



Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment
Authority(SEIAA), Kerala)

To,

The Managing Director
 METAROCK PRIVATE LIMITED
 Mr. N. Vinod Lal
 (Managing Director),
 M/s Metarock Private Limited
 "Lalas", Thattamala P.O.,
 Kollam, Kerala-691020 Branch Office: CheriyaKonni, Aruvikkara Village,
 Thiruvananthapuram, Kerala-695564 -691020

Subject: Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the SEIAA vide proposal number SIA/KL/MIN/59482/2020 dated 04 Aug 2022. The particulars of the environmental clearance granted to the project are as below.

- | | |
|--|---|
| 1. EC Identification No. | EC24B001KL176782 |
| 2. File No. | 1871/EC1/2021/SEIAA |
| 3. Project Type | New |
| 4. Category | B1 |
| 5. Project/Activity including Schedule No. | 1(a) Mining of minerals |
| 6. Name of Project | "Building Stone Mine" Minor Mineral Quarry Project of M/s Metarock Private Limited situated at Aruvikkara Village, Nedumangad Taluk, Thiruvananthapuram District, Kerala for an area of 3.7980 ha. Government land 0.1859 ha.+ private land 3.6121 ha.] |
| 7. Name of Company/Organization | METAROCK PRIVATE LIMITED |
| 8. Location of Project | Kerala |
| 9. TOR Date | 19 Jan 2021 |

The project details along with terms and conditions are appended herewith from page no 2 onwards.

Date: 07/03/2024

(e-signed)
 Dr Rathan U kelkar IAS
 Member Secretary
 SEIAA - (Kerala)

Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH. Please quote identification number in all future correspondence.

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सत्यमेव जयते

PROCEEDINGS OF THE STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY – KERALA, THIRUVANANTHAPURAM

*(Present : Dr.H.Nagesh Prabhu IFS (Retd), Chairman,
Shri.K.Krishna Panicker, Member, Dr.Rathan U.Kelkar IAS, Member Secretary)*

**Sub:- Environmental Clearance for the Granite Building Stone Quarry Project of
Sri. N. Vinod Lal, Managing Director, M/s Metarock Private Limited, “Lalas”,
Thattamala P.O., Kollam, Kerala- Granted – Orders issued.**

State Level Environment Impact Assessment Authority, Kerala

Proposal No. SIA/KL/MIN/59482/2020

File No. 1871/EC1/2021/SEIAA

- Ref:**
- 1.Application for EC received from Sri. N. Vinod Lal on 04.08.2022.
 2. Minutes of the 142nd meeting of SEAC held on 11th to 12th May, 2023.
 3. Minutes of the 154th meeting of SEAC held on 02nd December 2023.
 4. Minutes of the 136th meeting of SEIAA held on 09th January 2024.
 5. Minutes of the 158th meeting of SEAC held on 5th to 7th February 2024.

ENVIRONMENTAL CLEARANCE NO. 54/Q/2024

Sri. N. Vinod Lal, Managing Director, M/s Metarock Private Limited, “Lalas”, Thattamala P.O., Kollam, Kerala, read as paper 1st above submitted an application for Environmental Clearance for the Granite Building Stone Quarry Project for an area of 3.7980 Ha at Block No. 41, Re Sy. Nos. 340/8, 340/19, 340/22, 341/2-1, 341/2-2, 341/2-3, 341/3, 341/8, 341/8-1, 356/2, 356/4, 356/5, 356/5-1, 356/5-2pt, 356/5-3, 356/5- 5, 356/6pt, 356/10, 356/10-1pt, 356/10-1-1pt, 357/7-1pt, 357/26pt, 341/1pt, 356/3pt in Aruvikkara Village, Nedumangad Taluk, Thiruvananthapuram.

1. Project Details

SL.No	Particulars	Details
1	Name of the Project	Granite Building Stone Quarry Project of M/s Metarock Private Limited
2	Proposed Activity	Mining of Granite Building Stone
3	Name of the Sector & Schedule No. (in the EIA Notification, 2006)	Non Coal mining, Activity 1(a), Category B2
4	Name & Address of the Project Proponent	Sri. N. Vinod Lal, Managing Director, M/s Metarock Private Limited, "Lalas", Thattamala P.O., Kollam, Kerala 691020
5	Project Location	
	a) Block No. b) Survey Nos.	41 340/8, 340/19, 340/22, 341/2-1, 341/2-2, 341/2-3, 341/3, 341/8, 341/8-1, 356/2, 356/4, 356/5, 356/5-1, 356/5-2pt, 356/5-3, 356/5- 5, 356/6pt, 356/10, 356/10-1pt, 356/10-1-1pt, 357/7-1pt, 357/26pt, 341/1pt, 356/3pt
	c) Revenue Village	Aruvikkara
	d) Taluk	Nedumangad
	e) District	Thiruvananthapuram
7	Extent (in Hectare)	3.7980 Ha
8	Project Cost	₹ 5.20 Crore
9	Mineable Reserve	Shall be reassessed by the Mining & Geology Department as per specific condition No. (4)
10	Power Requirement & Source	300 kW KSEB
11	Date of field inspection	21.10.2023 & 18.02.2023

II EMP DETAILS

Items	Details	Capital Cost (Lakhs)	Recurring Cost (Lakhs)
1) Air Environment	Personnel Protective Equipments (PPE) to mine workers, Uniform for mine workers, Blast mats, Wetting of roads (paved and unpaved) and sprinkler system, Plantation on road side-3m interval and buffer zone – 3m interval plus maintenance, Regular cleaning of paved roads, Construction of speed controllers, Asphaltting of roads and its maintenance	19.0	3.9
2) Noise & vibration Environment	Maintenance of machinery suitably, PPE's like Ear muffs, Acoustic enclosure for DG set, Blasting siren and notice boards	14.00	4.20
3) Water Environment	Construction of garland drains with intermittent siltation traps (storm water management), De-silting operations, Construction of ponds (rain water harvesting), Construction of retaining wall for waste dump in slope side	50.00	6.5
4) Occupational Safety and Health	First aid kits – 2 nos. Fire extinguishers-2 nos. Training and awareness programs on risk factors during emergencies by the experts, Periodical medical check-up and supply of medicines,	7.0	7.5
5) Ecological Environment	Green Area development in buffer of mine lease area. Saplings of trees in mine lease area will be transplanted to land outside mine lease area owned by PP. Development of medicinal garden own land outside mine lease area owned by PP., Ecorestoration through planting of trees, shrubs, herbs in mine lease area during mine closure.	42.90	5.0
6) Environmental monitoring	Ambient Air Quality study, Noise and vibration studies, Soil studies, Water quality studies, Hydrogeology, Ecology assessment, Socio-economic assessment	-	9.8420
Total		132.90	36.942

III) CER Details

SI No.	Activities	Amount
1.	Cleaning of public pond & its fencing at Manaboar ward of Aruvikkara Gramapanchayath	2,50,000
2.	Recharge of 10 wells in Aruvikkara Gramapanchayath	3,00,000
3.	Installation of solar streetlights near Aruvikkara Gramapanchayath, Govt. H S School, Village Office and Family Health Centre.	2,00,000
4.	Repair of Public Roads in the vicinity of mining area	7,50,000
5.	Monitor the air & noise pollution online in the spot having the highest traffic density & display the result for public	-
TOTAL		15,00,000

2. In the 154th SEAC meeting, after conducting one more field verification the Committee recommended EC for the project with certain additional specific conditions in addition to the 28 specific conditions recommended in the 142nd meeting of SEAC.

3. In the 136th meeting, the Authority noted that for the sustainable management of quarry operations, the approved mining plan is revised every five years till the project life of mine as per KMMC Rules, incorporating scheme of activities to be carried out for the next 5 years. The Authority is of the opinion that it is essential to match these procedures and time lines followed in the department of Mining and Geology with the time lines ECs issued for the sustainable management of quarry operations and protection of environment in the project region.

The Authority decided to issue Environmental Clearance initially for a period of 5 years and then to extend the EC period to cover the project life of 10 (Ten) years, from the date of execution of mine lease / permit, subject to the review by SEAC at the end of each five years, to verify whether the Project Proponent has violated any of the EC conditions and thereby caused any damage to the Environment in the project region.

The EC is subject to General Conditions and the following Additional Specific Conditions.

- 1. The Project Proponent shall carry out quarrying as per the approved Mining Plan and as per the Specific Conditions mentioned hereafter. The Project Proponent should strictly follow the Kerala Minor Mineral Concession Rules 2015 and amendments thereby.*
- 2. The EC shall be valid from the date of execution of permit/lease from the Department of Mining and Geology. The copy of the lease order should be provided to the SEIAA before commencing the mining activity.*
- 3. The EC issued will be subject to a review by SEAC after each 5 years through field verification to ensure that mining is carried out sustainably as per the EC conditions.*
- 4. The ultimate depth of mining should be limited to 45 m and the mineable resources shall be reworked accordingly by the Mining and Geology Department while approving the Scheme of Mining / issuing the lease or permit.*
- 5. Constitute a monitoring committee comprising representative of local residents, local ward member, Project Proponent and Mining Engineer to monitor the implementation of the EC conditions and blasting.*
- 6. Develop and nurture wide green belts of dense foliage all along the buffer of project area within first two years itself and the status should be submitted along with geotagged photographs in the Half Yearly Compliance Report (HYCR).*
- 7. The machinery which generates less noise only should be procured and they should be regularly maintained. The noise level of the machinery and equipment used should be monitored and submitted along with the HYCR.*
- 8. Conduct periodical medical check-up of all workers for health problems and the details should be furnished along with the HYCR.*

- 9. A report on monitoring of noise once in 3 months in the project area, and at sensitive receptors should be submitted along with HYCR.*
- 10. The impact of vibration due to blasting on all the built structures within 500m should be monitored in terms of Peak Particle Velocity and amplitude for maximum charge per delay and included in the HYCR.*
- 11. The proponent has to schedule the blasting accordingly as it will not overlap with the blasting time of the adjacent mines.*
- 12. A MoU should be signed with the adjacent quarry owners regarding the blasting time to avoid concurrent blasting and submit the same to the SEIAA prior to the commencement of mining.*
- 13. Compulsory use of muffling arrangements during blasting to arrest fly rocks should be done in addition to NONEL blasting. Geotagged photos of the use of muffling arrangements should be submitted with HYCR.*
- 14. Compensatory afforestation (in 0.38 ha and outside ML area) as proposed in S & SW direction with local trees of dense foliage should be done within first two year itself and Geotagged photos of the same shall be submitted with HYCR. The suggested species are *Phyllanthus emblica* (Nelli), *Syzygium cumini* (Njaval), *Writia tinctoria* (Dhanthapala) , *Ficus bengalensis* (Peral), *Ficus racemosa* (Atti), *Bambusa bambos* (Mullumula), *Dendrocalamus strictus* (Kallan mula), *Strychnos nux-vomica* (Kanjiram), *Terminalia cattappa* (Thanni), *Schleichera oleosa* (Poovam), *Artocarpus hirsutus* (Ayiniplavu) etc.*
- 15. The blasting should be done only using the blast of diameter 32mm and depth 1.5m.*

- 16. Install sprinklers all along the haulage road and Use mobile sprinklers within the mine site for effective dust suppression. Also use air suspended water mist/fog sprinkler system where ever applicable.*
- 17. Transport of material from quarry to crusher should be in a wet condition and also use air suspended water mist/fog sprinkler system at the unloading area of crusher unit.*
- 18. The environmental monitoring should be done by establishing more number of monitoring stations, especially in the downwind directions for air quality and noise level. Also check the air quality model every year by monitoring stations mentioned in the air quality model (Mylam Govt. School, Perumkulam & St. Shantal English Medium School).*
- 19. A butterfly garden should be developed within the first two year since one of the species of butterfly in the area is endemic i.e. Southern Birdwing. Geotagged photos of the same should be submitted along with the HYCR.*
- 20. The water level data of the observatory well (Well No. 4 (W4) located in the south direction (Latitude N 08° 33' 5.02" and Longitude E 77° 01' 22.87") should be monitored monthly and submitted along with HYCR.*
- 21. AA", BB" & CC" sections of the mined area should be filled with earth material and vegetated as part of progressive mine closure.*
- 22. The impact of vibration due to blasting on the houses and built structures within 500m should be monitored in terms of Peak Particle Velocity and amplitude for maximum charge per delay and included in the HYCR.*

- 23. Drainage system incorporating garland canal, silt traps, siltation pond and outflow channel connecting to a natural drain should be provided prior to the commencement of mining.*
- 24. Overflow water from the siltation pond should be discharged to the nearby natural drain after adequate filtration.*
- 25. Garland drain, silt-traps, siltation ponds and outflow channel should be desilted periodically and geo-tagged photographs of the process should be included in the HYCR.*
- 26. Drainage water should be monitored at different seasons by an NABL accredited lab and clear water should only be discharged into the natural stream. Geotagged photographs of the drainage and sampling site should be submitted along with HYCR.*
- 27. Overburden should be stored at the designed place and gabion wall should be provided for the topsoil and overburden storage sites*
- 28. CER Plan should be implemented within the first 2 years and it should be operated and maintained till the mine closure plan is implemented.*
- 29. Transportation of mined material should not be done during the peak hours in the forenoon (8.00am to 10.00am) and afternoon (3.30pm to 5 pm).*
- 30. Adequate sanitation, waste management and rest room facilities should be provided to the workers.*
- 31. Adequate energy conservation measures should be implemented including solar power installations. At least 40% of the energy requirement shall be met from the solar power.*
- 32. Adequate measures should be adopted to harvest the rainwater as per the guidelines issued by the Central Ground water Authority.*

- 33. Environment Management Cell (EMC) should include one subject expert in environment management. The proceedings of the monthly meeting of the EMC should be submitted along with the HYCR.*
- 34. Adequate number of avenue trees of indigenous species should be planted along both sides of the haulage road.*
- 35. There is a catchment of a small watershed near the Boundary Pillar BP 5 and BP 14 and a seasonal flow line reaching a pond. The catchment area of the watershed covers the buffer area of the proposed mine and slightly beyond it towards the proposed lease. Therefore, a buffer of 7.5m should be provided beyond the catchment area of the micro watershed.*
- 36. Adequate buffer should be provided adjacent to a pathway used by the local people and a temporary wall of 5m height should be provided all along the side of the pathway to avoid disturbance to the local people using the pathway.*
- 37. Widen the outflow channel flowing through the site and behind the existing site office and enhance its carrying capacity as entire excess water from the existing and proposed quarry will be drained through it. Provided adequate number of silt-traps in the course of the drain and a couple of small check-dams at the portion of the land behind the existing project office.*
- 38. Ensure that the discharge of overland flow and the pumped-out water through the common drain to the natural drain water is free of silt and other contaminants and the discharge should be regulated within the carrying capacity of the natural drain.*
- 39. The out-flow water to the natural drain should be monitored by a NABL accredited lab on a monthly basis to ensure that its quality is within the specified as per the PCB norms for first one year from the date of commencement of mining. Further, the*

monitoring should be continued as per the specific condition stipulated in the EC for monitoring water discharge to the natural drain from the project area

- 40. The impact due to blast-induced vibration and vibration due to the movement of heavy vehicle should be monitored every six months and the result uploaded in the HYCR. While monitoring the vibration, one of the monitoring stations should be adjacent to the spot where the house of Mr. Rajendran is located. 39. Strict precautionary measures should be adopted while blasting including the use of mufflers.*
- 41. Address the issue of dust pollution strictly and ensure that they comply with the preventive measures with utmost care and efficiency.*
- 42. Air and water quality data monitored as per PCB norms should be displayed at the project entry gate for the public to know. Installation of an online water quality monitoring probe with telemetry at the discharge point will help in displaying the real-time water quality data.*
- 43. Considering the increasing traffic congestion in the area, the Proponent should be directed to approach the Local Government and Transport Department to enforce the speed of the heavy vehicles in the area where about 4 to 5 quarries and crushers are under operation*
- 44. The Proponent should ensure that the buffer distance as per norms should be maintained with all the built structures adjacent to the proposed site. Special care should be taken at the built structure near the boundary pillar BP 13 and house of Mr. Rajendran and his sister.*
- 45. The monitoring of environmental parameters should be carried out during the stipulated frequency and attached to the HYCR.*

- 46. Blasting mats should be used during rock blasting to contain the blast, prevent fly rocks and suppress dust.*
- 47. The project proponent should submit a Compliance report within 6 months after adopting all the above specific conditions and SEAC shall verify the compliance.*
- 48. In the wake of occurrence of large scale landslides in the state, as per the information provided by the Department of Mining & Geology, it is directed to use only NONEL (Non Electrical) technology for blasting to reduce the vibration of the ground, which is one of the causative factors that triggers landslides, formation of cracks in the surrounding buildings and disturbance to human and wildlife.*
- 49. As per OM no F.No.22-65/2017-IA.III dated 30th September 2020, under Corporate Environmental Responsibility (CER) the Project Proponent should implement the Environment Management Plan (EMP)/CER as directed by SEAC during appraisal, covering the issues to address the environmental problems in the project region, from the beginning of the project, indicating both physical and financial targets year wise. The EMP/CER shall be implemented in consultation with Local Self Govt. Institutions. A copy of the approved EMP/CER shall be made available to the concerned Panchayat for information and implementation support. The indicated cost for implementation of CER activities shall be 2% of the project cost. 49. As per the directions contained in the OM F.No.22-34/2018-IA.III dated 16th January 2020 issued by MoEF&CC, in obedience to the directions of the Hon'ble Supreme Court the Project Proponent shall, undertake re-grassing the mining area and any other area which may have been disturbed due to his mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. The compliance of*

this direction shall be included in the Half Yearly Compliance Report which will be monitored by SEAC at regular intervals

50. The violation of EC condition may lead to cancellation of EC and action under The Environment (Protection) Act 1986.

51. SEAC will inspect the project area after six months for monitoring compliance of EC Conditions

4. Environmental Clearance as per the EIA Notification, 2006 is hereby accorded for the Granite Building Stone Quarry Project of Sri. N. Vinod Lal, Managing Director, M/s Metarock Private Limited, “Lalas”, Thattamala P.O., Kollam, Kerala-691020 for an area of 3.7980 ha at Block No. 41, Re Sy. Nos. 340/8, 340/19, 340/22, 341/2-1, 341/2-2, 341/2-3, 341/3, 341/8, 341/8-1, 356/2, 356/4, 356/5, 356/5-1, 356/5-2pt, 356/5-3, 356/5- 5, 356/6pt, 356/10, 356/10-1pt, 356/10-1-1pt, 357/7-1pt, 357/26pt, 341/1pt, 356/3pt in Aruvikkara Village, Nedumangad Taluk, Thiruvananthapuram, initially for a period of 5 years from the date of execution of valid mining lease/permit from the Department of Mining and Geology as per S.O.1807 (E) dated.12.04.2022 of MoEF&CC, and then to extend the EC period to cover the project life of 10 years for the quantity reassessed as per specific condition no. (4) subject to other specific conditions, and to the review by SEAC at the end of five years, to verify whether the Project Proponent has violated any of the EC conditions and thereby caused any damage to the Environment in the project region, subject to the Specific Conditions suggested by SEIAA in Para 3 above, and 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 project proponent will deemed to be a part of this Proceedings as if incorporated herein. Also the General Conditions for projects stipulated for mining (items 1 to 57), mentioned below will be applicable and have to be strictly adhered to

5. The Environmental 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. The above undertakings and the conditions and the undertakings of the Mining Plan in (Mining), (Blasting), (Mines Drainage), (Stacking of Mineral rejects and Disposal of waste), (Environment Management Plan) & (Progressive Mine Closure Plan) as submitted will be deemed to be part of this Proceedings as conditions as undertaken by the project proponent, as if incorporated herein.

6. Validity of the Environmental Clearance will be initially for a period of **Five (5)** years from the date of execution of valid mining lease/permit from the Department of Mining & Geology and then will be extend to cover the Project Life of 10 years, subject to the conditions stipulated in Para 4 and the earlier review of EC in case of violation or non-compliance of any of the conditions stipulated here in or genuine complaints from residents in the security area of the project.

7. Compliance with 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, Forest & Climate Change, Govt. of India, Bangalore. 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. Instances of violation if any shall be reported to the **District Collector, Thiruvananthapuram.**

8. The Half Yearly Compliance Report (HYCRs) with name of the project, EC No. and date, the period of submission with its contents, compliance report and environmental monitoring data & covering letter have to be uploaded in the Parivesh Portal as per O.M. F.No.IA3-22/1/2022-IA-III(E)-17264 dated 14.06.2022 and the website of the Project Proponent. Hardcopy of HYCRs shall not be acceptable.

9. The given address for correspondence with the authorised signatory of the project is Sri. N. Vinod Lal, Managing Director, M/s Metarock Private Limited, "Lalas", Thattamala P.O., Kollam, Kerala-691020

GENERAL CONDITIONS

1. *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.*
2. *All the statutory clearances should be obtained, as applicable, by the project proponent from the respective competent authorities including that for blasting and storage of explosives. Copies of all statutory clearances shall be submitted along with First Half Yearly Compliance Report.*
3. *The project proponent should advertise in news papers that the project has been accorded Environmental Clearance and copies of clearance letters are available in the Office of State Environment Impact Assessment Authority (SEIAA) and on the website of the Authority at www.seiaakerala.in. The advertisement should be in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language. The advertisement should be made within 10 days from the date of receipt of the Environmental Clearance letter and a copy of the same signed in all pages should be forwarded to the office of this Authority as confirmation.*
4. *The proponent shall send a copy of the EC 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 uploaded on the website of the company.*
5. *The lease area shall be fenced with barbed wire to a minimum height of 4ft around, before starting mining. All the boundary indicators (boards, markings, etc) shall be*

conspicuous and maintained at all times.

- 6. 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 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.*
- 7. Explosives should be stored in magazines in isolated place specified and approved by the Explosives Department. Mats to reduce fly rock blasts to a maximum of 10 PPV should be provided.*
- 8. Warning alarms indicating the time of blasting (to be done at specific timings) has to be arranged stipulated by Explosive Department.*
- 9. Access roads to the quarry shall be black topped to contain dust emissions that may arise during transportation of materials. The transportation of minerals should be done in covered trucks to contain dust emissions.*
- 10. A separate Environmental Management Cell (EMC) with suitable qualified personnel should be set-up under the chairmanship of a Senior Executive, who will report directly to the Head of the Organization. The Cell should have representative of Biodiversity Management Committee of the Panchayath and a representative of NGO, if any active in the area. The EMC should meet at least once in six months and review the activities and minutes should be a part of the compliance report.*
- 11. Quarrying has to be carried out as per approved mining plan with the suggestions from SEAC incorporated and following KMMC rules 2015 and the Amendments thereby.*
- 12. The quarrying operation (blasting) shall be restricted between 7 AM and 5PM*
- 13. Rain Water Harvesting facility should be installed as per the prevailing provisions of*

KMBR/KPBR, unless otherwise specified. Maximum possible solar energy generation and utilization shall be ensured as an essential part of the project.

- 14. Maximum depth of mining shall be as per the mining plan and as per specific direction of SEAC after field inspection. The maximum depth of mining should not be deeper than the local ground water table. No mining operations should be carried out at places having a slope greater than 45°.*
- 15. The height of any bench shall not exceed five meters and breadth shall not be less than the height.*
- 16. The Project proponent shall ensure that no perennial or intermittent natural water course and/or water resources are 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.*
- 17. A minimum buffer distance specified as per existing rules and statutory orders shall be maintained from the boundary of the quarry to the nearest dwelling unit or other structures, and from forest boundaries or any other ecologically sensitive and archeologically important areas or the specific distance specified by SEIAA in EC as per the recommendations of SEAC depending on specific local conditions.*
- 18. The proponent should plant seedlings at least 5 times of the loss of trees that has occurred while clearing the land for the project and follow planting measures as suggested by SEAC. Suitable avenue trees should be planted along the sides of the approach road and internal roads and open parking areas, if any. Preference should be given to endemic native and fruit bearing species. Planting in buffer areas should be taken up beforehand. Proper upkeep and maintenance of planted seedlings shall be ensured by the project proponent.*

19. *The proponent should ensure that the vegetation in the buffer is retained, maintained and strengthened with additions of native broad leaved plants.*
20. *Eco-restoration including the closure of mine as per the progressive closure plan and final closure plan shall be done at the cost of the project proponent. This eco-restoration should follow scientific standards available for restoration, full recovery of the original vegetation and improving the resilience of different ecosystems. Overburden materials should be managed within the site and used for reclamation of mined pit as per mine closure plan / specific conditions.*
21. *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 suitable indigenous plant species, if no other specific condition on reclamation of pit is stipulated in the E.C. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining.*
22. *Control measures on noise and vibration prescribed by KSPCB should be implemented. Quarrying activities should be limited to day time as per KSPCB guidelines/specific conditions.*
23. *Periodical monitoring of the vibration at specified location (preferably at a distance of 50 m and 100 m) to be conducted and records kept for inspection. This could also form a part of the compliance reports.*
24. *Speed of trucks entering or leaving the mine site is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.*
25. *Acoustic enclosures should be 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 standard limit indicated by CPCB/KSPCB.*

26. *Blasting should be done in a controlled manner using NONEL technique as specified by the regulations of Petroleum and explosive safety organization (GOI) or any other concerned authorized agency. A licensed person should supervise/ control the blasting operations.*
27. *Measures should be taken for maintaining noise levels below 85 dBA in the work environment.*
28. *Project proponent should obtain necessary prior permission of the competent authorities for drawing requisite quantity of surface water and ground water for the project.*
29. *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 compliance reports to SEIAA.*
30. *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, and for green belt development etc. The drains shall be regularly desilted and maintained properly, particularly after monsoon.*
31. *Regular monitoring of ground water level and quality shall be carried out around the mine area during mining operation. If any stage ,if it is observed that ground water table is getting depleted due to the mining activity; necessary corrective measures shall be carried out.*
32. *Garland drains and silt traps are to be provided in the slopes around the core area to channelize storm water. De-silting of Garland canal and silt traps have to be*

attended on a daily basis. A labour has to be specifically assigned for the purpose. The proponent shall ensure the quality of the discharging storm water as per the General Effluent Discharge Standards of CPCB.

- 33. 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 the E.C was issued, the project would require a fresh appraisal by this Authority, for which the proponent shall apply and get the approval of this Authority. In the case of transfer of ECs, the matter shall be intimated and get the approval from the Authority as per the existing norms.*
- 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 top soil, if any, shall be temporarily stored at earmarked place (s) and 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 at 45⁰. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. At critical points, use of geo textile shall be undertaken for stabilization of the dump. Protective wall or gabions should be made around the dump to prevent erosion / flow of sediments during rains. The entire excavated area shall be backfilled.*
- 36. All the mining equipment used in Mining like backhoe loaders and excavators cause*

pollution and hence shall be serviced regularly & maintained for their efficient functioning and for reducing pollution. Disposal of spent oil from diesel engines should be as specified under relevant Rules/ Regulations.

- 37. All vehicles used for transportation and within the mines shall have 'PUC' certificate from authorized pollution checking centre. Washing of all vehicles shall be inside the lease area. .*
- 38. Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution such as haul road, loading and unloading points and transfer points and having high levels of PM₁₀ and PM_{2.5}. 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.*
- 39. Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement at project site, parking area, on haul roads, loading and unloading and at transport points should be provided and properly maintained.*
- 40. Corporate Environmental Responsibilities (CER) as prescribed by SEIAA/SEAC should be carried out leading to Environmental stability of the Project region. The activities carried out under CER should be a part of the half yearly compliance report. The certificates from the beneficiaries, if the CER part is completed should also be submitted to the State Environment Impact Assessment Authority (SEIAA) along with year wise expenditure .*
- 41. The project proponent is responsible for implementing all the provisions of labour laws applicable from time to time to quarrying /Mining operations. The workers on the site should be provided with on-site accommodation or facilities at a suitable boarding place, protective equipment such as ear muffs, helmet, etc.*

42. *The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh lease before execution of mining lease.*
43. *Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed. The report of health surveillance programme should be included in the half yearly compliance reports.*
44. *The pits in the abandoned quarries and in the mined area shall be used for activities like water harvesting, aqua culture etc. in an eco friendly manner.*
45. *If Government land is partly or fully used for mining, the area shall be returned at the end of lease period after mine closure with separate demarcation with suitable survey marks.*
46. *Any accident occurring in the mined out area after the lease period due to negligence in carrying out safety measures and non-closure , will lead to suspension of all EC obtained for mining by the Proponent.*
47. *In case of transfer of EC the matter shall be intimated and approval from the Authority shall be obtained as per the existing norms.*
48. *The proponent shall submit Half Yearly Compliance Reports (1st of June & 1st of December) 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 be simultaneously sent to the respective Regional Office of Ministry of Environment, Forests and Climate Change, Govt. of India and also to the Office of State*

Environment Impact Assessment Authority (SEIAA). The proponent has to submit Environmental statement in form V of Environment (Protection) Rules 1986 to SPCB on 31st March every year.

- 49. The project authorities should extend full cooperation to the officer (s) from the Regional Office of MOEF & CC located at Bangalore/SEAC/SPCB/CPCB/dept of Mining and Geology, while monitoring compliance of the stipulated conditions, by furnishing the requisite data/information/monitoring reports.*
- 50. 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.*
- 51. 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.*
- 52. The EC given will be withdrawn at any time if the area is declared high hazardous by the SDMA.*
- 53. The Environmental Clearance will be subject to the final order of the courts on any pending litigation related to the land or project, in any court of law.*
- 54. 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.*
- 55. 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.

56. *The SEIAA may revoke or suspend the order, for non implementation of any of the specific or any of the above conditions. The SEIAA reserves the right to alter/modify the above conditions or stipulate any further condition in the interest of environmental protection.*
57. *As per regulation no. 106(2) of metalliferous mines regulation under Mine act, the height of any bench shall not exceed six meters and breadth shall not be less than the height.*

**Sd/
Administrator, SEIAA
For Member Secretary, SEIAA**

To,

Sri. N. Vinod Lal
Managing Director
M/s Metarock Private Limited
“Lalas”
Thattamala P.O.
Kollam,
Kerala-691020.

Copy to

1. MoEF Regional Office, Southern Zone, Kendriya Sadan, 4th Floor, E&F Wing, II Block, Koramangala, Bangalore-560034.(through e-mail: rosz.bng-mefcc@gov.in).
2. The Secretary to Government, Environment Department, Government of Kerala.
3. The Director, Directorate of Environment & Climate Change, 4th Floor KSRTC Bus Terminal, Thampanoor, Thiruvananthapuram, Kerala 695001.
4. The District Collector, Thiruvananthapuram.
5. The Director, Mining & Geology, Thiruvananthapuram -4.
6. The Member Secretary, Kerala State Pollution Control Board
7. The District Geologist, Thiruvananthapuram.
8. The Tahsildhar, Nedumangad Taluk, Thiruvananthapuram District.
9. The Secretary, Aruvikkara Panchayath, Thiruvananthapuram.
10. The Chairman, SEIAA.
11. Website.
12. S/f / O/c