

# Proceedings of the State Environment Impact Assessment Authority Kerala

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

Sub: SEIAA- Environmental clearance for the quarry project in Sy.No. 567/1-2, 567/2B2, 568/1-1, 568/2-2, 569/1-3, 569/1-5, 567/2A, 567/2B1, Thirumarady Village & Panchayat, Muvattupuzha Taluk, Ernakulam District, Kerala by Sri. Nizamudheen K.S. for the quarry project -Granted- Orders issued.

## STATE ENVIRONMENTAL IMPACT ASSESSMENT AUTHORITY

No. 538/SEIAA/EC3/3881/2014

dated, Thiruvananthapuram 1.06.2016

- Read:- 1. Application dated 13.08.20154 submitted by Nizamudheen K.S., Kunnathu (H), Peringala P.O., Pallikkara, Ernakulam District District-683565
  - 2. Minutes of the 45<sup>th</sup> meeting of SEAC held on 11/12 -09-2015.
  - 3. Minutes of the 53<sup>rd</sup> meeting of SEAC held on 25/26-02-2016.
  - 4. Minutes of the 52<sup>nd</sup> meeting of SEIAA held on 29-04-2016.

#### Environmental Clearance No. \$2 /2016.

Sri. Nizamudheen K.S., vide his application received on 13.08.2015, has sought Environmental Clearance under EIA Notification, 2006 for the Proposed Expansion of Building Stone Quarry in survey No. 567/1-2, 567/2B2, 568/1-1, 568/2-2, 569/1-3, 569/1-5, 567/2A, 567/2B1, Thirumarady Village &Panchayat, Muvattupuzha Taluk, Ernakulam District, Kerala for an area of 3.9662 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 18<sup>th</sup> 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.

# **Basic information**

Name of the Project	Quarry project of Mr. Nizamudheen K.S.
Survey Numbers	Survey No. 567/1-2, 567/2B2, 568/1-1, 568/2-2, 569/1-3, 569/1-5,
Survey Numbers	567/2A, 567/2B1
Village	Thirumarady
Tehsil	Muvattupuzha
District	Ernakulam
Extent of land in	3.9662 hectares
hectors	
Is the property forest	None within the area
land/Govt. land/ own	
land	
Latitude	09°55'28.50" to 09°55,21.57"
Longitude	76°33'45.62" to 76°33'34.34"
Distance of mining area	182 m., E
from nearest human	
settlement	
Proposed production	1,60,000 MTA
capacity	
Expected life of mine	12 years
Expected cost of the	Rs. 2.25 Crores
project	
Interlinked project (if	No, the quarry is interlinked with a crusher unit which is located
any)	outside the complex.
Whether CRZ is	Not Applicable
applicable	
Status of	Not Applicable
litigation/complaint/cas	
es	
Permanent or temporary	The land use classification as per revenue records is rocky land with
change on land use,	private land. The mining activity will have localized impact and
land cover or	create physical change in the existing environment due to the change
topography	in the existing land use. At the end of life of mine, the excavated pit
	will be backfilled and reclaimed and rehabilitated by plantation
	leaving no void.
Topography of land and	The physiography of the surrounding of the lease area is a part of
elevation	elevated terrain with quarry land with some native trees, shrub, herb,
	climbers & grass etc. The topography of the lease area is hilly
	terrain. The highest elevation of the lease area is 190 m MSL and
	lowest is 90 m MSL. As the proposed area is hill rock, the drainage
	of the lease area is towards west.
Vegetation	The proposed land is covered with native trees, climbers, grass,

	shrubs, herbs etc.	
Nearest water body	Muvattupuzha River, 3.5 km., NW,	
	Thodupuzha River, 4.5 km., NE &	
	Mannathoor Thodu, 2 km., SE	
Change in water bodies	No. The water body Mannathoor Thodu is located at 2 KM SE from	
due to mining activities	the site.	
Proneness to natural	Nil	
hazards		
Environmental parameters considered		
	WATER	
Water (expected use	The total water requirement is about 5 KLD. (Domestic - 1 KLD;	
and sources in KLD)	Dust Suppression – 2 KLD & Plantation – 2 KLD)	
	There is open well for meeting the domestic water demand and storm	
0 0	water collection pond for dust suppression system.	
Sources of generation	There will be no industrial waste generation due to proposed project.	
and facilities for liquid		
waste treatment		
Water quality meeting	Water quality meeting requirements after the treatment of water	
requirements	(filtration, disinfection & sedimentation).	
Water Regime	Open Well, Storm water pond.	
Access road to the site —	LAND	
Width & Condition	7 m., tarred SW	
Storage of explosives	Constitute law as \$50 has a second of the se	
/hazardous substances	Considering low consumption, a 550 kg magazine is for storing the explosive. The magazines are exists within the complex	
Hazardous waste	Industrial Waste Management	
management	There will be no industrial waste generation due to proposed project.	
	Solid Waste Management	
	About 39,662 cu. m. of top soil is estimated from the pit of the prop	
	mine. Other than top soil, about 21,814 cu. m. of overburden wil generated throughout the mine life.	
Facility for solid waste	A total quantity of 39,662 cu.m. of topsoil and 21,814 cu.m of over	
management	burden will 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. OB will be utilized for laying internal	
	haul road and will form base in reclamation / plantation.	
Significant land	No	
disturbance resulting in	·	
erosion, subsidence &		
instability		
Top soil, overburden	Top soil: 39,662 cu. m.	

etc.	Overburden: 21,814 cu. m.
	NOISE
From operation of equipment e.g. engines, ventilation plant, crushers	The sources of noise contributing to environment in this mine and surrounding area are mainly due to drilling, blasting, loading and unloading of mineral and movement of trucks.
Noise pollution control measures	<ul> <li>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:-</li> <li>Proper maintenance of machinery, equipments and improvement on design of machines.</li> <li>Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas.</li> <li>Creation of wide green belt of dense foliage between mine areas and residential colonies.</li> <li>Related health problems</li> <li>Proper training to personnel to create awareness about adverse noise level effects.</li> <li>Planned noise monitoring at suitable locations in the plant and outside location for proper effective remedial actions.</li> </ul>
Noise level monitoring	Noise level monitoring will be carried out by an approved laboratory at site and report of the same will be submitted with compliance report.
4190.	AIR
Likely emissions	Emissions from the vehicles only.
affecting environment	
Air pollution control measures	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.
	<ul> <li>Laying of haul road as per the standards, black topping of permanent haul road and service road to avoid or eliminate air – borne dust.</li> <li>To avoid the dust generation from the drilling operations, wet drilling method will be adopted.</li> <li>Drill machines will be equipped with dust collectors.</li> <li>Use of appropriate explosives for blasting and avoiding overcharging of blast holes.</li> </ul>
	<ul> <li>Controlled blasting techniques will be adopted.</li> <li>Watering of haul road and other road at regular intervals.</li> <li>Provision of dust filters/ mask to workers working at highly dust prone and affected areas.</li> <li>Provision of green belt all along the periphery of the lease area.</li> <li>Periodical monitoring of ambient air quality in and around the</li> </ul>

	lease area.  The extracted mineral will be transported from the quarry to the end user by adopting following measures so as to minimize dust emissions.  In case of long transportation the trucks after loading will be covered with tarpaulin sheets.  Speed of the vehicles will be maintained within the prescribed limits.	
	Trucks will not be over loaded and will be maintained to the body level.	
	ENERGY	
Energy requirement	The total power requirement will be 75 kW for compressors which will be operated by Diesel Engine.	
BIODIVERSITY		
Presence of any endangered species or	Nil stated by proponent.	
red listed category		
Loss of native species	Yes, for the quarrying activity all of native tree species shrubs, herbs,	
and genetic diversity	climbers etc. existing at project site will be cleared	
	SOCIAL ASPECTS	
Proximity to nearest		
densely populated or	Nearest Town - Muvatupuzha, 10 km., NE	
build-up area		
CSR related to the	Not Applicable	
project		
GENERAL		
Details of	Mr. Nizamudheen K.S.,	
Authorised	Karukunnathu House,	
Signatory& Address   for correspondence)	Peringala P.O.,	
. Alk iiiii	Pallikkara, Ernakulam, Kerala-683565.	
Details of NABET	M/s Environmental Engineers & Consultants Pvt. Ltd.	
approved EIA	(Sr. No. 59 as per MoEF&CC list of Accredited Consultant	
consultant	Organization)	
Organisation	Head Office: - A1-198, Janak Puri, New Delhi.	
	Branch Office:-	
	C-306, Kanchanjunga Apartments,	
	Palarivattom P.O., Kochi, Kerala	

2. The proposal was considered in the 45thSEAC meeting held on 11thand 12thSeptember 2015 under agenda item no. 45.05. The Committee observed that mining plan is not in accordance with KMMC Rules 2015 and hence the proponent was directed submit a revised

mining plan. The Committee decided to DEFER the proposal for field inspection. Subsequently, field visit to the quarry site was carried out on 17.09.2015 by the subcommittee of SEAC, Kerala, comprising Sri P. Sreekumaran Nair and Sri. John Mathai. The Proponent with his representatives was also present at the site.

The details of the Field Inspection Report are given below:

"The project is an active quarry located at about one km north east of Navolimattom near Mannathur. This quarry area of 3.9662 ha falling in own land is relatively flat on the top and moderate to steep sloping to west on the lower part, partly exposing hard rock. The elevation ranges from 120 m in the west to 190 m in the east. The rock type is mostly fractured charnockite suite of rocks with steep foliation. Major faults are not observed in the site. On the western side of the lease area, steep cutting of the old workings are seen while to the east benches are under formation. Pockets of weathered rock with about 2 m thick over burden (OB) and top soil is seen in the upper part. The removed OB is stocked in the land of the proponent at a lower level. Being an elevated land, streams are not seen in the site. However fairly good seepage of water is seen in the rainy season at the interface of rock and OB. The entire drainage from the elevated land including the quarry is partly channelized into the abandoned quarry pit on the western side from where it flows out through a narrow first order ephemeral stream. The area in general supports patches of rubber plantation. Floral biodiversity is not observed as the quarry area is mostly cleared of vegetation. Haulage road to the upper level is formed but not provided with hard surfacing. Dwelling units are are noted on the NE side but not in the immediate vicinity of 100 m. The water demand of the quarry is met from the old quarry pit which acts as a RWH structure. Accommodation to workers and canteen facilities are not observed. The unit does not have an associated crusher.

Based on an overall evaluation of the site, the quarry operations may be recommended with following conditions:

- 1. Fencing should be provided all around the lease area. The steep cut faces of the old workings should be further demarcated, fenced and to be left as danger zone.
- 2. Over burden must be stored in the designated places and provided with protective support walls.
- 3. Part of the drainage from the quarry is currently directed to the old pit that acts as RWH structure. However part of it flows out as overland sheet flow. A lined catchwater drain should be provided at the lower elevation leading to the abandoned quarry pit which is now RWH structure.
- 4. The water from the RWH structure should be let out only after clarification/desiltation for which a suitable structure is essential at the outlet. It may be important to provide a check dam in the outlet point of the channel to arrest all fine particles and to clarify water before it is let out. The deposited silt must also be cleaned periodically.

- 5. Considering the topography, garland drains need not be insisted upon.
- 6. The main haulage road formed in the quarry must be maintained in motorable condition. The approach road to the quarry from the main road is not maintained at all. This road should also be maintained in good motorable condition by the proponent.
- 7. In the absence of perennial streams in the vicinity, ultimate depth of mine will depend on the possible benches of 5m width and 5m height in the lease area.

Other items from general conditions like a) Appropriate sign boards should be displayed, b) The blasting time must be displayed and strictly adhered to, c) The PPV values must be less than 10 mm/sec, d) Steps to be taken to limit fly rock to within the lease area. Rock fragments should not fall anywhere outside the lease area, e) Dust suppression mechanism must be in place f) A belt of trees (Vegetation belt) should be maintained all around the quarry but must be maintained till the entire life of quarry, g) A separate small plot to be maintained in the premise to preserve rare and endemic species listed in the biodiversity assessment and the promised activity under CSR may be added".

- 3. The proponent has submitted the Mining plan as per KMMC Rule, 2015. The proposal was placed before SEAC in its 53<sup>rd</sup> meeting held on 25<sup>th</sup> and 26<sup>th</sup> of September 2016 for further appraisal. The Committee after examining the mining plan, prefeasibility report, field inspection report and all other documents, decided to recommend for issuance of EC subject to general conditions in addition to the following specific conditions for mining projects.
  - 1. Fencing should be provided all around the lease area. The steep cut faces of the old workings should be further demarcated, fenced and to be left as danger zone.
  - 2. Over burden must be stored in the designated places and provided with protective support walls.
  - 3. Part of the drainage from the quarry is currently directed to the old pit that acts as RWH structure. However part of it flows out as overland sheet flow. A lined catchwater drain should be provided at the lower elevation leading to the abandoned quarry pit which is now RWH structure.
  - 4. The water from the RWH structure should be let out only after clarification/desiltation for which a suitable structure is essential at the outlet. It may be important to provide a check dam in the outlet point of the channel to arrest all fine particles and to clarify water before it is let out. The deposited silt must also be cleaned periodically.

The main haulage road formed in the quarry must be maintained in motorable condition. The approach road to the quarry from the main road is not maintained at all. This road should also be maintained in good motorable condition by the proponent.

- 4. The 52<sup>nd</sup> meeting of SEIAA held on 29.04.16, examined the recommendations proposed by the inspection team given in para 2 and the recommendation of the 53<sup>rd</sup> meeting of SEAC, given in the para 3 and decided to issue E.C with all the conditions proposed by the inspection team as well as the general conditions for mining projects.
- 5. Environmental clearance as per the EIA notification 2006 is hereby accorded for the proposed Building Stone Quarry project in survey No. 567/1-2, 567/2B2, 568/1-1, 568/2-2, 569/1-3, 569/1-5, 567/2A, 567/2B1, of Thirumarady Village & Panchayat, Muvattupuzha Taluk, Ernakulam District, Kerala for an area of 3.9662 Hectares., subject to all the suggestion of the inspection team mentioned in para 2 above specific conditions stipulated in para 3, all the environmental impact mitigation and management measures undertaken by the project proponent in the Form I and other documents submitted to SEIAA and the mitigation measures proposed in the table in para 1 above. 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 the conditions and undertakings in chapter 4 of Mining plan (Mining), Chapter 5 of Mining plan (Blasting), Chapter 11 (EMP) of the Mining Plan and Chapter 12 for Progressive Mine Closure Plan as submitted will be deemed to be part of these proceedings as conditions as undertaken by the proponent, as if incorporated herein.
- 7. Validity shall be 5 years 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. Environmental Clearance is therefore granted to the Building Stone Quarry project of Nizamudheen K.S.-, Kunnathu (H), Peringala P.O., Pallikkara, Ernakulam District District-683565 subject to all the above mentioned conditions.
- 8. Compliance of the conditions herein will be monitored by the State Environment Impact Assessment Authority or its authorised offices.

- 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, Ernakulam to take legal action under the Environment (Protection) Act 1986.
- iii) The given address for correspondence with the authorised signatory of the project is Nizamudheen K.S., Kunnathu (H), Peringala P.O., Pallikkara, Ernakulam District District-683565

Sd/ P. Mara Pandiyan., I.A.S Member Secretary (SEIAA)

Additional Chief Secretary to Government
Environment & Forest Department
Government of Kerala.

To,
Nizamudheen K.S.,
Kunnathu (H), Peringala P.O.
Pallikkara,

Ernakulam District t-683565

### Copy to:

- 1. MoEP Regional Office, Southern Zone, Kendriya Sadan, 4<sup>th</sup> Floor, E& F Wing, II block, Koramangala, Bangalore 560034.
- 2. Principal Secretary to Government, Environment Department.
- 3. The District Collector, Eranakulam.
- 4. The Director, Mining and Geology Department, Kesavadasapuram, Thiruvananthapuram-4
- 5. The Secretary, Thiru ambadi Grama Panchayath, Eranakulam. 686687
- 6. Chairman, SEIAA
- 7. E.C File
- 8. Stock File
- 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.
- 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.
- 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 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 PM<sub>10</sub> and PM<sub>2.5</sub> 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.
- 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 not withstanding 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 up stream and down stream 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.
- 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.

Member Secretary, SEIAA Kerala

Mo. Nisamudeen Kis. Kennether H) parkete Popallithane Ekus destruich reviewed Ec No. 82, boy hand on 28/06/16. the Submitted

1. Potte devist 2. Proof 10 Card

feared By Mizamethers as

