



***Proceedings of the State Environment Impact Assessment Authority
Kerala***

*Present: Prof. (Dr.) K.P. Joy, Chairman, Dr. J. Subhashini, Member &
Sri. V.S.Senthil I.A.S Member Secretary*

Sub: SEIAA - Environmental clearance for the quarry project in Sy. No. 120/1-23 at Erumely South Village Erumely Panchayath, Kanjirappally Taluk, Kottayam District, Kerala by Mr.K.V.Abraham, M/s Thomsun Sands & Metals Pvt. Ltd – E.C Granted-Orders issued

State Environment Impact Assessment Authority, Kerala

No. 963/SEIAA/EC4/4473/2015

dated, Thiruvananthapuram 08.02.2017

- Ref:**
1. Application dated 27.10.2015 from Sri. K.V.Abraham, M/s Thomsun Sands & Metals Pvt. Ltd
 2. Minutes of the 58th meeting of SEAC held on 28/29-06-2016
 3. Minutes of the 62nd meeting of SEAC held on 6/7-09-2016
 4. Minutes of the 60th meeting of SEIAA held on 27-10-2016

ENVIRONMENTAL CLEARANCE NO.15/2017

Mr.K.V.Abraham, Managing Partner, Thomsun Estates, Chempakapara, Erumely P.O, Kottayam District -686 509 vide his application received on 27/10/2015, has sought Environmental Clearance under EIA Notification, 2006 for the quarry project in Sy. No.120/1-23 at Erumely South Village, Erumely Panchayath, Kanjirappally Taluk, Kottayam District, Kerala for an area of 4.23 hectares. The project comes under Category B, Activity 1(a), (i) as per the Schedule of EIA Notification 2006 (since it is below 50 hectares) 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 the O.M. No. J-13012/12/2013-IA-II (I) dt. 24.12.2013 of Ministry of Environment and Forests, since the area of the project is below 25 hectares.

The proposed project site falls within Latitude 9°28'22.26"N to 9°28'31.19"N and Longitude 76°51'12.47"E to 76°51'22.71"E. The land use classification as per revenue records is private own land. The lease area consists of 4.23 hectares. The current proposal is

for the new building stone quarry project. The proposed project is for quarrying of 1, 50,000MTA of building stone. The Other details are as follows;

I. Project details				
1.	File No.	963 / SEIAA / EC4 / 4473 / 2015		
2.	Name /Title of the project	M/s Thomsun Sands & Metals		
3.	Name and address of project proponent.	Mr. K.V. Abraham, Managing Partner, M/s Thomsun Sands & Metals, Thomsun Estates, Chempakapara, Erumely P.O., Kottayam District, Kerala-686509		
4.	Owner of the land	Private Own Land		
5.	Survey No. District/Taluk/ and Village etc.	Survey Nos. 120/1-23, Erumely South Village, Erumely Panchayat, Kanjirappally Taluk, Kottayam District, Kerala		
6.	Nature of the proposal – lease or permit with evidence.	New Quarry Project		
7.	Date of submission of Application	27-10-2015		
8.	Brief description of the project.	Quarry project with an area of 4.23 hectares. & Production capacity 1,50,000.MTA		
9.	Details of Authorized Signatory and address for correspondence	M/s Thomsun Sands & Metals, Mr. K.V. Abraham, Managing Partner Thomsun Estates, Chempakapara, Erumely P.O., Kottayam District, Kerala-686509		
II. Land Details				
10.	a) Extent of area in hectares	4.23 hectares		
11.	b) Is the property forest land/Govt. land/own land/patta land	Private own land		
12.	c) Quantity of top soil/over burden produced and managed	Topsoil :15,015 cu. m. Overburden : 5,460 cu. m		
13.	d) Latitude and Longitude	Latitude (N)	09°28'22.26"N to 09°28'31.19"N	
		Longitude (E)	76°51'12.47"E to 76°51'22.71"E	
14.	e) Topography of land and elevation	Part of the proposed land is exposed rock and there is no vegetation in that area. Some part of the proposed land is covered with native trees, shrubs, herbs, grass, climbers, bushes etc. The highest elevation of the lease area is 195 m. MSL and lowest is 130 m MSL. As the proposed area is low height hillocks, the drainage of the lease area is towards North-West. No habitants are located in the lease area		
15.	f) Slope analysis	Slope: towards North-West		
16.	g) Will there be any significant land disturbance	No		

	resulting in soil erosion, subsidence & natural drainage.	
17.	h) Access road to the site width and condition	8m tarred road, SW
18.	i) Will there be any adverse impact on the aesthetics of the proposal site	No
III. Mining details		
19.	a) Minimum and Maximum height of excavation.	135 m MSL and 195 m MSL
20.	b) Life of mine proposed.	About 17 years
21.	c) Underground mining if any proposed	There will be no underground mining activities.
22.	d) Method of Mining	Open cast semi-mechanized method of mining.
23.	e) Distance from the adjacent quarry	There is no quarry in operating within 500m from the quarry.
24.	f) Cluster condition if any	No. There is no quarry in operating within 500m from the quarry.
25.	g) Has "No cluster certificate" submitted?	Yes. Cluster certificate submitted along with our application Page No. 190
26.	h) Distance from nearby habitation	No human habitation within 500m radius.
27.	i) Distance from nearby forest, if applicable	1. Mangamaruthy Reserve Forests, about 8 km. SW 2. Ponthenpuzha Forest, 8 km., W
28.	j) Distance from protected area, Wildlife Sanctuary, National Park etc.	None within the study area.
29.	k) Distance from nearby streams/rivers/National Highway and Roads	Water bodies :- 1. Manimala River, about 2 km., NW 2. Korattypuzha, 5 km., E 3. Pampa River, 7.5 km., SE Highway :- SH-44 5km. W.
30.	l) Is ESA applicable? If so distance from ESA limit	Not falling in ESA
31.	m) Has approved	Yes. Submitted along with the application.

	mining plan, prepared by RQP submitted?	
32.	n) Capacity of production in TPA	1,50,000 TPA
33.	o) Details of mining process	The mining will be done by open cast semi-mechanized method of mining. The bench height and width will be maintained 5 m. Excavated material is transported to the crusher unit proposed to be installed within the complex for further processing. The ultimate depth of the mine workings is estimated to reach upto 130 m. MSL
IV. Details of Project cost		
34.	a) Land cost	Rs. 2.50 Crores.
35.	b) Plant and Machinery	
36.	c) Total Cost	
37.	V. Financial Statement including funding source and details of insurance etc.	Insurance: Insurance to the quarry workers would be provided through insurance company Source of funding = Own source & Bank loan
38.	Management Plan	<p>Air Pollution</p> <p>Mining activities will generate certain quantities of dust during drilling, blasting, loading and transportation operations. The following measures will be taken to mitigate the fugitive dust from different operations.</p> <ul style="list-style-type: none"> ➤ Laying of haul road as per the standards, black topping of permanent haul road and service road to avoid or eliminate air – borne dust. ➤ To avoid the dust generation from the drilling operations, wet drilling method will be adopted. ➤ Drill machines will be equipped with dust collectors. ➤ Use of appropriate explosives for blasting and avoiding overcharging of blast holes. ➤ Controlled blasting techniques will be adopted. ➤ Watering of haul road and other road at regular intervals. ➤ Provision of dust filters/ mask to workers working at highly dust prone and affected areas. ➤ Provision of green belt all along the periphery of the lease area. ➤ Periodical monitoring of ambient air quality in and around the lease area. <p>The extracted mineral will be transported from the quarry to the end user by adopting following measures so as to minimize dust emissions.</p> <ul style="list-style-type: none"> ➤ In case of long transportation the trucks after loading will be covered with tarpaulin sheets.

			<p>➤ Speed of the vehicles will be maintained within the prescribed limits.</p> <p>Trucks will not be over loaded and will be maintained to the body level.</p>	
		Water Pollution	Provision of a storm water collection pond of total capacity about 8,000 KL. The water requirement for sprinkling on sources of dust emission, on roads, landscaping etc. can be met from the stored rainwater in the pond.	
		Noise	<p>The major noise generating source from the proposed activity is working machinery, drilling, blasting and plying of vehicles. The following control measures are to be undertaken to bring down the noise levels:-</p> <ul style="list-style-type: none"> ➤ Proper maintenance of machinery, equipments and improvement on design of machines. ➤ Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas. ➤ Creation of wide green belt of dense foliage between mine areas and residential colonies. ➤ related health problems ➤ Proper training to personnel to create awareness about adverse noise level effects. ➤ Planned noise monitoring at suitable locations in the plant and outside location for proper effective remedial actions. 	
		Solid Waste Management	<p>Topsoil Management</p> <p>A total estimated quantity of 15,015 cu. m. of topsoil is proposed to be removed during the mining operations. The topsoil excavated from the quarry will be dumped separately at pre-determined place and subsequently will be utilized in spreading over reclaimed areas for plantation. Precautions will be taken to limit the height of the topsoil dump to 5 to 6 meters in order to preserve its fertility and shelf life. It will be suitably protected from soil erosion and infertility by planting fodder grass and leguminous plants during temporary storage.</p> <p>Overburden Management</p> <p>About 5,460 cu. m of overburden will be generated throughout the mine life. This waste will be utilized within the pit for lying of haul roads. At the end use, OB can be reutilized as soil base for plantation</p>	
		Eco-restoration	The year wise programme of eco-restoration for the life of mine, about 2,750 trees will be planted in an area of 2.7581 ha. The main aim of the green belt development is to restore the eco-system to its original form to a maximum extent by designing the green cover with the same native species.	
39.	VI. Whether Environment Management Plan or Eco	Yes		

	restoration Plan satisfactory?	
40.	VII. Does it suggest mitigation measures for each activity	Yes
41.	VIII. If Pre-Feasibility Report (PFR) satisfactory	Yes.
42.	IX. Does it need public hearing	No Public Hearing required because of the project comes under below 25 ha.
43.	X. Details of litigation and Court verdict if any	No litigation is pending against the lease area/ applicant of the proposed lease area in any court of law.
44.	XI. Details of public complaint, if any	Nil
45.	XII. Details of statutory sanction required	a. Mine Lease b. NOC from Pollution Control Board c. Environment Clearance from SEIAA / MoEF d. NOC from Explosive Dept.
46.	XIII. If CRZ recommendation applicable?	Not Applicable
PART B		
Environment Impact Assessment and Mitigation Measures		
Impact on water		
47.	a) Details of water requirement per day in KLD	The total water requirement is about 15 KLD in which 1 KLD is for domestic which would be sourced from open well, 12 KLD for dust suppression system in mine & in Ancillary Unit and 2 KLD for plantation purposes and will be sourced from storm water pond.
48.	b) Water source/sources.	Open Well and Storm water pond.
49.	c) Expected water use per day in KLD.	15KLD
50.	d) Details of water requirements met from water harvesting.	It is proposed to construct a storm water collection pond and de-siltation unit in the lowest contour of the plot. The water requirement for sprinkling on sources of dust emission, roads and for landscaping purposes can be met from the stored rain water pond and thereby conserve the fresh water.

51.	e) What are the impact of the proposal on the ground water?	The source of water for the project are :- Stored Rain water (Pond), Wells. The use of ground water (standby arrangement) only based on the permissible yield from the large open wells. Thereby no impact to the ground water.
52.	f) How much of the water requirement can be met from the recycling of treated waste water? (Facilities for liquid waste treatment)	Not applicable as the project is quarry Project
53.	g) What is the incremental pollution load from waste water generated from the proposed activities?	Not applicable as the project is quarry Project
54.	h) How is the storm water from within the site managed?	It is proposed to construct a storm water collection pond and de-siltation unit in the lowest contour of the plot.
Impact on Biodiversity and Eco restoration Programmes		
55.	a) Will the project involve extensive clearing	Yes. The proposed quarry has native trees, climbers, grass, shrubs, herbs etc. which will be clear from the site.

	or modifica tion of vegetatio n (Provide details)	
56.	b) What are the measures proposed to minimize the likely impact on vegetation (details of proposal for tree plantation/ landscaping)	<p>It is proposed to develop green belt to 90 % which includes areas like along mine lease boundary (7.5 m width), all along the periphery and reclaimed area.</p> <p>Grass and bushes will be planted in areas prone to erosion especially at the foot of the hill. Other areas will be fertilized and planted with local species. The characteristics of this vegetation will resemble that of the natural environment except for the early growth, which may be a protective cover crop of non-seeding annuals</p>
57.	<p>c) Is there any displacement of fauna – both terrestrial and aquatic. – If so what are the mitigation measures ?</p> <p>d) Presence of any endangered species or red listed category (in detail)</p>	<p>No</p> <p>No.</p>
Impact on Air Environment		
58.	a) What are the	Already mentioned in above (Item No. 38)

	mitigation measures on generation of dust, smoke and air quality	
59.	b) Details of internal traffic management of the site.	N.A.
60.	c) Details of noise from traffic, machines and vibrator and mitigation measures	Already mentioned in above (Item No. 38)
61.	d) Impact of DG sets and other equipments on noise and vibration and ambient air quality around the project site and mitigation measures	Already mentioned in above (Item No. 38)
62.	e) Air quality monitoring in	Yes, air quality monitoring carried out from an approved laboratory at site and report of the same is already submitted.

	detail	
Energy Conservation		
63.	a) Details of power requirement and source of supply.	The total power requirement will be 75 kW for compressors which will be operated by Diesel Engine.
64.	b) Details of renewable energy (non – conventional) used.	The project proponent proposed to have a solar power plant to meet the energy requirements of the site office & labour quarters.
Risk Management		
65.	a) Are there sufficient measures proposed for risk hazards in case of emergency such as accident at the site?	<ul style="list-style-type: none"> • Proper barricading and monitoring of the water stored area would be taken up to prevent accidents. • Well equipped medical / hospital facilities would be available round the clock for attending emergency arising out of accidents. • All working personnel would be medically examined at least once in every year and at the end of his term of employment.
66.	b) Are proposals for fencing around the quarry satisfactory?	Yes
	c) Storage of explosives/hazardous substance in detail	Proper and safe storage of explosives in approved and Licensed Magazine.
	d) Facility for solid waste management	<p>Topsoil Management A total estimated quantity of 15,015 cu. m. of topsoil is proposed to be removed during the mining operations. The topsoil excavated from the quarry will be dumped separately at pre-determined place and subsequently will be utilized in spreading over reclaimed areas for plantation. Precautions will be taken to limit the height of the topsoil dump to 5 to 6 meters in order to preserve its fertility and shelf life. It will be suitably protected from soil erosion and infertility by planting fodder grass and leguminous plants during temporary storage.</p> <p>Overburden Management About 5,460 cu. m of overburden will be generated throughout the mine life. This waste will be utilized within the pit for lying of haul roads. At the end use, OB can be reutilized as soil base for plantation</p>
Socio Economic Impacts		
67.	a) Will the project cause adverse effects on local communities disturbance to	No.

	sacred sites or other cultural values. What are the safe guards proposed?	
68.	b) Will the proposal result in any changes to the demographic structure of local population. If so, provide details.	No. Part of proposed land is covered with native trees, shrubs, herbs, grass, climbers, bushes etc. it should be removed.
69.	c) CSR components suggested	As a part of Corporate Social Responsibility, it is proposed to spend Rs 9 lakhs (non-recurring) and 13 lakhs (recurring) per year for a period of next 5 years for the welfare of the local community
70.	d) What are the projects benefits in terms of employment potential?	26 people are directly and indirectly working this quarry
PART C		
71.	Details of NABET approved EIA Consultant engaged- Their name, address and accreditation details	M/s Environmental Engineers & Consultants Pvt. Ltd. (MoEF&CC list of Accredited Consultant Organization) <i>Head Office :-</i> A1-198, JanakPuri, New Delhi. <i>Branch Office:-</i> C-306, Kanchanjunga Apartments, Palarivattom P.O., Kochi, Kerala.
Summary and Conclusion		
72.	a) Overall justification for implementation of the project.	The proposed project is a New Quarry project with an area of 4.23 hectares. & Production capacity 1,50,000 MTA
73.	b) Explanation of how adverse impact have been mitigated.	No., there will be no adverse impacts envisaged on the aesthetics of the project site.

2. The proposal was considered in the 58th meeting of SEAC held on 28th & 29th June, 2016. The minutes of the said meeting are as follows; Further to the intimation of SEAC, the proponent along with the RQP was present in the meeting and RQP made a power point presentation of the salient features of the project. The committee appraised the proposal based on the mining plan, pre-feasibility report and all other documents submitted along with the Form I application and decided to **defer** the item for site visit.

Field visit to the quarry project site of M/S Thomsun Sands and Metals, Erumely Village, Kanjirappaly Taluk, Kottayam district, Kerala was carried out on 30.08.2016 by Sri. John Mathai, Member, SEAC along with Dr. K. Sreedharan from DoECC. The representatives of the proponent were present at the site at the time of site visit.

The project is located at about 1.5 km south-east of Erumeli centre. This quarry lease area form part of a hillock exposing hard rock falling entirely within the land of Thomsun Estates. The approach road is through the unsurfaced estate road. Boundary pillars of this plot are erected and numbered displaying GPS values. In the area proposed for quarry is an elevated ridge with overall slope to NW. This is an uncultivated land that exposes hard rock with few patches of OB and top soil of variable thickness. Rubber plantation is the dominant landuse all around. The storm water flows as sheet flow reaching Erumelitodu located on the western side. Dwelling units are not seen within 100 m. Other quarries are not seen within 500 m.

The quarry may be recommended for EC after considering the following points:-

- 1) The entire area proposed for quarry should be fenced all around.*
- 2) The limited top soil and OB need proper storage area on the lower part and provided with protective walls.*
- 3) The approach road needs widening and surfacing even though it is located within the estate.*
- 4) The limited patch of natural vegetation seen in the upper part adjacent to the proposed lease area should be preserved as such.*
- 5) A small plot should be set apart for the rehabilitation of rare plants seen in the area.*
- 6) The entire quarry should be provided with catch water drain all around. The storm water from the upper slopes to be channelized into the drain and clarified before it is let out.*
- 7) A RWH structure should be created for the storage of rain water.*
- 8) The area planned for crusher is located in the valley. The water draining out through this area should also be clarified before it is let out.*
- 9) Details of CSR to be provided as promised in the SEAC meeting.*

3. The proposal along with field visit report was again placed in the 62nd SEAC meeting held on 6th & 7th September 2016. The Committee after examining the mining plan, prefeasibility report, field inspection report by Sri. John Mathai and all other documents submitted, decided to Recommend for issuance of EC subject to general conditions along with the following specific conditions.

- 1) Should be fenced all around.
- 2) The approach road needs widening and surfacing even though it is located within the estate.
- 3) The limited patch of natural vegetation seen in the upper part adjacent to the proposed lease area should be preserved as such.
- 4) A small plot should be set apart for the rehabilitation of rare plants seen in the area.
- 5) The entire quarry should be provided with catch water drain. The storm water from the upper slopes to be channelized into the drain and clarified before it is let out.
- 6) A RWH structure should be created for the storage of rain water.

The proponent agreed to set apart Rs 9 lakhs (non-recurring) and 13 lakhs (recurring) per year for a period of next 5 years for the welfare of the local community. The proponent also agreed to spend this amount in consultation with the local Panchayath.

4. The proposal was considered by the Authority in its 60th meeting held on 27.10.2016. The Authority resolved to issue Environmental Clearance on condition that quarrying should be started only after fulfilling the pre mining specific conditions No. 1, 2 and 4. An affidavit should be given for this.

5. The Proponent submitted the affidavits stating that the premining conditions No.1, 2 & 4 have been fulfilled before starting with mining. Environmental clearance as per the EIA notification 2006 is hereby accorded for the proposed Quarry project of Mr.K.V.Abraham, M/s Thomsun Sands & Metals Pvt. Ltd, Managing Partner, Thomsun Estates, Chempakapara, Erumely P.O, Kottayam District -686 509 in Survey No. 120/1-23 at Erumely South Village, Erumely Panchayath, Kanjirappally Taluk, Kottayam District, Kerala for an area of 4.23 hectares, subject to the specific conditions as recommended by SEAC in para 3 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, appended hereto will be applicable and have to be strictly adhered to.

6. 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 conditions and the undertakings subject to all the mining features, Environmental Management Plans as undertaken in the Mining Plan and EMP submitted to SEIAA will be deemed to be part of this proceedings as conditions as undertaken by the proponent, as if incorporated herein.

7. 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.

8. 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,

Kottayam to take legal action under the Environment (Protection) Act 1986.

- iii. The given address for correspondence with the authorised signatory of the project is Mr.K.V.Abraham, M/s Thomsun Sands & Metals Pvt. Ltd, Managing Partner, Thomsun Estates, Chempakapara, Erumely P.O, Kottayam District -686 509.

Sd/-

V.S.SENTHIL.I.A.S,
Member Secretary (SEIAA)

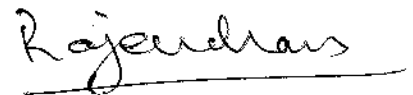
To,

Mr.K.V.Abraham,
M/s Thomsun Sands & Metals Pvt. Ltd,
Managing Partner, Thomsun Estates,
Chempakapara, Erumely P.O,
Kottayam District -686 509

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. Director, Mining & Geology, Thiruvananthapuram -4.
4. District Collector, Kottayam
5. Secretary, Erumely Grama Panchayat, Erumely P.O, Kanjirapally, Kottayam - 686 509
6. Chairman, SEIAA.
7. Website
8. S/f
9. 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 100 m 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 proponent 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 this implementation 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 or 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.



Rajendran

For Member Secretary, SEIAA Kerala

