m	
7	Elevation of Mine	:	683 AMSL to 660 AMSL	
8	Ground Level Elevation	:	660 AMSL	
9	Ultimate Working Depth	:	655 AMSL	
10	Water Table	:	645 AMSL (15 mbgl)	
11	Topography of Mine	:	Area represents hillock of Granite/Gneiss	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details

Year	Production of stone (cum)	Production of stone (tons)	Bench RL in Meters
1 st	26144.0	65360.0	683mRL - 673mRL
2 nd	26144.0	65360.0	679mRL - 673mRL
3 rd	26144.0	65360.0	679mRL - 667mRL
4 th	26144.0	65360.0	673mRL - 667mRL
5 th	26144.0	65360.0	673mRL - 667mRL
Total	130720.0	326800.0	

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	After life of mine (Ha)
Quarry	--	1.242	1.615 (Entire area will be converted into water reservoir)
Road	0.007	0.007	0.003

A

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

Plantation	--	0.292	0.405
Total	0.007	1.541	2.023
Balanced Area	2.016	0.482	--
Total Area	2.023	2.023	2.023

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.292 ha	730
2	Along Approach Road	0.800 km	800
3	Plants distributed in schools, Anganwadi or in Panchayat Bhawan	--	100

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

Solid Waste Management

Total 6536.0 cum or 16340.0 TPA waste will be generated during the Plan Period which shall be used in making and maintenance of haul road and village road, so there is no requirement of waste dumping Plan for this mining Plan period.

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

A

630

630

B

630

630

630

- 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

A

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

		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

A

[Signature]

[Signature]

[Signature]

[Signature]

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)

A

MA

C

edu

X

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.

A

✓

C

edw

✓

✓

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.

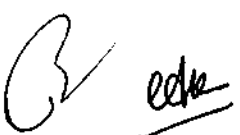
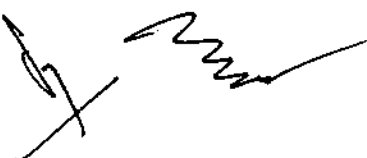
Transportation

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 protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

A   

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 09, 10, 11, 12 & 13.10.2023, 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 conditions :

- I. As per OM F. no. IA3-22/10/2022-IA.III(E177258), dated 08.06.2022 of MoEF&CC, Govt. of India Project Authority will obtained certified compliance report from IRO (MoEF&CC), Ranchi and submit the same with EIA / EMP report.

Day 4 : October 12th, 2023 [Thursday]

Consideration of Proposals

1. Gudaitungi Stone Mine of M/s Maa Tara Stone Works (Prop. : Shri Brijmohan Sharma), Village : Gudaitungi, Tehsil : Rajmahal, Distt. : Sahibganj, Jharkhand (2.16 Ha).
(Proposal No. SIA/JH/MIN/447180 /2023).

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

Project Category: B2 – Application for Environmental Clearance (re-appraisal of Environment Clearance issued by DEIAA, Sahibganj).

EC Application for: Proposed Capacity- 34848 cum/year or 94089.6 TPA.

The project has been granted EC by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/106, dated 26.12.2016.

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

This is re-appraisal of the EC issued by DEIAA, Sahibganj which has been taken up for consideration on 23.09.2023. 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 -76.0 $\mu\text{g}/\text{m}^3$, PM2.5- 43.3 $\mu\text{g}/\text{m}^3$, SO2- 13.17 $\mu\text{g}/\text{m}^3$, NO2- 24.60 $\mu\text{g}/\text{m}^3$. All the data are within the permissible limit.

A

638

638

638

Data generated by JSPCB empanelled Laboratory has been also submitted by PP. All the data are within prescribed limit.

Dust suppression is being carried out on regular basis.

Near about 480 plantation has been done in safety zone and haul road.

Production detail as per memo no. 1021/M dated 07.10.2023 by D.M.O. Sahibganj is within the permissible limit of EC.

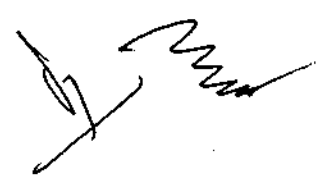
Certified compliance report vide reference no. 2150 dated 10.10.2023 by JSPCB has been also submitted by PP. All the conditions given in EC letter are also found to be satisfactory.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Gudaitungi Stone Mine at Mauza- Gudaitungi, Thana- Taljhari, District- Sahibganj, Jharkhand.
2	Lessee:	: M/s Maa Tara Stone Works. Proprietor- Sri Brijmohan Sharma
3	Lease Address	: At.- Hatpara, P.O. & P.S.: Rajmahal, District: Sahibganj, (Jharkhand).
4	Lease Area	: 2.16 Ha. Acres: 5.35 Acres
5	Type of Land	: Non Forest – Rayati Land
6	Project Cost	: 83.00 Lakhs
7	EMP Budget	: Capital: 6.50 Lakhs Recurring: 3.0 Lakh / year
8	CSR / CER Budget	: 1.50 Lakhs
9	New or Expansion	: Appraisal of DEIAA EC
10	Mineable Reserves	: Cu.M.: 319516 Cum Tonnes: 892693
11	Mine Life	: 6.30 years
12	Man power	: 20
13	Water Requirement	: 10.0 KLD= 1.0 KLD (Drinking & Domestic Uses) + 1.0 (Plantation) KLD + 8.0 KLD (Dust Suppression).
14	Water Source	: From closed mine pits and river by tankers
15	DG Set / power	: Not required
16	Crusher	: Not required within lease area
17	Nearest Water Body	: Ganga River, Approx. 12 Km towards East direction
18	Nearest Habitation	: Gudaitungi Approx. 0.60 km towards SE
19	Nearest Rail Station	: Bakudih Railway Station, approx. 3.5 km towards SW.
20	Nearest Air Port	: Deoghar Airport, approx. 225 km.
21	Nearest Forest	: Protected Forest- Not within 250m.
22	Road & Highways	: Barharwa – Rajmahal - Approx 2.0 km towards East.

CO-ORDINATES

1	Latitude	From 24° 56' 10.40"	To 24° 56' 15.10" N

A    

2	Longitude	From 87° 47' 34.07"	To 87° 47' 40.40" E

LAND DETAILS :

Khata no.	Plot No.
48	41 (P), 43, 44, 45, 46 & 47 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	: Lease deed : date 09.11.2017 to 09.10.2027.
2	CO	: The CO, Taljhari vide letter no. 701, dated 09.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	: DMO, Sahibganj vide memo no. 1024/M, dated 07.10.2023 certified that 01 other mining lease area (6.50 Acre) exists within 500 m radius from proposed project site.
4	DFO Wild Life	: DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1894, dated 29.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	: Division Forest Officer, Sahibganj Forest Division vide memo no. 1266, dated 20.06.2015 certified that the distance of notified forest is more than 250 meter from proposed project site.
6	DSR	: This project is mentioned in District Survey Report (DSR) of Sahibganj District.
7	Gram Sabha	: Gram Sabha conducted on 14.09.2011.
8	Mine Plan Approval	: Approved by DMO, Sahibganj vide Memo No. 3415/M, dated 21.09.2015.
9	Production Report	: Production figure issued by DMO, Sahibganj vide memo no. 1021/M, dated 07.10.2023.
10	Consent to Establish (CTE)	: CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-2155978 /2018/639, dated 13.06.2018.
11	Consent to Operate (CTO)	: CTO issued by JSPCB vide Ref. no. : JSPCB/RO/DMK/CTO-16018465 /2023/97, dated 20.05.2023.

A

640

edk

12

12	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Sahibganj vide letter no. EC/DEIAA/2016-17/106, dated 26.12.2016.
13	Compliance report of previous EC	:	Compliance report certified by JSPCB, Regional Office, Dumka vide Ref. no. : 2150, dated 10.10.2023.
14	Grid Certificate	:	PAs have submitted Affidavit regarding proposed project is situated outside negative carrying supporting grid 1, 3, 4 and 7.

Working Details

1	Mining Method	:	Opencast mechanised method
2	Quarry Area	:	2.16 Ha / 5.35 Ac. Life of Mine – 6.30Years
3	Waste Generation	:	16942.65 cum
4	Stripping Ratio	:	1:0.02
5	Working Days	:	300
6	Bench size & No	:	6m x 6m
7	Elevation of Mine	:	105mAMSL to 131m AMSL
8	Ground Level Elevation	:	105m AMSL
9	Ultimate Working Depth	:	100m AMSL
10	Water Table	:	80mAMSL
11	Topography of Mine	:	Area represents a small hillock.
12	Explosive Requirement	:	11760 kg/day
13	Diesel/Fuel requirement	:	150 litre/day

Production Details

Year	Production of stone (Cum)	Production of stone (Tonnes)	Total Waste in (cum)	Bench RL in Meters
1 st	33698.40	90985.68	5523.60	124 - 112
2 nd	34308.30	92632.41	1805.70	112 – 106
3 rd	34670.25	93609.68	1824.75	106 - 100
4 th	33937.80	91632.06	3736.20	118 – 100

A    

5 th	33675.60	90924.12	1772.40	106 - 100
Total	170290.35	459783.95	14662.65	

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
Quarry	0.876	1.723	1.670 (0.053 ha area shall be backfilled & 1.617 ha area shall be left as water reservoir)
Road	0.008	0.000	0.000
Waste Dump	-	-	-
Safety Zone	0.437	0.437 (Plantation)	0.437 (Plantation)
Total	1.321	1.321	2.160
Balance	0.839	0.000	0.00
Lease Hold Area	2.160	2.160	2.160

Protection Measures for Post Mine Closure Action Plan

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

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

Total Water Reservoir Potential in Post Mine Closure

$$\begin{aligned}
 &= \text{Area} \times \text{Ultimate Depth} \\
 &= 1.67 \times 100 \times 100 \text{ sqm} \times 24 \text{ m} \\
 &= 4,00,800 \text{ cum.}
 \end{aligned}$$

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.437 ha	480
2	Along Approach Road	0.10 km	120
3	In consulting local authorities	-	100

Handwritten signatures and marks at the bottom of the page, including a large 'A' on the left, a signature in the center, and several other marks on the right.

- 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

It has been calculated that total 16942.65 cum in-situ, waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 8471.33 cum (In situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%) 8471.33 cum (In situ), 10589.16 cum (loose) & 9000.78 cum (compact) waste shall be temporarily dumped in north western part of the lease area during the first to third year, fourth year onwards the generated waste and waste materials of temporary dump shall be removed and used for backfilling of exhausted portion of quarry in north eastern part and it will cover 0.053ha area.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 20m 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.

A

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

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

Risk Rating Scale

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

Hazard identification & Risk Analysis in Stone Mining operation

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

A

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

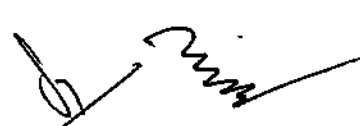
A



646







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.

A



648









Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard.
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- Personal protective equipments such as protecting 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 Gudaitungi Stone Mine of M/s Maa Tara Stone Works (Prop. : Shri Brijmohan Sharma), Village : Gudaitungi, Tehsil : Rajmahal, Distt. : Sahibganj, Jharkhand (2.16 Ha) is recommended for grant of EC. During the appraisal the Committee observed that present status of greenbelt, Dust Suppression measures and use of PPE's was not upto the mark. The various conditions for grant of EC is enclosed as Annexure – I alongwith following specific conditions for improving the environmental performance :

- Trees 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.

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

2. Residential Project "The Watermark" of M/s Kamini Kaushal Construction, Mouza : Anandpur, Thana : Adityapur, Distt. : Saraikela – Kharsawan, Jharkhand.

(Proposal No. SIA/JH/INFRA2/446237 /2023).

Project Category: 8(a) Category B2 – Application for Environment Clearance

Name of the consultant: M/s Oceao-Enviro Management Solutions (India) Pvt. Ltd, Ghaziabad

This is a new project which has been taken for appraisal on 12.10.2023.

Project is classified as Category 8(a) as per EIA Notification as the built up area is less than 1,50,000 m² and development area is less than 50 ha.

The proposed project is construction of Residential Project "THE WATERMARK" by M/s Kamini Kaushal Construction located at Mouza Anandpur, Thana- Adityapur, District- Saraikela Kharsawan, Jharkhand. The total plot area of the project is 27518.24 m² or 6.79 acres. The Built-up area for project is 1,06,384.68 m².

Background:

- The proposed project is construction of Residential Project "THE WATERMARK" by M/s Kamini Kaushal Construction located at Mouza Anandpur, Thana- Adityapur, District- Saraikela Kharsawan, Jharkhand
- The total plot area of the project is 27518.24 m² or 2.089 acres. The Built-up area for project is 1,06,384.68 m². (including FAR + NON FAR + Services)

A

- The proposed project is consists of 9 towers, 8 Row houses & clubhouse for which application has been submitted for Environment Clearance.

Salient features of the project:

S.No.	Area Details	AREA (m ²)
1	Total plot area (6.79 acres)	27518.24
2	Net Plot Area (6.79 acres)	27518.24
3	Permissible Coverage Area (@50 % of Net Plot Area)	13759.12
4	Proposed Coverage Area (@49.01 % of Net Plot Area)	13486.6
5	Permissible FAR Area (3)	82554.72
6	Proposed FAR Area	78377.29
7	Proposed Non FAR (Basement and Parking)	28007.39
8	Built up area	106384.68
9	Green Area (@20% of Total Plot Area)	5503.64

Floor Wise Area Details:

S.No.	Area statement	Total BUA with utility (sq.m)								
		Tower 1	Tower 2	Tower 3	Tower 4	Tower 5	Tower 6	Tower 7	Tower 8	Tower 9
1	Basement 1	7100.88	0	0	0	0	6848.63	0	0	0
2	Basement 2	7153.94	0	0	0	0	6903.94	0	0	0
3	GF	431.72	448.59	496.51	502.53	502.53	502.53	448.59	448.59	431.72
4	1st floor	405.58	439.16	479.95	492.37	492.37	492.37	439.16	439.16	405.58
5	2nd floor	405.58	439.16	479.95	492.37	492.37	492.37	439.16	439.16	405.58
6	3rd floor	405.58	439.16	479.95	492.37	492.37	492.37	439.16	439.16	405.58
7	4th floor	405.58	439.16	479.95	492.37	492.37	492.37	439.16	439.16	405.58
8	5th floor	405.58	439.16	479.95	492.37	492.37	492.37	439.16	439.16	405.58
9	6th floor	405.58	439.16	479.95	492.37	492.37	492.37	439.16	439.16	405.58
10	7th floor	405.58	439.16	479.95	492.37	492.37	492.37	439.16	439.16	405.58
11	8th floor	420.27	453.59	494.37	506.85	506.85	506.85	453.59	453.59	420.27
12	9th floor	405.58	439.16	479.95	492.37	492.37	492.37	439.16	439.16	405.58
13	10th floor	405.58	439.16	479.95	492.37	492.37	492.37	439.16	439.16	405.58
14	11th floor	405.58	439.16	479.95	492.37	492.37	492.37	439.16	439.16	405.58
15	12th floor	405.58	439.16	479.95	492.37	492.37	492.37	439.16	439.16	405.58
16	13th floor	420.27	453.59	494.37	506.85	506.85	506.85	453.59	453.59	420.27
17	14th floor	405.58	439.16	479.95	492.37	492.37	492.37	439.16	439.16	405.58
18	15th floor	405.58	439.16	479.95	492.37	492.37	492.37	439.16	439.16	405.58
19	16th floor	405.58	439.16	479.95	492.37	492.37	492.37	439.16	439.16	405.58
20	17th floor	405.58	439.16	479.95	492.37	492.37	492.37	439.16	439.16	405.58
Total		21610.78	7943.17	8684.5	8901.78	8901.78	22654.35	7943.17	7943.17	7355.96
101938.66										
Club House										
1.	GF	726.45								

2.	1st floor	924.44
3.	2nd floor	298.91
4.	3rd floor	288.78
	Total	2238.58
Row house		
1.	GF	114.13
2.	1st floor	134.78
3.	Roof	27.02
	Total	275.93
	For 8 Row houses	2207.44
	Total Built up area	106384.68

Khata no. & Plot no. of the project :

Khata no.	Plot no.
11	35
38	14, 34, 40, 62, 59 & 54
55	37
60	57
62	60, 15, 33, 39 & 58
76	42 & 61
93	41, 16, 31, 32 & 38

Latitude & Longitude:

Pillar No.	Latitude	Longitude
1	22°49'15.27"N	86°07'47.52"E
2	22°49'14.26"N	86°07'47.99"E
3	22°49'12.55"N	86°07'46.90"E
4	22°49'11.52"N	86°07'45.85"E
5	22°49'10.17"N	86°07'44.84"E
6	22°49'08.87"N	86°07'50.47"E
7	22°49'07.58"N	86°07'50.26"E
8	22°49'08.57"N	86°07'45.94"E
9	22°49'09.20"N	86°07'44.14"E
10	22°49'09.84"N	86°07'42.69"E
11	22°49'11.44"N	86°07'41.59"E
12	22°49'13.37"N	86°07'42.02"E
13	22°49'14.91"N	86°07'43.29"E
14	22°49'16.24"N	86°07'43.59"E

A     

15

22°49'15.90"N

86°07'45.20"E

Population Break up:

S. No.	Particulars	No. of Units	PPU/No. of person/m2	Total
1.	Residents	630	@6 Person Per Unit	3780
2.	Row house	8	7 person per flat	56
Total Residents				3836
•	Staff	-	@10 % of residential population	384
•	Visitors	-	@10 % of residential population	384
Total residential population				4603
3.	Clubhouse	2322.5 sq.m	1 person /6 sqm	387
•	Staff	-	@10 % of commercial population	39
•	Visitors	-	@90 % of commercial population	348
Total Commercial Population				387
Total Population				4990

Site Surroundings:

S. No	Particulates	Name of Places	Distance (Km)	Direction
1.	Nearest Airport	Sonari airport	3.23	E
2.	Nearest Railway Station	Gamharia Junction	3.81	SSW
		Adityapur railway station	4.46	SE
3.	Nearest Bus Stand	Imli chowk bus stand	4.70	SE
		Kagalnagar bus stand	3.83	ENE
4.	Nearest State Highway/ any other Road	SH-5	1.75	SSW
5.	Nearest National Highway	NH-118	2.05	ESE
6.	Nearest School/College	Netaji Subhash Public School	2.45	E
		Kerala Public School	2.83	SE
		Akshar International School	3.38	ENE
		Jamshedpur Co-operative college	5.76	E
		XITE College	4.45	W
7.	Nearest Worship Place	Saraswati and Lakshmi Mandir	0.06	W

		Mahakal Mandir	1.06	WNW
		Masjid	3.94	E
8.	Nearest Hospital	TMH-Tata Main Hospital	5.40	ESE
9.	Nearest Police Station	Jharkhand Police	4.31	E
10.	Nearest Fire Station	New fire Station Adityapur	3.98	SE
11.	State Border	Jharkhand – West Bengal boundary	29.68	E
12.	International Border	NA		
13.	Nearest Town, City, District Headquarters	Jamshedpur	2	E
14.	Nearest Pond	Sitarampur Reservoir	4.42	SW
15.	Nearest River/Nallah/ Canal	Subarnarekha river	1.68	N
		Kharkhai	1.91	ESE
16.	Wild Life Sanctuary	Dalma Wildlife sanctuary	5.13	N
17.	Reserved Forest	Chandil Gamaria range	5.32	NNW
		Ukam Hill Forest	11.83	SSE
		Reserved forests	19.5	SE
18.	Protected Forest	Protected forests	0.7	W
19.	Wetland	Anandpur lake adjacent to project site	-	-
20.	Nearest Defence Installation	Civil Defence Office	5.92	ESE
21.	Village Panchayats, Zila Parishad, Municipal Corporation, Local Body	Nagar Nigam Karyalaya, Adityapur	4.3	SE
22.	Historical Importance Place	NA		

Water Requirement:

The water requirement will be met by Municipal Supply. The total water requirement for operational phase is approx. 424 KLD. Fresh water requirement is approx. 288 KLD.

A

[Signature]

[Signature]

[Signature]

[Signature]

[Signature]

Calculations for Daily Water Demand:

S. No.	Particulars	Occupancy/ Area/ No's	Fresh Water Demand		Treated Water Demand	
			lpcd	Quantity	lpcd	Quantity
1	Residents	3780	70	265	30	113
	Row house	56	70	4	30	2
	Staff	384	25	10	20	8
	Visitors	384	5	2	10	4
2	Commercial					
	Staff	39	25	1	20	1
	Visitor	348	5	2	10	3
3	Horticulture	5503.64 sqm	NIL	NIL	1l/ sqm	6
4	Swimming pool			5		0
Sub Total				288		136
Total Water Requirement						424

Summary of Water and Waste water:

S. No.	Particulars	In KLD
1	Total Water Requirement	424
2	Fresh Water Requirement	288
3	Flushing Water	131
4	Treated water demand	136
5	Wastewater Generated (80% of Fresh i.e. 230 KLD + 100% Flushing i.e. 131 KLD)	361
6	STP Capacity (approx. 20% higher than the wastewater generated)	433.2 ~ 450

Power Requirement:

There is requirement of 2420 kVA power supply. 1 DG set of 1000 kVA and 1 DG set of 750 kVA are proposed to be used as backup power supply. The DG sets will be equipped with acoustic enclosure to minimize noise generation and adequate stack height for proper dispersion.

Calculation of Solid Waste generation:

S. No.	Category	Kg per capita per day	Waste generated (kg/day)
	Residential		
1.	Residents	3780 @ 0.5 kg/day	1890
2.	Row house	56 @ 0.5 kg/day	28
•	Staff	384 @ 0.25 kg / day	96
•	Visitor	384 @ 0.15 kg /day	58
3.	Commercial		
•	Staff	39 @0.25 kg/day	9.8
•	Visitor	348 @0.15kg/day	52
4.	Landscape waste	1.35 @ 0.2 kg/acres	0.27

	(5503.64 m ²)		
Total Solid Waste Generated			2134.07 ~ 2134 kg/day

STATUTORY CLEARANCES :

1	DFO Forest Distance	:	DFO, Saraikela Forest division vide letter no. 1513, dated 17.08.2023 certified that the distance of reserved / protected forest is less than 250 m from proposed project site.
2	DFO wildlife	:	DFO, Dalma Elephant Project vide letter no. 1283, dated 21.08.2023 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
3	CO certificate	:	The CO, Gamharia vide letter no. 754, 755, 756, 757, 758, 759, 760 & 761, dated 10.07.2023, letter no. 1023, 1024 & 1025, dated 05.09.2023 have mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II.
4	Fire Department	:	- Affidavit dated 29.09.2023 submitted stating no groundwater will be used for construction purposes and abstraction of groundwater will be done only after obtaining permission from CGWA in the operation phase. - Affidavit dated 29.09.2023 stating the plans are at conceptual stage and fire advisory will be submitted after obtaining approved drawings.
5	Building Plan approval	:	Conceptual Plan submitted.
6	AAI	:	Airport Authority of India issued a height clearance NOC vide its NOC ID -JAMS/EAST/B/031023/746330, dated 29.03.2023 valid upto 28.03.2031.

Based on the presentation made and information provided, the Committee decided that the proposal for Residential Project "The Watermark" of M/s Kamini Kaushal Construction, Mouza : Anandpur, Thana : Adityapur, Distt. : Saraikela – Kharsawan, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – III.

A

✓

✓

✓

✓

✓

3. Proposed expansion of existing SMS of M/s Radhagopal Ispat LLP, Village : Konra, Barhi Industrial Area, Tehsil : Barhi, Dist. : Hazaribagh, Jharkhand.

(Proposal No. : SIA/JH/IND1/ 425399 /2023).

Name of the consultant : Pollution and Ecology Control Services (PECS), Nagpur

This is an expansion project which has been taken for appraisal on 12.10.2023.

The State Level Expert Appraisal Committee (SEAC), Jharkhand deliberated on the project during its 93rd meeting held on 18-27.02.2022 and SEIAA, Jharkhand has approved the ToRs in 94th meeting held on 13th, 14th & 15th April, 2022. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2021-22/2404/2021/83, date 16.04.2022. The final EIA/ EMP submitted by PP to SEIAA on 10.04.2023 and which was forwarded to SEAC on 12.04.2023.

Project background:

The proponent is M/S RADHAGOPAL ISPAT LLP at Village-Konra, Barhi Industrial Area, Hazaribagh district of Jharkhand state. RADHAGOPAL ISPAT LLP presently owns a steel melting shop of benchmark capacity 27,000 TPA adopting Induction Furnace based ingots/billet manufacturing plant at Notified Barhi Industrial area, Konra village, Barhi, Hazaribagh district of Jharkhand state. RGILLP has now proposed expansion of steel melting shop (SMS) with matching CONCAST facilities consisting 1x8T existing Induction Furnace with 20 TPH Slag Crusher + 2x15T proposed Induction furnaces with matching CONCAST for manufacturing of ingots/billets of capacity 91,200 (TPA). CCM capacity 15TPH with 4/7 radius two strands caster (Size of billet 100 X 100 mm), Ladle size 1 X 15 T one number.

This project will be with an aim to manufacture MS Billets/Ingots of capacity 91,200 TPA (including existing facilities). The target production will be achieved in small steps over the next two years. The required water, power and workforce are all available from nearby area. The industrial land is already in possession of unit and hence infrastructure is constructed, so that operation will commence promptly. The plant area is of medium dimension, has a connecting road and has approachability. This power is sourced from Damodar Valley Corporation (DVC).

The estimated cost for the expansion of existing plant will be Rs. 18.0 Crores.

EMP Capital Cost: Rs. 96 Lakhs + Cost towards action plan for PH issues Rs. 45 Lakhs =Rs. 141 Lakhs. EMP Recurring Cost: Rs. 12.6 lakhs/annum + CSR amount as per Company Law/Year

S.No.	Particular	Description	Capital Cost (In Lakhs)	Recurring Cost / annum (In Lakhs)
1.	Air Pollution Control	Bag filter, Chimney, Dust Handling system	75.0	7
2.	Water Pollution Control	Settling tank, water conservation like Rainwater Harvesting	12.0	3

Latitude
&
Longitu
de:

3.	Environment monitoring (CAAQMS and online stack monitoring system)	Air, Water, Noise, & Soil Monitoring	1.5	2
4.	Greenbelt development	Plantation	1.5	0.4
5.	Others		6	0.2
6.	Public Hearing		45	
	Total		141	12.6
Latitude		Longitude		
24° 18' 25.57" N		85° 50' 13.72" E		
24° 18' 20.13" N		86° 50' 9.48" E		
24° 18' 19.18" N		86° 50' 15.26" E		
24° 18' 22.49" N		86° 50' 17.89" E		

Details of Khata no. & Plot no. of the project site:

SL.No.	Khata No.	Survey Plot No.	Area in Acres
1.	19	676P	0.84
2.	42	677P	1.05
3.	23	678P	0.07
4.	23	679P	0.90
5.	76	680P	0.80
6.	78	681P	0.15
7.	53	682P	0.70
8.	53	683P	0.14
9.	52	808P	0.38
10.	26	809	1.07

A

11.	39	810	0.20
Total			6.3 Acres

Project details:

This unit is in the field of manufacturing of MS Ingot/Billets and MS-Bar now the existing scenario and proposed project details are as follows :

S. No.	Details	Existing	Proposed	Total
1	Production Capacity TPA MS Ingots/billets	27,000	64,200	91,200
2	Area m ²	25,400	0	25,400
3	Induction Furnace	1x8T	2x15T	38 T
4	CCM		15 TPH caster having 4/7 radius with 2 strands Ladle capacity-15T (1no.) 1:1 sequence	15 TPH caster having 4/7 radius with 2 strands Ladle capacity- 15T (1no.) 1:1 sequence
5	Stack	30 m height Top Dia 0.8m Bottom Dia 1.52m		1 no.
6	Fuel for furnace	Electric Power	Electric Power	Electric Power
7	Power (MVA)	4	10	14
8	D.G Set (KVA)	240	400	640
9	Water Requirement (KLD)	10 KLD	30KLD	40 KLD
10	Investment Cr.	9	18	27

Product and by product:

S. No.	Product	Capacity (TPA)

		Existing	Additional	Total (TPA)
1	MS Billet/Ingot	27000	64,200	91,200
2	Slag	5,700	21,300	27000

Raw material details:

Sl. No.	Name	Quantity Existing (TPA)	Quantity additional (TPA)	Quantity Total (TPA)	Source & Distance	Transportation
1	Sponge Iron	21,600	51,360	72,960	Ramgarh	Road
2	Iron Scrap	14,400	34,240	48,640	Ramgarh	Road
3	Metal Recovery Slag	570	2130	2700	Inhouse	Inhouse
	Total	36,570	87,730	124,300		

Wastewater treatment and disposal:

Waste water will be generated due to water softener/RO plant. All water will be used within the premises for wetting road, dust suppression, slag cooling & spraying. There is/will be no waste water discharge outside the plant premises. (ZLD)

Sanitary waste water is/will be treated in septic tank followed by sub-surface dispersion trench.

Water requirement:

Sl. No.	Existing	Proposed	Total
1.	10 KLD	30 KLD	40 KLD

WILD LIFE MANAGEMENT PLAN

The total cost for Wild life management plan is 68.304 lakhs. The proposed budget is planned for 10 years. The detailed summary of plan is mentioned below:

SUMMARY		
SN	Activity	Amount (in lakh)

A

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

1	Infrastructure Development	07.763
2	Habitat Management	10.350
3	Enhancing soil moisture regime	09.311
4	Staff Welfare	06.900
5	Human Wildlife Conflicts	19.550
6	Conservation Awareness	05.750
7	Community Development	03.500
8	Monitoring and Evaluation	05.180
	TOTAL	68.304

Action Plan for ESC activities:

Total Project Cost of Expansion: Rs. 18 Crores

Total ESC/CER Cost: Rs 45 Lakhs @ 2.5% of the Proposed Expansion Cost

SUMMARY OF ALL ACTIVITIES

S. No.	Activity Heads	Years (Rs. In lakhs)							Total (Rs in Lakhs)
		Phase-I			Phase-II				
		1 st	2 nd	3 rd	4 th	5 th			
1.	DRINKING WATER SUPPLY-Tanker as and when Required.	2.25	1.75	1.5	1.25	0.75	-	-	7.5
2.	EDUCATION PROMOTION PROGRAMMES-Infrastructure, building, books etc.	2.1	1.65	1.4	1.15	0.7	-	-	7.0
3.	HEALTH & FAMILY WELFARE PROGRAMMES-Infrastructure, building, medicines etc.	2.2	1.50	1.35	1.25	0.7	-	-	7.0
4.	PLANTATION IN NEARBY AREA-10000 plantation in nearby schools, Govt offices, pond side, road side and available space	2.4	1.85	1.6	1.35	0.8	-	-	8.0
5.	ROAD DEVELOPMENT - Internal Village Road Development for Konra, Barhi East and Barhi West.	2.5	1.8	1.5	1.2	1.0	-	-	8.0
6.	COMMUNITY INFRASTRUCTURE DEVELOPMENT PROJECTS- Infrastructures	2.0	1.75	1.6	1.15	1.0	-	-	7.5

	and Buildings etc								
GRAND TOTAL		13.45	10.3	8.95	7.35	4.95	-	-	45.0
The proposed expenditure may be shifted year to year to other heads based on need.									

STATUTORY CLEARANCES:

1	CO	:	The CO, Barhi (Hazaribag) vide letter no. 482, dated 10.07.2021 has mentioned the plot nos. of the project is not recorded as "Jangle Jhari" in R.S. Khatyan & Register II.
2	DFO Wild Life	:	DFO, Wildlife Hazaribagh vide letter no. 1103, dated 06.07.2021 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribagh Wildlife Sanctuary.
3	DFO Forest Distance	:	DFO, Hazaribagh West Division vide letter no. 2845, Dated 11.08.2021 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
4	Consent to Establish (CTE) & Consent to Operate (CTO)	:	i. CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-6168703/2019/572, dated 01.10.2019. ii. CTO issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTO-10385657/2021/733, dated 31.05.2021. The current CTO is valid till 30/06/2024 having letter no- JSPCB/HO/RNC/CTO-10939150/2023/1133.
5	Public Hearing	:	Public Hearing conducted on 29.10.2022
6	CGWA	:	NOC no- CGWA/NOC/IND/ORIG/2022/15218 Dated: 04/04/2022 Valid up to: 03/04/2025
7	Land ownership	:	Land allocation from JIADA Application no- 1000000570 Allotment order no- PRO/RNC/SW/00535/2019 Dated: 19/07/2019

A

[Handwritten signature]

[Handwritten signature]

[Handwritten signature]

8	CTO Compliance	:	Reference letter no-556 Dated: 01/06/2022 Certified by Regional Director JSPCB Hazaribagh

Based on the presentation made and information provided, the Committee decided that the proposal for Proposed expansion of existing SMS of M/s Radhagopal Ispat LLP, Village : Konra, Barhi Industrial Area, Tehsil : Barhi, Dist. : Hazaribagh, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – IV.

4. Proposed project is expansion of Rolling Mill from 29,700 TPA of TMT Bars to 180,000 TPA of TMT Bars with Coal/Oil Fired Re-heating Furnac by M/s Mohit Ventures Private Limited at Village- Gumo, Gujhandi Road, Tehsil- Jhumritelaiya, District- Koderma, Jharkhand.
(Proposal No. : SIA/JH/IND1/447067/2023)

Name of the consultant : Rian Enviro Private Limited, Patna, Bihar

This is a expansion project which has been taken for appraisal on 12.10.2023.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 82nd meeting held on 04 - 07.11.2019 and SEIAA, Jharkhand has approved the ToRs in 84th meeting held on 08th November, 2019. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2018-19/2234/2019/715, date 08.11.2019. The final EIA / EMP submitted by PP to SEIAA on 08.10.2023 and which was forwarded to SEAC on 08.10.2023.

S. No	Parameters	Description
1	Identification of project	Project falls under Metallurgical Industries (secondary metallurgical processing) Item 3(a) of the schedule of EIA notification of Sept 14, 2006 issued by MOEF & CC.
2	Project Proponent	M/S Mohit Ventures Private Limited
3	Brief description of nature of the project	The proposed project is expansion of its TMT Bars production capacity from 29,700TPA to 180,000TPA by modernizing the existing re-heating furnace and rolling mill to high-speed mill and full capacity utilization in 3 shifts at the existing plant premises of 2.18 Ha. (5.40acres).

S. No	Parameters	Description																														
4	Salient Features of the Project																															
4.1	Proposed production capacity	TMT Bars production capacity from 29,700TPA to 180,000TPA by modernizing the existing re-heating furnace and rolling mill to high-speed mill and full capacity utilization in 3 shifts at the existing plant premises of 2.18 Ha. (5.40 acres)																														
4.2	Total Plot Area	Total Plot Area ~5.40 Acres (2.18 Ha) <table border="1"> <thead> <tr> <th>Sl no</th><th>Khata no</th><th>Plot no</th></tr> </thead> <tbody> <tr><td>1.</td><td>514</td><td>2793</td></tr> <tr><td>2.</td><td>514</td><td>2766</td></tr> <tr><td>3.</td><td>514</td><td>2791</td></tr> <tr><td>4.</td><td>514</td><td>2787</td></tr> <tr><td>5.</td><td>514</td><td>2788</td></tr> <tr><td>6.</td><td>514</td><td>2789</td></tr> <tr><td>7.</td><td>631</td><td>2186</td></tr> <tr><td>8.</td><td>631</td><td>2791</td></tr> <tr><td>9.</td><td>631</td><td>2793</td></tr> </tbody> </table>	Sl no	Khata no	Plot no	1.	514	2793	2.	514	2766	3.	514	2791	4.	514	2787	5.	514	2788	6.	514	2789	7.	631	2186	8.	631	2791	9.	631	2793
Sl no	Khata no	Plot no																														
1.	514	2793																														
2.	514	2766																														
3.	514	2791																														
4.	514	2787																														
5.	514	2788																														
6.	514	2789																														
7.	631	2186																														
8.	631	2791																														
9.	631	2793																														
4.3	Location	Village Gumo, Gujhandi Road, Tehsil- Jhumritelaiya, District Koderma, Jharkhand.																														
4.4	Water requirement	Total water requirement for the complete unit after expansion shall be 166 KLD. Potable water requirement for the plant personnel will be 3.5 KLD. The Company will procure water from ground water sources through bore wells with due permission from CGWA.																														
4.5	Source of water	Borewell																														
4.6	Wastewater	Wastewater generation shall take place in the form of blow downs from cooling towers, back wash from Softening Plant, wastewater from cooling of rollers in Rolling mill and domestic waste water. Domestic waste water will be generated from toilets, washrooms and canteen buildings in the plant. Total Waste water discharge from the process and domestic waste will be 3.75 KLD																														
4.7	Man Power	Around 70 people.																														

A

CMA

C

eade

J

S. No	Parameters	Description
4.8	Electricity/Power requirement	Total requirement of power for the after proposed expansion will be 4.0 MW. Permission for the additional power requirement shall be obtained from DVC/JSEB. Emergency Back-up Power: DG set of 1 x 250 kVA and 1 x 500 kVA will be installed.
4.9	Cost of the project	Total Cost after the expansion is estimated as Rs. 2903.84 Lakhs including cost of existing plant as Rs. 2100.00 Lakhs. Project Cost for additional facilities is estimated as Rs. 803.84 Lakhs.
4.10	Alternative site	The proposed addition will be established in the existing plant premises only.
4.11	Land form, Land use and land ownership	Private land, owned by Mohit Ventures Pvt. Ltd.

Site Location

This project will be located at village- Gumo, Gujhandi Road, Jhumretaliya, Distt: Koderma in the state of Jharkhand over an area of 5.40 acres (2.18 ha.). The Latitude and Longitude of the proposed site is 24° 25' 09.26" N and 85° 29' 30.51" E respectively.

Configuration and Production Capacities of the existing & Proposed Units

Sl. No.	Plant Facilities	Existing Installed Units and Capacity		Proposed Units and Capacity	Total after Expansion	
		Unit	Capacity		Unit	Capacity
1.	Rolling Mill	82.5TPD	29,700 TPA TMT Bars	Modernization & expansion for additional 150,300 TPA TMT Bars	546 TPD	180,000 TPA TMT Bars
2.	Reheating Furnace (Coal/Oil Fired)	-	29,700 TPA	Modernization & enhancement for additional capacity of 150,300 TPA	-	180,000 TPA

Product	Existing (TPA)	After proposed expansion (TPA)
TMT Bars	29,700	180,000

Annual Requirement of Raw Material and source

Sl. No.	Raw Material	Quantity (TPA)		Source
		Existing	Total after expansion	
1.	MS Billets	30,928	187,440	Units in Hazaribagh & Ramgarh districts
2.	Coal or Oil	Coal- 2,124 TPA	Coal - 12870 TPA Or Oil - 6600 KL/Year	Coal mines in Dhanbad & Ramgarh districts Oil from local depots

LAYOUT PLAN AREA BREAK UP

Sl no	Land use	Area (acre)	Area (Ha)	Percentage
1.	Plant area	4.65	1.93	86
2.	Entrance, road and Pavements	0.50	0.20	9.25
3.	Green belt	0.25	0.05	4.67
	Total	5.40	2.18	100
4.	Additional green belt	2.086	0.85	38
	Grand Total	7.486	3.03	138

Water Requirement

Total water requirement for the complete unit after expansion shall be 166 KLD. Potable water requirement for the plant personnel will be 3.5 KLD. The Company will procure water from ground water sources through bore wells with due permission from CGWA.

Industrial

Type of Waste	After proposed Expansion Quantity (TPA)	Mode of Disposal
Dust from Bag filter and other APC system	165	Supplied to outside parties for construction filling
Scrap/Cutting from Rolling Mill	7095	It is saleable to induction furnace units where it is processed for manufacturing MS billets.
Total	7260	

A

UJA

Cone

Solid waste and Hazardous waste

Hazardous waste: No hazardous waste shall be generated from the process except the 'Used Oil'. Approximate quantity of 'Used Oil' generation will be approx. 2 KL per year. Used Oil shall be temporary stored in dedicated drums on impervious concrete flooring with bund wall all around to contain spillage for a maximum of 90days duration before selling it to register recycler.

Public Hearing was conducted on 25th September, 2023 at Anchal Karyalay Koderma Dist.- Koderma, Jharkhand.

S.No.	Particulars	Date and Description
1.	Date of advertisement	19 th August 2023
2.	Date of public hearing	25 th September, 2023
3.	Place of public hearing	Anchal Karyalay Koderma Dist.- Koderma, Jharkhand.
4.	Officials in Public Hearing	A.C Koderma, Regional Officer JSPC Board, C.O Koderma, C.E JSPCB (HQ) Ranchi
5.	Public attended public hearing	50
6.	Main issue discussed in public hearing	Air pollution, Dust emission, Plantation and Employment, Medical Facility, Solid Waste Management

Total project cost is about Rs. 2903.84 Lakhs, as per public hearing commitment and primary socio-economical survey, Rs. 30 Lakhs shall be spent under social development in the nearby area. The detail expenditure breakup is mentioned below:

S. No	Area of Concern	Activities	Year of Implementation (Budget in INR lakhs)					Total Expenditure (Rs.)
			1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year	
01.	Vocational Training for Skill Development	The project proponent will provide financial support to the 15 person /year. (Rs. 10000*15 person *5 years)	1.5	1.5	1.5	1.5	1.5	7.5
02.	Medical Facility	Generic health checkup camp will be organized for villagers within 2 km of the project site for the	2.4	2.4	2.4	2.4	2.4	12.0

A

688

10/10

10/10

		coming 5 years from the execution date of the project						
03.	Community Development	Installation of solar lighting in village Doiadih (Rs. 25,000 x 20 Nos.)	--	--	5.0	--	--	5.0
		Renovation of Toilet Facilities in nearby Government Schools in Village Gumo	--	5.5	--	--	--	5.5
	Total		3.9	9.4	8.9	3.9	3.9	30

BUDGET FOR ENVIRONMENTAL MONITORING PLAN DURING CONSTRUCTION PHASE

Components	Items	Capital Cost (Lakhs of Rs.)	Recurring Cost (Lakhs of Rs./Annum)
Air	Water Sprinklers	2.0	0.20
	Tarpaulin Covers for vehicles for use during transportation of construction materials		
	Shed for cement storage		
Water	Sanitary Facilities - construction Workers	0.5	0.1
	Oil & Grease Traps		
Soil	Cementing of Floor for storage of paint & LDO	2.0	0.2
Noise	Ear plugs and muffs	0.2	0.05
OH&S	PPE, first aid facility, drinking water facility	1.0	0.2
Total		5.7	0.75

BUDGET FOR ENVIRONMENTAL MONITORING PLAN DURING OPERATION PHASE

Sl No	Item Description	Capital Investment (Rs. In Lacs)	Recurring Cost Per Year (Rs. In Lacs)
1.	Air Pollution Control System	20.0	3.50
2.	Rain Water Harvesting	15.0	2.50
3.	Concrete platform with bund wall and oil collection system for storage of HSD, and other Oil Drums and Used Oil	2.0	0.5
4.	Green Belt Development	8.64	1.0
5.	Occupational Health & Safety	7.00	1.0
6.	Solar energy harnessing through PV cell	5.00	0.5
TOTAL		57.64	9.0

A     

STATUTORY CLEARANCES :

1	CO	:	The CO, Koderma vide memo no. 48, dated 07.06.19 has mentioned the plot no. of the project is not recorded as "Jangle Jhari" in R.S Khatiyani & Register II.
2	DFO Wild Life	:	DFO, Wildlife Hazaribagh vide letter no. 1202, dated 20.06.2019 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribagh Wildlife Sanctuary.
3	DFO Forest Distance	:	DFO, Koderma Forest Division vide letter no. 1569, Dated 25.04.2019 certified that the distance of notified forest is 400 meter from proposed project site.
4	Consent to Establish (CTE) & Consent to Operate (CTO)		i. CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-444650/2016/36, dated 25.05.2016. ii. CTO issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTO-10692979/2021/969, dated 02.09.2021.
5	CGWA		No Objection Certificate (NOC) for Ground Water Abstraction issued by CGWA vide NOC no. CGWA/NOC/IND/ORIG/2023/18731, dated 19.06.2023, valid upto 28.05.2026.
6	Public Hearing	:	Regional Office -cum- Loabotory, JSPCB, Hazaribagh vide letter no. 1043, dated 26.09.2023 informed that Public Hearing conducted on 25.09.2023.

Based on the presentation made and information provided, the Committee decided that the proposal for Proposed project is expansion of Rolling Mill from 29,700 TPA of TMT Bars to 180,000 TPA of TMT Bars with Coal/Oil Fired Re-heating Furnace by M/s Mohit Ventures Private Limited at Village- Gumo, Gujhandi Road, Tehsil- Jhumritelaiya, District- Koderma, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - IV.

5. Enhancing the production of Angle, Flat etc. from 13,500 TPA to 50,000 TPA by Modernization of existing Re-Rolling Mill and by enhancing the production of M.S. Billets from 14,700 TPA to 60,000 TPA by installing additional 1x10 T Induction Furnace and Modernization of Existing Induction Furnace from 1x8 T to 1x10 T with 1x1 Strand, 3/6 Radius CCM and addition of Electroplating Machine (10 TPD x 4) by M/s Renuka Ispat Pvt. Ltd., Village : Saldaha, Tehsil : Baghmara, Distt. : Dhanbad, Jharkhand.

(Proposal No : SIA/JH/IND1/447256/2023)

Name of the consultant : Rian Enviro Pvt. Ltd., Patna, Bihar.

This is a expansion project which has been taken for appraisal on 12.10.2023.

Project Category : B1 3 (a) Metallurgical Industries (Ferrous & Non-Ferrous) :

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 103rd meeting held on 14 - 18.04.2023 and SEIAA, Jharkhand has approved the ToRs in 104th meeting held on 27th & 28th April, 2023. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2022-23/2797/2023/68, dated 02.05.2023. The final EIA / EMP submitted by PP to SEIAA on 08.10.2023 and which was forwarded to SEAC on 08.10.2023.

S. No	Parameters	Description
1	Identification of project	Project falls under Metallurgical Industries (secondary metallurgical processing) Item 3(a) of the schedule of EIA notification of Sept 14, 2006 issued by MOEF & CC.
2	Project Proponent	M/S Renuka Ispat Private Limited
3	Brief description of nature of the project	The unit is enhancing the production capacity of angle, flat, etc. from 13,500 TPA to 50,000 TPA by modernization of existing Re-Rolling Mill and by enhancing the production of M.S. Billets from 14,700 TPA to 60,000 TPA by installing additional 1x 10T induction furnace and modernization of existing induction furnace from 1x8 T to 1x10 T with 1x1 strand, 3/6 radius CCM and addition of electroplating machine (10 TPD x 4)
4	Salient Features of the Project	
4.1	Proposed production capacity	Angle, flat, etc. from 13,500 TPA to 50,000 TPA by modernization of existing Re-Rolling Mill and by enhancing the production of M.S. Billets from 14,700 TPA to 60,000 TPA by installing additional 1x 10T induction furnace and modernization of existing induction furnace from 1x8 T to 1x10 T with 1x1 strand, 3/6 radius CCM and addition of electroplating machine (10 TPD x 4).

A

U.A.

B

edue

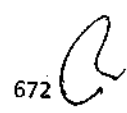
S. No	Parameters	Description
4.2	Total Plot Area	Total Plot Area ~3.3 Acre.
4.3	Location	Village- Saldaha, P.S- Rajganj, Block-Baghmara and District-Dhanbad.
4.4	Water requirement	Water requirement is fulfilled through bore well made at the plant area and from the rain water harvesting pond. Overall water requirement for the proposed expansion project will be approx. 70 KLD out of which 58 KLD will be recirculated in the process and 12 KLD will be makeup water.
4.5	Source of water	Borewell
4.6	Wastewater	The domestic water consumption will result in generation of ~2.4 m3/day of domestic wastewater. The wastewaters will be treated and entirely reused. Proposed ETP Capacity-10KLD
4.7	Man Power	Around 70 people.
4.8	Electricity/Power requirement	The electrical power requirement will increase to ~8000 kVA. One DG set of 125 kVA already installed (as power backup).
4.9	Cost of the project	19.35 Crs.
4.10	Alternative site	The proposed addition will be established in the existing plant premises only.

Land Details :

Sl. No.	Khata No.	Plot No.
1	02	303, 304, 305, 306, 307, 308 & 376

Latitude & Longitude of the project :

Latitude	Longitude
23° 51'32.453"N and 23°51'37.690"N	86°20'13.184"E and 86°20'19.204"E

A  672    

Configuration and Production Capacities of the existing & Proposed Units

Sl. No	Plant Facilities	Existing Installed Units and Capacity		Proposed Units and Capacity		Total after Expansion	
		Unit	Capacity	Unit	Capacity	Unit	Capacity
1.	Induction Furnace	1X8 T	14700 TPA	Addition of 1x10 T & Modernization of Existing 1x8 T to 1x10 T	60,000 TPA MS Billets	2x10T	60,000 TPA MS Billets
2.	Continuous Casting Machine	1x1 Strand, 3/6 Radius CCM		-		1x1 Strand, 3/6 Radius CCM	
3.	Rolling Mill	1x10TPH	13500 TPA	Rolling Mill 1x10TPH capacity)	50,000 TPA Angle Flat Etc.	1x10TPH	50,000 TPA Angle Flat Etc.
4.	Slag Crusher	--	3000 TPA	By 1x10 TPH	13,530 TPA	1x10 TPH	13,530 TPA
5.	Electroplating machine	-	-	10 TPD x 4		10 TPD x 4	

Raw Material Requirement and its source

Raw Materials	Total Requirement After Expansion (TPD)	Source
MS Billets Production		
Sponge Iron	~ 185 TPD	Local Plant in Dhanbad Through Road
Ferro- Alloy	~ 5.0 TPD	Local Plant in Dhanbad Through Road
MS scrap/ Pig Iron	~ 36 TPD	Scrap- In-house & nearby Plants. Through Road Pig iron- Local Plants in Dhanbad. Through Road
Rolling Mill- Angle, Flat etc.		
Hot Billets/ M.S. Billets	~182 TPD	Billets will be used for in-house rolling mill
Electroplating Machine		
Zinc	35kg/day	Open Market
HCL	200 lpd	

Industrial Solid waste and Hazardous waste

A *W* *Ch* *am* *dy* *man*

Units	Solid Wastes	Qty In TPA	Disposal Practice
Induction Furnace	Slag	13530	It will be supplied to Metal recovery plants and then will be used for construction filling.
Rolling Mill	Mill Scale	495	The waste has commercial worth and will be sold
APCD	Dust	500 kg/day	Low landfilling or supplied to construction contractors for use in construction fillings.
ETP	Sludge	5kg/day	This will be sent to TSDF

There is no hazardous waste from the plant except for used oil (approx. 100kg/year) from equipment, which will be stored properly as per norms and is saleable to the registered recyclers in the market.

Public Hearing was conducted on 14th September, 2023 at Bhagirat Bal Brahamchari High School, Dist. Dhanbad, Jharkhand.

S.No.	Particulars	Date and Description
1.	Date of advertisement	11 th August 2023
2.	Date of public hearing	14 th September, 2023
3.	Place of public hearing	Bhagirat Bal Brahamchari High School, Dist. Dhanbad, Jharkhand
4.	Officials in Public Hearing	- A.C. Dhanbad - Regional Officer JSPC Board, Regional Office Dhanbad - Consulting Executive, JSPCB Ranchi - G.M. DIC Dhanbad
5.	Public attended public hearing	41
6.	Main issue discussed in public hearing	Air pollution, Dust emission, Plantation and Employment, Source of Water, Development of Village.

Total project cost is about Rs 1935 Lakhs, as per public hearing commitment and primary socio-economical survey, Rs 20 Lakhs shall be spent under social development in the nearby area. The detail expenditure breakup is mentioned below:

S. No	Area of Concern	Activities	Year of Implementation (Budget in INR)					Total Expenditure (Rs.)
			1st Year	2 nd Year	3 rd Year	4 th Year	5 th Year	

A  674   

01.	Vocational Training for Skill Development	The project proponent will provide financial support to the 15 person /year. (Rs. 10000*15 person *5 years)	1.5	1.5	1.5	1.5	1.5	7.5
03.	Green belt	Plantation in nearby village and schools.	2.5	--	--	--	--	2.5
05.	Community Development	Installation of solar lighting in village Saldaha (Rs. 25,000 x 20 Nos.) &	--	--	5.0	--	--	5.0
		Renovation of Toilet Facilities in nearby Government Schools in Village Saldaha	--	5.0	--	--	--	5.0
	Total		4.0	6.5	6.5	1.5	1.5	20

BUDGET FOR ENVIRONMENTAL MONITORING PLAN

S. No	Title	Capital Cost Rs. Lacs	Recurring Cost Rs. Lacs (Annum)
1	Air Pollution Control	60.00	15.00
2.	Effluent Treatment Plant	15.00	6.00
3.	Noise Pollution Control (Including cost of Landscaping, Green Belt)	10.00	2.00
4.	Solid Waste Management	5.00	2.00
5.	Environment Monitoring and Management (Including Establishment of Laboratory)	15.00	0.5
6.	RWH Pond	15.00	2.00
	Photovoltaic cell installation at site	5.00	0.5
7.	Miscellaneous (Appointment of Consultants, occupational health & safety measure)	5.00	1.0
	Total	130.0	29.0

STATUTORY CLEARANCES :

1	LOI/Lease docs	:	Private land, owned by M/S Renuka Ispat Private Limited.
2	CO	:	The CO, Baghmara (Dhanbad) vide letter no. 860, dated 12.11.2022 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyon & Register II.

3	DFO Wild Life	:	DFO Wildlife, Hazaribagh vide letter no. 2495 , dated 10.12.2022 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Tupchanchi Wildlife Sanctuary.
4	DFO Forest Distance	:	DFO, Dhanbad vide letter no. 2645, dated 17.11.2022 certified that the distance of reserved / protected forest is 750 metre from project site.
5	Consent to Establish (CTE) & Consnet ot Operate (CTO)	:	i. CTE issued by JSPCB vide Ref. no. JSPCB /HO/RNC/CTE-6060248/2019/574, dated 01.10.2019. ii. CTO issued by JSPCB vide Ref. no. JSPCB /HO/RNC/CTO-9904232/2021/978, dated 06.09.2021.
6	Public Hearing	:	Public Hearing conducted by JSPCB on 14.09.2023.
7	CGWA	:	CGWA/NOC/IND/ORIG/2023/18361 dated 26.04.2023

Based on the presentation made and information provided, the Committee decided that the proposal for Enhancing the production of Angle, Flat etc. from 13,500 TPA to 50,000 TPA by Modernization of existing Re-Rolling Mill and by enhancing the production of M.S. Billets from 14,700 TPA to 60,000 TPA by installing additional 1x10 T Induction Furnace and Modernization of Existing Induction Furnace from 1x8 T to 1x10 T with 1x1 Strand, 3/6 Radius CCM and addition of Electroplating Machine (10 TPD x 4) by M/s Renuka Ispat Pvt. Ltd., Village : Saldaha, Tehsil : Baghmara, Distt. : Dhanbad, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – IV.

6. Expansion of Jarangdih Opencast Coal Mine (1.5 MTPA) of M/s Central Coalfields Limited (CCL)
Village : Jarangdih and Borea, Tehsil : Bermo, Distt. : Bokaro, Jharkhand (207.26 Ha).

(Proposal No. SIA/JH/CMIN/411426 /2022)

Name of the consultant : CMPDI, RI-III, Ranchi.

This is a expansion project which has been taken for appraisal on 12.10.2023.

Project Category : B1 - 1 (a) Mining of Minerals (Coal) :

TOR for the project was issued by MoEF&CC, Govt. of Jharkhand vide letter no. F.no. J-11015/502/2008-IA-II(M), dated 19.08.2021. The final EIA / EMP submitted by PP to SEIAA on 07.10.2023 and which was forwarded to SEAC on 08.10.2023.

- Expansion of Jarangdih Opencast Coal Mine Project of M/s Central Coalfields Limited, Village : Jarangdih, Bodiya Tehsil : Bermo, Distt. : Bokaro, Jharkhand (207.26 Ha). (Proposal No. : SIA/JH/CMIN/411426/2022)
- Name of the consultant: CMPDI, Kanke Road, Ranchi
- Jarangdih colliery is the oldest mine in East Bokaro Coalfield. It was started in 1922 to work in Kargali and Jarangdih Seams, by M/s Anderson Wright and company. Transferred to NCDC in 1956 and then to CIL through nationalization in 1973.

A UGA 676 C M J

- MoEFCC has prescribed Terms of Reference (ToR) for conducting EIA/EMP studies for obtaining Environmental Clearance in accordance with the provisions of the EIA Notification, 2006 vide letter no: J-11015/502/2008-IA-II(M) Dt. 19.08.2021.
- Public Hearing in respect of Expansion of Jarangdih OCP (1.50 MTPA/223.15 Ha) was conducted on 18.10.2022.
- The mineable reserve of Jarangdih OCP is estimated as 15.62 Mte with corresponding volume of OB estimated as 28.84 Mm³ with an average stripping ratio of 1.85 cum/t. The life of proposed project is 11 years.

Summarised Data:

Sl	Particulars	Unit	Value
A.	GENERAL		
1	Name of Project		Jarangdih Expansion OCP
2	Name of Area / Company		Central Coalfield Ltd.
3	Nearest Railway Station from project	Name	Jarangdih Railway station
		km	1
4	Nearest National / State Highway / Approach road	Name	Jarangdih Road
		km	0.15

Water requirement:

Max Industrial water	Max Domestic water	Max Mine Seepage
313 m ³ /day	1025 m ³ /day	3620 m ³ /day

CO-ORDINATES

1	Latitude	From 23°45'53.49"	To 23°46'54.60"N
2	Longitude	From 85°53'36.49"E	To 85°55'10.53"E.

Geological and Mining Characteristics of Jarangdih OCP

Stratigraphic Sequence	Thickness Range (m)	Net Geological Reserves (Mte)	Remarks		
XI	1.40-4.63	1.557	Considered in both quarry	Considered in western quarry	Considered in eastern quarry
X	12.32-16.25	8.879			
VIII	29.47-41.56	30.140			Not considered
VII	1.48-3.92	2.907			
VI	7.68-13.36	14.144	Not considered for mining in the present proposal		
VA	0.55-3.02	1.827			
V	0.40-2.16				
III	0.58-1.60	1.332			

Land use details of Jarangdih OCP:

SN	Component	Total Area

(Handwritten signatures and marks)

		(in Ha)
1	Quarry	86.35
2	Infrastructure	11.16
3	External OB Dump	37.96
4	Existing OB Dump	16.36
5	Proposed Embankment	4.20
6	Top Soil Storage Area	7.66
7	Safety Zone & Green Belt	43.57
Total		207.26 Ha

Production report of Jarangdih OCP:

Year	Opencast	
	Coal (te)	OB (m ³)
1993-94	762880	902189
1994-95	615629	1073211
1995-96	648393	1114430
1996-97	572052	1239944
1997-98	603816	967985
1998-99	608056	972142
1999-2000	438071	710505
2000-01	450333	693843
2001-02	435539	744573
2002-03	454000	766896
2003-04	517857	1293458
2004-05	562299	1276876
2005-06	600051	1064248
2006-07	880200	1079738
2007-08	883127	1536288
2008-09	488508	1245610
2009-10	576123	1268310
2010-11	547931	1273140
2011-12	588822	1031865
2012-13	642138	900013
2013-14	655012	837963
2014-15	810722	2518014
2015-16	742009	1915374
2016-17	829534	1247632
2017-18	830922	1316230
2018-19	844250	945044
2019-20	879384	977867
2020-21	774542	348304
2021-22	371628	249948
2022-23	872006	1283878

A  678    

LAND DETAILS :

Mauza: Borea, Thana: 115

Khata No.								
1	2	4	5	6	8	9	11	12
13	15	17	18	19	20	21	22	24
25	26	27	31	32	33	35	36	39
40								
Plot No.								
30(P)	222(P)	223	224	225	227	228	229(P)	230
231	232(P)	233(P)	236(P)	252(P)	253(P)	254	255	256(P)
257(P)	268(P)	391(P)	392(P)	406(P)	407	408	409	410
411	412	413	414	415	416(P)	417(P)	420(P)	421
422	423	424	425	426	427	428	429	430
431	432	433	434(P)	435	436(P)	437	438	439
440	441	442	443	444	445	446	447	448
449	450	451	452	453	455	456	457	458
459	460	461	462	463	464	465	466	467
468	469	470	471	472	473	474	475	476
477	478	479	480	481	482	483	484	485
486	487	488	489	490	491	492	493	494
495	496	497	498	499	500	501	502	503
504	505	506	507	508	509(P)	510	511	512
513	514	515	516	517	518	519	520	521
522(P)	523(P)	527(P)	528(P)	531(P)	532	533	534	535
536	537	538	539	540	541	542	543	544
545	546	547	548	549	550	551	552	553
554(P)	555	556	557	558	559	560	861(P)	862
863	864	865	866	867	868	869(P)		

Mauza: Jarangdih, Thana No:116

Khata No.								
1	2	3	4	5	7	8	10	11
12	13	14	15	16	19	21	22	25
26	33	35	36	37	38	39	41	42
43	44	50	52	54	56	58	59	60
63	64	65	68					
Plot No.								
2	3	4	5	6	7	8	9	11
12	13(P)	14(P)	15(P)	17(P)	18(P)	30(P)	33(P)	34
35	37(P)	46(P)	47	48(P)	73(P)	74(P)	83(P)	84
85	86	87	88(P)	89	90	91	92	93
94(P)	95	96	97	98	99	100	101	102
103	104	105	106	107	108	109	110	111
113	114	115	116	117	118	119	120	121
122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139
140	141	142	143	144	145	146	147	148
149	150	151	152	153(P)	154	155	156	157

A *U* *Q* *am* *b* *z*

158	159	160	161	162	163	164	165	166
167	168	169	170	171	172	173	174	175(P)
176	177	178(P)	188(P)	189(P)	191(P)	192	223(P)	227
228	229	230	231(P)	232	233	234	235	236
237(P)	238	239	240	496(P)	497(P)	503(P)	557	558
559	560	561	562	563	564	565	566	567
568	569	570	571	572	573	574	575	576
577	578	579	580	581	582	583	584	585
586	587	588	589	590	591	592	593	594(P)
595	596	597	598	599	600	601	602	603
604	605	606	607	608	609	610	611	612
613	614	615	616	617	618	619	620	621
622	623	624	625	626	627	628	629	630
631	632	633	634	635	636	637	638	639
640	641	642	643	644	645	646	647	648
649	650	651	652	714(P)	715(P)	716(P)	717(P)	719
813(P)	815	816	822(P)	823	824	826	827	828
829	830	831	832	833	834	835	836	837
838	839	840	841	842	843	844	845	846
847	848	849(P)	850(P)	851(P)	852	853	854	855
856	857	858	859	860	861	862	863	864
865	866	867	868	869	870	871	872	873
874	875	876	877	878	879	880	882(P)	959(P)
989(P)	990	991	992(P)	995	1032(P)	1047(P)	1048(P)	1049(P)

STATUTORY CLEARANCES :

1	LOI/Lease docs	:	Land has been acquired under LA Act 1894 vide declaration no. 10126 dt 12.12.1922
2	CO	:	The CO, Bermo (Bokaro) vide letter no. 109, dated 17.02.2023 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyani & Register II.
3	DFO Wild Life	:	DFO Wildlife, Hazaribagh vide letter no. 1707, dated 05.08.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
4	DFO Forest Distance	:	DFO, Bokaro Forest Division vide letter no. 1515, dated 04.07.2023 certified that the distance of notified forest is forest is 160 metre from project site.
5	Consent to Establish (CTE) & Consnet ot Operate (CTO)	:	i. CTE issued by JSPCB vide Ref. no. JSPCB /HO/RNC/CTE-1737404/2018/988, dated 22.09.2018. ii. CTO issued by JSPCB vide Ref. no. JSPCB /HO/RNC/CTO-13992210/2022/1865, dated 30.12.2022.
6	Public Hearing	:	Public Hearing conducted by JSPCB on 18.10.2022.
7	Inspection Report / Monitoring Report	:	Monitoring report issued by MoEF&CC, Regional Office, Ranchi vide F.no. 103-367/12/EPE/1451, dated 26.09.2023.

8	Approved Mine Plan	:	Mine plan approved by Central Coalfields Ltd, Darbhanga House, Ranchi vide Ref. No. C.S/B.M./525/2023/39, dated 17.03.2023.
9	Terms of Reference (ToR)	:	Terms of Reference (ToR) granted by MoEF&CC, Govt. of India vide letter no: J-11015/502/2008-IA-II(M) Dt. 19.08.2021
10	Previous Environmental Clearance (Ec)	:	Previous EC granted by MoEF, Govt. of India vide letter no. J-11015/502/2008-IA.II(M), dated 01.03.2012.

Total proposed project area as per the ToR obtained was 223.15 Ha, which involves 9.78 Ha. of forest land (GMK JJ) which would have required Forest Clearance.

Accordingly, to expedite the proposal of environment clearance of the project, a mine plan of Jarangdih Expansion OCP (Project Area-207.26 Ha, Capacity-1.50 MTY) has been approved by CCL Board to exclude 15.89 Ha land (9.78 Ha of GM JJ land + contiguous 6.11 Ha non-forest land) and re-handling of external OB dump. Summary is given in the table below:

Particulars	As per ToR	Modification as per revised Mining Plan	Remarks
Project Area	223.15 Ha	207.26 Ha.	Exclusion of un-diverted forest land.
Dumping Plan	No Re-handling of External Dump	Re-handling of proposed external dump into mine void and further reduction of mine void to 4.50 ha	In compliance with the Specific ToR Condition VI.
Life of Mine	13 Years	11 Years	Due to change in mineable reserves from 18.48 Mte to 15.62 Mte

Modification in the Landuse

Landuse As per the ToR (Area in Ha.)					Revised landuse (Area in Ha.)				
Sl. No.	Particulars	Forest	Non-Forest	Total Area	Sl. No.	Particulars	Forest Land	Non-Forest Land	Total Area
1	Quarry	1.20	92.38	93.58	1	Quarry	0	86.35	86.35
2	Infrastructure (W/S, office, conveyor)	1.19	11.20	12.39	2	Infrastructure (W/S, office, conveyor)	0	11.16	11.16
3	Proposed External OB dump	4.29	41.10	45.39	3	External OB Dump	0	37.96	37.96
4	Existing OB Dump	0	16.36	16.36	4	Existing OB Dump	0	16.36	16.36
5	Embankment/ green belt	0	4.20	4.20	5	Proposed Embankment	0	4.20	4.20
6	Top soil storage area	0	7.66	7.66	6	Top soil storage area	0	7.66	7.66
7	Safety zone	0.95	0	0.95	7	Safety zone and green belt	0	43.57	43.57
8	Green zone	2.15	40.47	42.62					
	Total area in Ha	9.78	213.37	223.15		Total area in Ha	0	207.26	207.26

[Handwritten signatures and initials]

Safety Measures and Pollution Control Measures for Konar River:

- No streams/surface water bodies shall be diverted in the present proposal
- The Konar nadi flows towards south-east and meet master drainage Damodar river in the south-east of the project and Bokaro nadi flows from west to east and meet Konar nadi in the west of the project.
- Konar River forms the Northern boundary of the project and safe distance of 85 m is being maintained b/w mine working and Konar River.
- HFL of Konar Nadi is +221.64 m and the adjacent surface boundary RL is +240 m.
- There would be a slight decline in the surface run-off into Konar river due to change in the surface topography.
- However, at the peak of mine operation, apprx. 2 MLD of mine water will be fed into Konar River after proper treatment.

A) Existing Water Pollution Control Measures for Konar River:

- 100 KLD ETP with Advanced treatment system along with Zero Liquid Discharge (Primary and Secondary Siltation with Lamella settler, Oil and Grease Skimmer, Sand and Carbon Filter, Chemical Dosing etc.) has been constructed
- Mine Sumps and siltation pond at discharge point have been provided for collection and treatment of Mine Seepage water.
- Filter plant has been installed to provide treated drinking water to different colonies in Kathara area.
- Around 225 m of toe wall and 725 m garland drain have been provided all around the mine periphery to treat surface run-off and prevent soil erosion.
- Rain water harvesting system has been provided at P.O. Office Jarangdih OCP
- A Piezometer has been installed at Filter plant to check the level of ground water.

B) Proposed Water Pollution Control Measures for Konar River:

Activity	Details	Cost in Rs. lakhs
Catch Drains, Toe Wall and Garland Drains	• Toe walls of length 4 km all along the existing and proposed dumps • Garland drains/catch drains of length of 8 kms with settling ponds	275
Settling pond for mine water	Capacity enhancement of Existing settling ponds	100
Sewage treatment Plant (STP)	STP with SBR System to be provided at Colony and office premises (0.12 MLD)	200
Rooftop Rainwater Harvesting System	Rooftop rain-water harvesting system proposed at Workshop, Filter plant and other service buildings	50
Strengthening of Embankment along Konar River	Strengthening of Embankment of length 1500 m all along Konar river	150
Total in Rs. Lakh		775

Provision of CHP, Pipe Conveyor and Rapid Loading System (RLS) :

1. A pit-head CHP is proposed and Crushed coal from CHP to Jarangdih siding by pipe conveyor of length 750m.

A

MA

B

MA

MA

MA

2. However, commissioning of above said infrastructure would take around 3 years from the date of start of operation of mine.
3. Therefore, for initial 3 years of mine operation, coal will be dispatched by road through tipping trucks to Jarangdih railway siding situated at 1000 m from mine.

Summary of coal transportation is given in the table below:

RoM coal From Pit to Surface/CHP	Handling	Crushed Coal from Bunker to Siding	Loading at Siding
Rear loading dumpers on Haul road of approx. length 800 m	Pit Head CHP to crush ROM coal down to (-) 100 mm size.	Closed pipe conveying system (780 m)	Rapid Loading System (RLS)

Wildlife Management Plan and Budgetary Provision:

- During the site visit avifaunal species Peafowl has observed in core zone as well as buffer zone.
- As per the data obtained from Forest Dept., Python & Monitor lizard belong to Schedule-I of Wildlife Protection Act 1972.
- Wildlife Management Plan with below mentioned budgetary provision has been submitted to DFO Bokaro on 23.12.2022 and PCCF(HoFF) Jharkhand on 19.01.2023 for competent approval.

Description	Amount in Lakhs (Rs)
A) Capital cost	
Afforestation program	Covered in EIA & EMP report
Artificial nests, feeding and watering arrangement for birds	10.00
Construction of water holes & check dams etc.	10.00
Sub Total amount	20.00
B) Revenue expenditure / Year	
Afforestation program	Covered in EIA & EMP report
Food facility for animals (Grass land development)	2.00
Drinking water arrangement by tanker	2.00
Protection arrangements for animals (Fencing, along with operation and maintenances)	2.00
Training program for villagers	2.00
Awareness program, Sign boards, cultural program to create awareness for flora & fauna	2.00
Rescue center for animals	2.00
Man Power for protection (4 persons)	2.00
Financial assistance for wild animals health care	2.00
Artificial nests, feeding & watering arrangement(Pots) for birds	2.00
Habitat for grazing animals will be developed at suitable location in consultant with Panchayat	2.00
Sub Total amount	20.00
Grand total	40.00

[Handwritten signatures and marks at the bottom of the page]

Provision of LNG/CNG based Mining Machinery:

- Mine machinery and trucks proposed in this project are majorly of electric/ HSD fuel based.
- Presently use of LNG/ CNG in HEMM in coal sector has been taken up as a pilot/ experimental scale. Further scale up will depend on outcome of the pilot study.

Energy Conservation:

- 3MW solar plant is proposed on OB Dump, thus generating 54 Lakh KWH annually.
- Electric vehicles will be used for commutation of employees.
- Energy Audit is being carried out to assess the specific Energy consumption and planning of Y-o-Y reduction targets
- Proposed Pit-head CHP with closed pipe conveyor system will control dust emissions and CO2 emissions due to truck transportation.

In the power distribution network, care has been taken to select suitable size of conductors and cables to minimise losses and voltage drop. It is suggested that the conductor sizes recommended in the P.R are drawn at the construction stage of the project itself to avoid duplication of work later. The size should not be changed either with higher or lower size of the conductor.

Based on the presentation made and information provided, the Committee decided that the proposal for Expansion of Jarangdih Opencast Coal Mine (1.5 MTPA) of M/s Central Coalfields Limited (CCL) Village : Jarangdih and Borea, Tehsil : Bermo, Distt. : Bokaro, Jharkhand (207.26 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - V alongwith following specific conditions :

- I. Embankment proposed along face of River Konar should be of sufficient strength such that mine effluent water does not merge with the river water. Stability study for same to be done by Institute of repute located in area first as mines is made operational and thereafter every 3rd year.
- II. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- III. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- IV. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- V. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.

The meeting concluded with thanks to all present.



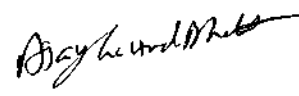
(Dr. Raju Kumar)
Member



(Niranjana Lal Agarwalla)
Member



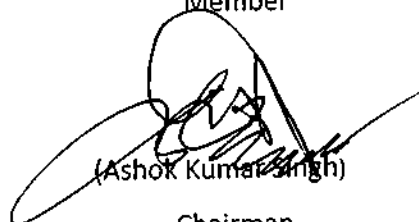
(Srikant Verma)
Secretary



(Dr. Ajay Govind Bhatt)
Member



(Dr. Kirti Avishek)
Member



(Ashok Kumar Singh)
Chairman

I. Statutory compliance

- i. This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.
- ii. In the writ petition (Civil) no. 202/1995, T.N. Godaverman 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 ".
- 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.Environmentclearance.nic.in). A copy of the advertisement may be forwarded to the concerned MoEF & CC Regional Office for compliance and record.
- xvi. The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred than mining operation shall only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

II. Air quality monitoring and preservation

- i. The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO2; CO and SO2 etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCUI, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.

A

✓

✓

✓

✓

- ii. Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEF&CC/ Central Pollution Control Board.

III. Water quality monitoring and preservation

- i. In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEF&CC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.
- ii. Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug well 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-IAJl (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 the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

V. Mining Plan

- i. The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.
- ii. The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.
- iii. The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-à-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self sustaining. The compliance status shall be submitted half-yearly to the MoEF&CC and its concerned Regional Office.

VI. Land reclamation

- i. The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.

A

690

B

con

12

- 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

The bottom of the page features several handwritten signatures and initials in black ink. From left to right, there is a small 'A', a stylized signature, a signature that appears to be 'C', a signature that appears to be 'adk', a signature that appears to be 'J', and a final signature that appears to be 'W'.

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

A











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.

A

UAA

C

edu

↓

~

- xix. Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.
- xx. Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- xxi. R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
- xxii. One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.
- xxiii. Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
- xxiv. The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.

- xxv. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
- xxvi. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
- xxvii. Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
- xxviii. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
- xxix. Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
- xxx. Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.
- xxxi. A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.
- xxxii. Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.
- xxxiii. Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.

- xxxiv. Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
- xxxv. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
- xxxvi. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
- xxxvii. Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
- xxxviii. Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
- xxxix. Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
- xl. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- xli. The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- xl.ii. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
- xl.iii. 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.
- xl.ii. Besides the above, the below mentioned general points are also to be followed :-
- Executive Summary of the EIA/EMP Report
 - All documents to be properly referenced with index and continuous page numbering.
 - Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.

- 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.

The bottom of the page features several handwritten signatures and initials in black ink. From left to right, there is a large 'A', a signature that appears to be 'Usha', a circular mark or signature, a signature that looks like 'CDM', a signature that looks like 'J', and a long, flowing signature on the far right.

Annexure – III

I. Specific Conditions

- i. Ground water to be drawn for use in the project only after obtaining permission from the Competent Authority.
- ii. 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.
- iii. All raw material to be stored only under covered shed.
- iv. PAs to offset (upto 20%) consumption of conventional energy sources by promoting use of solar energy, passive energy utilization, optimum fenestration, shading effect and heat islands.
- v. 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.
- vi. Trees should be developed & maintained not less than 15% of project area.
- vii. Organic Waste Converter (OWC) to be installed of sufficient capacity such that all organic waste (bio degradable) generated is composted at source only.
- viii. Developers/Company to install STP of sufficient capacity such that all the sewer produced is treated and reused.
- ix. 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.
- x. Developers/Company to conduct and submit carbon footprint and carbon sequestration study report including mitigation measures as a part of EC compliance.
- xi. 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.
- xii. Sufficient number of EV fast charging points to be installed.
- xiii. 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.
- xiv. ISO 14k EMS system standard to be followed for implementation of EMPs with MRM in place for feedback to Sr management.
- xv. A cycling tract to be provided in residential complex so as to save on fuel and make in campus movement environment friendly.

II. 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 lightning 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.

A

UVA

702

B

CD

IX

Signature

- 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.

III. 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.

The bottom of the page features several handwritten signatures and initials in black ink. From left to right, there is a large 'A', a signature that appears to be 'Usha', a signature that appears to be 'Ravi', a signature that appears to be 'Sudha', and a signature that appears to be 'Munish'.

- 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.

IV. Water quality monitoring and preservation

- i. The natural drain system should be maintained for ensuring unrestricted flow of water. No construction shall be allowed to obstruct the natural drainage through the site, on wetland and water bodies. Check dams, bio-swales, landscape, and other sustainable urban drainage systems (SUDS) are allowed for maintaining the drainage pattern and to harvest rain water.
- ii. Buildings shall be designed to follow the natural topography as much as possible. Minimum cutting and filling should be done.
- iii. Total fresh water use shall not exceed the proposed requirement as provided in the project details.

- iv. The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.
- v. A certificate shall be obtained from the local body supplying water, specifying the total annual water availability with the local authority, the quantity of water already committed, the quantity of water allotted to the project under consideration and the balance water available. This should be specified separately for ground water and surface water sources, ensuring that there is no impact on other users.
- vi. At least 20% of the open spaces as required by the local building bye-laws shall be pervious. Use of Grass pavers, paver blocks with at least 50% opening, landscape etc. would be considered as pervious surface.
- vii. Installation of dual pipe plumbing for supplying fresh water for drinking, cooking and bathing etc and other for supply of recycled water for flushing, landscape irrigation, car washing, thermal cooling, conditioning etc. shall be done.
- viii. Use of water saving devices/ fixtures (viz. low flow flushing systems; use of low flow faucets tap aerators etc) for water conservation shall be incorporated in the building plan.
- ix. Separation of grey and black water should be done by the use of dual plumbing system. In case of single stack system separate recirculation lines for flushing by giving dual plumbing system be done.
- x. Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.
- xi. The local bye-law provisions on rain water harvesting should be followed. If local byelaw provision is not available, adequate provision for storage and recharge should be followed as per the Ministry of Urban Development Model Building Byelaws, 2016. Rain water harvesting recharge pits/storage tanks shall be provided for ground water recharging as per the CGWB norms.
- xii. A rain water harvesting plan needs to be designed where the recharge bores of minimum one recharge bore per 5,000 square meters of built up area and storage capacity of minimum one day of total fresh water requirement shall be provided. In areas where ground water recharge is not feasible, the rain water should be harvested and stored for reuse. The ground water shall not be withdrawn without approval from the Competent Authority.
- xiii. All recharge should be limited to shallow aquifer.
- xiv. No ground water shall be used during construction phase of the project.
- xv. Any ground water dewatering should be properly managed and shall conform to the approvals and the guidelines of the CGWA in the matter. Formal approval shall be taken from the CGWA for any ground water abstraction or dewatering.

- xvi. The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.
- xvii. Sewage shall be treated in the STP with tertiary treatment. The treated effluent from STP shall be recycled/re-used for flushing, AC make up water and gardening. As proposed, no treated water shall be disposed in to municipal drain.
- xviii. No sewage or untreated effluent water would be discharged through storm water drains.
- xix. Onsite sewage treatment of capacity of treating 100% waste water to be installed based on the MBBR/MBR/SBR technology. The installation of the Sewage Treatment Plant (STP) shall be certified by an independent expert and a report in this regard shall be submitted to the Ministry before the project is commissioned for operation. Treated waste water shall be reused on site for landscape, flushing, cooling tower, and other end-uses. Excess treated water shall be discharged as per statutory norms notified by Ministry of Environment, Forest and Climate Change. Natural treatment systems shall be promoted.
- xx. Periodical monitoring of water quality of treated sewage shall be conducted. Necessary measures should be made to mitigate the odour problem from STP.
- xxi. Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organization (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013.

IV. Noise monitoring and prevention

- i. Ambient noise levels shall conform to residential area/commercial area/industrial area/silence zone both during day and night as per Noise Pollution (Control and Regulation) Rules, 2000. Incremental pollution loads on the ambient air and noise quality shall be closely monitored during construction phase. Adequate measures shall be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB / SPCB.
- ii. Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.
- iii. Acoustic enclosures for DG sets, noise barriers for ground-run bays, ear plugs for operating personnel shall be implemented as mitigation measures for noise impact due to ground sources.

V. Energy Conservation measures

- i. Compliance with the Energy Conservation Building Code (ECBC) of Bureau of Energy Efficiency shall be ensured. Buildings in the States which have notified their own ECBC, shall comply with the State ECBC.
- ii. Outdoor and common area lighting shall be LED.
- iii. Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased day lighting design and thermal mass etc. shall be incorporated in the building design. Wall, window, and roof u-values shall be as per ECBC specifications.
- iv. Energy conservation measures like installation of CFLs/ LED for the lighting the area outside the building should be integral part of the project design and should be in place before project commissioning.
- v. Solar, wind or other Renewable Energy shall be installed to meet electricity generation equivalent to 1% of the demand load or as per the state level/ local building bye-laws requirement, whichever is higher.
- vi. Solar power shall be used for lighting in the apartment to reduce the power load on grid. Separate electric meter shall be installed for solar power. Solar water heating shall be provided to meet 20% of the hot water demand of the commercial and institutional building or as per the requirement of the local building bye-laws, whichever is higher. Residential buildings are also recommended to meet its hot water demand from solar water heaters, as far as possible.

VI. Waste Management

- i. A certificate from the competent authority handling municipal solid wastes, indicating the existing civic capacities of handling and their adequacy to cater to the M.S.W. generated from project shall be obtained.
- ii. Disposal of muck during construction phase shall not create any adverse effect on the neighboring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.
- iii. Separate wet and dry bins must be provided in each unit and at the ground level for facilitating segregation of waste. Solid waste shall be segregated into wet garbage and inert materials.
- iv. Organic waste compost/ Vermiculture pit/ Organic Waste Converter within the premises with a minimum capacity of 0.3 kg /person/day must be installed.
- v. All non-biodegradable waste shall be handed over to authorized recyclers for which a written tie up must be done with the authorized recyclers.

- vi. Any hazardous waste generated during construction phase, shall be disposed off as per applicable rules and norms with necessary approvals of the State Pollution Control Board.
- vii. Use of environment friendly materials in bricks, blocks and other construction materials, shall be required for at least 20% of the construction material quantity. These include Fly Ash bricks, hollow bricks, AACs, Fly Ash Lime Gypsum blocks, Compressed earth blocks, and other environment friendly materials.
- viii. Fly ash should be used as building material in the construction as per the provision of Fly Ash Notification of September, 1999 and amended as on 27th August, 2003 and 25th January, 2016. Ready mixed concrete must be used in building construction.
- ix. Any wastes from construction and demolition activities related thereto shall be managed so as to strictly conform to the Construction and Demolition Rules, 2016.
- x. Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination.

VII. Green Cover

- i. No tree can be felled/transplant unless exigencies demand. Where absolutely necessary, tree felling shall be with prior permission from the concerned regulatory authority. Old trees should be retained based on girth and age regulations as may be prescribed by the Forest Department. Plantations to be ensured species (cut) to species (planted).
- ii. A minimum of 1 tree for every 80 sqm of land should be planted and maintained. The existing trees will be counted for this purpose. The landscape planning should include plantation of native species. The species with heavy foliage, broad leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping.
- iii. Where the trees need to be cut with prior permission from the concerned local Authority, compensatory plantation in the ratio of 1:10 (i.e. planting of 10 trees for every 1 tree that is cut) shall be done and maintained. Plantations to be ensured species (cut) to species (planted). Area for green belt development shall be provided as per the details provided in the project document.
- iv. Topsoil should be stripped to a depth of 20 cm from the areas proposed for buildings, roads, paved areas, and external services. It should be stockpiled appropriately in designated areas and reapplied during plantation of the proposed vegetation on site.

VIII. Transport

- i. A comprehensive mobility plan, as per MoUD best practices guidelines (URDPFI), shall be prepared to include motorized, non-motorized, public, and private networks. Road should be designed with due consideration for environment, and safety of users. The road system can be designed with these basic criteria.

- a. Hierarchy of roads with proper segregation of vehicular and pedestrian traffic.
 - b. Traffic calming measures.
 - c. Proper design of entry and exit points.
 - d. Parking norms as per local regulation
- ii. Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards be operated only during non-peak hours.
 - iii. A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 Kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department and the P.W.D./ competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.

IX. Human Health Issues

- i. All workers working at the construction site and involved in loading, unloading, carriage of construction material and construction debris or working in any area with dust pollution shall be provided with dust mask.
- ii. For indoor air quality the ventilation provisions as per National Building Code of India.
- iii. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
- iv. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- v. Occupational health surveillance of the workers shall be done on a regular basis.
- vi. A First Aid Room shall be provided in the project both during construction and operations of the project.

X. Corporate Environment Responsibility

- 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.

A

710

- vi. The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
- vii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- viii. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
- ix. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
- x. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- xi. The Ministry / SEIAA / SEAC may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- xii. The Ministry / SEIAA / SEAC reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- xiii. It shall be mandatory for the project management to submit six (06) monthly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard copies and soft copies to the regulatory authority concerned Regional Office of MoEF & CC at Ranchi and Jharkhand State Pollution Control Board (J.S.P.C.B.), Ranchi / CPCB / SEIAA.
- xiv. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
- xv. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.
- xvi. The Prescribed EC is valid as per Notification no. S.O. 1807(E) dated 12.04.2022 of MoEF&CC, Govt. of India.

Annexure – IV

I. Statutory compliance:

- i. The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1980, in case of the diversion of forest land for non-forest purpose involved in the project.
- ii. The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
- iii. The project proponent shall prepare a Site-Specific Conservation Plan & Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (in case of the presence of schedule-I species in the study area)
- iv. In the writ petition (Civil) no. 202/1995, T.N. Godaverman Thirumulpad vs union of India and ors. the Hon'ble Supreme Court passed an order dated 03.06.2022 " National Park or Wildlife Sanctuary must have an ESZ of minimum 01 km in which the activities prescribed and prescribed in the guidelines of 09th February, 2011 shall be strictly adhered to ".
- v. The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee.
- vi. The project proponent shall obtain the necessary permission from the Central Ground Water Authority, in case of drawl of ground water / from the competent authority concerned in case of drawl of surface water required for the project.
- vii. The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.

II. Air quality monitoring and preservation

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

A

✓

12

✓

✓

✓

- iii. The project proponent shall install system carryout Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM25 in reference to PM emission, and SO2 and NOx in reference to SO2 and NOx emissions) within and outside the plant area (at least at four locations one within and three outside the plant area at an angle of 120° each), covering upwind and downwind directions. (case to case basis small plants: Manual; Large plants: Continuous)
- iv. The project proponent shall submit monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring and manual monitoring of air quality / fugitive emissions to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six- monthly monitoring report.
- v. Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources.
- vi. The project proponent shall provide leakage detection and mechanised bag cleaning facilities for better maintenance of bags.
- vii. Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant roads, shop floors, roofs, regularly.
- viii. Recycle and reuse iron ore fines, coal and coke fines, lime fines and such other fines collected in the pollution control devices and vacuum cleaning devices in the process after *briquetting*/ agglomeration.
- ix. The project proponent shall use leak proof trucks/dumpers carrying coal and other raw materials and cover them with tarpaulin.
- x. The project proponent shall provide covered sheds for raw materials like scrap and sponge iron, lump ore, coke, coal, etc.
- xi. The project proponent shall provide primary and secondary fume extraction system at all melting furnaces.
- xii. Design the ventilation system for adequate air changes as per ACGIH document for all tunnels, motor houses, Oil Cellars.

III. Water quality monitoring and preservation

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

A

UAA

B

UAA

UAA

- ii. The project proponent shall monitor regularly ground water quality at least twice a year (pre and post monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognised under Environment (Protection) Act, 1986 and NABL accredited laboratories.
- iii. The project proponent shall submit monthly summary report of continuous effluent monitoring and results of manual effluent testing and manual monitoring of ground water quality to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.
- iv. Adhere to 'Zero Liquid Discharge'.
- v. Sewage Treatment Plant shall be provided for treatment of domestic wastewater to meet the prescribed standards.
- vi. The project proponent shall provide the ETP for effluents of rolling mills to meet the standards prescribed in G.S.R 277 (E) 31st March 2012 (applicable to IF/EAF) as amended from time to time.
- vii. Garland drains and collection pits shall be provided for each stock pile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off
- viii. The project proponent shall practice rainwater harvesting to maximum possible extent.
- ix. The project proponent shall make efforts to minimise water consumption in the steel plant complex by segregation of used water, practicing cascade use and by recycling treated water.

IV. Noise monitoring and prevention

- i. Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.
- ii. The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB (A) during day time and 70 dB(A) during night time.

V. Energy Conservation measures

- i. The project proponent shall provide waste heat recovery system (pre-heating of combustion air) at the flue gases of reheating furnaces.
- ii. Practice hot charging of slabs and billets/blooms as far as possible.
- iii. Ensure installation of regenerative type burners on all reheating furnaces.

A



714 ✓







- iv. Provide solar power generation on rooftops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly.
- v. Provide the project proponent for LED lights in their offices and residential areas.

VI. Waste management

- i. Used refractories shall be recycled as far as possible.
- ii. Oily scum and metallic sludge recovered from rolling mills ETP shall be mixed, dried, and briquetted and reused melting Furnaces
- iii. 100% utilization of fly ash shall be ensured. All the fly ash shall be provided to cement and brick manufacturers for further utilization and Memorandum of Understanding in this regard shall be submitted to the Ministry's Regional Office.
- iv. The waste oil, grease and other hazardous waste shall be disposed of as per the
- v. Hazardous & Other waste (Management & Transboundary Movement) Rules, 2016.
- vi. Kitchen waste shall be composted or converted to biogas for further use. *(to be decided on case to case basis depending on type and size of plant)*

VII. Green Belt

- i. Green belt shall be developed in an area equal to 33% of the plant area with a native tree species in accordance with CPCB guidelines. The greenbelt shall inter alia cover the entire periphery of the plant
- ii. The project proponent shall prepare GHG emissions inventory for the plant and shall submit the programme for reduction of the same including carbon sequestration including plantation.

VIII. Public hearing and Human health issues

- i. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
- ii. The project proponent shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms of Factory Act.
- iii. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

IX. Corporate Environment Responsibility

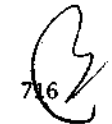
- i. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.

A

- 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 report to the head of the organization.
- iv. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry / Regional Office along with the Six Monthly Compliance Report.
- v. Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.
- vi. All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the plants shall be implemented.
- vii. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.

X. Miscellaneous

- i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
- ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
- iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
- iv. The project proponent shall monitor the criteria pollutants level namely; PM₁₀, SO₂, NO_x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.

A     

- v. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
- vi. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
- vii. The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
- viii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- ix. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
- x. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
- xi. Concealing factual data or submission of false / fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- xii. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- xiii. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- xiv. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
- xv. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
- xvi. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

C. Other Conditions:

- i. The Authority reserves the right to add any new condition or modify the above conditions or to revoke the clearance if conditions stipulated above are not implemented to the satisfaction of Authority or for that matter for any other Administrative reason.
- ii. The Prescribed EC is valid as per Notification no. S.O. 1807(E) dated 12.04.2022 of MoEF&CC, Govt. of India.
- iii. In case of any deviation or alteration in the project proposed from those submitted to SEIAA, Jharkhand for clearance, a fresh reference should be made to SEIAA to assess the adequacy of the conditions imposed and to incorporate any new conditions if required.

A

UAA

718

elk

61

Wm

I. Statutory compliance

- i. The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1980, in case of the diversion of forest land for non-forest purpose involved in the project.
- ii. The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
- iii. The project proponent shall prepare a Site-Specific Conservation Plan / Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (in case of the presence of schedule-I species in the study area)
- iv. In the writ petition (Civil) no. 202/1995, T.N. Godaverman Thirumulpad vs union of India and ors. the Hon'ble Supreme Court passed an order dated 03.06.2022 " National Park or Wildlife Sanctuary must have an ESZ of minimum 01 km in which the activities prescribed and prescribed in the guidelines of 09th February, 2011 shall be strictly adhered to ".
- v. The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee.
- vi. The project proponent shall obtain the necessary permission from the Central Ground Water Authority.
- vii. Solid waste/hazardous waste generated in the mines needs to be addressed in accordance to the Solid Waste Management Rules, 2016 / Hazardous & Other Waste Management Rules, 2016 as amended from time to time.

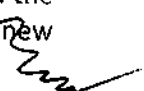
II. Air quality monitoring and preservation

- i. Continuous ambient air quality monitoring stations as prescribed in the statute be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM10, PM2.5, SO2 and NOx. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.

- ii. The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.
- iii. Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water / mist sprinkling / rain gun etc shall be carried out in critical areas prone to air pollution (with higher values of PM10/PM2.5) such as haul road, loading/ unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.
- iv. The transportation of coal shall be carried out as per the provisions and route envisaged in the approved Mining Plan or environment monitoring plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, it is proposed to construct a 'bypass' road, it should be so constructed so that the impact of sound, dust and accidents could be appropriately mitigated.
- v. Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centres.
- vi. Coal stock pile/crusher/feeder and breaker material transfer points shall invariably be provided with dust suppression system. Belt-conveyors shall be fully covered to avoid air borne dust. Side cladding all along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.
- vii. Coal handling plant shall be operated with effective control measures w.r.t. various environmental parameters. Environmental friendly sustainable technology should be implemented for mitigating such parameters.

III. Water quality monitoring and preservation

- i. The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board.
- ii. The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No. J-20012/1/2006-1A,II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.
- iii. Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new

A  720   

piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.

- iv. Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change / Regional Office.
- v. Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.
- vi. Catch and or garland drains and siltation ponds in adequate numbers and appropriate size shall be constructed around the mine working, coal heaps & OB dumps to prevent run off of water and flow of sediments directly into the river and water bodies. Further, dump material shall be properly consolidated/ compacted and accumulation of water over dumps shall be avoided by providing adequate channels for flow of silt into the drains. The drains/ ponds so constructed shall be regularly de-silted particularly before onset of monsoon and maintained properly. Sump capacity should provide adequate retention period to allow proper settling of silt material. The water so collected in the sump shall be utilised for dust suppression and green belt development and other industrial use. Dimension of the retaining wall constructed, if any, at the toe of the OB dumps within the mine to check run-off and siltation should be based on the rainfall data. The plantation of native species to be made between toe of the dump and adjacent field/habitation/water bodies.
- vii. Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) after due treatment conforming to the specific requirement (standards).
- viii. Industrial waste water generated from CHP, workshop and other waste water, shall be properly collected and treated so as to conform to the standards prescribed under the standards prescribed under Water Act 1974 and Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time. Adequate ETP / STP needs to be provided.
- ix. The water pumped out from the mine, after siltation, shall be utilized for industrial purpose viz. watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.
- x. The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations, considering the presence of river/rivulet/pond/lake etc, shall be prepared and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the approved Mining Plan/EIA/EMP report and with due approval of the concerned State/Gol Authority. The construction of embankment to prevent any danger against inrush of surface water into the mine should be as per the approved Mining Plan and as per the permission of DGMS or any other authority as prescribed by the law.
- xi. The project proponent shall take all precautionary measures to ensure reverian/ riparian ecosystem in and around the coal mine upto a distance of 5 km. A revarian /riparian ecosystem conservation and management plan should be prepared and

implemented in consultation with the irrigation / water resource department in the state government.

IV. Noise and Vibration monitoring and prevention

- i. Adequate measures shall be taken for control of noise levels as per Noise Pollution Rules, 2016 in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs / muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness programme for users to be conducted. Progress in usage of such accessories to be monitored.
- ii. Controlled blasting techniques shall be practiced in order to mitigate ground vibrations, fly rocks, noise and air blast etc., as per the guidelines prescribed by the DGMS.
- iii. The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six-monthly basis.

V. Mining Plan

- i. Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.
- ii. Mining shall be carried out as per the approved mining plan(including Mine Closure Plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).
- iii. No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980
- iv. Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.

VI. Land reclamation

- i. Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change (MOEF&CC) from time to time shall be submitted to MOEFCC/Regional Office (RO).
- ii. The final mine void depth should preferably be as per the approved Mine Closure Plan, and in case it exceeds 40 m, adequate engineering interventions shall be provided for sustenance of aquatic life therein. The remaining area shall be backfilled and covered with thick and alive top soil. Post-mining land be rendered usable for agricultural /forestry purposes and shall be diverted. Further action will be treated as specified in the guidelines for Preparation of Mine Closure Plan issued by the Ministry of Coal dated 27th August, 2009 and subsequent amendments.
- iii. The entire excavated area, backfilling, external OB dumping (including top soil) and afforestation plan shall be in conformity with the "during mining" / "post mining" land-use pattern, which is an integral part of the approved Mining Plan and the EIA/EMP

A

Usha

722

edre

12

Man

submitted to this Ministry. Progressive compliance status vis-a-vis the post mining land use pattern shall be submitted to the MOEFCC/RO.

- iv. Fly ash shall be used for external dump of overburden, backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any, along with fly ash for external dump of overburden, backfilling of mines. Compliance report shall be submitted to Regional Office of MoEF&CC, CPCB and SPCB.
- v. Further, it may be ensured that as per the time schedule specified in mine closure plan it should remain live till the point of utilization. The topsoil shall temporarily be stored at earmarked site(s) only and shall not be kept unutilized. The top soil shall be used for land reclamation and plantation purposes. Active OB dumps shall be stabilised with native grass species to prevent erosion and surface run off. The other overburden dumps shall be vegetated with native flora species. The excavated area shall be backfilled and afforested in line with the approved Mine Closure Plan. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change/ Regional Office.
- vi. The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.

VII. Green Belt

- i. The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered/endemic flora/fauna, if any, spotted/reported in the study area. The Action plan in this regard, if any, shall be prepared and implemented in consultation with the State Forest and Wildlife Department.
- ii. Greenbelt consisting of 3-tier plantation of width not less than 7.5 m shall be developed all along the mine lease area as soon as possible. The green belt comprising a mix of native species (endemic species should be given priority) shall be developed all along the major approach/ coal transportation roads.

VIII. Public hearing and Human health issues

- i. Adequate illumination shall be ensured in all mine locations (as per DGMS standards) and monitored weekly. The report on the same shall be submitted to this ministry & its RO on six-monthly basis.
- ii. The project proponent shall undertake occupational health survey for initial and periodical medical examination of the personnel engaged in the project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS circulars. Besides regular periodic health check-up, 20% of the personnel identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, as amended time to time.

- iii. Personnel (including outsourced employees) working in core zone shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.
- iv. Implementation of the action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the tasks/measures as per the action plan submitted with budgetary provisions during the public hearing. Land oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.
- v. The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.

IX. Corporate Environment Responsibility

- i. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.
- ii. The company shall have a well laid down environmental policy duly 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 report to the head of the organization.
- iv. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
- v. Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

[Handwritten signatures and initials at the bottom of the page]

X. Miscellaneous

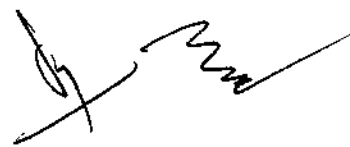
- i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
- ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
- iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
- iv. The project proponent shall monitor the criteria pollutants level namely; PM₁₀, SO₂, NO_x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
- v. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
- vi. The project proponent shall submit the environmental statement for each financial year in Form- V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
- vii. The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.
- viii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- ix. The project proponent shall abide by all the commitments and recommendations made in the EIAEMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
- x. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
- xi. Concealing factual data or submission of false / fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

A









- xii. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- xiii. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- xiv. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.
- xv. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
- xvi. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
- xvii. The Prescribed EC is valid as per Notification no. S.O. 1807(E) dated 12.04.2022 of MoEF&CC, Govt. of India.

A



728





