



State Level Environment Impact Assessment Authority, Jharkhand

Nursery Complex, Near Dhurwa Bus Stand, P.O+P.S-Dhurwa, Ranchi, Jharkhand-834 004

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Letter No.- EC/SEIAA/2023-24/2991/2023/

Ranchi, Date :

To: **Shri Binay Kumar Mandal,**
S/o Shri Dharanidhar Mandal,
Village : Barwadda, P.O. : Kalyanpur, P.S. : Barwadda,
District : Dhanbad, Jharkhand : 826004.

Amendment

Sub: Amendment in Environmental Clearance for the project “Stone Mine Project of Shri Binay Kumar Mandal at Village : Lakhapur & Bhursa, Thana no. : 162 & 163, Distt. : Dhanbad, Jharkhand (1.52 Ha)” (Proposal No. : SIA/JH/MIN/417666/2023) – regarding.

Ref: Your application no. Nil, dated – 08.10.2023.

Sir,

1. This is in continuation of Environmental Clearance (EC) issued by the State Level Environment Impact Assessment Authority (SEIAA), Jharkhand vide letter no. : EC/SEIAA/2022-23/2779/2023/32, Ranchi dated : 12/04/2023 in favour of “Binay Kumar Mandal Project (Stone Mine) of Sri Binay Kumar Mandal at Mouza : Lakhapur & Bhursa, Block : Keliasole (Nirsa), District. : Dhanbad, Jharkhand (1.52 Ha)” (Proposal No. : SIA/JH/MIN/422379/2023).

2. Further you have applied online application no. : SIA/JH/MIN/417666/2023 requesting for amendment of EC in terms of change in production reduction from 118500 TPA to of 93852.07 tonne per annum (Max) to the above mentioned project proposal.

3. Your request has been examined by the State Level Expert Appraisal Committee (SEAC), Jharkhand in its 109th meeting held on 09th, 10th, 11th, 12th and 13th October, 2023. based on the information furnished/provided and discussion held. the State Level Expert Appraisal Committee, (SEAC) recommended to issue **amendment of earlier Environmental Clearance** issued vide letter no. : EC/SEIAA/2022-23/2779/2023/32, Ranchi, Date : 12/04/2023, as the following:

“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 118500 TPA 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 –Lakhipur & 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)
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. Khatiyani & 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.
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	Benches: 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

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

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

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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.

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Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss. thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, 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

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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"

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Preventive Measures:

Face Stability

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

While others may need to work at or near the edge of a working bench the person most at risk

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

Control Measures

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



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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

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

Blasting Operations

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

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

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





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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

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Accident at Site

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

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

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

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving 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 facts mentioned above the committee recommends that earlier issued Environmental Clearance should be amended as mentioned above alongwith rest other terms & conditions mentioned in previous Environmental Clearance letter no. : **EC/SEIAA/2022-23/2779/2023/32** Ranchi. Date : **12/04/2023** shall remain the same."

4. The recommendation of SEAC, Jharkhand in this regard has been examined by the State Level Environment Impact Assessment Authority, Jharkhand in its **110th** meeting held on **27th, 28th and 29th October, 2023** and decided **amendment in Environmental Clearance** to the said project proposal as recommended by SEAC alongwith all other terms and conditions of earlier EC letter no. : **EC/SEIAA/2022-23/2779/2023/32**, Ranchi. Date : **12/04/2023** shall remain the same.

5. This issues with the approval of SEIAA, Jharkhand.

Sd/-


Member Secretary
State Level Environment Impact
Assessment Authority, Jharkhand.

Memo No.- **EC/SEIAA/2023-24/2991/2023/ 346**

Ranchi. Date : **02/11/2023**

Copy to:

1. Additional Chief Secretary, Department of Forests, Environment & Climate Change, Govt. of Jharkhand.
2. Deputy Commissioner, District – Dhanbad, Jharkhand.
3. Divisional Forest Officer, Dhanbad Forest Division, Dhanbad, Jharkhand.
4. Divisional Forest Officer, Wildlife Division, Hazaribagh, Jharkhand.
5. Director IA Division, Monitoring Cell, MoEF and Climate Change, Indira Paryavaran Bhavan, Jorbag Road, Aliganj, New Delhi – 110003.
6. Integrated Regional Office, Ranchi, Ministry of Environment, Forest and Climate Change, 2nd Floor, Jharkhand State Housing Board (HQ), Harmu Chowk, Ranchi, Jharkhand – 834002.
7. District Mining Officer, Dhanbad, Jharkhand.
8. Member Secretary, Jharkhand State Pollution Control Board, Ranchi.
9. Secretary, Jharkhand State Expert Appraisal Committee, Ranchi.
10. Website.
11. Guard file.


Member Secretary
State Level Environment Impact
Assessment Authority, Jharkhand



