



Validity expires on 28.12.2022

Proceedings of the State Environment Impact Assessment Authority Kerala

*Present: Prof. (Dr.) K.P. Joy, Chairman; Dr. J. Subhashini, Member and
Sri. P.H.Kurian I.A.S., Member Secretary.*

**Sub: SEIAA- Environmental Clearance for the proposed quarry project in Sy.No.66
(Part) at Trikkur Village, Mukundapuram Taluk, Thrissur District, Kerala by
Sri.M. J. Jose, Managing Partner, M/s Thattil Granites -Granted – Orders issued.**

STATE ENVIRONMENTAL IMPACT ASSESSMENT AUTHORITY, KERALA

No. 958/SEIAA/EC1/4434/2015

Dated, Thiruvananthapuram 29.12.2017

- Ref: 1. Application received on 26-10-2015 from Sri. M. J. Jose, Managing Partner of M/s. Thattil Granites
2. Minutes of the 58th meeting of SEAC held on 28th & 29th June 2016
3. Minutes of the 75th meeting of SEAC held on 29th & 30th June 2017
4. Minutes of the 79th meeting of SEAC held on 25th & 26th September 2017
5. Minutes of the 75th meeting of SEIAA held on 28th October 2017
6. Affidavit received on 19.12.2017 from Sri. M. J. Jose, Managing Partner of M/s. Thattil Granites

ENVIRONMENTAL CLEARANCE NO.104/2017

Sri.M. J. Jose, Managing Partner of M/s. Thattil Granites, SMS Road, Trikkur (PO) & Village, Mukundapuram Taluk, Thrissur District - 680 306, vide his application received on 26-10-2015, has sought Environmental Clearance under EIA Notification, 2006 for the quarry project in Sy. No. 66 (Part) of Trikkur Village, Mukundapuram Taluk, Thrissur District, Kerala for an area of 3.9986 ha. The project comes under Category B, Activity 1(a), (i) as per the Schedule of EIA Notification 2006 and as per O.M. No. L-11011/47/2011-IA.II (M) dated 18th May 2012 of Ministry of Environment and Forests. It is further categorized as Category B2 as per Notification No.S.O.141 (E) dt.15.01.2016 of Ministry of Environment and Forests, since the area of the project is below 25 hectares.

2. The proponent has submitted the approved mining plan as per KMMC Rules-2015. The proposal was placed in the 58th meeting of SEAC held on 28th & 29th June 2016. The committee appraised the proposal based on the mining plan, pre-feasibility report and all other documents submitted along with the Form I application.

Proponent informed that he has 9.5 ha of land proposed for quarrying and the Geologist from Mining and Geology has refused to approve the comprehensive mining plan

for the whole area. Hence he was forced to apply for an area of 3.99 ha. But from environmental point of view it is always desirable to have a comprehensive mining plan wherever possible. This is a fit case for drawing up such a plan. Hence the Committee decided to request the proponent to take up the matter with the District Geologist with the observations of the Committee and submit such an approved plan for the appraisal of the application. Hence the Committee decided to defer the item.

The proponent vide letter dt.27.04.2017 stated that after re assessing the entire area of 9.50 ha and leaving the sufficient safety barriers, considering the dwelling units, roads and so on, only there was a balance area of 5.8654 ha. So the Mining Plan was approved only for 5.8654 ha. Accordingly the proponent has submitted the Mining Plan sought by 58th SEAC held on 28th & 29th June 2016.

Details of the project as furnished by the applicant are as follows:

**BASIC INFORMATION OF QUARRY
(To be filled in by the Project Proponent)**

PART A

PROJECT DETAILS	
File No.	958 / SEIAA / EC 1 / 4434 / 15
Name /Title of the project	Building stone quarry of M/s Thattil Granites
Name and address of project proponent.	Mr. M. J. JOSE – Managing partner Thattil Granites, SMS Road, Trikkur (po) & village, Mukundapuram Taluk, Thrissur District. thattilgranites@gmail.com +91 487 2355974, +91 487 2351403 + 91 9995773243
Owner of the land	Private land
Survey No. District/Taluk/ and Village etc.	66 part, Trikkur village, Mukundapuram Taluk, Thrissur District.
Category/Sub Category and Schedule	1 a
Details of period of lease or permit with number including the beginning and expiry date of lease/permit period (Copy to be attached)	The said company is operating Building Stone quarry in Trikkur village extends over an area of 0.9105 ha. Initially this lease was granted to Mr. K. P. Joy, vide GO order No. 327/2008-09/7801/M3/2008 dated 31.08.2008. Later on this lease was transferred to M/s. Thattil Granites vide G O No. 440/2013-14/09/8117/M3/2013 dated 30.09.2013. A copy of the said GO's and the lease deed is enclosed as Annexure No. 1.
Present Status of the project	Quarry plan has been approved over an area of 5.8654 and Environment Clearance has been obtained and the said project is active.
Date & Year of starting the work of the quarry project.	September 2008
Whether the quarry is working at present or not ?	working

If stopped working since when?	Not applicable
Date of submission of Application	26.10.2015
GPS Co-ordinate	Latitude (N) 10° 27' 54.9" N to 10° 28' 07.7" Longitude(E) 76° 16' 42.2" E to 76° 16' 54.3"
Details of Authorized Signatory and address for correspondence	Mr. M. J. JOSE – Managing partner Thattil Granites, SMS Road, Trikkur (po) & village, Mukundapuram Taluk, Thrissur District. thattilgranites@gmail.com +91 487 2355974, +91 487 2351403 + 91 9995773243
LAND DETAILS	
Extent of area in hectares	5.8654 Ha
Is the property forest land/Govt. land/own land/patta land	Of the said Sy. Nos 66 pt, most of the land belongs to the proponent and part of the area in Sy. No. 66pt belongs to Mr. Josemon Varghese (1.6895 ha) and Mr. Paul P. Parakka (1.9967), both the persons has given their consent stating that they don't have any objection to carry out the quarry operation in their area / land. A copy of the consent given by them is enclosed as Annexure No. 2.
Quantity of top soil/over burden produced and managed	<p>Top soil : About 11,000 tonnes of topsoil is estimated. Topsoil is sparsely distributed. The amount of topsoil exists to the thickness is just 0.75 mts (average). However during the course of quarrying of this area, the topsoil so occurs will be removed separately and will be used for plantation purpose.</p> <p>Overburden : The waste generated a part of the waste will be utilized for leveling, filling and road repair purpose while the balance will be dumped in the area earmarked. The average waste generation is about 14,785 tonnes annually, the first three years generation of the waste will be dumped within lease area earmarked for the purpose. And the fourth and fifth year will be backfilled in the old worked out pit which is outside the lease area. Dumping will be done in a systematic and phase wise manner. The height of the dump will not exceed more than 15.0 m. terracing will be done at an interval of 5.0 mts. Toe walls and trench will be constructed all along the periphery of the dump to arrest the surface runoff during the monsoon.</p> <p>While building up, dumps are properly graded and terraced with provision of contour drainage. Terracing is always accompanied with plantation for stabilization of terraced slopes. It is always ensured that the average height of the dump does not exceed 10.0 m in each phase of dumping. Dump slopes are suitably protected from any environmental damages, providing all the required protective measures such as terracing, plantation, construction of toe walls / retention walls, garland drains and etc.,</p>
Latitude and Longitude	Latitude N 10° 27' 54.9" N to 10° 28' 07.7" Longitude E 76° 16' 42.2" E to 76° 16' 54.3"
Topography of land and elevation	The said lease occupies the north eastern part of the Thrikkur village where the hillock is trending E- W. The highest elevation is about 60 m above MSL towards north of the quarry area and the lowest elevation is 40 m above MSL towards south of the quarry.

Slope analysis	The lease area is generally sloppy from north to south. The slope is moderate to steep.
Will there be any significant land disturbance resulting in soil erosion, subsidence & natural drainage.	Since the most of the area is covered by hard massive rock, and soil is sparsely disturbed. More so this soil will be removed before the extraction and stacked separately. Hence the erosion will not arise.
Access road to the site width and condition	Asphalted road till the quarry site is made and the width of the road is 7.0 mts.
Will there be any adverse impact on the aesthetics of the proposal site	There will be an impact to the ground profile in the form of pits. However the area 5.8654 ha the impact of the aesthetics of the proposal site.
MINING DETAILS	
Minimum and Maximum height of excavation.	The top most working level is about 55 m MSL and the lowest is 15 m MSL.
Life of mine proposed.	Seven years.
Underground mining if any proposed	Not applicable
Method of Mining	Opencast method mode of operation is mechanized.
Distance from the adjacent quarry	There is an adjacent quarry towards northeast which belongs Deepthi Granites Metals.
Cluster condition if any	Not applicable
Has "No cluster certificate" submitted?	Not applicable
Distance from nearby habitation	There is no any human settlement within the quarry area, Trikkur village and Paliyar junction is the nearest human settlement which is at a distance of 0.60 kms SE and W respectively from the quarry area.
Distance from nearby forest, if applicable	There are no any sensitive area such as, forest, sanctuaries, within radius of 5.0 kms from quarry
Distance from protected area, Wildlife Sanctuary, National Park etc.	
Distance from nearby streams/rivers/National Highway and Roads	Public road know as SMS road lies toward east of the lease at a distance of 150 mts. An major public road connecting between Marathakkara to Kallur lies towards south of quarry at a distance of 460 mts. The national highway No. 47 connection between Kanyakumari – Coimbatore is at a distance of 2.4 kms which lies towards east of quarry.
Is ESA applicable? If so distance from ESA limit	Not applicable
Has approved mining plan, prepared by RQP submitted?	Mining plan prepared by RQP is approved by DMG and the same was submitted.
Capacity of production in TPA	3,23,000 tonnes.
Details of mining process	Opencast method with bench system, mode of operation is mechanized which involves drilling and blasting, excavation, loading and transportation.
DETAILS OF PROJECT COST	
Land cost	1.00 crore + 1.00 crore construction

Plant and Machinery	15.00 crore
Total Cost	17.00 crore
Financial Statement including funding source and details of insurance etc.	The Project Proponent is financially sound.
Environment Management Plan	
Air Pollution	Regular monitoring will be carried-out
Water Pollution	Regular monitoring will be carried-out
Noise	Regular monitoring will be carried-out
Solid Waste Management	Will be stored and utilized for construction purpose.
Eco-restoration	Quarry pit will be converted as a water pond.
Whether Environment Management Plan or Eco restoration Plan satisfactory?	Yes.
Does it suggest mitigation measures for each activity	yes
Is Pre-Feasibility Report (PFR) satisfactory	Yes and submitted as a part of EC document
Does it need public hearing	NO
Details of litigation and Court verdict if any	NIL
Details of public complaint, if any	NIL
Details of statutory sanction required	Submitted
If CRZ recommendation applicable?	NA
PART B	
ENVIRONMENT IMPACT ASSESSMENT AND MITIGATION MEASURES	
Details of water requirement per day in KLD	2.5 KLD
Water source/sources.	Borewell and pit water
Expected water use per day in KLD.	2.0
Details of water requirements met from water harvesting.	1.0 to 1.5 KLD
What are the impact of the proposal on the ground water?	The mining activity will not touch the ground water table.
How much of the water requirement can be met from the recycling of treated waste water? (Facilities for liquid waste treatment)	Domestic effluent will be generated and will be disposed off to septic and soak pit constructed as per CPCB norms. The discharge point would be to ground.
What is the incremental pollution load from waste water generated from the proposed activities?	NIL
How is the storm water from within the site managed?	Before onset of monsoon, drains are cut along toe of the quarry faces to divert the surface run off. Garland drain is provided at the quarry top to regulate monsoon water and direct the same to the settling ponds / quarry pit to contain

	the quarry wash off and to avoid the same joining to the adjoining surface water bodies / water courses. It also helps to avert eventual collapses and damages to the quarry faces. The pit will be fenced, such that no habitats can enter the pit. And watch and ward is provided round the clock.
IMPACT ON BIODIVERSITY AND ECO RESTORATION PROGRAMMES	
Will the project involve extensive clearing or modification of vegetation (Provide details)	Part of the quarry area is broken up, the non broken area is covered by moderate to scanty vegetation
What are the measures proposed to minimize the likely impact on vegetation (details of proposal for tree plantation/ landscaping)	Green belt development will be carried out in the safety zone all around the quarry. Rubber trees are planted all around
Is there any displacement of fauna – both terrestrial and aquatic. – If so what are the mitigation measures ? Presence of any endangered species or red listed category (in detail)	NO
IMPACT ON AIR ENVIRONMENT	
What are the mitigation measures on generation of dust, smoke and air quality	<ul style="list-style-type: none"> • Wet drilling will be followed so that the dust emission to atmosphere is minimized, • Proper blasting pattern will be followed for effective rock fragmentation and generation of minimal fine dust to open atmosphere, • Water spraying arrangement on haul road and other critical locations, • Proper maintenance of transport vehicles including HEMMs so that their emission always within the RTO norms, • Approach road shall be maintained for its dust free movement of transport trucks, • Avenue plantation all along the approach road which will act as dust arrestors, • Shall ensure that the trucks are overloaded so that spillages on the public road is avoided, <p>Regular ambient air quality monitoring shall be carried out to ensure the air pollutants are kept under permissible limits always.</p>
Details of internal traffic management of the site.	Existing road is catering to average density of traffic and that expected incremental increase in road traffic due to the proposed activities would not exceed has 13 trucks per day and would make no significant changes on the traffic load situation at quarry site.
Details of noise from traffic, machines and vibrator and mitigation measures	<ul style="list-style-type: none"> • Personnel who are exposed to critical locations in the quarry will be provided with PPEs, • Fitness of all the transport and HEMMs will be ensured, • Acoustic enclosures will be provided for DG sets,

	<ul style="list-style-type: none">• Corrective & preventive maintenance will be carried for all HEMMs so that they operate effectively,• Greenbelt will be developed, which will act as an acoustic barrier for noise transmission																														
Impact of DG sets and other equipments on noise and vibration and ambient air quality around the project site and mitigation measures	<ul style="list-style-type: none">• Acoustic enclosures will be provided for DG sets,• Fitness of all the transport and HEMMs will be ensured,																														
Air quality monitoring in detail																															
Quarrying activity contributes to pollution of air due to working heavy earth moving & Quarrying machineries. To know the impacts of quality of air the parameter such as Suspended Particulate Matter (SPM), Sulphur Dioxide (SO ₂), oxides of Nitrogen (NO _x) and Carbon monoxide (CO) monitoring is being carried out through consultant having MoEF & NABET accredited agencies. Analysis reports are submitted along with the EC document. To know the base line values within the core and buffer zone monitoring was carried out in different locations which are shown in the below table:																															
<table><tr><th>Sl. No.</th><th>Locations</th><th>Distance and direction wrt quarry</th></tr><tr><td colspan="3">CORE ZONE</td></tr><tr><td>1</td><td>Quarry area</td><td>---</td></tr><tr><td>2.</td><td>Crusher area</td><td></td></tr><tr><td colspan="3">BUFFER ZONE</td></tr><tr><td>1</td><td>Palliyara</td><td>SE – 0.60 km</td></tr><tr><td>2</td><td>Trikkur</td><td>W – 0.60 km</td></tr><tr><td>3</td><td>Ponnukkara</td><td>E - 0.90 km</td></tr><tr><td>4</td><td>Puthur</td><td>N – 2.50 km</td></tr><tr><td>5</td><td>Manali river</td><td>W – 1.00 km</td></tr></table>		Sl. No.	Locations	Distance and direction wrt quarry	CORE ZONE			1	Quarry area	---	2.	Crusher area		BUFFER ZONE			1	Palliyara	SE – 0.60 km	2	Trikkur	W – 0.60 km	3	Ponnukkara	E - 0.90 km	4	Puthur	N – 2.50 km	5	Manali river	W – 1.00 km
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ENERGY CONSERVATION																															
Details of power requirement and source of supply.	HSD is used for the Earth moving machineries on an average about 80 - 100 lts of HSD is required per day and the Power Source is required for crusher unit, workshops, office building and canteen. The required power supply of 500 KVA is demand through Kerala State Electricity Board. Apart from above a DG 1 Nos of 550 KVA each capacity is installed for backup / stand bye.																														
Details of renewable energy (non – conventional) used.	Not applicable																														
RISK MANAGEMENT																															
Are there sufficient measures proposed for risk hazards in case of emergency such as accident at the site?	Sufficient measures are taken like First Aid Box etc..																														
Are proposals for fencing around the quarry satisfactory? Storage of explosives/hazardous substance in detail Facility for solid waste management	b)YES c) Designated storage area for explosives/hazardous substance d) Solid waste are mainly topsoil and overburden which are stacked separately																														
SOCIO ECONOMIC IMPACTS																															

Will the project cause adverse effects on local communities disturbance to sacred sites or other cultural values. What are the safe guards proposed?	No adverse effect are visualised on local community, in fact, the local community are benefited by direct and indirect employment. However the around quarry fencing is done.
Will the proposal result in any changes to the demographic structure of local population. If so, provide details.	Due to this project, there may not be much changes in the demography, but for little increase in population.
Details of CSR commitment	

Sr. No	Description	Amount in INR	Remarks
1.	Contributions for marriages to poor/needly people / handicapped and etc., (Trikkur & Kallur) (Rs. 25,000/- each for eight peoples)	2,00,000/-	yearly
2.	Donations for the nearby villages (Trikkur & Kallur) for festivals and cultural programmes. (Rs 1,00,000/- each village)	2,00,000/-	yearly
3.	Medical checkup camps for the nearby villages (Trikkur & Kallur) and extending medicine facilities to locals (Rs 1,00,000/- each village)	2,00,000/-	Yearly
4.	Repairing of Public roads and Bridges	4,00,000/-	yearly
5.	Providing or funding for the construction of houses for needy / poor families (Rs. 40,000/- each for 8 peoples)	3,20,000/-	yearly
6.	Supply of school books to Trikkur and kallur government schools	2,00,000/-	yearly
7.	Providing Scholarship to the students of Trikkur and kallur government schools	1,00,000/-	yearly
8.	Construction of toilets for government schools under Swaachh Bharath at Trikkur & Kallur village	2,00,000/-	20 - 21
Total		18,20,000/-	-

Additionally, 1 percent of the annual profit shall be given to the concerned Panchayath for Biodiversity Management Committee towards eco-restoration.

What are the projects benefits in terms of employment potential?	About 25 direct employment and 200 indirect employment
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PART C

Details of NABET approved EIA Consultant engaged-Their name, address and accreditation details	METAMORPHOSIS Project Consultants Pvt. Ltd., #200, 2 nd Floor, 40 th Main BTM Layout, Bangalore 560058 QCI/NABET Accreditation serial no. NABET/EIA/1518/RA 014
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SUMMARY AND CONCLUSION

Overall justification for implementation of the project.	<ul style="list-style-type: none"> There will be no environmental impact from the project since the scale of operation is very minimum. There will be no major environmental impact due to proposed building stone quarrying. This operation doesn't need relocation of any habitats. The project provides employment opportunities to the people of surrounding area, in turn helps in improving the economic status of the present population.
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	<ul style="list-style-type: none"> • Provides raw material for the construction activities and other related activities. • Also there are many similar quarry operations working in the vicinity. <p>Considering the overwhelming aspects we requested to accord Environmental Clearance for this project.</p>
Explanation of how adverse impacts have been mitigated.	--

3. The proposal was again placed in the 75th meeting of SEAC held on 29th & 30th June 2017. The Committee appraised the proposal based on the Mining Plan, Pre-feasibility Report and all other documents submitted along with Form 1 and decided to defer the item for field inspection and submission of a realistic CSR commitment.

Accordingly the site visit was conducted by the Sub Committee consisting of Dr. E A Jayson & Dr. K. G. Padmakumar on 01. 09.2017 and submitted the report;

4. The proposal was again considered in the 79th meeting of SEAC held on 25th and 26th September 2017. Based on the Mining plan, Form 1, Pre-feasibility Report, all other documents submitted with the proposal and the field visit report, the committee decided to **Recommend for issuance of EC** subject to general conditions in addition to the following specific condition.

- 1) *The proponent shall ensure that the stipulated minimum distance of 100 m is maintained from the quarry to the residential area.*
- 2) *If any rare, endemic and threatened plant species are noticed, they shall be properly protected insitu or transplanted to a suitable site inside the lease area.*

Considering the fact that the annual capacity of the quarry is 3,13,000 tonnes per annum, SEIAA may appropriately fix an amount for CSR activities.

5. Authority considered the proposal in its 75th meeting held on 28th October 2017. Authority accepted the recommendation of SEAC and decided to issue EC subject to general conditions in addition to the following specific conditions.

1. *The proponent shall ensure that the stipulated minimum distance of 100 m is maintained from the quarry to the residential area. A notarised affidavit to this effect should be given.*
2. *Proponent should fix sign boards at different location to ensure safety.*
3. *If any rare, endemic and threatened plant species are noticed, they shall be properly protected insitu or transplanted to a suitable site inside the lease area.*

2% of the total project cost should be set apart for CSR activities in consultation with the local panchayat and details should be forwarded to SEIAA. A notarised affidavit for the commitment of CSR activities and also agreeing to all the general and specific conditions should be submitted before the issuance of EC.

6. As decided in the 77th meeting of SEIAA the proponent agreed to set apart Rs.10 lakhs (non-recurring) and 10 lakhs (recurring) per annum for CSR activities for the welfare of the local community. The proponent has submitted the affidavit vide reference 6th cited satisfying all the general and specific conditions and also agreeing the CSR component.

7. Environmental Clearance as per the EIA Notification 2006 is hereby accorded for the proposed quarry project of Sri.M. J. Jose, Managing Partner of M/s. Thattil Granites, SMS Road, Trikkur (PO) & Village, Mukundapuram Taluk, Thrissur District - 680 306, in Sy. No. 66 (Part) of Trikkur Village, Mukundapuram Taluk, Thrissur District, Kerala for an area of 5.8654 ha, subject to the specific conditions as in para 5 above, all the environmental impact mitigation and management measures undertaken by the project proponent in the Form I, EMP, PFR and Mining plan submitted to SEIAA. The assurances and clarifications given by the proponent will be deemed to be a part of these proceedings as if incorporated herein. Also the general conditions for projects stipulated for mining (items 1 to 61), appended hereto will be applicable and have to be strictly adhered to.

8. The clearance issued will also be subject to full and effective implementation of all the undertakings given in the application form, mitigation measures as assured in the Environment Management Plan and the mining features including progressive mine closure plan as submitted with the application and relied on for grant of this clearance. The above undertakings and the conditions and the undertakings in Chapter 2 (Mining), Chapter 3 (Mines Drainage), Chapter 4 (Stacking of Mineral rejects and Disposal of waste), Chapter 8 (Mine Closure Plan) of the Mining Plan as submitted will be deemed to be part of this proceedings as conditions as undertaken by the proponent, as if incorporated herein.

9. Validity of the Environmental Clearance will be five years from the date of this clearance, subject to inspection by SEIAA on annual basis and compliance of the conditions, subject to earlier review of E.C in case of violation or non-compliance of conditions or genuine complaints from residents within the security area of the quarry.

10. Compliance of the conditions herein will be monitored by the State Environment Impact Assessment Authority or its authorised offices and also by the regional office of the Ministry of Environment & Forests, Govt. of India, Bangalore.

- i. Necessary assistance for entry and inspection should be provided by the project proponent and those who are engaged or entrusted by him to the staff for inspection or monitoring.
- ii. Instances of violation if any shall be reported to the District Collector, Thrissur.
- iii. The given address for correspondence with the authorised signatory of the project is Sri.M. J. Jose, Managing Partner of M/s. Thattil Granites, SMS Road, Trikkur (PO) & Village, Mukundapuram Taluk, Thrissur District - 680 306.

Sd/-

P.H.KURIAN.I.A.S
Member Secretary (SEIAA)

To,

Sri.M. J. Jose,
Managing Partner of M/s. Thattil Granites,
SMS Road, Trikkur (PO) & Village,
Mukundapuram Taluk, Thrissur- 680 306

Copy to,

1. MoEF Regional Office, Southern Zone, Kendriya Sadan, 4th Floor, E&F Wing, II Block, Koramangala, Bangalore-560034.
2. The Additional Chief Secretary to Government, Environment Department, Government of Kerala.
3. District Collector, Thrissur
4. Director, Mining & Geology, Thiruvananthapuram -4.
5. The Member Secretary, Kerala State Pollution Control Board
6. District Geologist, Thrissur
7. Tahsildhar, Mukundapuram Taluk, Thrissur
8. Website.
9. S/f
10. O/c

Forwarded/By Order



Administrator, SEIAA

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY KERALA

GENERAL CONDITIONS (for mining projects)

1. Rain Water Harvesting facility should be installed as per the prevailing provisions of KMBR / KPBR, unless otherwise specified.
2. Environment Monitoring Cell as agreed under the affidavit filed by the proponent should be formed and made functional.
3. Suitable avenue trees should be planted along either side of the tarred road and open parking areas, if any, including of approach road and internal roads.
4. Maximum possible solar energy generation and utilization shall be ensured as an essential part of the project.
5. Sprinklers shall be installed and used in the project site to contain dust emissions.
6. Eco-restoration including the mine closure plan shall be done at the own cost of the project proponent.
7. At least 10 percent out of the total excavated pit area should be retained as water storage areas and the remaining area should be reclaimed with stacked dumping and overburden and planted with indigenous plant species that are eco-friendly, if no other specific condition on reclamation of pit is stipulated in the E.C.
8. Corporate Social Responsibility (CSR) agreed upon by the proponent should be implemented
9. The lease area shall be fenced off with barbed wires to a minimum height of 4ft around, before starting of mining. All the boundary indicators (boards, stores, markings, etc) shall be protected at all times and shall be conspicuous.
10. Warning alarms indicating the time of blasting (to be done at specific timings) has to be arranged as per stipulations of Explosive Department.
11. Control measures on noise and vibration prescribed by KSPCB should be implemented.
12. Quarrying activities should be limited to day time as per KSPCB guidelines/specific conditions.
13. Blasting should be done in a controlled manner as specified by the regulations of Explosives Department or any other concerned agency.
14. A licensed person should supervise/ control the blasting operations.
15. Access roads to the quarry shall be tarred to contain dust emissions that may arise during transportation of materials.
16. Overburden materials should be managed within the site and used for reclamation of mine pit as per mine closure plan / specific conditions.
17. Height of benches should not exceed 5 m, and width should not be less than 5 m, if there is no mention is the mining plan/specific condition.
18. Mats to reduce fly rock blast to a maximum of 10 PPV should be provided.
19. Maximum depth of mining from general ground level at site shall not exceed 10m
20. No mining operations should be carried out at places having a slope greater than 45°.
21. Acoustic enclosures should have been provided to reduce sound amplifications in addition to the provisions of green belt and hollow brick envelop for crushers so that the noise level is kept within prescribed standards given by CPCB/KSPCB.
22. The workers on the site should be provided with the required protective equipment such as ear muffs, helmet, etc.
23. Garland drains with clarifiers to be provided in the lower slopes around the core area to channelize storm water.
24. The transportation of minerals should be done in covered trucks to contain dust emissions.
25. The proponent should plant trees at least 5 times of the loss that has been occurred while clearing the land for the project.
26. Disposal of spent oil from diesel engines should be as specified under relevant Rules/ Regulations.
27. Explosives should be stored in magazines in isolated place specified and approved by the Explosives Department.
28. A minimum buffer distance of 100m from the boundary of the quarry to the nearest dwelling unit or other structures, not being any facility for mining shall be provided.
29. 100 m buffer distance should be maintained from forest boundaries.

30. Consent from Kerala State Pollution Control Board under Water and Air Act(s) should be obtained before initiating mining activity.
31. All other statutory clearances should be obtained, as applicable, by project proponents from the respective competent authorities including that for blasting and storage of explosives.
32. In the case of any change(s) in the scope of the project, extent quantity, process of mining technology involved or in any way affecting the environmental parameters/impacts as assessed, based on which only the E.C is issued, the project would require a fresh appraisal by this Authority, for which the proponents shall apply and get the approval of this Authority.
33. The Authority reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environment (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.
34. The stipulations by Statutory Authorities under different Acts and Notifications should be complied with, including the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and control of Pollution) act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006.
35. The project proponent should advertise in at least two local newspapers widely circulated in the region, one of which (both the advertisement and the newspaper) shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the State Environment Impact Assessment Authority (SEIAA) office and may also be seen on the website of the Authority at www.seiaakerala.org. The advertisement should be made within 10 days from the date of receipt of the Clearance letter and a copy of the same signed in all pages should be forwarded to the office of this Authority as confirmation.
36. A copy of the clearance letter shall be sent by the proponent to concerned Grama Panchayat/ District Panchayat/ Municipality/ Corporation/ Urban Local Body and also to the Local NGO, if any, from whom suggestions / representations, if any, were received while processing the proposal. The Environmental Clearance shall also be put on the website of the company by the proponent.
37. The proponent shall submit half yearly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well as by e-mail) and upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the respective Regional Office of MoEF, Govt. of India and also to the State Environment Impact Assessment Authority (SEIAA) office.
38. The details of Environmental Clearance should be prominently displayed in a metallic board of 3 ft x 3 ft with green background and yellow letters of Times New Roman font of size of not less than 40. Sign board with extent of lease area and boundaries shall be depicted at the entrance of the quarry, visible to the public
39. The proponent should provide notarized affidavit (indicating the number and date of Environmental Clearance proceedings) that all the conditions stipulated in the EC shall be scrupulously followed.
40. No change in mining technology and scope of working should be made without prior approval of the SEIAA, No further expansion or modifications in the mine shall be carried out without prior approval of the SEIAA, as applicable.
41. The Project proponent shall ensure that no natural water course and/or water resources shall be obstructed due to any mining operations. Necessary safeguard measures to protect the first order streams, if any, originating from the mine lease shall be taken.
42. Monitoring of Ambient Air Quality to be carried out based on the Notification 2009, as amended from time to time by the Central Pollution Control Board. Water sprinkling should be increased at places loading and unloading points & transfer point to reduce fugitive emissions.
43. The top soil, if any, shall temporarily be stored at earmarked site(s) only for the topsoil shall be used for land reclamation and plantation. The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only. The maximum height of the dumps shall not exceed 8m and width 20m and overall slope of the dumps shall be maintained to 45°. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. The entire excavated area shall be backfilled. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining.

44. Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and OB dumps to prevent run off of water and flow of sediments directly into the river and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.
45. Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM₁₀ and PM_{2.5} such as haul Road, loading and unloading points and transfer points – it shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
46. Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.
47. Measures should be taken for control of noise levels below 85 dBA in the work environment.
48. A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.
49. The funds earmarked for environmental protection measures and CSR activate should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the State Environment Impact Assessment Authority (SEIAA) office.
50. The Regional Office of MOEF & CC located at Bangalore 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.
51. 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.
52. Concealing the factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
53. The SEIAA may revoke or suspend the order, for non implementation of any of the specific or thisimplementation of any of the above conditions is not satisfactory. The SEIAA reserves the right to alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
54. The above conditions shall prevail notwithstanding anything to the contrary, in consistent, or simplified, contained in any other permit, license on consent given by any other authority for the same project.
55. This order is valid for a period of 5 years or the expiry date of mine lease period issued by the Government of Kerala, whichever is earlier.
56. The Environmental Clearance will be subject to the final order of the courts in any pending litigation related to the land or project, in any court of law.
57. The mining operation shall be restricted to above ground water table and it should not intersect ground water table.
58. All vehicles used for transportation and within the mines shall have 'PUC' certificate from authorized pollution taking centre. Washing of all vehicles shall be inside the lease area'
59. Project proponent should obtain necessary prior permission of the competent authorities for drawal of requisite quantity of surface water and ground water for the project.
60. Regular monitoring of flow rates and water quality upstream and downstream of the springs and perennial nallahs flowing in and around the mine lease area shall be carried out and reported in the six monthly reports to SEIAA.
61. Occupational health surveillance program of the workers should be under taken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.



For Member Secretary, SEIAA Kerala

