

**COMPLIANCE REPORT FOR
GRANITE BUILDING STONE QUARRY
BY
M/s. K L R GRANITES**

***(FOR THE PERIOD FROM
OCTOBER 2023 TO MARCH 2024)***

ENVIRONMENTAL CLEARANCE NO.

**159/Q/2023 dated 06-10-2023
(FILE NO: 2073/EC1/2022/SEIAA)**

RE-SURVEY BLOCK NO.: 20

RE-SURVEY NO.: 47/1-9

EXTENT : 3.8717 HECTARES

VILLAGE : MALAYALAPPUZHA

TALUK : KONNI

DISTRICT : PATHANAMTHITTA

STATE : KERALA

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I. ABOUT THE PROPONENT

Shri. Joshy. A. Chemparathy, Managing Partner, M/s. K L R Granites, 27/906 Josh Building, Kothayikunnu Bypass, Thodupuzha-Post, Idukki is the proponent of Granite Building Stone Quarry for an area of 3.8717 Ha situated at Re-Sy Block No. 20, Re-Sy No. 47/1-9 in Malayalappuzha Village, Konni Taluk, Pathanamthitta District, Kerala.

State Environment Impact Assessment Authority (SEIAA) Kerala accorded Environmental Clearance No. 159/Q/2023 dated 06-10-2023 to the Granite building stone quarry project in Malayalappuzha Village, Konni Taluk, Pathanamthitta District, Kerala State.

II. ABOUT THE PROJECT

a. Project Category:

The project comes under the Category B2, Activity 1(a) of Schedule of EIA Notification 2006 and subsequent amendments.

b. Project Location:

Re-Sy Block No. 20, Re-Sy No. 47/1-9 in Malayalappuzha Village, Konni Taluk, Pathanamthitta District, Kerala

The proposed project site falls within latitude and longitude value:

| | |
|---------------|---------------------------------------|
| Latitude (N) | 09°29'31.514" N to 09°29'26.196" N |
| Longitude (E) | 76°46'13.504" E to 76°46'15.902" E |

c. Project Extent And Activity:

The project is for quarrying of 20,34,517.50 MT of building stone from an area of 3.8717 hectares. The annual production is 3,49,920.23 TPA. The mine life is 7 years.

d. Project Description:

Shri. Joshy. A. Chemparathy, Managing Partner, M/s. K L R Granites has obtained environmental clearance from SEIAA for 5 years from the date of execution of valid mining lease or permit from the Department of Mining and Geology for the quantity mentioned in the approved mining plan. Then

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EC will be extended to cover the project life of 7 years from the date of issue of original EC subject to the review by SEAC at the end of 5 years. The granite building stone quarry over an area of 3.8717 hectares is located in Malayalappuzha Village, Konni Taluk, Pathanamthitta District, Kerala. The proponent has obtained approval for mining plan to produce 20,34,517.50 MT of building stone from an area of 3.8717 hectares.

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III. REPORT OF COMPLIANCE

A. GENERAL CONDITIONS

| ITEM NO | STIPULATIONS IN EC | STATUS OF COMPLIANCE |
|----------------|---|---|
| G-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. | The proponent has provided notarized affidavit (indicating the number and date of Environmental Clearance proceedings) that all the conditions stipulated in the EC have been scrupulously followed. EC order and Affidavit are attached as Annexure 1 and 2 respectively. |
| G-2 | All the statutory clearances should be obtained, as applicable, by project proponents 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. | All the statutory clearances are obtained. Explosive license, Panchayat license, Pollution Control Board Consent and Quarrying Lease are attached as Annexure 3, 4, 5 and 6 respectively. |
| G-3 | The project proponent should advertise in newspapers 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. | Advertisement has been given in the newspaper within 10 days from the date of receipt of the Environmental Clearance. Newspaper images for the same are attached as Annexure 7. |
| G-4 | The proponent shall send a copy of the EC to concerned Grama Panchayat/ District Panchayat/Municipality/ Corporation/ Urban | A copy of Environmental Clearance has been submitted to Konni Grama Panchayat. |

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| | 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. | Environmental Clearance has been uploaded on the website of the company. Website link: http://klrgranite.com/ |
| G-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. | Lease area is fenced off. Sign boards have been erected at prominent places. |
| G-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 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. | The details of Environmental Clearance are prominently displayed in a metallic board. Photograph of the same is attached as Figure 1 . |



Figure 1: Display Board

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| G-7 | Explosives should be stored in magazines in isolated place specified and approved by Explosive Department. Mats to reduce fly rock blasts to a maximum of 10 PPV should be provided. | Explosives are stored in magazines in isolated place specified and approved by Explosive Department. Mats will be provided to reduce fly rock blasts. |
| G-8 | Warning alarms indicating the time of blasting (to be done at specific timings) has to be arranged as per Stipulations of Explosive Department. | Warning alarms indicating the time of blasting is arranged as per the stipulations of Explosive Department. Photograph of alarm is attached as Figure 2. |



Figure 2: Warning Alarm

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| G-9 | Access roads to 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. | Access roads to quarry are black topped and transportation of minerals is done in covered trucks to contain dust emissions. |
| G-10 | A separate Environmental Management Cell 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 Panchayat | A separate environmental management cell with suitable qualified personnel has been set-up under the control of proponent. The cell has representative of Biodiversity Management Committee of the |

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| | 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. | Konni Panchayat. The EMC meetings are scheduled to conduct once in six months. Now, the cell has been formulated and the activities of the cell are yet to start. The review of activities and minutes will be submitted with the next compliance onwards. |
| G-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. | Quarrying will be carried out as per the approved mining plan with the suggestions from SEAC incorporated and following KMMC rules 2015 and the amendments. |
| G-12 | The quarrying operation (blasting) shall be restricted between 7 AM and 5 PM. | The quarrying operation (blasting) will be restricted between 7 AM and 5 PM |
| G-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. | Rainwater harvesting facility will be provided. Solar energy generation and utilization will be explored and provided. |
| G-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 groundwater table. No mining operations should be carried out at places having a slope greater than 45 ⁰ . | Maximum depth of mining will be as per the mining plan and as per specific direction of SEAC after field inspection. The maximum depth of mining will not intercept local groundwater table. No mining operations will be carried out at places having a slope greater than 45 ⁰ . |
| G-15 | The height of any bench shall not exceed five meters and breadth shall not be less than the height. | The height of any bench will not exceed five meters and breadth will not be less than the height. This will be scrupulously followed. |
| G-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. | There are no perennial or intermittent natural water course and/or water resources within the lease area. Hence, the mining operations will not obstruct any water course or drainage pattern. |

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| G-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. | A buffer zone of 7.5 m is maintained along the lease boundary and no specific distance specified by SEIAA in EC. There are no nearest forest boundaries or any other ecologically sensitive and archeologically important areas from the project area. |
| G-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 area should be taken up beforehand. Proper upkeep and maintenance of planted seedlings shall be ensured by the project proponent. | It is proposed to plant at least 5 times of the loss of trees as compensatory plantation. |
| G-19 | The proponent should ensure that the vegetation in the buffer is retained, maintained and strengthened with additions of native broad leaved plants. | The vegetation in the buffer is retained, maintained and strengthened. Native broad leaved plant saplings will be selected for plantation in the buffer area. |
| G-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 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. | To maintain eco-restoration, periodical afforestation and maintenance of the plantation will be made. Rain harvesting and dust controlling will be done. Mining will be carried by ecofriendly method. Overburden will be stacked in pre-determined site and will be used for reclamation of mined pit. |
| G-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 | At the time of the closure of the mine, it will be ensured that the directions contained are scrupulously followed. The |

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| | 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. | mined pit will be retained as water storage area. Monitoring and management of rehabilitated areas will be continued until the vegetation becomes self-sustaining. |
| G-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. | Control measures on noise and vibration will be implemented as per KPSCB. Quarrying activities are limited to day time. |
| G-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. | Periodical monitoring of the vibration will be conducted at specified locations and record will keep for inspection. Vibration study report is attached as Annexure 8 . |
| G-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. | Speed of trucks entering or leaving the mine site will be limited to moderate speed of 10 kmph. Speed limit boards are installed near project site. |
| G-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 standards limit indicated by CPCB/KSPCB. | Will be complied. |
| G-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. | Scrupulously follows the directions contained. |
| G-27 | Measures should be taken for maintaining noise levels below 85 dBA in the work environment. | Measures will be taken for the control of noise levels below 85 dBA in the work environment. |
| G-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. | Scrupulously follows the directions contained. |

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| G-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 reports to SEIAA. | There are no springs and perennial nallahs flowing in and around the mine lease area. |
| G-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 in to the river and other water bodies. The water so collected should be utilized for watering the mine area, roads, green development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly, particularly after monsoon. | Scrupulously follows the directions contained. |
| G-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. | Regular monitoring of ground water level and quality will be carried out around the mine area during mining operation. The ultimate working depth is above the ground water table. Hence, quarrying will not intersect with ground water table. |
| G-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. | Garland drains and silt traps will be provided in the slopes around the core area to channelize storm water. De-silting of Garland canal and silt traps are carried out on a daily basis. A labour has specifically assigned for the purpose. Thus, ensured that clear storm water is discharging from the project area. |
| G-33 | In 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 EC was issued, the project would require a fresh appraisal by this Authority, | Noted. |

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| | 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. | |
| G-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. | Scrupulously follows the directions contained. |
| G-35 | The top soil, if any, shall temporarily be 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 dumpsite(s) only. The maximum height of the dumps shall not exceed 8m and width 20m and overall slope of dumps shall be maintained to 45°. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface runoff. In 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. | Topsoil will be used for the Green belt development. OB generated will be stacked separately and covered with coir mats (geo textiles) and is vegetated with locally available shrubs and grasses. The maximum height of the dumps will not exceed 8m and width 20m and overall slope of dumps will be maintained to 45°. Protective wall or gabions will be made around the dump to prevent erosion/flow of sediments during rains. The entire excavated area will be backfilled. |
| G-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. | All the mining equipment will be serviced regularly & maintained for their efficient functioning and for reducing pollution. Spent oil from diesel engines will be collected in drums and stored in secured manner and then disposed to KSPCB authorized recyclers. |
| G-37 | All vehicles used for transportation and within the mines shall have 'PUC' certificate from authorized pollution taking center. Washing of all vehicles shall be inside the | Vehicles with valid 'PUC' certificate from authorized pollution taking center will be allowed for transportation |

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| | lease area. | within the mines. Washing of all vehicles will be inside the lease area. |
| G-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 PM ₁₀ 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. | Scrupulously follows the directions contained and ensured that the Ambient Air Quality parameters Conform to the norms prescribed by the Central Pollution Control Board in this regard. Monitoring reports are attached as Annexure 9 . |
| G-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 transfer points should be provided and properly maintained | Water sprinklers will be provided at project site, parking area, on haul roads, loading and unloading and at transfer points and properly maintained. |
| G-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. | Activities will be carried out under Corporate Environmental Responsibilities as per the activities listed in EC. |
| G-41 | The 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. | All the provisions of labour laws applicable from time to time to quarrying/mining operations will be implemented. The workers on the site will be provided with accommodation facilities at a suitable boarding place, protective equipment such as ear muffs, helmet, etc. |
| G-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. | Insurance protection will be provided to all the workers. |

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| G-43 | 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. The report of health surveillance program should be included in the half yearly compliance reports. | Occupational health surveillance program of the workers will be done periodically to observe any contractions due to exposure to dust and corrective measures will be taken, if needed. |
| G-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 ecofriendly manner. | The mined pit will be utilized for water harvesting and aqua culture. |
| G-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. | No Government land is involved in this project. |
| G-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. | Noted. Occupational Health and safety measures will be followed scrupulously. |
| G-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. | Noted. |
| G-48 | The proponent shall submit Half Yearly Compliance Reports (1 st of June & 1 st 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 31 st March every year. | Half yearly reports will be submitted as stipulated. |

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| G-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. | The Regional office of MOEF&CC located at Bangalore will monitor compliance of the stipulated conditions. The project authorities will extend full cooperation to the officer(s) from the Regional Office by furnishing the requisite data/information/monitoring reports. |
| G-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. | Noted. |
| G-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. | Noted. |
| G-52 | The EC given will be withdrawn at any time if the area is declared high hazardous by the SDMA. | Noted. |
| G-53 | 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. | Noted. There is no litigation pending against the project. |
| G-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. | Noted. |
| G-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 | Noted. |

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| G-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 environment protection. | Noted. The proponent will follow the conditions scrupulously. |
| G-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. | Noted. |

B. ADDITIONAL SPECIFIC CONDITIONS

| ITEM NO | STIPULATIONS IN EC | STATUS OF COMPLIANCE |
|----------------|--|---|
| 1 | The proponent shall carry out quarrying as per the approved mining plan and the proponent should strictly follow the Kerala Minor Mineral Concession Rules 2015 and amendments thereby. | The quarrying activities are carrying out as per the approved mining plan and strictly following 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. | The copy of the lease order is submitted to SEIAA and the same is attached as Annexure 6. |
| 3 | The EC issued will be subject to a review by SEAC after 5 years through field verification to ensure that mining is carried out sustainably as per the EC conditions. | Noted. |
| 4 | Ultimate depth is limited to 110 m amsl considering the local groundwater regime. District Geologist, Mining & Geology Department, Pathanamthitta may rework the mineable reserve before issuing lease/permit. | Complied. |
| 5 | The banks of the seasonal stream should be protected to ensure adequate drainage of the overland flow. Two or three silt | Will be complied. |

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| | traps should be provided in the drain carrying the overland flow to the seasonal stream. | |
| 6 | Development of green belt should be initiated prior to the commencement of mining using indigenous species. The suggested species are <i>Phyllanthus emblica</i> (Nelli), <i>Syzygium cumini</i> (Njaval), <i>Writia tinctorial</i> (Dhanthapala), <i>Ficus bengalensis</i> (Peral), <i>Ficus racemose</i> (Atti), <i>Bambusa bamboos</i> (Mullumula), <i>Dendrocalamus strictus</i> (Kallan mula), <i>Strychnos nuxvomica</i> (Kanjiram), <i>Terminalia cattappa</i> (Thanni), <i>Schleichera oleos</i> (Poovam), <i>Artocarpus hirsutus</i> (Ayiniplavu), etc. | Will be complied. |
| 7 | 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. | Will be complied. |
| 8 | The impact of vibration due to blasting on the houses and other built structures within 500m distance from the project boundary should be monitored in terms of Peak Particle Velocity and amplitude for maximum charge per delay and included in the Half Yearly Compliance Report. | The vibration study has been conducted and report is attached as Annexure-8 . |
| 9 | 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 half-yearly compliance report (HYCR). | Will be complied. |
| 10 | 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. | Will be complied. |
| 11 | Geotagged Photographs of the progress of compensatory afforestation should be submitted along with HYCR. | Will be complied. |
| 12 | Overflow water from the siltation pond should be discharged to the nearby natural | Will be complied. |

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| | drain after adequate filtration | |
| 13 | Overburden should be stored at the designed place and gabbion wall should be provided for the topsoil and overburden storage sites | Will be complied. |
| 14 | CER Plan should be implemented within the first 2 years and it should be operated and maintained till the mine closure plan is implemented. | Wheel chair provided as a part of CER activities. Photograph of the same is attached as Figure 3 . The remaining activities will be implemented as per the time frame provided in EC. |



Figure 3: Wheel Chair provided as a part of CER activities

| | | |
|----|--|--|
| 15 | 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). | Complied. |
| 16 | Adequate sanitation, waste management, and restroom facilities should be provided to the workers. | Complied. |
| 17 | Adequate energy conservation measures should be implemented including solar power installations. At least 40% of the energy requirement should be met from | Will explore the possibilities to conserve energy by use of solar power. |

**COMPLIANCE REPORT FOR GRANITE BUILDING STONE QUARRY BY
M/s. K L R GRANITES**

| | | |
|----|--|---------------------------|
| | the solar power. It should be used for office purposes and premises lighting | |
| 18 | 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. | Will be complied. |
| 19 | Adequate number of avenue trees of indigenous species should be planted along both sides of the haulage road. | Will be complied. |
| 20 | Adequate measures should be taken to harvest the rainwater as per the guidelines issued by the Central Ground Water Authority. | Will be complied. |
| 21 | Blasting mats should be used during rock blasting to contain the blast, prevent fly rocks and suppress dust. | Will be complied. |
| 22 | As per OM no F.No.22-65/2017-IA.III dated 30 th 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. | Will be complied. |
| 23 | In the wake of occurrence of large scale landslides in the state, as per the information provided by the Department of Mining and 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 | Noted and being followed. |

**COMPLIANCE REPORT FOR GRANITE BUILDING STONE QUARRY BY
M/s. K L R GRANITES**

| | | |
|----|---|--------|
| | of cracks in the surrounding buildings and disturbance to human and wildlife. | |
| 24 | As per the directions contained in the OM F. No. 22-34/2018-IA.III dated 16 th 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. | Noted. |
| 25 | The violation of EC condition may lead to cancellation of EC and action under The Environment (Protection) Act 1986. | Noted. |

ANNEXURE 1

EC



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

To,

The Managing Partner
KLR GRANITES
Shri. Joshy A Chemparathy,
Managing Partner,
M/s. K L R Granites,
27/906 Josh Building, Kothayikunnu Bypass, Thodupuzha-Post, Idukki,
Kerala -685584

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/275159/2022 dated 10 Aug 2022. The particulars of the environmental clearance granted to the project are as below.

- | | |
|--|-------------------------|
| 1. EC Identification No. | EC23B001KL154968 |
| 2. File No. | 2073/EC1/2022/SEIAA |
| 3. Project Type | New |
| 4. Category | B2 |
| 5. Project/Activity including Schedule No. | 1(a) Mining of minerals |
| 6. Name of Project | Ms. K L R Granites |
| 7. Name of Company/Organization | KLR GRANITES |
| 8. Location of Project | Kerala |
| 9. TOR Date | N/A |

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

Date: 06/10/2023

(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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**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. Kelker IAS, Member Secretary)*

Sub:- Environment Clearance for the Granite Building Stone Quarry of Shri. Joshy .A. Chemparathy, Managing Partner, M/s. K L R Granites, 27/906 Josh Building, Kothayikunnu Bypass, Thodupuzha-Post, Idukki - Granted – Orders issued.

State Level Environment Impact Assessment Authority, Kerala

Proposal No. SIA/KL/MIN/275159/2022

File No. 2073/EC1/2022/SEIAA

- Ref: 1. Application for EC received from Shri. Joshy A. Chemparathy on 10.8.2022
2. Minutes of the 147th meeting of SEAC held on 21st & 22nd July 2023
3. Minutes of the 131st meeting of SEIAA held 24th & 25th August 2023

ENVIRONMENTAL CLEARANCE NO.159/Q/2023

Shri. Joshy A Chemparathy, Managing Partner, M/s. K L R Granites, 27/906 Josh Building, Kothayikunnu Bypass, Thodupuzha-Post, Idukki – 685584, submitted an application for Environmental Clearance for the Granite Building Stone Quarry Project for an area of 3.8717 Ha at Re-Sy Block No. 20, Re-Sy No. 47/1-9 in Malayalappuzha Village, Konni Taluk, Pathanamthitta .

i) Project Details

| SL. No | Particulars | Details |
|---------------|---------------------|---|
| 1 | Name of the Project | Granite Building Stone Quarry Project of Shri. Joshy A Chemparathy, Managing Partner, M/s. K L R Granites |

| | | |
|----|---|--|
| 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 | Shri. Joshy A Chemparathy, Managing Partner, M/s. K L R Granites 27/906 Josh Building, Kothayikunnu Bypass Thodupuzha-Post, Idukki - 685584 |
| 5 | Project Location | |
| | a) Re-Sy Block No. | 20 |
| | b) Re - Survey No. | 47/1-9 |
| | c) Village | Malayalappuzha |
| | d) Panchayath | Konni |
| | e) Taluk | Konni |
| | f) District | Pathanamthitta. |
| 6 | Geo Co-ordinates | As per the mining plan |
| 7 | Extent (in Hectare) | 3.8717 |
| 8 | Project Cost | Rs. 758.75 lakh |
| 9 | Production details | The production/mineable reserve shall be reworked by the Mining & Geology Department as per specific condition no.(4) |
| 10 | Date of field inspection | 06.05.2023 |

ii) **EMP Details**

| Sl.No | Particulars | Capital Cost (Lakhs Rs) | Recurring Annual Cost (Lakhs Rs) |
|--------------|---|------------------------------------|---|
| 1 | Water Sprinkling for dust suppression | - | 8.00 |
| 2 | Green belt development | - | 2.25 |
| 3 | Personal protective equipment | - | 1.10 |
| 4 | Environmental monitoring | - | 2.00 |
| 5 | Desilting and Maintenance of Garland Drain, SST and RWHP | - | 4.00 |
| 6 | Maintenance of haulage roads for removal of dust accumulation | - | 2.00 |
| 7 | Coir matting on the dump, dump maintenance etc., | - | 2.00 |
| 8 | Activities proposed as CER | 12.00 | - |
| | TOTAL | 12.00 | 21.35 |

iii) CER Details

| Activity | Cost incurred 1 st Year | Maintenance Provision Provided | | | | Total Budget |
|---|---------------------------------------|--------------------------------|----------------------|----------------------|----------------------|-------------------|
| | | 2 nd Year | 3 rd Year | 4 th Year | 5 th Year | |
| Wheel chairs (5), Stretcher (5), Examination Coat(10), Airport Chair Set (5) to Konni Block Panchayath, Elakottoor.P.O., Konni | Rs. 3,00,000/- | Rs. 10,000/- | Rs. 10,000/- | Rs. 10,000/- | Rs. 20,000/- | Rs. 3,50,000/- |
| Installation of fans and sound system in the all class rooms, construction of the wash area and providing Laptop (10 Nos.) to Govt.HSS Konni | Rs. 2,50,000/- | Rs. 3,00,000/- | Rs. 15,000/- | Rs.15,000/- | Rs. 20,000/- | Rs. 6,00,000/- |
| Providing benches (100 nos) and desks (100 nos) to Govt. L.P.S Konni | Rs. 1,00,000/- | Rs. 1,30,000/- | Rs. 5,000/- | Rs. 5,000/- | Rs.10,000/ - | Rs. 2,50,000/- |
| Total | | Rs. 12,00,000/- | | | | |

2. In the 147th meeting, the Committee examined the proposal and verified the documents submitted by the project proponent. The mineable reserve as per mining plan is 2034517.50 MT and annual production is 3,49,920.23 TPA. The mine life is 7 years. The depth to water table is 10m and the source of water is an open well. The highest and lowest elevation is 115m and 145m, respectively. The presentation and field inspection has been completed. Based on discussions, the Committee recommended EC for mine life of 7 years subject to certain Specific Conditions in addition to the General Conditions.

3. In the 131st meeting, 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. 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 the period of 5 years, and then to extend the EC period to cover the project life of 7 years, from the date of execution of mine lease / permit, for the quantity mentioned in the approved mining plan, subject to the specific condition no.(4) 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.

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 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 5 years through field verification to ensure that mining is carried out sustainably as per the EC conditions.*

4. *Ultimate depth is limited to 110 m amsl considering the local groundwater regime. District Geologist, Mining & Geology Department , Pathanamthitta may rework the mineable reserve before issuing lease/permit.*
5. *The banks of the seasonal stream should be protected to ensure adequate drainage of the overland flow. Two or three silt traps should be provided in the drain carrying the overland flow to the seasonal stream.*
6. *Development of green belt should be initiated prior to the commencement of mining using indigenous species. The suggested species are The suggested species are *Phyllanthus emblica* (Nelli),*Syzygium cumini* (Njaval),*Writia tinctoria* (Dhanthapala) , *Ficus bengalensis*(Peral), *Ficus racemosa*(Atti),*Bambusa bamboos* (Mullumula), *Dendrocalamus strictus* (Kallan mula), *Strychnos nuxvomica*(Kanjiram), *Terminalia cattappa*(Thanni), *Schleichera oleosa* (Poovam), *Artocarpus hirsutus*(Ayiniplavu) etc.*
7. *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.*
8. *The impact of vibration due to blasting on the houses and other built structures within 500m distance from the project boundary should be monitored in terms of Peak Particle Velocity and amplitude for maximum charge per delay and included in the Half Yearly Compliance Report.*
9. *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 half-yearly compliance report (HYCR).*
10. *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.*
11. *Geotagged Photographs of the progress of compensatory afforestation should be submitted along with HYCR.*
12. *Overflow water from the siltation pond should be discharged to the nearby natural drain after adequate filtration*

13. *Overburden should be stored at the designed place and gabbion wall should be provided for the topsoil and overburden storage sites*
14. *CER Plan should be implemented within the first 2 years and it should be operated and maintained till the mine closure plan is implemented.*
15. *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).*
16. *Adequate sanitation, waste management, and restroom facilities should be provided to the workers.*
17. *Adequate energy conservation measures should be implemented including solar power installations. At least 40% of the energy requirement should be met from the solar power. It should be used for office purposes and premises lighting*
18. *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.*
19. *Adequate number of avenue trees of indigenous species should be planted along both sides of the haulage road.*
20. *Adequate measures should be taken to harvest the rainwater as per the guidelines issued by the Central Ground Water Authority.*
21. *Blasting mats should be used during rock blasting to contain the blast, prevent fly rocks and suppress dust.*
22. *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.*

23. *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.*
24. *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.*
25. *The violation of EC condition may lead to cancellation of EC and action under The Environment (Protection) Act 1986*

4. Environmental Clearance as per the EIA Notification, 2006 is hereby accorded for the Granite Building Stone Quarry Project of Shri. Joshy A Chemparathy, Managing Partner, M/s. K L R Granites, 27/906 Josh Building, Kothayikunnu Bypass, Thodupuzha-Post, Idukki – 685584, for an area of 3.8717 Ha at Re-Sy Block No. 20, Re-Sy No. 47/1-9 in Malayalappuzha Village, Konni Taluk, Pathanamthitta, initially for the period of 5 years, and then to extend the EC period to cover the project life of 7 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, for the quantity reassessed by the Mining & Geology Department, subject to the Specific Condition no. (4) 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 mine lease / permit from Mining & Geology Department as per SO 1807(E) dated 12.04.2022 of MoEF & CC, subject to earlier review of EC in case of violation or non-compliance of conditions or genuine complaints from residents within the security area of the quarry. The validity shall extend to cover Project Life of 7 years, from the date of execution of original EC, subject to the review by SEAC at the end of every five years as stipulated in Para (3) & (4).

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, Pathanamthitta

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 Shri. Joshy A Chemparathy, Managing Partner, M/s. K L R Granites, 27/906 Josh Building, Kothayikunnu Bypass, Thodupuzha-Post, Idukki – 685584

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 45°. 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,

Shri. Joshy A Chemparathy,
Managing Partner, M/s. K L R Granites,
27/906 Josh Building, Kothayikunnu Bypass,
Thodupuzha-Post, Idukki – 685584

Copy to

1. MoEF Regional Office, Southern Zone, Kendriya Sadan, 4th Floor, E&F Wing, II Block, Koramangala, Bangalore-560034. (through e-mail: ros.z.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, Pathanamthitta
5. The Director, Mining & Geology, Thiruvananthapuram -4.
6. The Member Secretary, Kerala State Pollution Control Board
7. The District Geologist, Pathanamthitta
8. The Tahsildhar, Konni Taluk Pathanamthitta District
9. The Secretary, Konni Grama Panchayat, Pathanamthitta
10. The Chairman, SEIAA.
11. Website.
12. S/f
13. O/c

Signature Not Verified

Digitally signed by Dr Rathan U
kelkar IAS
Member Secretary

Date: 10/6/2023 9:10:06 PM

ANNEXURE 2
AFFIDAVIT

भारतीय गैर न्यायिक

पचास
रुपये
₹.50



FIFTY
RUPEES
Rs.50

INDIA NON JUDICIAL

കേരളം കേരल KERALA

CU 893338

AFFIDAVIT

I Mr. **Joshy A. Chembarathy** S/o Augustin, (Holder of Aadhaar Card No.3563 8716 9714) Managing Partner, KLR Granites, 27/906 Josh Building Kothayikunnu Bypass Thodupuzha P. O, Idukki, Kerala-685584 hereby affirm and confirm as follows:

Deponent: Mr. **Joshy A. Chembarathy**



ADV. G. SURESH KUMAR
DISTRICT NOTARY
ADOOR / PATHANAMTHITTA
KERALA, INDIA

ADV. G. SURESH KUMAR
DISTRICT NOTARY
ADOOR / PATHANAMTHITTA
KERALA, INDIA



22.5.24

₹ 50 രൂപയ്ക്ക് താ
ജലനാശനം, K.L.R. ഓരോർ
ജലനം.

ADOOR VENDOR
SREEJA. S

भारतीय गैर न्यायिक

पचास
रुपये
रु.50



FIFTY
RUPEES
Rs.50

INDIA NON JUDICIAL

കേരളം KERALA

CU 893339

-2-

1. That my quarry project is situated at Block No. 20, Re- survey No. 47/1-9 in Malayalapuzha village, Konni Taluk, Pathanamthitta Dist. Kerala State.

Deponent: Mr. Joshy A. Chembaruthy



G. SURESH KUMAR
DISTRICT NOTARY
ADOOR / PATHANAMTHITTA
KERALA, INDIA



100.
22.5.24

പ്ര 50 ഭാഗികമായി
H.L.R. ഉപയോഗിച്ച്
അടയ്ക്കുന്നു.
ADOOR VANDER
SREEJA. S



കേരളം KERALA

CU 893340

-3-

2 That, the Eco- restoration including the mine closure plan will be done at my expenses.

Deponent: Mr. Joshy A. Chembarathy



G. SURESH KUMAR
DISTRICT NOTARY
ADOOR / PATHANAMTHITTA
KERALA, INDIA



Rs 50
22.5.24

RS 50 ഭൂമി പുനഃനിർമ്മാണ
R. L. R. G. Ram 2nd fl
202000

ADOOR VENDOR
SREF 11 S

भारतीय गैर न्यायिक

पचास
रुपये
₹.50



FIFTY
RUPEES
Rs.50

INDIA NON JUDICIAL

കേരളം കേരल KERALA

CU 893341

-4-

Verification:

Verified that my above statement are true to the best of my knowledge and no materials have been concealed there in.

Place: ^{ADDOOR} Thodupuzha
Date: ²²⁻⁰⁵⁻²⁰²⁴ 22-05-2024

Deponent: Mr. Joshy A. Chembaruthy

^{LV}
ADV. G. SURESH KUMAR
DISTRICT NOTARY
ADDOOR / PATHANAMTHITTA
KERALA, INDIA



^{Embaruthy}
ADV. G. SURESH KUMAR
DISTRICT NOTARY
ADDOOR / PATHANAMTHITTA
KERALA, INDIA



No 22-5-24

50. ഭയപ്പെട്ട് 26/05/2024
K.L.R. അനന്തൻ
അനന്തൻ.

ADDOOR/DEPDER
SRE...

ANNEXURE 3
EXPLOSIVE LICENSE

अनुज्ञापि प्ररूप एल. ई.-3 | LICENCE FORM LE-3

(विस्फोटक नियम, 2008 की अनुसूची 4 के भाग 1 के अनुच्छेद 3(क) से (घ) देखिए।)
(See article 3(a) to (d) of Part I of Schedule IV of Explosives Rules, 2008)

(ग) उपयोग के लिए एक समय पर वर्ग 1,2,3,4,5 या वर्ग 7 के विस्फोटक या किसी मैगजीन में वर्ग 6 के विस्फोटक रखने के लिए अनुज्ञापि
Licence to possess : (c) for use,explosives of class 1, 2,3,4,5,6 or 7 in a magazine

अनुज्ञापि सं. (Licence No.) : E/SC/KL/22/1764(E50911)

वार्षिक फीस रुपए (Annual Fee Rs): 2400/-

1. Licence is hereby granted to

M/s KLR GRANITES (अधिभोगी / Occupier : **Joshy A. Chemparathy**), Joshi A. Chemparathy (Mg. Partner), No.27/906, Josh Building, Kothayikunnu Bye Pass, Town/Village - Thodupuzha, District-IDUKKI, State-Kerala, Pincode - 689692



को अनुज्ञापि अनुदत्त की जाती है।

2. अनुज्ञापिधारी की प्रास्थिति | Status of licensee : **Partnership Firm**

3. अनुज्ञापि निम्नलिखित प्रयोजनों के लिए विधिमाम्य है।

Licence is valid only for the following purpose.

possess for use of **Nitrate mixture - Slurry and Emulsion Explosives, Safety Fuse, Electric Detonators, Ordinary Detonator**, - के उपयोग के लिए

4. अनुज्ञापि विस्फोटकों के निम्नलिखित किस्मों, प्रकार और मात्रा के लिए विधिमाम्य है।

Licence is valid for the following kinds and quantity of explosives: -- (क) (a)

| क्र Sr. No. | नाम और विवरण Name and Description | वर्ग और प्रभाग Class & Division | उप-प्रभाग Sub-division | मात्रा किसी एक समय में Quantity at any one time |
|----------------|--|------------------------------------|---------------------------|--|
| 1. | Nitrate mixture - Slurry and Emulsion Explosives | 2 ,0 | 0 | 100 Kg. |
| 2. | Safety Fuse | 6 ,1 | 0 | 2000 Mtrs |
| 3. | Electric Detonators | 6 ,3 | 0 | 1500 Nos. |
| 4. | Ordinary Detonator | 6 ,3 | 0 | 2000 Nos. |

(ख) किसी एक कलेंडर मास में खरीदे जाने वाले विस्फोटक की मात्रा [अनुच्छेद 3(ख) और (ग) के अधीन अनुज्ञापि के लिए]

(b) Quantity of explosives to be purchased in a calendar month[applicable for licence under article 3(b) and (c)] :

**20 times
as above.**

5. निम्नलिखित रेखाचित्र (रेखाचित्रों) से अनुज्ञापि परिसर की पुष्टि होती है।

The licensed premises shall conform to the following drawing(s) :

रेखाचित्र क्र. (Drawing No.) E/SC/KL/22/1764(E50911)

दिनांक (Dated) 20/09/2023

6. अनुज्ञापि परिसर निम्नलिखित पते पर स्थित हैं। The licensed premises are situated at following address:

Survey No. 581/1-4 , ग्राम (Town/Village) : **Konni-thazham village, Kozhencherry taluk**

जिला (District) **PATHANAMTHITTA** पुलिस थाना (Police Station) : **Konni** राज्य (State) **Kerala** पिनकोड (Pincode) **689692**
दूरभाष (Phone) ई. मेल (E-Mail) फैक्स (Fax)

7. अनुज्ञापि परिसर में निम्नलिखित सुविधाएं अंतर्विष्ट हैं।

The licensed premises consist of following facilities.

two mini magazines of stone masonry construction

8. अनुज्ञापि समय - समय पर यथासंशोधित विस्फोटक अधिनियम, 1884 और उनके अधीन विरचित विस्फोटक नियम, 2004 के उपबंधों, शर्तों और अतिरिक्त शर्तों और निम्नलिखित उपाबंधों के अधीन रहते हुए अनुदत्त की जाती है।

The licence is granted subject to the provision of Explosives Act 1884 as amended from time to time and the Explosives Rules, 2008 framed there under and the conditions, additional conditions and the following Annexures.

1. उपर्युक्त क्रम सं. 5 में यथा कथित रेखाचित्र (स्थान, सन्निर्माण संबंधी और अन्य विवरण दर्शित करते हुए)।

Drawings (showing site, constructional and other details) as stated in serial No. 5 above.

2. अनुज्ञापि प्राधिकारी द्वारा हस्ताक्षरित इस अनुज्ञापि की शर्तों और अतिरिक्त शर्तों।

Conditions and Additional Conditions of this licence signed by the licensing authority.

3. दूरी प्ररूप DE-2 | Distance Form DE-2.

9. यह अनुज्ञापि तारीख **31 मार्च 2028** तक विधिमाम्य रहेगी। This licence shall remain valid till **31st day of March 2028**.

यह अनुज्ञापि, अधिनियम या उसके अधीन विरचित नियमों या अनुसूची V के भाग 4 के प्रति निर्दिष्ट सेट-VII के अधीन तथा उपवर्णित इस अनुज्ञापि की शर्तों का अधिक्रमण करने या यदि अनुज्ञापि परिसर योजना या उससे संलग्न उपबंध में दर्शित विवरण के अनुरूप नहीं पाए जाने पर निलंबित या प्रतिसंहत की जा सकती है, जहां वह लागू हो।

This licence is liable to be suspended or revoked for any violation of the Act or Rules framed there under or the conditions of this licence as set forth under Set VIII, wherever applicable, referred to in Part 4 of Schedule V or if the licensed premises are not found conforming to the description shown in the plans and Annexure attached hereto.

तारीख | The Date - 15/09/2023

संयुक्त मुख्य विस्फोटक नियंत्रक | **Joint Chief Controller of Explosives**
South Circle, Chennai

Amendments :

- Change in Authorized Signatory/Occupier/Partners/Directors dated : 15/09/2023
- Change in Postal Address dated : 15/09/2023
- Amendment in Drawings/Facilities/Premises dated : 15/09/2023
- Change in Postal Address dated : 18/09/2023
- Amendment in Drawings/Facilities/Premises dated : 20/09/2023

Transfers :

- Change in Licensee Name/Address/Status dated : 15/09/2023

नवीनीकरण के पृष्ठांकन के लिए स्थान
Space for Endorsement of Renewal

नवीकरण की तारीख
Date of Renewal

समाप्ति की तारीख
Date of Expiry

अनुज्ञापन प्राधिकारी के हस्ताक्षर और स्टाम्प
Signature of licensing authority and stamp

कानूनी चेतावनी : विस्फोटकों को गलत ढंग से चलाने या उनका दुरुपयोग विधि के अधीन गंभीर दंडिक अपराध होगा।

Statutory Warning : Mishandling and misuse of explosives shall constitute serious criminal offence under the law.

Note :- This is system generated document does not require physical signature. Applicant may take printout for their records.

ANNEXURE 4
PANCHAYAT LICENSE



കേരള പ്രാജക്ടുകളുടെയും മറ്റ് പ്രാജക്ടുകളുടെയും നിന്നും
 1994ലെ കേരള പഞ്ചായത്ത് രാജ് ആക്ട് (1994ലെ 13) 232, 233, 234, 254 എന്നീ വകുപ്പുകളും
 അതേ തുടർനിയമങ്ങളും അനുസരിച്ച്
 ഹോളിക്വിലിംഗ്, വ്യവസായങ്ങൾ, സംരംഭങ്ങൾ, മറ്റു സംവരണങ്ങൾ എന്നിവയ്ക്കായി നൽകുന്ന

ലൈസൻസിംഗ്

നമ്പർ : 400371/RPTL20/GPO/2024/1542(129)

തീയതി : 18.03.2024

| | | |
|---|--|--|
| ലൈസൻസിംഗ് ചെയ്ത പദ്ധതിയുടെ പേരും വാർഡ് നമ്പറും | ലൈസൻസിംഗ് ചെയ്ത പദ്ധതിയുടെ പേരും വാർഡ് നമ്പറും, കെ.എസ്.ആർ. പ്രാജക്ട്, കൂനലംകരംപിള്ള | |
| സമാപനത്തിന്റെ പേരും സമയനാളവും | കെ.എസ്.ആർ. പ്രാജക്ട്, കൂനലംകരംപിള്ള | |
| ലൈസൻസിംഗ് നൽകിയിട്ടുള്ള പ്രവർത്തനങ്ങൾ | കുടിവെള്ളം - നൽകൽ | |
| കെട്ടിടത്തിന്റെ നമ്പരും വാർഡ് നമ്പരും | സർവ്വേ നമ്പർ: 47/1-9 | |
| ലൈസൻസിംഗ് കാലാവധി | 01-04-2024 മുതൽ 31-03-2025 വരെ | |
| ഇനംകൊടുക്കുന്ന ലൈസൻസിംഗ് ഫീ | ₹15000 | റസിപ്റ്റ് നമ്പർ: 1230108594 തീയതി: 18-03-2024 |
| അനുബന്ധ ഫീ | ₹1250 + ₹1250 | റസിപ്റ്റ് നമ്പർ: 1230108594 തീയതി: 18-03-2024 |
| ലൈസൻസിംഗ് അനുബന്ധമായി നൽകേണ്ട പേപ്പറുകളുടെ വിവരങ്ങൾ (നമ്പർ, തീയതി, കാലാവധി, നൽകിയ നമ്പർകൊടുക്കാനും) | 1)PCB Certificate (File No: KSPCB/PT/ICO/10045668/2023 dtd 21.10.2023 , Certificate Valid UPTo 18.04.2027) 2)Form LE-3 Explosive Licence (Cert valid upto 31.03.2028, Survey No: 47/1-9) 3) Letter Head - Company Minutes Copy 4)EC (No : 2073/EC1/2022/SEIAA dtd 06.10.2023 ,Valid Upto for 5 year) 5) Partnership deed 6) Survey Map 7) Mining & geology cert (File No : DMG/631/2022-M2 dtd 19.04.2022) | |

Document signed by DPU T K - 400371@kerala.gov.in
 Digitally signed by DPU T K
 Date: 2024.03.18 10:44:45 GMT-07:00
 കേരള സർക്കാർ, ഗവൺമെന്റ് കോളേജ് കോർപ്പറേഷൻ, കേരളം

ANNEXURE 5
PCB CONSENT

FILE NO : KSPCB/PT/ICO/10045668/2023

Date of issue : 21-10-2023



KERALA STATE POLLUTION CONTROL BOARD

CONSENT TO

OPERATE/AUTHORISATION/REGISTRATION

ISSUED UNDER

The Water (Prevention & Control of Pollution) Act, 1974

The Air (Prevention & Control of Pollution) Act, 1981

and

The Environment (Protection) Act, 1986

As per Application No. : 10045668

Dated : 07-10-2023

To

K L R GRANITES

CHENGARA P.O.,MALAYALAPUZHA ERAM,PATHANAMTHITTA

Consent No. : KSPCB/PT/ICO/10045668/2023

Valid Upto : 18-04-2027

1. GENERAL

1.1. This integrated consent is granted subject to the power of the Board to withdraw consent, review and make variation in or revoke all or any of the conditions as the Board deems fit

| | | |
|----|---------------------------------------|--|
| 1 | VALIDITY | 18-04-2027 |
| 2 | Name and Address of the establishment | K L R GRANITES CHENGARA P.O.,MALAYALAPUZHA ERAM,PATHANAMTHITTA E-Mail : 9946555658 Contact Number : 9946555658 |
| 3 | Occupier Details | JOSY A CHEMPARATHY , (Managing Partner, M/s. K L R Granites,27/906 Josh Building, Kothayikunnu Bypass , Thodupuzha-Post, Idukki), Chemparathy, Thodupuzha, Muthalakodam, Idukki, PIN - 685605 E-Mail : chemparathyjoshy@gmail.com Contact Number : |
| 4 | Local Body | KONNI |
| 5 | Survey Number | 47/1-9 |
| 6 | Village | Malayalappuzha |
| 7 | Taluk | Konni |
| 8 | District | PATHANAMTHITTA |
| 9 | Capital Investment(Rs in Lakhs) | 758.75 |
| 10 | Scale | Medium |
| 11 | Category | RED |
| 12 | Annual fee(Rs) | 62900.0 |
| | Total Fee remitted(Rs) | 408850.0 |
| 13 | Activity | Granite Building Stone -349920.23 Metric Tonnes per Annum. Extend of Land (in Hectare)=3.8717 |
| 14 | Machinery details | Total 249 HP (Tractor with compressor 50 HP (2 Nos), Excavator with Breaker 74 HP, Excavator with loader 75 HP) |

GENERAL CONDITIONS

1. This Consent is issued based on the Judgement dated 25-10-21 of the Honourable Supreme Court of India in CA no. 6273 of 2021 and connected matters, order dated 14-12-2021 of the Honourable Supreme Court in MA no. 1904 of 2021, Judgement dated 10-11-2021 of the Honourable High Court of Kerala in WP(C) 2773 of 2021 and Judgement dated 10-12-2021 of the Honourable High Court of Kerala in WP(C) 27178 of 2021.
2. This Consent is issued subject to any order passed by the Honourable Supreme Court, Honourable National Green Tribunal, Honourable High Court of Kerala in connected matters.
3. The consent unless withdrawn earlier and subject to condition no. 1 & 2 shall be valid up to 18/04/2027. For renewal of consent, application may be submitted via online 2 months in advance of expiry of validity date.
4. Quarrying shall be done only within the area marked in the approved location plan attached. No change, deviation or alteration that may affect the environment, extent and location of quarry shall be made. Any change in particulars furnished in the application/the identity of the occupier/ authorized agent is to be intimated to the Board forthwith.
5. A minimum distance of 50 m shall be kept from the boundary of quarry area to residential buildings, places of worship, public buildings, public road having vehicular traffic, river or lake, railway line and bridges.
6. The applicant shall put up sign boards near the main entrance of the plant to display consent number & validity.
7. Suitable species of trees and curtain plants shall be planted and maintained within and along the periphery of the premises, forming a green belt to improve the environment.
8. Fencing shall be provided around the boundary of quarry and shall be maintained properly.
9. After completion of excavation at any site, the abandoned quarry shall be utilized for rain water harvesting with protective barriers/ any other suitable approved purpose or may be reclaimed as per specification.
10. Quarrying activity shall not be carried out during night hours.
11. PM₁₀ in ambient air at the boundary of quarry shall not exceed 100 micrograms per cubic meter and PM_{2.5} in ambient air at the boundary shall not exceed 60 micrograms per cubic meter .
12. The Sound level (Leq) at 1m outside the boundary of the site shall not exceed the ambient noise standards applicable to the adjoining areas.
13. The consent issued from the Board shall be valid only for a period when all other statutory or necessary clearances from other concerned authorities are valid.
14. The applicant shall comply with the instructions that the Board may issue from time to time regarding the prevention and control of Air, Water, Land and Sound Pollution.
15. Regular wetting of the roads in the premises of the quarry and approach roads near the quarry shall be done for avoiding excessive dust emission within and outside the boundary of the unit.

16. Products shall be transported with proper cover and/or after wetting to prevent spreading of dust.

SIGNATURE OF ISSUING AUTHORITY

ENVIRONMENTAL ENGINEER

To

M/s K L R GRANITES

CHENGARA P.O. MALAYALAPUZHA ERAM PATHANAMTHITTA

E-Mail : 9946555658

Contact Number : 9946555658

1.This digitally signed document is legally valid as per the Information Technology Act 2000

2. For verifying this document please go to www.keralapcbonline.com and search using date of issue/name of the unit/Application Number in “Consent Granted Applications” link in the home page of the Board’s Phoenix website.

ANNEXURE 6
QUARRY LEASE

DRUIDK/456/2024-INS, Office of the District Registrar, Idukki
Thodupuzha 05-03-2024

CERTIFICATE UNDER SECTION 32(1)(b) OF KERALA STAMP ACT 1959

Certified that proper stamp duty of Rs. 1383350/- (Rupees Thirteen Lakh Eighty Three Thousand Three hundred and Fifty only) with which the document is chargeable has been remitted by Sri. Joshy A Chemparathy, Managing Partner, M/S K.L.R. Enterprises as per ETR003227242202324 dated 05-03-2024 in this office. This document contains 8 sheets.




REGHUK R
DISTRICT REGISTRAR (Collector)
IDUKKI

FORM H
(See Rule 43)
QUARRYING LEASE
Lessee : Joshy A Chemparathy


Doc. No. 465 / I / 2024.



This deed of lease made on this the 04th day of March 2024, between the Governor of Kerala (hereinafter referred to as the "State Government" which expression shall,


LESSOR

SHYJU P.
Geologist
Dept. of Mining & Geology
District Office, Pathanamthitta
Adoor P.O., Pin - 691 523

LESSEE 

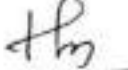
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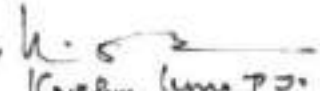
DISTRICT REGISTRAR
IDUKKI

Doc. No. 465 / I / 2024

Presented to the office of the Sub Registrar of Kanni with affixed photograph and thumb impression of the Lessee as per Section 32(A) of Registrars Act on the 7th day of March 2024 at 11:00 AM and paid a Registrar's fee of Rs. 3475/- High S- Agent by.

23/906 Josh building

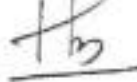
JOSHUA A. CHEMPARATHY 

7th day of March 2024 

Executed and attested to




Christine Kumar P.J.
Sub Registrar

JOSHUA A. CHEMPARATHY 

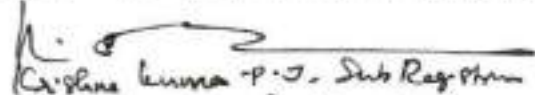
S/o Augustine business Kothayikkunnu Bypass, Thodupuzha.

For and on behalf of Ms. Shyju P. Geologist adept of ~~Thodupuzha~~
Mining and Geology, District office Pathanamthitta

Identified by

Sreenivasan  s/o. Sankara Varrier Sivilas (H), Agriculture Thodupuzha.

Sudhin. C. P. J. Sudhin s/o P. J. Chollammackal (H) Agriculture, Thodupuzha.

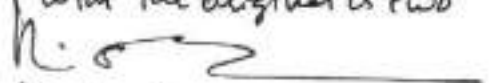
7th day of March 2024 

Registered as No. 465/24 of Book 1

Vol. 689 page 89 to 100

8 Sheet 1st sheet Number of Duplicate registered along with the original is two

7th day of March 2024



Christine Kumar P.J.
Sub Registrar.



Returned to the
Executant on 11/3/24
with 2 Duplicates

where the context so admits be deemed to include his successors and assigns) of the one part and **M/s K.L.R Granites** (PAN : AAYFK0644A), 27/906 Josh Building, Kothayikunnu Bypass, Thodupuzha. P.O, Idukki - 685584. (Represented by its Managing Partner, **Shri. Joshy A Chemparathy**) (Aadhaar No.3563 8716 9714) (hereinafter called the "lessee/lessees" which expression shall where the context so admits, include his/their heirs, executors, administrators, representatives and permitted assigns) of the other part. Witnesseth that in consideration of the rents and royalties and lessee's/Lessees' covenants, hereinafter reserved and contained the State Government hereby give on lease to the lessee/lessees the land measuring 3.8717 Hectares described in the schedule hereunder and delineated on the plan hereto annexed and therein coloured red (hereinafter called the "said lands") to hold the same for a period of 7 **(Seven) years** commencing from the.....04|03|2024.....and ending on the...03|03|2031..... for the purposes of extracting minor mineral/minerals and subject to the terms and conditions contained in the Kerala Minor Mineral Concession Rules, 2015 and Kerala Minor Mineral Concession (Amendment) Rules, 2023 (hereinafter referred to as "the Rules") and to the terms and conditions hereinafter appearing.

1. The lessee/lessees shall have the right in and upon the said lands to extract Granite Building Stone (herein after called the said mineral/minerals) and to do all acts necessary for the extraction of the said mineral/minerals including the erection on the said lands, buildings and plant required for the purposes and also to take lead and carry away over the said lands and to dispose of the said minerals extracted as aforesaid.
2. The lessee/lessees shall during the subsistence of this lease have the liberty to work the said mineral/minerals and remove the same from the leasehold on permits issued by the State Government/competent authority or any other officer authorized by him in this regard. The permits shall be issued only on the basis of pre-paid royalty at the rates specified in Schedule I to these Rules. The royalty rates shall be subject to revision from time to time as the State Government may order.



LESSOR

SHYJU P.
Geologist
Dept. of Mining & Geology
District Office, Pathanamthitta
Adoor P.O., Pin - 691 523

LESSEE



3. The lessee/lessees shall pay to the State Government a yearly surface rent equal to the land revenue if any, assessable under the rules for the time being in force, or if the land be the property of Government or in reserve forest then equal to the land revenue plus cess, if any, per hectare of the land the surface whereof shall be occupied or used by the lessee/lessees for any of the purposes of this deed and so in proportion for any area less than one hectare. The said surface rent shall be paid by yearly payments, the first of such payments to be made on or before the last day of the first year of occupation provided always that no such rent shall be paid or demanded in respect of any roads or ways now in existence.
4. The lessee/lessees shall at all times during the currency of this lease keep correct and intelligible books of account showing accurately the quantity of the said minerals extracted and the weight and value of the said mineral sold or exported together with the names of the purchasers or consignees. The lessee shall also maintain a register of employees showing therein separately men, women employed daily and shall at reasonable times allow the competent authority appointed under the rules (hereinafter referred to as "competent authority") or the officer authorized by him to examine the said books of account and the register of employees and to take copies and extracts there from. The lessee/lessees shall submit reports in Forms F and G on the specified dates.
5. All sums found due under or by virtue of this deed from the lessee/lessees may be recovered from him jointly and severally from them and his/their properties movable and immovable under the provisions of the Revenue Recovery Act for the time being in force as though such sums are arrears of land revenue or in any other manner as the State Government may deem fit.
6. The lessee/lessees shall at the lessee's/lessees' own expense erect and at all times maintain and keep in repair boundary marks and pillars along the boundaries of the said lands according to the demarcation shown in the plan here to annexed.


LESSOR

SHYJU P.
Geologist
Dept. of Mining & Geology
District Office, Palthanamthitta
Adoor P.O., Pin - 591 523

LESSEE



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7. The lessee shall not carry on or allow to be carried on any quarrying operations at or to any points within a distance of 100 meters from any railway line except with the previous written permission of the railway administration concerned and any bridge on National Highway or 50 meters from any reservoir, tanks, canals, rivers, bridges, public roads, other public works, residential buildings, the boundary walls of places of worship, burial grounds or burning ghats or any monument protected by Government except with the previous permission of the authorities concerned or the Government or competent authority. Provided the railway administration or the State Government or any other authority in this behalf may in granting such permission impose such other conditions as may be found proper and necessary.
8. The sides of open workings shall be sloped, stepped or secured by the lessee in such a manner as to prevent slope failure, when an open working is worked in steps, steps shall be of sufficient breadth in relation to their height to secure safety. In open workings trees liable to fall and all loose ground and material shall be removed by the lessee sufficiently far from the edge or otherwise made source in order to prevent danger to persons employed in the quarry.
9. If a working place is found to be unsafe all persons shall be withdrawn by the lessee/ lessees immediately from the dangerous area and all access to such working place except for the purpose of removing the danger of saving life shall be prevented by securely fencing the full width of all entrances to the place.
10. The lessee/lessees shall at all reasonable times allow any officer authorized by the Central Government or by the State Government in that behalf to inspect the said lands and the buildings and plants erected thereon and the lessee/lessees shall assist such persons in conducting the inspection and afford them all information they may reasonably require, and shall conform to and observe all orders which the Central and State Governments as the result of such inspection or otherwise, may from time to time pass.


LESSOR

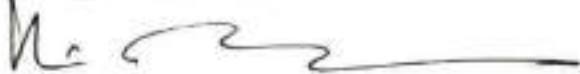
SHYJU P.
Geologist
Dept. of Mining & Geology
District Office, Palakkad
Adoor P.O., Pin - 621 623

LESSEE



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DISTRICT REGISTRAR
IDUKKI

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No. 



11. The lessee shall be responsible for implementing the provisions of the various labour laws applicable, from time to time, to the quarry.
12. The lessee/lessees shall not assign or underlet the said lands or any part thereof or the rights or privileges, therein hereby granted or any of them without the previous permission in writing of the State Government/competent authority.
13. Where the lease or any right, title or interest therein has been assigned, sublet or transferred as provided in rule 45 read with condition 12, then the person in whose favor such assignment, sublease or transfer has been made shall be responsible for implementing the provisions of the various labour laws applicable, from time to time, to the quarry.
14. The lease may be surrendered by the lessee/lessees at any time after 3 months notice in writing to the State Government/competent authority: Provided the lessee/lessees has/have paid all sums due on account of the lease. Provided further that if the lessee/lessees elects/elect to determine this lease before the expiry of the term of the lease, shall pay in addition to other dues a sum equal to the dead rent payable for the remaining part of the term of the lease deed.
15. If the lessee/lessees shall be desirous of taking a further lease of the said lands for a further term, he/they shall give three months' previous notice in writing of such desire to the State Government/competent authority and if the lessee/lessees has/have duly observed all the conditions of this lease, the State Government/competent authority may agree to renew the lease for such further term and on such terms and conditions as the State Government/competent authority may determine which shall be in accordance with the provisions of these rules.
16. If the lessee/lessees shall at any time during the said term use the said lands or any part thereof in any manner other than as authorized by this lease or fail to carry on quarrying operations as per the approved mining plan without sufficient cause of which the State Government/competent authority shall be the judge or shall commit a breach of any of the conditions of this lease it shall be lawful for the State Government/competent authority



LESSOR

SHYJU P.
Geologist
Dept. of Mining & Geology
District Office, Pathanamthitta
Adoor P.O., Pin - 691 523

LESSEE



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- to cancel this lease after giving the lessee an opportunity of being heard or the alternative to receive from the lessee/lessees such penalty not exceeding Rs.5,00,000/- (Rupees Five Lakhs only) for the breach as the State Government/ competent authority may fix.
17. In cases where the area under quarrying lease is Government land, the lessee shall close the mine within three calendar months after the expiry of the lease or its determination and remove any engine, machinery, buildings, structures and other works and conveniences from the area under the lease. If the lessee does not remove the same within the said period, the same shall become the property of the State Government and the State Government shall have the right to dispose the same on such terms and conditions as it deems fit.
 18. This lease subject to all rules and regulations which may from time to time be issued by the State Government regulating the working of the quarries and other matters affecting safety, health and convenience of the lessee's/lessees' employees or of the public, whether under the Indian Mines Act or otherwise.
 19. The lessee/lessees shall without delay send to the District Collector and the competent authority or the officer authorized by him in this regard report of any accident causing loss of life or serious bodily injuries or seriously affecting or endangering life or property which may at any time occur at or in the said lands in the course of operations under this lease.
 20. The lessee/lessees shall furnish such reports and returns relating to output, labourers employed and other matters as the State Government may prescribe.
 21. The lessee/lessees shall make and pay such reasonable compensation as may be assessed by lawful authority in accordance with the law in force on the subject for all damage, injury or disturbance which may be done by him/them in exercise of the powers granted by this lease and shall indemnify and shall keep indemnified fully and completely the State Government against all claims which may be made by any person or persons in respect of any such damage, injury or disturbance and all costs and expenses in connection therewith.


LESSOR

SHYJU P.
Geologist
Dept. of Mining & Geology
District Office, Palakkad
Adoor P.O., Pin - 611 423

LESSEE



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22. Any condition prescribed in the Kerala Minor Mineral Concession Rules, 2015 but left out in this lease which may be found applicable to the lessee / lessees shall be treated as binding on the lessee/lessees.
23. In this case, the anticipated royalty to be remitted for the mineral extracted per year at the present rate of royalty of Rs. 48/- per tonne for the proposed average annual production of 3,60,000 metric ton is Rs. 1,72,80,000/- (Rupees one crore seventy two lakh eighty thousand only).
24. In this case, the annual surface rent to be remitted per year at the present rate of Rs. 8/- per Are per year is **Rs. 3,097/- (Rupees three thousand and ninety seven only)** and the refundable Security Deposit is **Rs. 38,717/- (Rupees thirty eight thousand seven hundred and seventeen only)**

SCHEDULE OF DESCRIPTION OF LAND

District : **Pathanamthitta**

Taluk : **Konni**

Block No: **20**

| Village | Re -Survey No | Lease Area in Hectares |
|------------------------|---------------|------------------------|
| Malayalappuzha | 47/1-9 | 3.8717 Ha |
| Total Area in Hectares | | 3.8717 Ha |


LESSOR

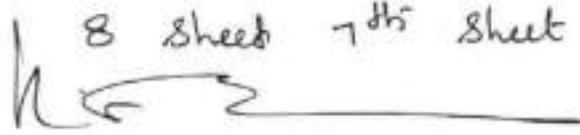
SHYJU P.
Geologist
Dept. of Mining & Geology
District Office, Pathanamthitta
Adoor P.O., Pin - 681 623

LESSEE



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DISTRICT REGISTRAR
IDUKKI


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Bounded by Survey No:

| | |
|-------------------|--|
| On the North by : | 23/3, 47/1-12 |
| On the East by : | 47/1-12, 47/1-10 |
| On the South by : | 47/1-10, 47/1-18, 47/1-9 |
| On the West by : | 47/1-12, 47/1-11, 47/2-3, 47/1-9, 47/2-2, 47/1-2 |



In witness whereof the parties hereto have signed on the date and year first above written.

Signed by Shyju P 

SHYJU P.
Geologist
Dept. of Mining & Geology
District Office, Pathanamthitta
Adoor P.O., Pin - 691 523

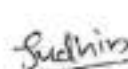

For and on behalf of the Governor of Kerala.

In the presence of

- (1) K. JANTHOSH KUMAR, Dept. of Mining & Geology
Dist. Office, Pathanamthitta 
- (2) SHERMI N.S., DEPT. OF MINING AND GEOLOGY,
DISTRICT OFFICE, PATHANAMTHITTA. 

Signed by JASAY A. CHEMPAKATHY 

For and on behalf of the lessee/lessees In the
presence of

- (1) Sudhin C. P. Chollammattal
Kulumbannoor, P.O. Thodupuzha 
- (2) Dibi K. Chama Kala
Chama Koleyil (CH)
Arunoottimangalam P.O.
Kottayam 686604 


LESSOR

SHYJU P.
Geologist
Dept. of Mining & Geology
District Office, Pathanamthitta
Adoor P.O., Pin - 691 523

LESSEE 

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NEWSPAPER
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THE NEW INDIAN EXPRESS

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RISE OF SAT-CHI CONTINUES: WORLD NO. 1 DUO CLINCH PARIS OPEN

Satwiksairaj Rankireddy and Chirag Shetty make short work of unseeded Chinese Taipei's Lee Jhe-Huei and Yang Po-Hsuan in straight games

RUBBER-STUMPING A DOMINATING WEEK

The Indian pair, one of the favourites to return from the French capital with a medal at the Olympics this Summer, didn't lose a single game all week in the 750 Super Series tournament. Across the five matches, they never allowed their opponents to settle. Their next event is the one at the All England beginning this week

ROAD TO TITLE

R1: bt Ong Yew Sin/ Teo Ee Yi 21-13, 24-22
R2: bt Man Wei Chong/ Kai Wun Tee 21-13, 21-12
QF: Supak Jomkoh/ Kittinupong Kedren 21-19, 21-13
SF: Kang Min Hyuk/ Seo Seung Jee 21-13, 21-16

GOOD START TO THE YEAR

While this is their first title of the year, they have always looked in control. That this is their third final of the year (India Open and Malaysia Open in January) is a testament to that.

2

THE INDIAN PAIR HAS WON THE PARIS OPEN FOR THE SECOND TIME

TMC goes solo, INDIA out of Bengal

Mamata Banerjee announces candidates for all 42 LS seats: Cong says talks still possible

PRANAB MONDAL & PREETHA NAIR @Kolkata/ New Delhi

OFFICIALLY closing the door on the INDIA bloc in West Bengal, Mamata Banerjee-led Trinamool Congress on Sunday announced candidates for all 42 Lok Sabha seats in the state, roping in both veterans and greenhorns.

Despite the snub, the Congress said there is still time to make the alliance work through negotiations. "Our doors are always open and an alliance can happen anytime before withdrawal," said Congress president Mallikarjun Kharge.

Among the newcomers in the TMC list are former cricketer Yusuf Pathan, who will contest from state Congress chief Adhir Ranjan Chowdhury's Baharampur constituency in



Mamata Banerjee

THE GREENHORNS

The TMC list has six political newcomers, including former cricketer Yusuf Pathan. The other fresh faces are actor Rachana Banerjee, psychiatrist Sharmila Sarkar, PhD scholar Shah Nawaz Ali Raihan, former IPS officer Prasen Banerjee, and Padma Shri recipient Kalipada Soren

Murshidabad district. Adhir, a vocal critic of TMC, was against the Congress having any truck with the Trinamool. Murshidabad has the highest Muslim population in Bengal at 67% and Chowdhury has been winning the Baharampur seat since 1999 though his victory margin has dropped over the years.

Reacting to Pathan's candidature, Chowdhury said: "If

Mamata Banerjee wanted to show respect to the cricketer, she could have sent him to the Rajya Sabha. But she decided to field him in Baharampur to divide Muslim votes."

Notably, the TMC decided to field Mahua Moitra, who was suspended from Lok Sabha in connection with cash-for-question scandal, from Krishnagar. "The allegation levelled against her was during the tenure of

her previous term in Lok Sabha. If she gets elected fresh, the old allegations will not hold and there will be no bar for her to become an MP," said a senior TMC leader.

Among the five sitting MPs axed from the list is Nusrat Jahan from Basirhat, where Sandeshkhali uproar surfaced.

The talks between the two parties hit a roadblock last month after TMC supremo and West Bengal CM Mamata Banerjee refused to part with more than two seats for the Congress in the state. Though the Congress scaled down its demand from 10 seats to six, the TMC chose to contest solo in the state. The TMC's main grouse was West Bengal Congress chief Adhir Ranjan Chowdhury's continuous attacks on Mamata and the party.

Did Modi stop Putin from nuking Ukraine?

YESHI SELI @New Delhi

THE Biden administration feared that Russia may nuke Ukraine sometime in late 2022, when it was a step back in its war with Ukraine.

So the US administration enlisted India and China's help to prevent Russia using a tactical or battlefield nuclear weapon, according to a new book, *The Return of Great Powers* written by CNN analyst and anchor Jim Sciutto. He says without taking the officials' names. A chapter of the book is shared on the CNN website and the book is to be published on March 12.

US officials said outreach and public statements from Indian Prime Minister Narendra Modi and Chinese President Xi Jinping helped avert a crisis.

"I think the fact that we know China weighed in, India weighed in, others weighed in, may have had some effect on their thinking," a senior US administration official said. "I can't

demonstrate this positively, but I think that's our assessment." It may be recalled that Modi had said "Today's era must not be of war" and urged both Russia and Ukraine to resolve the issues through dialogue and diplomacy. His statement "Today's era must not be of war" was also used in the G20 Bali Leaders' Declaration in November 2022.

The Biden administration's fear was not just hypothetical—it was also based on some information that it picked up, the book revealed. It picked up a collection of developments, analysis and highly sensitive new intelligence.

In 2022 Ukrainian forces had a lead on Russian-occupied Kherson and Ukrainian forces advanced, entire Russian units were in danger of being surrounded, the book revealed.

The view inside the administration was that such a catastrophic loss could be a "potential trigger" for the use of nuclear weapons, it added.



EXPRESS READ

Modi in Palakkad on Friday; 4th visit this yr

T'Puram: Prime Minister Narendra Modi will visit Kerala this Friday, his fourth visit this year. The PM will hold a road show in Palakkad for BJP candidate C. Krishnakumar. The BJP state leadership is also trying to get his time to campaign in Pathanamthitta for Anil Antony, said sources in BJP.

Kerala, K'taka to jointly curb man-wildlife conflict

EXPRESS NEWS SERVICE @T'Puram

IN THE wake of an increasing number of human-wildlife conflicts being reported from both the states, Kerala and Karnataka signed an agreement on Sunday to tackle the menace jointly.

As per the agreement, Kerala and Karnataka will jointly map areas prone to wildlife attacks, examine the reasons, avoid delay in tackling the issue and ensure speedy exchange of information between the two sides. The agreement was reached at a meeting of the forest ministers of both states at Bandipur Tiger Reserve in Karnataka. The meeting was also attended by senior forest officials from Tamil Nadu.

During the meeting, attended by Kerala Forest Minister A K Saseendran and his Karnataka counterpart Eshwar Khandre, a joint Standard Operating Procedure (SOP) for managing man-animal conflict was adopted. An interstate coordination committee charter was also unveiled during the meeting that marked a commitment for collaborative efforts in conflict mitigation in affected areas.

During discussions, Saseendran stressed the need for amendments to the 'outdated' provisions in the Wildlife (Protection) Act to effectively deal with wildlife attacks. "It is high time that the Wildlife Act of 1972 is amended in a timely manner. The social realities have

MANAGEMENT STRATEGIES

- Recognising shared habitats and responsibility to conserve forests and expanding human settlements
- Commitment to seamless collaboration, structured intelligence sharing and joint operations
- Exchange of critical resources, expertise and knowledge
- Synchronised population estimation and coordinated operations
- Advisory board comprising experts to resolve conflict

drastically changed compared to 50 years ago when the legislation was enacted," Saseendran told the meeting.

The meeting focused on the Nilgiri Biosphere reserve covering Kerala, Karnataka and Tamil Nadu and highlighted the need for joint efforts in estimating the population of elephants and vultures.

Discussions also centred on sharing the best practices in forest and wildlife conservation among the states. Addressing challenges such as invasive weeds and exploring collaboration in employment generation were also discussed.



Swiss Federal Council member Guy Parmelin presents a copy of an article published in this newspaper in 1947 to commerce minister Piyush Goyal on Sunday in New Delhi. The article pitches for enhancing trade between India and Switzerland | pn

India, Euro bloc deal targets \$100bn FDI

EXPRESS NEWS SERVICE @New Delhi

INDIA on Sunday signed a trade pact with a four-nation European bloc that gives access to India's goods and services to their markets and opens up possibilities of \$100 billion investments as FDI in the country spread over the next 15 years, according to a statement from the Ministry of Commerce and Industries.

The four-nation bloc includes Iceland, Liechtenstein, Norway and Switzerland. Dubbed European Free Trade Association (EFTA), the trade pact would not include foreign portfolio investments and it would take a year for it to come into force. This agreement can generate upto one million jobs in India.

EFTA will eliminate or reduce the import tariffs on 99.6% of India's exports. Similarly India will eliminate or reduce import tariffs on 95.3% of the exports from EFTA nations. The deal gives the four nations market access to non-agri products, concessions on processed agricultural products.

However, agricultural products are out of the ambit of the pact and there is no change on duty on gold.

The trade pact also mutually recognises professional services, allowing Indian professionals to have more opportunities in the bloc. On IPR, both the sides agreed to follow TRIPS.

VARKALA

GOVT AGENCIES ALSO RESPONSIBLE FOR MISHAP

Tourism Director P B Nooh says DTPC, Kerala Adventure Tourism Promotion Council can't wash hands of incident, to file report on bridge collapse soon | PS

Error at trials for Olympic medallists Bajrang, Ravi

FIROZ MIRZA @Chennai

TOKYO bronze medallist Bajrang Punia had been in the forefront of a massive protest against former Wrestling Federation of India president Brij Bhushan Sharan Singh last year. Missing most of the season last year, he failed to medal at the Asian Games despite getting a direct entry in 65kg. To add to his woes, on Sunday, he failed to secure a place in the India squad for the Asian Championships and Asian Olympic Games qualifiers to be held next month.

Joining him is another Tokyo silver medallist Ravi Dahiya, who had been nursing injuries for quite some time. The trials at SAI Centre in Sonapat were held jointly by the WFI and ad-hoc committee after United World Wrestling said it would accept entries only by WFI. The Asian cham-

ionships and qualifier next month will be held in Bishkek, Kyrgyzstan. Gold medallists from six Olympic weight categories each in men's freestyle and Greco-Roman will represent the country at the qualifying event. The women's trials are scheduled at SAI Centre in Patiala on Monday.

Even as the loss was second consecutive selection trial loss for Ravi in the last nine months, it was Bajrang's defeat that garnered attention. He was given a direct entry for the Asian Games by the ad-hoc committee headed by Bhupinder Singh Bajwa last year. Call it poetic, aggrieved wrestler Sujeeet Kalkal, who moved the Delhi HC against Bajrang's direct entry unsuccessfully, found a place in the squad. Bajrang, who had a tough first bout too, didn't compete in the bronze play-off.



Bajrang Punia Ravi Kumar Dahiya

INDIA TEAM FOR ASIAN QUALIFIERS

- | | |
|-----------------------|----------------------|
| 57KG Aman Sherawat | 86KG Deepak Punia |
| 65KG Sujeet Kalkal | 97KG Deepak Nehra |
| 74KG Jaideep | 125KG Sumit Malik |

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Prime Minister Narendra Modi arrives with Davanagere Lok Sabha candidate Gayathri Siddeshwar and Shivamogga candidate B Y Raghavendra at the election rally venue in Shivamogga, Karnataka, on Monday | EXPRESS

INDIA bloc aims to destroy Shakti concept: PM Modi

Says Opposition parties will come to know the power of 'Nari Shakti' on counting day

EXPRESS NEWS SERVICE @Shivamogga

PRIME Minister Narendra Modi on Monday alleged that the INDIA bloc has proclaimed to destroy the Shakti concept, which not only disrespects the Hindu dharma but also the Nari Shakti (women power). He said the Opposition alliance will definitely come to know about Shakti's significance on June 4, the day Lok Sabha election results are announced.

Addressing a mega election rally in Shivamogga, covering four parliamentary constituencies of Shivamogga, Chikkamagaluru-Udupi, Davanagere and Chitradurga, he said, "Nari Shakti is a symbol of Maa Shakti, which is my armour."

Quoting the example of the relationship between Chhatrapati Shivaji and Maa Bhavani, Modi said he is a devotee of Hindu religion and offers pooja to Bharata Maata, but opposition parties say they will destroy Shakti. "While the I.N.D.I.A bloc attacks the wom-

Modi road show in Kovai leaves vendors upset

Coimbatore: Prime Minister Narendra Modi's visit to the city for a roadshow on Monday enthused the BJP cadre. But scores of traders, vendors and hawkers who make a living in Anna daily market on the Muttupalayam Road and East TV Samy Road in RS Puram were distraught after losing their day's earnings as all shops in the route in which the PM's motorcade passed were shut for security reasons. Sources said business worth ₹10 crore was affected. More than 500 shops, including vegetable markets and hotels, remained closed since morning.

enfolk, BJP focuses on women empowerment. Join hands with BJP," he exhorted voters.

"The British left this country, but Congress still has the mindset of the British. Even today, Congress relies on divide-and-rule policy and aims to divide the country along caste and religious lines," he said.

Abhimanyu murder: Court appoints inquiry officer to probe missing docs

TOBY ANTONY @Kochi

THE Ernakulam District Principal Session Court on Monday appointed an inquiry officer to conduct an administrative-level probe into the missing of 11 crucial documents in the Abhimanyu murder case. Observing that the documents have been missing from the court since January 2019, District Principal Sessions Judge Honey M Varghese, however, said such incidents were "not unusual".

The missing documents include the chargesheet, post-mortem report, case particulars with a covering letter, an attested copy of the register of property found in prison search, police intimation to an accused

person named Arjun, casualty register and hospital card of another accused Vineeth, the wound certificate of Rahul K, 15 customer application forms submitted to procure SIM cards, a site plan, a certificate issued from Maharaja's College and a 161 CrPC statement by the accused persons during the interrogation.

The court, while considering the case on Monday, observed, "Missing documents are regular at courts. There have been instances where the lost documents were found later. There is nothing unusual about the missing of documents in this case."

Regarding the inquiry officer, the judge did not disclose any details saying that it is an ad-

ministrative procedure, not a judicial one. However, it is learned that a judge is conducting the inquiry into the incident.

Judge Honey was apprised of the missing document issue on September 2023. As per procedure, she reported it to the Kerala High Court which directed her to reconstruct the files.

The case was considered Monday to hear the defence counsel's objections, if any, regarding the authenticity of the reconstructed documents. However, the counsel representing the eight accused persons, who are members of the student political organisation Campus Front, filed an objection over the reconstruction of missing documents. The counsel for the third accused sought more time for filing an objection.

Kerala, K'taka hold wild animals

EXPRESS NEWS SERVICE @Kochi

SPURRED by the spike in human-wildlife conflicts in Kerala, the state forest and wildlife department, along with the Tamil Nadu and Karnataka governments, will undertake a simultaneous survey of wild animals to find out the increase in their numbers.

Announcing this on Monday, Forest Minister A K Saseendran said the current number of wild animals in Kerala are estimated based on the census done in 2018.

"The last time the survey was done was five years ago. To find out the rise in the number of wild animals and their current status, Kerala, Karnataka and Tamil Nadu have jointly decided to undertake a new census at the same time," Saseendran told reporters in Ernakulam.

He said the government has also come up with initiatives to ensure availability of water in forests to prevent wild animals from straying into human habi-

Availability of water will be ensured forests to prevent wild animals from straying into human settlements. A project in the Cauvery basin will be resolved by spending ₹5 lakh and we have decided to go ahead with implementation

A K Saseendran Forest Minister

K-Rice flies off shelves, govt orders 8k MT more

EXPRESS NEWS SERVICE @TPuram

THE positive response to K-Rice, its initiative to provide rice to people at subsidised rates, has prompted the government to place orders for more quantities of the grain from suppliers in other states.

Sources said, Supplyco, which is the procurement agency, has placed an order for another 8,000 metric tonnes (MT) of rice. As per the data, 1.6 lakh families have purchased K-Rice so far. Of the 2,000 MT of rice bought in the first phase, nearly 1,800 MT have been distributed so far. Three varieties - Jaya, Kuruva and Matta - are available for purchase. Jaya rice is being distributed in the Thiruvananthapuram region, Matta in Kottayam and Ernakulam regions and Kuruva in the Kozhikode region.

The procurement is done through the government's elec-

tronic tender system and suppliers are mostly from Andhra Pradesh, Tamil Nadu and Karnataka.

Priority cards

The food and civil supplies department has decided to supply priority ration cards to 19,384 families which had been on its waiting list. They will be included in the Priority Household (PHH) Category funded by the state government.

Mustering

Mustering for priority ration card holders has been temporarily stopped due to technical issues.

EXPRESS READ

Man kills self after parents delay marriage

Virudhunagar: An Aruppukottai resident died by suicide on Sunday, allegedly because his parents delayed his marriage. Sources said, the deceased, J Prithiviraj, 31, had a dispute with his parents a few days ago when he asked them to get him married. They told him that they would find him a bride after his sisters were married off. Irrked by this, Prithiviraj took the extreme step.

Sakhas grow, RSS bifurcate into north & south prant committees

EXPRESS NEWS SERVICE @Kozhikode

THE growth in the number of sakhas in Kerala has prompted the RSS to bifurcate its existing prant committees into two in the state. The decision was taken at the Akhil Bharatiya Prati-

nidhi Sabha in Nagpur from March 15 to 17.

Ernakulam will be the headquarters of the south committee, which will include districts from Thiruvananthapuram to Ernakulam. Districts from Kasaragod to Thrissur will come under the north commit-

KONKAN RAILWAY CORPORATION LIMITED
(A Government of India Undertaking)

OPEN E-TENDER (SINGLE PACKET SYSTEM) INVITATION NOTICE

Name of Work: Rate contract for Cement Concrete for Foundation and plinth in Normal, Hard & Rocky soil for 2X25 KV traction system in Chennai - Veppampattu section of Chennai, Southern Railway. **Tender Notice No: KR/CO/EL/MAS-VEU/T/18/24, Dtd: 11/03/2024. Completion Period: 12 (Twelve) Months. Estimated Cost: ₹ 5,76,34,150/- excluding GST. EMD: ₹ 4,38,200/-.** Last Date & Time for Online Submission of Tender: 03/04/2024 up to 15.00 Hrs. **Opening of Tender:** On 03/04/2024, at 15.30 Hrs.

Name of Work: Rate contract for Cement Concrete for Foundation and plinth in Normal, Hard & Rocky soil for 2X25 KV traction system in Veppampattu - Arakkonam section of Chennai, Southern Railway. **Tender Notice No: KR/CO/EL/VEU-AJJ/T/19/24, Dtd: 19/03/2024. Completion Period: 12 (Twelve) Months. Estimated Cost: ₹ 5,76,34,150/- excluding GST. EMD: ₹ 4,38,200/-.** Last Date & Time for Online Submission of Tender: 03/04/2024 up to 15.00 Hrs. **Opening of Tender:** On 03/04/2024, at 15.30 Hrs.

Name of Work: Rate contract for Cement Concrete for Foundation and plinth in Normal, Hard & Rocky soil for 2X25 KV traction system in Arakkonam - Renigunta section of Chennai, Southern Railway. **Tender Notice No: KR/CO/EL/AJ-RUIT/10/24, Dtd: 19/03/2024. Completion Period: 12 (Twelve) Months. Estimated Cost: ₹ 6,42,08,200/- excluding GST. EMD: ₹ 4,71,000/-.** Last Date & Time for Online Submission of Tender: 03/04/2024 up to 15.00 Hrs. **Opening of Tender:** On 03/04/2024, at 15.30 Hrs.

Amendments / Corrigendum if any, would be uploaded on IREPS website only. **Submission of Tender Documents:** Through IREPS. Manual Tender Documents shall not be accepted.

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SALE NOTICE

E-AUCTION SALE NOTICE OF IMMOVABLE PROPERTIES THROUGH E-AUCTION (ONLINE AUCTION) UNDER RULES 8(6) & 9 OF THE SECURITY INTEREST (ENFORCEMENT) RULES 2002.

Notice is hereby given to the public in general and in particular to the borrower(s) and Guarantor(s) that the below described immovable properties mortgaged to the Secured Creditor, the Possession of which has been taken by the Authorized Officer of Canara Bank, will be sold on "As is Where is, As is What is" and "Whatever there is" on 18.04.2024 for Recovery of Rs. 5,75,25,620/- (Rupees Five Crores Seventy Five Lakhs Twenty Five Thousand Six Hundred Twenty Only) Plus further interest thereon from 01.02.2024 along with suit expenses and other legal charges due to Ernakulam ARM Branch of Canara Bank from borrower M/s. CORONA SOLAR AND SWITCH GEAR represented by its partners Sri. AJAY MOHAN and Sri. ANIL KUMAR P T. The reserve price will be Rs. 56 Lakhs (Rupees Fifty Six Lakhs only), and the Earnest Money Deposit (EMD) will be Rs. 5.60 lakhs (Rupees Five Lakhs Sixty Thousand only). The Earnest Money Deposit shall be deposited on or before 16-04-2024 till 5.00 pm.

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All the part and parcel of property consisting of 41.59 Ares of land with building in Re Sy No.252/9, 252/12B, 252/13B, 252/17, 252/20 of Keerikkad Village, Karthikapally Taluk, Alleppey in the name of Anilkumar, Thankappan, Jaya and Santhamma. **Boundaries:** North: Property of Guru Nithya Chaitanya Yathi Trust, South: Property of Thundil Sukumar and Road, East: Properties of Guru Nithya Chaitanya Yathi Trust, Rathnamma, Soman, West: Properties of Thankappan, Sankaran, Amaritharayil Latha. For Detailed terms and conditions of the sale please refer the link "E-Auction" provided in Canara Bank Website (www.canarabank.com) or may contact Chief Manager, ARM Branch, Ernakulam, mail id : cb2875@canarabank.com, Ph: 8281991413, 0484-2353071, 2353072.

(Sd/-) Authorised Officer CANARA BANK

Ernakulam, 11.03.2024

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NOTICE

This is to inform the general public that the proposed quarry project, in survey no 47/1-9 in Malayalappuzha Village, Konni Grama Panchayat, Konni Taluk, Pathanamthitta district, Kerala is accorded with environmental clearance by the State Environment Impact Assessment Authority, Kerala vide file no:2073/EC1/2022/SEIAA dated 06.10.2023 and the copy of the environmental clearance is available with the office of State Environment Impact Assessment Authority and may also be seen on website of authority at www.seiaakerala.org

NOTICE

This is to inform to the general public that the proposed quarry project in Block 70, re-survey Nos: 23/1, 23/2 of Poonjar Village, Poonjar Grama Panchayat, Meenachil Taluk, Kottayam District, Kerala is accorded with ENVIRONMENTAL CLEARANCE by State Environment Impact Assessment Authority, Kerala vide File No.1812/EC3/2020/SEIAA, EC24B001KL135547 dated 01-02-2024 and the copy of the environmental clearance is available with the office of State Environment Impact Assessment Authority and may also be seen on the website of Authority at www.seiaakerala.org

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Chief

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Notice for sale of immovable assets

E-Auction Sale Notice for Sale of Immovable Assets under the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002 read with provision to Rule 8 (6) of the Security Interest (Enforcement) Rules, 2002.

Notice is hereby given to the public in general and in particular to the Borrower(s) and Guarantor(s) that the below described immovable property mortgaged/charged to the Secured Creditor, the Physical Possession of which has been taken by the Authorized Officer of ICICI Bank Ltd. will be sold on "As is where is", "As is what is", and "Whatever there is", as per the brief particulars given hereunder;

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|---------|------------------------------------|--|--------------------|-----------------------|---------------------------|--------------------------|
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NOTICE
I, Janaki K. W/o. Kallikkalathil Bhaskaran (Ser.No. 6611973M, Sep), residing at Kallikalathil, Mannampatta (PO), Palakkad Dist., Kerala, PIN -678 633, do hereby make it known to the general information of the public at large that my name and date of birth erroneously

ANNEXURE 8
VIBRATION STUDY
REPORT

DR. T. THIMMAIAH INSTITUTE OF TECHNOLOGY

(Affiliated to Visveswaraya Technological University, Belagavi, Karnataka)

(Approved by AICTE, New Delhi)

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P. No. 001/Min Engg./2023

Dr.T.Venkat Vardhan Centre for Excellence

Department of Mining Engineering



**BLAST-INDUCED GROUND VIBRATION STUDY AT M/S. KLR
GRANITES, MALAYALAPUZHA, KERALA**

15th July 2023

Principal Investigator

Prof. John Gladious

Co-Investigators

Dr. Raja S.

**Department of Mining Engineering
Dr. T.Thimmaiah Institute of Technology
Oorgaum, Kolar Gold Fields, Karnataka**



DR. T. THIMMAIAH INSTITUTE OF TECHNOLOGY
(Affiliated to Visveswaraya Technological University, Belagavi, Karnataka)
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Department of Mining Engineering

WHOM SO EVER IT MAY CONCERN

*The ground vibration study was conducted at the quarry belonging to **KLR Granites** located at Malayalapuzha village, Pathanamthitta District, Kerala. During the study, drilling and blasting were practised using semi-mechanised methods. The ground vibration data collected using Minimate seismograph digital equipment was recorded by conducting 07 blasts. The study reveals that the blast-induced ground vibration level during the trail blast was within the permissible limit according to DGMS standards, and there is no apprehension of damage to the structures located about 200 meters away from the present blasting site.*


Dr. Raja S.
Co-Investigator
Associate Professor


John Gladious
Principal Investigator
Associate Professor



ACKNOWLEDGEMENT

The Investigators would like to express gratitude towards the president, management and the Principal of Dr. T. Thimmaiah Institute of Technology, Kolar Gold Fields.

The Investigators also acknowledge the indebtedness to the staff and management of KLR Granites for their kind help and cooperation during the study/data collection.

The Investigators also thank Mr. Vikram Krishna, Mining Consultant, Bengaluru, for his kind help and cooperation during the study/data collection.

The investigators would like to thank the faculty of the Department of Mining Engineering of Dr. T. Thimmaiah Institute of Technology, Kolar Gold Fields, for their constant support.

The investigators would like to thank the supporting staff of the Department of Mining Engineering of Dr. T. Thimmaiah Institute of Technology, Kolar Gold Fields, for their constant support.

PROJECT TEAM

ABSTRACT

Ground vibration induced by blasting practices in mines has become a serious environmental issue today. Various factors influence the blast vibration produced from the blasting practices, such as the pattern of blasting, the drilling pattern, the quality and quantity of explosives being used, the delay pattern etc. Also, the vibration generated by the blasting practices comprises two types of waves - body and surface waves. Some after-blast features must also be studied to determine safe blasting practices. In this project, a study has been conducted to monitor the safe blasting in and around structures at KLR Granites. Seven blasts were monitored at the point of interest of the mine officials and in and around the mine boundary, using the miniature seismographs. It is found from the study that the maximum peak particle velocity is 2.238 mm/s at 50m, and the apprehensions due to overpressure were not recorded. In this report, blast-induced vibrations were monitored in the selected location.

Keywords: Blast Induced Vibrations, Peak Particle Velocity, Monitoring of Blast Vibrations, Monitoring of Intensity of sound

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1.0 INTRODUCTION

The study was carried out at M/s. KLR Granites, Malayalapurzha village, Pathanamthitta District, Kerala. The granite building stone quarry is located 7.4 Km from Malayalapurzha Village. It is at a distance of 13 Km by road from Pathanamthitta town. The entire proposed mining area is private land with an extent of 3.8717 Ha bearing Re-sy Block no. 20 and Re-Sy. No. 47/1-9.

Mr. Joshy A Chemparathy, Managing Partner, M/s. KLR Granites planned to produce granite building quarry stone by developing benches through opencast mechanized mining methods. The overview of the mine is shown in Figure 1. The extraction at the M/s. KLR Granites is done by drilling and blasting. Usually, blasting induces three types of adverse effects. They are Overpressure, Fly rock and Ground vibration. However, the amplitude, frequency and duration of the ground vibration are determined by non-controllable factors like local geology, rock characteristic and distances of the structure from the blast site. Among them, blast-induced ground vibrations cause heavy damage to the structures in and around the mine.

Hence, in this study, blast-induced ground vibrations are studied at KLR Granites to see the vibration level during blasting.



Figure 1. An overview of the KLR Granites

1.1 Statement of the Problem

KLR Granites Management has proposed mining operations (Granite Building Stone Quarry) in the area of 3.8717 Ha for the production of granite building stone at Re-sy Block no. 20 and Re-Sy. No. 47/1-9 in Malayalapuzha Village, Konni Taluk, Pathanamthitta District, Kerala. The proposed mine is surrounded by local inhabitants and public structures. Mining activities involve drilling and blasting. The blasting activities will be held in the mine to extract building stones. Hence, the management of the KLR Granites wanted to conduct a study on blast-induced ground vibration to understand or find out the apprehensions due to the mining activities by the trial blast.

Blast-induced ground vibration is a significant effect caused due to the use of explosives, which has historically been a complicated problem to ignore. Various factors influence the blast-induced ground vibration produced from the blasting practices, such as the drilling pattern, the quality and quantity of explosives being used, the delay pattern, etc. It is also a serious issue based on the blasting practices in deep hole blasting mines and has become a severe environmental issue in today's scenario. Hence, It is also the foremost responsibility of the mine lessees to measure and monitor the ground vibration and also adhere to the threshold limit value prescribed by the Director General of Mines Safety (DGMS) standards.

1.2 Objective of the Study

To monitor the blast-induced vibrations at KLR Granites

1. To determine the blast-induced ground vibrations in and around the mine boundary
2. To ensure that the blast-induced ground vibration lies below the standards prescribed (DGMS) by controlling the blasting parameters.

2.0 LOCATION & GEOLOGY OF THE AREA

The mining lease area is on the slope, gently dipping towards the Northeast and Southwest. The highest elevation in this area is 145m above sea level, and the lowest elevation is 115m above sea level. The general slope of the mining leasehold area is between 6 to 32°.

2.1 Local Geology

The granite building stones are very well exposed in the working pit, whereas part of the area with higher elevation is covered by topsoil of about 0 to 1.3 thickness. The rock type in this area is cordierite gneiss, with a thickness of 80m (estimate). The outcrop of the rock is visible in many places, The formation seems to be non-foliated in the visible outcrops.

2.2 Location Map

The Google map with coordinates of the boundary pillar, location map and surface plan of the mine is shown in Table 1, Figure 2 and Figure 3.

Table 1. Location details of KLR Granites

| Coordinates | Lat | Long |
|-------------|-----------------------|-----------------|
| | BP-01: 9°16'17.003" N | 76°51'48.200" E |
| | BP-02: 9°16'17.200" N | 76°51'48.298" E |
| | BP-03: 9°16'17.600" N | 76°51'48.600" E |
| | BP-04: 9°16'15.800" N | 76°51'51.801" E |
| | BP-05: 9°16'11.200" N | 76°51'54.500" E |
| | BP-06: 9°16'07.309" N | 76°51'51.400" E |
| | BP-07: 9°16'09.200" N | 76°51'49.400" E |
| | BP-08: 9°16'11.552" N | 76°51'48.000" E |
| | BP-09: 9°16'13.609" N | 76°51'47.491" E |
| | BP-10: 9°16'16.405" N | 76°51'48.598" E |

KLR GRANITES

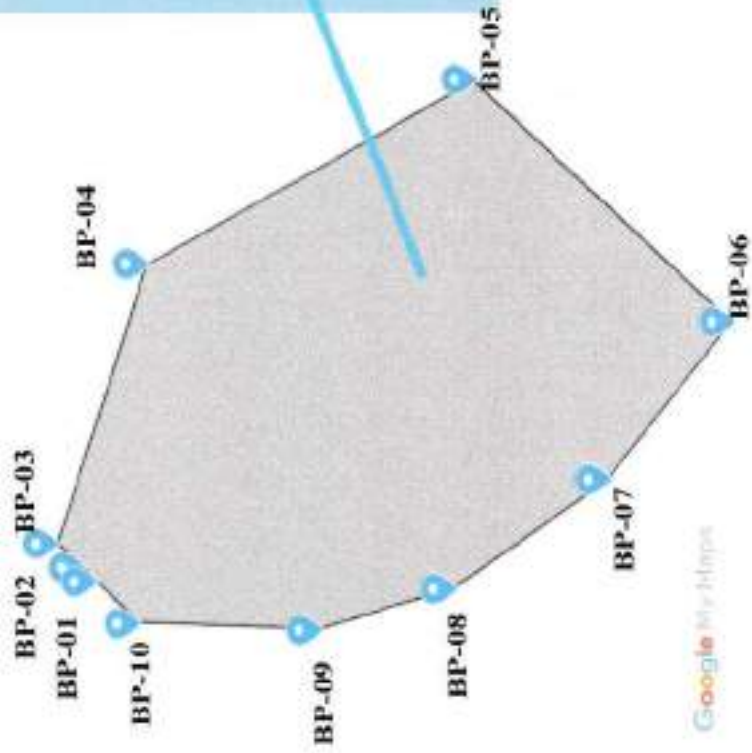


Figure 2. Google map of the boundary pillars of KLR Granites.



Figure 3. Administrative Plan of KLR Granites

3.0 BLAST INDUCED VIBRATION MONITORING INSTRUMENT & VIBRATION STANDARDS

The Minimate Blast seismograph from InstanTel, Canada, is deployed to monitor ground vibrations. This seismograph is equipped with the latest blast vibration analysis software. The unit consists of an external tri-axial geophone to monitor ground vibrations and a microphone for measuring air overpressure connected to the external port. The event analysis and documentation can be done with the help of analysis software supplied with this unit.

The record provides complete documentation of the events, full waveform and frequency spectrum. The instrument records the level of vibration in terms of peak particle velocities in the three orthogonal directions (vertical, longitudinal & transverse), time of peak occurrence, peak displacement (mm), peak acceleration, and peak sound pressure in terms of Pascals (Pa) and Decibels (dB).

Permissible standards for different structures have been arrived at, considering the importance of buildings and structures. Buildings of historical importance and multistoried structures are likely to get damaged with a low vibration level, and therefore acceptable standards are to be lowest. Similarly, buildings not belonging to the owner but with mud/brick in cement construction and others with good construction (RCC and framed structures) should also be protected, but higher permissible standards than that of the level fixed for the first category have been allowed.

Buildings belonging to the owner of the mine are constructed for a limited period, generally equal to the life of the project. Different countries adopt different standards of safe limits of vibration. In India, for mining blasts, the permissible ground vibration for different types of structures is specified by the Directorate General of Mines Safety (DGMS), as shown in Table 2, Ministry of Labour, Government of India, which considers PPV and the frequency of ground vibration for deciding the permissible level.

Table 2. Permissible PPV (mm/s) as per DGMS Circular No.7 of 1997

| Type of structures | Dominant excitation frequency, Hz | | |
|---|-----------------------------------|--------|-------|
| | < 8Hz | 8-25Hz | >25Hz |
| (A) Buildings/structures not belong to the owner | | | |
| 1. Domestic houses/structures (Kuchcha, bricks & Cement) | 5 | 10 | 15 |
| 2. Industrial building | 10 | 20 | 25 |
| 3. Objects of historical importance & sensitive Structures | 2 | 5 | 10 |
| (B) Buildings belonging to the owner with a limited span of life | | | |
| 1. Domestic houses/structures | 10 | 15 | 20 |
| 2. Industrial buildings | 15 | 25 | 50 |

Drilling and Blasting are the most economical means of extracting iron ore. The initial blast design depends mainly on the hardness of the rock, the geological structure of the rock mass, the location of the mine relative to vibration-sensitive structures, available drilling equipment and the excavation rate and capacity of the mining equipment. To begin, a well-designed blast consists of a quantity of explosives placed into a series of blast holes drilled into a rock mass.

Explosive energy generated by the explosive must be adequate to overcome the tensile strength of the rock mass. This series of blast holes must then be detonated in a controlled sequence to control the burden and spacing dimensions between adjacent holes. A well-designed blast will efficiently utilize the explosive energy to achieve optimum fragmentation. Proper burden, spacing, and design dimensions maintained through accurate field controls typically will yield reduced ground vibrations because the energy from the blast will be used to fragment and move rock and not create excessive ground vibrations through energy over-confinement.

Vibrations generated by blasting that are transmitted through the ground are typically referred to as elastic vibrations. These vibrations are non-deforming as the rock mass, or transmission medium, returns to its normal state after the vibration has passed. Elastic ground vibration is wave motion emanating from a blast, like ripples in the water as a pebble is dropped into a pool. As vibration signal is induced into the ground medium (which is made

up of innumerable adjacent particles), within the rock and soils, these particles are placed in motion, eventually diminishing the vibration signal through transition energy losses placing the particles back into their initial rest positions. Elastic ground particle motion of this type is generally classified into two major categories.

- i. Surface waves: Surface waves are elastic vibrations transmitted through the geology at the earth's surface. Surface waves are further classified into these types of vibrations.
 - Vertical and Horizontal shear waves-back and forth motion
 - Rayleigh waves-Rotational motion
 - P and S waves-Compressional and shearing motion
- ii. Body waves: Body waves are transmitted deep into the earth's crust and are returned to the surface through a phenomenon called Refraction or Reflection. These reflected signals effectively change the characteristics of the surface wave.

The characteristics of this ground vibration signal are mainly controlled by the energy of the sources, the geology and the timing between blast holes. The measure and study of these vibrations are called seismology. Blasting seismology has become an essential part of the explosives industry because the use of explosives must be conducted in populated areas. The units of measure commonly used to qualify the characteristics of the vibration signal are:

- Displacement-The actual distance the particle is moved when set in motion. This parameter is not usually used as the sole measure of a ground vibration's potential to cause structural damage. This distance is typically measured in thousands of an inch.
- Velocity-This is the speed at which the particle moves relative to its steady-state or rest positions. This parameter is measured in inches per second in three mutually perpendicular directions.
 1. Transverse-Horizontal motion at right angles to the blast.
 2. Vertical up and down motion.
 3. Longitudinal or Radial-Horizontal motion in the axis between the blast and recording location.

The PPV (Peak particle velocity) is the maximum of the three above axis of particle motion. Most seismographs are designed to record this parameter of ground motion in real-time. This time history information can then be processed to determine other complex wave parameters.

- Acceleration- the rate at which the particle velocity of a complex wave changes.
- Frequency- the major number of particle oscillations per second. The relationship between this parameter and particle velocity is the single most significant parameter to consider when assessing blast-induced ground vibrations' damage potential.

Extensive research has been conducted throughout the last 40 years by the USBM (UNITED STATES BUREAU OF MINES), universities and other private groups. This research has led to the development of acceptable vibration standards, vibration damage criteria, seismograph and techniques to predict and control blast vibrations.

The most widely accepted vibration standard is USBM RI 8507, titled "Structure response and damage produced by ground vibration from surface blasting". The standards are as follows:

1. Particle velocity is the single best ground motion descriptor and the most practical method for regulating damage potential for a class of structures with well-defined vibration response characteristics.
2. Damage potential for low-frequency blasts (< 40 Hz.) is considerably higher than those for high-frequency blasts (> 40 Hz.), with the latter produced by close-in construction and excavation blasts.
3. Home construction is another factor in the minimum expected vibration levels. Gypsum board (drywall) walls are more damage-resistant than older, constructed ones.
4. Practical, safe criteria for blasts that generate low-frequency vibrations are 0.75 inches per second for modern gypsum board homes and 0.50 recommended for all homes.
5. Homes eventually crack because of several environmental stresses, including humidity, settlement, temperature changes, hydrostatic soil pressures, wind and even water absorption from the roots. Consequently, there may be no absolute minimum vibration damage threshold when the vibration from any source could sometimes precipitate a crack about to occur.
6. The chance of damage from blast generating peak particle velocities less than 0.50 inches per second is not only small (less than 5% for worst cases) but decreases more rapidly than the mean prediction for the entire range of vibration levels.
7. Human reactions to blasting can be a limiting factor. Vibration levels can be felt that are far below the levels to produce damage. The human reaction to blasting depends on vibration duration and amplitude.

Research developed by the USBM (RI 8507), universities and others over the last 15 years in the blasting industry has concluded that a residential structure's response to a blast-induced ground vibration depends on the peak particle velocity and the frequency content of the waveform. The frequency is the number of oscillations that the ground particles vibrate per second as a blast vibration passes by the structure's location. This study used an InstanTel Minimate seismograph to measure the ground vibration and air overpressure.

3.1 InstanTel Minimate

Minimate consists of a geophone and microphone to monitor the ground vibration and noise levels.

3.1.1 Key Features

- 1) 40 Full waveform event capacity.
- 2) Easy personal operation.
- 3) Multiple record modes offer unlimited flexibility during monitoring operations, single event, continuous, auto record time programmed start/stop and manual operation.
- 4) Full waveform event analysis:- Full-field analysis of the event, including peak particle velocity, peak air (sound) pressure, and peak vector sum (PVS). Peak acceleration and peak displacement.
- 5) Compliance and national frequency Analysis standards.
- 6) Full PC compatibility.
- 7) 1024 sample rate: The 1024 sample rate ensures high-frequency blast performance analysis accuracy.

3.1.2 Event Monitoring

Event monitoring measures both ground vibrations and overpressure. The monitor measures vertical and longitudinal ground vibration. Transverse ground vibrations agitate particles in a side-to-side motion. Vertical ground vibrations agitate particles in an up-and-down motion. Longitudinal ground vibrations agitate particles in a forward and backward motion progressing outward from the event site. Events also consist of overpressure by creating what is commonly called "air blasts". Measuring overpressures can determine the effect of overpressure energy on structures measured on the linear "L" scale.

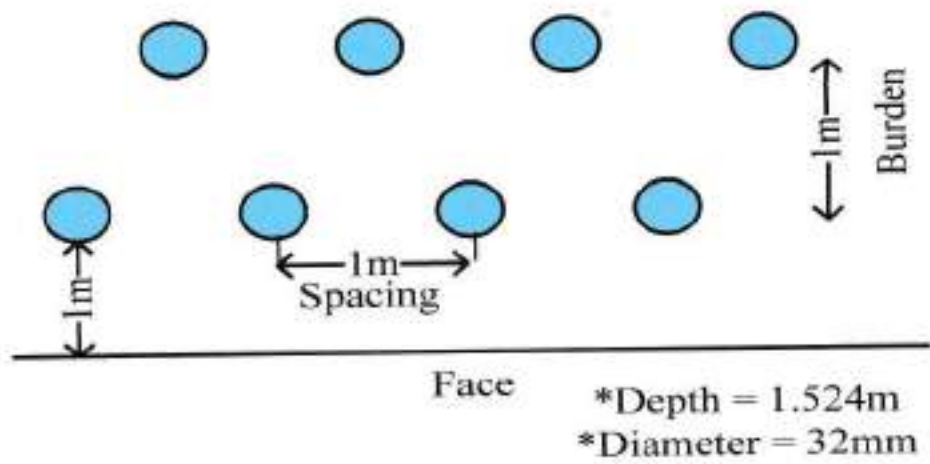
4.0 CASE STUDY AT KLR GRANITES

The mine is proposed to work with the opencast method with a bench system, and the mode of operation is semi-mechanized. The mine is proposed to operate with benches with a height of 5m and ultimate width of 5m per the statutory requirements. It is proposed to produce 3,49,920.23 tonnes (peak production from the third year) of granite building stone from the mine in three years.

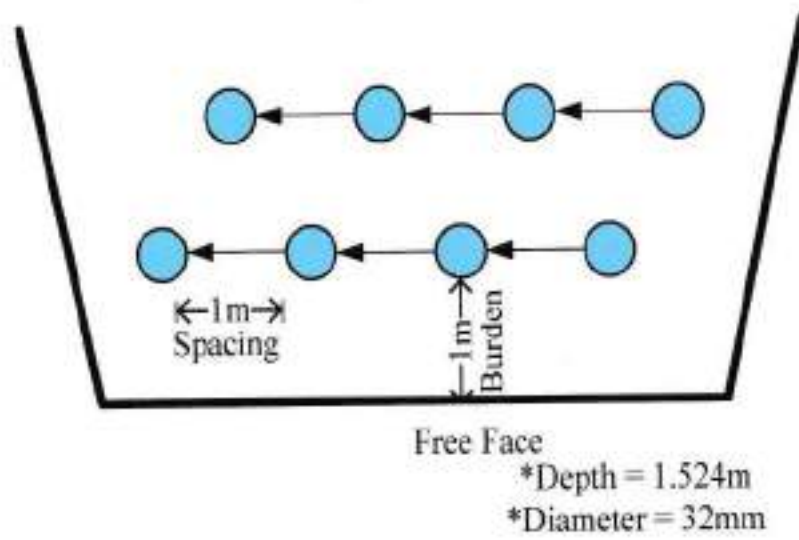
The mining activity will be carried out with the help of machinery like hydraulic excavators, breakers, tippers etc. Building stone is well-exposed in the area. The highest elevation in this area is 145m above (Mean Sea Level) MSL, and the lowest elevation is 115m above MSL. The mine extracts the mineral using drilling and blasting. Rock breakers do take care of the secondary fragmentation. A hydraulic excavator will be used to excavate and load the material to the tippers. The excavated material is proposed to be transported to the crushing and screening plant. The aggregates will be supplied mainly for road and building construction and infrastructure development.

4.1 Blasting

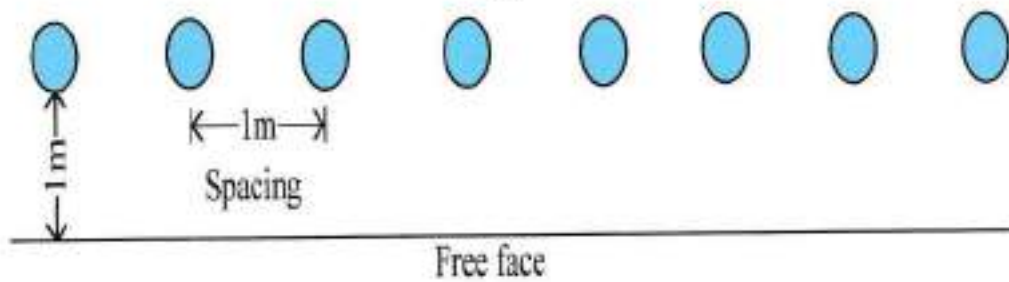
During the trial blast to fragment the bedrock, conventional 32mm diameter blast holes are drilled perfectly parallel at 1m intervals without any hole deviation using a down-the-hole drill. Blasting is carried out with 25mm small diameter Class II type explosives (Slurry Cartridges) with NONEL. A zig-zag blasting pattern with spacing and a burden of 1m was maintained at KLR Granites, as shown in Figures 4(a-c). A range of 6 - 8 holes was drilled at a depth of 1.524m. The charge for each blast hole is 0.250 kg, so the total charge per delay is 1.5 to 2 kg, as shown in Table 3. The charging of holes and stemming during the trial blast is shown in Figure 5. The rock fragmentation after the blast is shown in Figure 6.



(a)



(b)



(c)

Figure 4: Blasting pattern used during the trial blast



Figure 5: Blasting practice used in the trial blast



Figure 6: Rock fragmentation after the trial blast

Table 3: Parameters of Blasting used in KLR Granites

| Sl. No | Details of Blast | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--------|--|-------------------------------|---------|---------|---------|---------|---------|---------|
| 1 | Mineral/Rock | Granite Building Stone Quarry | | | | | | |
| 2 | No. of holes drilled | 8 | 8 | 8 | 8 | 8 | 7 | 6 |
| 3 | Diameter of hole (mm) | 32 | 32 | 32 | 32 | 32 | 32 | 32 |
| 4 | Spacing between holes (m) | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5 | Burden of hole (m) | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6 | Pattern of drilling | Zig-zag | Zig-zag | Zig-zag | Zig-zag | Zig-zag | Zig-zag | Zig-zag |
| 7 | Detonators used | Nonel | Nonel | Nonel | Nonel | Nonel | Nonel | Nonel |
| 8 | Explosives Used | Slurry | Slurry | Slurry | Slurry | Slurry | Slurry | Slurry |
| 9 | Depth of Hole (m) | 1.524 | 1.524 | 1.524 | 1.524 | 1.524 | 1.524 | 1.524 |
| 10 | Total quantity of explosives used (in kg) | 2 | 2 | 2 | 2 | 2 | 1.75 | 1.5 |
| 11 | Distance of equipment from blast site (m) - Minimate | 180 | 200 | 190 | 100 | 50 | 50 | 100 |

4.2 Monitoring of Blast-Induced Vibration at Selected Locations

4.2.1 Introduction to Minimate

Monitoring is an operation in which the frequency and the velocity of the seismic waves in transverse, vertical and longitudinal directions are measured. The corresponding peak particle velocity, peak acceleration, peak displacement and peak vector sum are determined from the event report. The monitoring instrument minimate have suitably placed nearby the structure, and monitoring operation is carried out for which the instructions are given on the minimate face panel view.

The geophone sensors are placed inside the minimate, detecting ground movements. These sensors emit electrical signals through the conductor wires and are recorded by the sensors. This constitutes the entire seismograph system, as shown in Figure 8.

Now the computer system analyses the recorded signals through a modem, and the event report is thus obtained through the printer. Based on the event report, a conclusion is made as to whether the vibrations are critical, for which the appropriate blast pattern is determined.

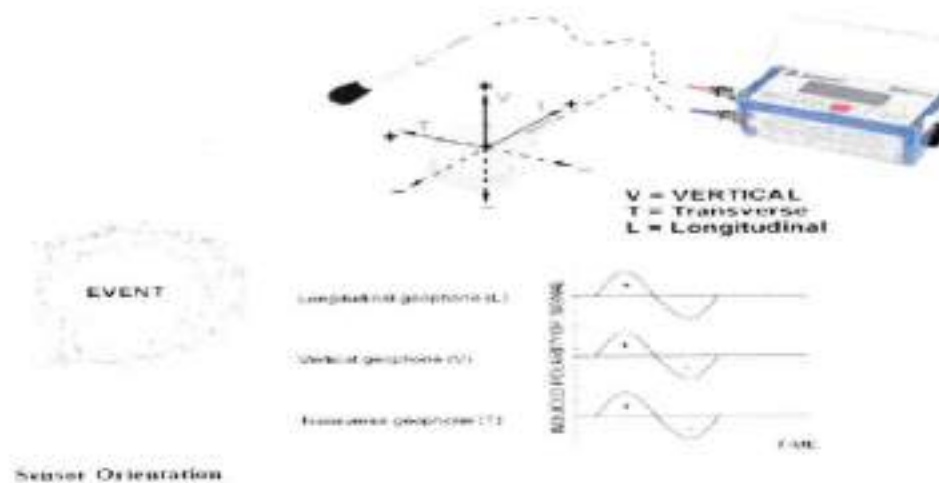


Figure 7. Event Monitoring of Minimate

4.2.2 Test at Site

The minimate vibration monitoring equipment is used to measure the ground vibration and air overpressure. A total of 10 blasts were conducted, and the blast-induced vibrations for each blast were monitored in and around the mine. The instrument locations set up during the

study are shown in Figure 8. The equipment was placed at the point of interest, i.e. located in all directions surrounding about 50m-275m away from the blast site shown in Figure 9.

Four readings of ground vibrations and air overpressure were recorded and monitored using Minimate at the Northwest side of the mine placed at a distance of 200m, 250m, and 275m. Three readings of ground vibrations and air overpressure were recorded and monitored at the North East side of the mine, placed at a distance of 50m. One reading of ground vibrations and air overpressure were recorded and monitored using a minimate at the Southside of the mine placed at a distance of 50m. Two readings of ground vibrations and air overpressure were recorded and monitored using a minimate at the Northside of the mine placed at a distance of 100m. The equipment set up at the location is shown in Figures 6 - 8.



Figure 8. Minimate instrument set up at a distance of 100m from the blast site

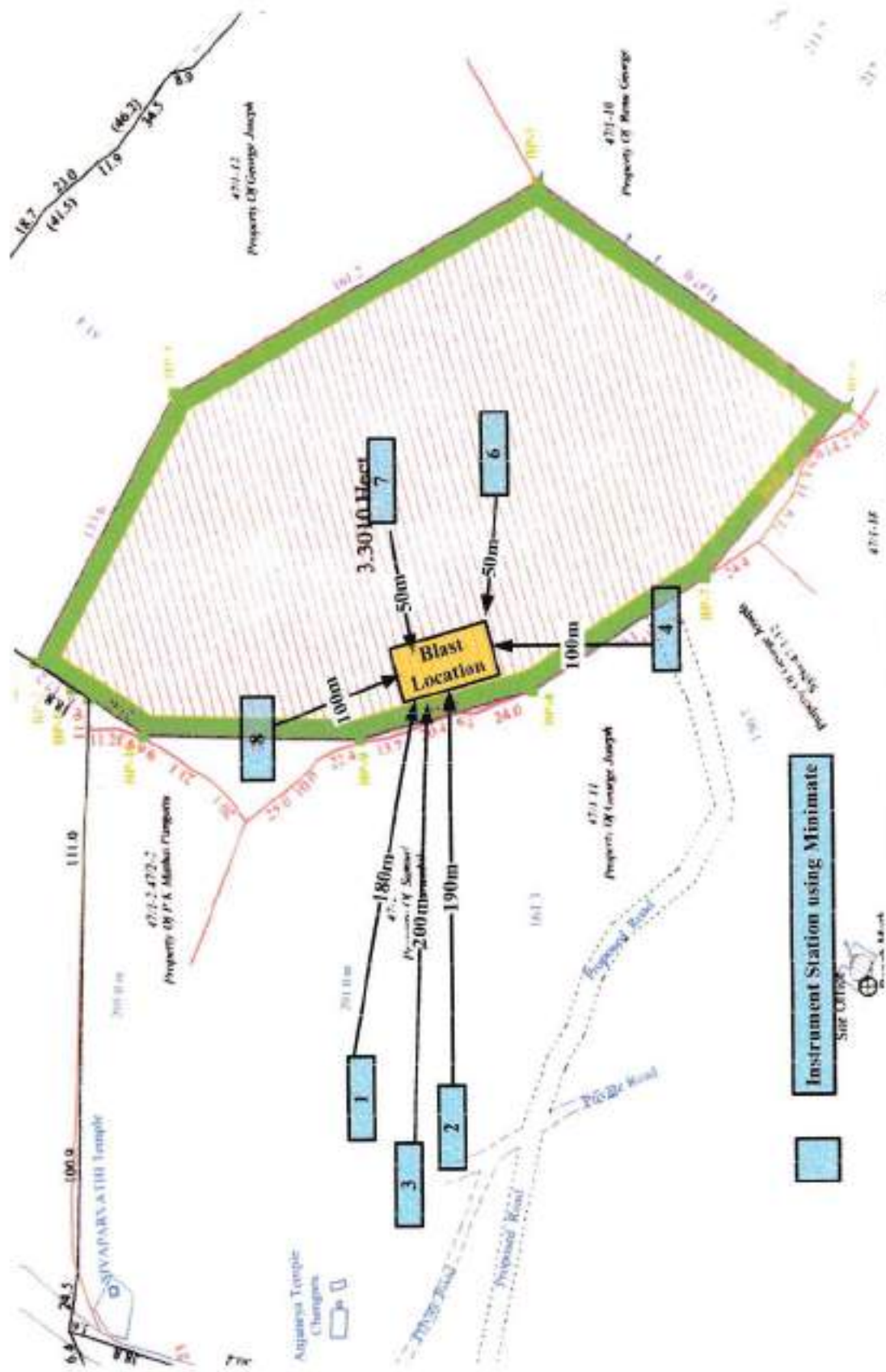


Figure 9. Location plan of KLR Granites with blasting location and instrument station

4.2.3 Observations

The recorded blast-induced ground vibrations at different locations are given in Figures 10 - 20 and Table 4. A total of 10 blasts were conducted, and the blast-induced vibrations for each blast were monitored. The following observations have been made from the ground vibration study:

Table 4: Peak Particle velocity recorded at different locations of KLR Granites

| Blast No. | Instrument Location | Distance (m) | Total Weight of Charge (kg) | Scale Distance (m) | PPV Recorded (mm/s)* |
|-----------|---------------------|--------------|-----------------------------|--------------------|----------------------|
| 1 | 1 | 180 | 2 | 127 | 0.270 |
| 2 | 2 | 200 | 2 | 141 | 0.206 |
| 3 | 3 | 190 | 2 | 134 | 0.302 |
| 4 | 4 | 100 | 2 | 71 | 0.429 |
| 5 | 5 | 50 | 2 | 35 | 2.238 |
| 6 | 6 | 50 | 1.75 | 38 | 0.413 |
| 7 | 7 | 100 | 1.5 | 82 | 0.397 |

1. During Blast 1, the ground vibration monitoring equipment was set up at a distance of 180m (Northwest side from the blast site). The peak particle velocity of the mine at the distance of 180m is 0.270 mm/s, as shown in Figures 10 and 11.
2. During Blast 2, the ground vibration monitoring equipment was set up at a distance of 200m (Northwest side). The peak particle velocity of the mine at the distance of 200m is 0.206 mm/s, as shown in Figures 10 and 12.
3. During Blast 3, the ground vibration monitoring equipment was set up at a distance of 190m (Northwest side). The peak particle velocity of the mine at the distance of 190m is 0.302 mm/s, as shown in Figures 10 and 13.
4. During Blast 4, the ground vibration monitoring equipment was set up at a distance of 100m (South side). The peak particle velocity of the mine at the distance of 100m is 0.429 mm/s, as shown in Figures 10 and 14.
5. During Blast 5, the ground vibration monitoring equipment was set up at a distance of 50m (Northeast side). The peak particle velocity of the mine at the distance of 50m is 2.238 mm/s, as shown in Figures 10 and 15.
6. During Blast 6, the ground vibration monitoring equipment was set up at a distance of 50m (Northeast side). The peak particle velocity of the mine at the distance of 50m is 0.413 mm/s, as shown in Figures 10 and 16.

ANNEXURE 9
MONITORING REPORTS



TEST REPORT

Page 1 of 2

Report No. : EEL/LR/24/0023090/700
Issue Date : May 14, 2024

Issued To:
M/s. K L R Granites
Malayalappuzha
Konni, Pathanamthitta.

Customer ref: - Verbal

Project: - Environmental Monitoring at Granite Building Stone Quarry of M/s. K L R Granites.
Lease Area: 3.8717 hectares, Resurvey Block No: 20, Resurvey No: 47/1-9,
Malayalappuzha Village, Konni Taluk, Pathanamthitta District, Kerala State.

Sample receipt form Ref. No. : SRF/W/05/700 dt. 08.05.2024

Sampling done by: Customer

Sample Particulars: Water sample

| | |
|--|---|
| Sample receiving date: May 08, 2024 | Lab identification code: W/05/700 |
| Analysis starting date : May 08, 2024 | Analysis completion date: May 13, 2024 |
| Quantity of sample received: 1L x 1 | Description of sample by the customer: Water sample (Open well) |
| Packaging details : Pet bottle | |
| Physical appearance of the sample: Clear liquid | |
| Tests required: For the parameters listed below, as per Drinking water specification IS 10500:2012 | |

SAMPLE TESTED AS RECEIVED

| Sl. No. | Parameters | Unit | Method | Result | Requirement (Acceptable limit) |
|---------|-------------------------------------|-----------------|-----------------------|----------------|--------------------------------|
| 1. | pH at 25°C | --- | IS 3025 (Pt 11):2022 | 6.7 | 6.5-8.5 |
| 2. | Odour | --- | IS 3025 (Pt 5): 2018 | Agreeable | Agreeable |
| 3. | Colour | Hazen Units,max | IS 3025 (Pt 4):2021 | 3.0 | 5.0 |
| 4. | Turbidity | NTU,max | IS 3025 (Pt 10):1984 | 0.60 | 1.0 |
| 5. | Total Dissolved Solids | mg/l,max | IS 3025(Pt 16):2023 | 43 | 500 |
| 6. | Total Hardness as CaCO ₃ | mg/l,max | IS 3025 (Pt 21):2009 | 30 | 200 |
| 7. | Chloride as Cl | mg/l,max | IS 3025(Pt 32):1988 | 8.68 | 250 |
| 8. | Sulphate as SO ₄ | mg/l,max | IS 3025(Pt 24):2022 | 2.56 | 200 |
| 9. | Alkalinity as CaCO ₃ | mg/l,max | IS 3025(Pt 23):1986 | 15.52 | 200 |
| 10. | Iron as Fe | mg/l,max | IS 3025 (Pt 53):2003 | 0.12 | 1.0 |
| 11. | Calcium as Ca | mg/l,max | IS 3025(Pt 40):1991 | 7.21 | 75 |
| 12. | Magnesium as Mg | mg/l,max | IS 3025(Pt 46):1994 | 2.92 | 30 |
| 13. | Free Residual Chlorine | mg/l,min | IS 3025 (Pt 26):2021 | BDL(MDL-0.1) | 0.2 |
| 14. | Fluoride as F | mg/l,max | IS 3025(Pt 60):2008 | BDL(MDL-0.2) | 1.0 |
| 15. | Manganese as Mn | mg/l,max | IS 3025 (Pt 2) : 2019 | BDL(MDL-0.01) | 0.1 |
| 16. | Zinc as Zn | mg/l,max | IS 3025 (Pt 2) : 2019 | BDL(MDL-0.01) | 5.0 |
| 17. | Cadmium as Cd | mg/l,max | IS 3025 (Pt 2) : 2019 | BDL(MDL-0.001) | 0.003 |
| 18. | Lead as Pb | mg/l,max | IS 3025 (Pt 2) : 2019 | BDL(MDL-0.005) | 0.01 |

Note:- BDL: Below Detection Limit

MDL: Minimum Detection Limit

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ISO 9001:2015, ISO 45001:2018 Certified organisation

Approved 'A' grade Lab by Kerala State Pollution Control Board

Accredited Lab by NABL as per ISO 17025:2017 (Cert No: TC-7114)

Recognised Lab by Ministry of Environment, Forests & Climate Change (Govt. of India) as per E (P) Act 1986

Page 2 of 2

Report No. : EEL/LR/24/0023090/700

| Sl. No. | Parameters | Method | Result | Requirement |
|---------|--|----------------|--------|---|
| 1. | Total coliform bacteria/100ml | IS 15185 :2016 | Absent | Shall not be detectable in any 100ml sample |
| 2. | E.coli or thermotolerant coliform bacteria/100ml | IS 15185 :2016 | Absent | Shall not be detectable in any 100ml sample |

...End of Report....



Susan Abraham
Technical Manager
Authorised Signatory
Envirodesigns Eco Labs



Jesty M. T.
Dy.Tech. Manager-Microbiology
Authorised Signatory
Envirodesigns Eco Labs



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TEST REPORT

Report No. : EEL/LR/24/0023091/701
Issue Date : May 14, 2024

Issued To:
M/s. K L R Granites
Malayalappuzha
Konni, Pathanamthitta.

Customer ref: - Verbal

Project: - Environmental Monitoring at Granite Building Stone Quarry of M/s. K L R Granites,
Lease Area: 3.8717hectares, Resurvey Block No:20, Resurvey No:47/1-9,
Malayalappuzha Village, Konni Taluk, Pathanamthitha District, Kerala State.

Sample receipt form Ref. No. : SRF/A/05/701 dt. 08.05.2024
Sampling done by: Lab field technicians

Sample Particulars: Ambient Air sample

| Date of monitoring | : May 07, 2024 to May 08, 2024 | | | | |
|----------------------------------|--|---|------------------------|--------|--------------|
| Location of monitoring | : Ambient Air Monitoring –Main entrance of the quarry | | | | |
| Location of sampler | : 3.2 m above ground level | | | | |
| Sampling method | : Monitoring Protocol No. EEL/ENV/MP/01 | | | | |
| Sample receiving date | : May 08, 2024 | Lab identification code: A/05/701 | | | |
| Analysis starting date | : May 09, 2024 | Analysis completion date : May 13, 2024 | | | |
| Tests required: | For the parameters listed below, as per CPCB guidelines | | | | |
| SAMPLE TESTED AS RECEIVED | | | | | |
| Sl. No. | Parameters | Unit | Method | Result | Limit (max)* |
| 1. | Particulate matter (Size less than 10µm) or PM ₁₀ | µg/m ³ | IS 5182(Pt 23):2006 | 57.25 | 100 |
| 2. | Particulate matter (Size less than 2.5µm) or PM _{2.5} | µg/m ³ | CPCB guidelines 2011 | 20.18 | 60 |
| 3. | Sulphur dioxide | µg/m ³ | IS: 5182 (Pt 2):2001 | 7.33 | 80 |
| 4. | Nitrogen dioxide | µg/m ³ | IS: 5182 (Pt 6): 2006 | 5.41 | 80 |
| 5. | Carbon Monoxide (8hrs) | mg/m ³ | IS: 5182 (Pt 10): 1999 | 0.60 | 2.0 |

Note:- * Limit applicable for 24 hour Ambient Air Quality monitoring for Industrial, Residential, Rural and other Areas as per National Ambient Air Quality Standards 2009.

Weather and Meteorological Data

Weather condition: Clear sky

| Meteorological Parameters | Max | Min |
|---------------------------|-----|-----|
| Temperature (°C) | 34 | 27 |
| Humidity (%) | 77 | 56 |

Instruments used for Monitoring

- 1) Fine Particulate Sampler (FPS), Make: Envirotech Instruments Pvt. Ltd., Model : APM 550, ID. No. EEL/FPS/07
- 2) Respirable Dust Sampler (RDS), Make: Envirotech Instruments Pvt. Ltd., Model: APM 460, ID. No.: EEL/RDS/09
- 3)CO ANALYZER, Make: Endee Engineers, Model :JR-100, ID NO.:EEL/COA/01

....End of Report....

Susan Abraham
Technical Manager

Authorised Signatory
Envirodesigns Eco Labs

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ISO 9001:2015, ISO 45001:2018 Certified organisation
Approved 'A' grade Lab by Kerala State Pollution Control Board
Accredited Lab by NABL as per ISO 17025:2017 (Cert No: TC-7114)
Recognised Lab by Ministry of Environment, Forests & Climate Change (Govt. of India) as per E (P) Act 1986

NOISE LEVEL MONITORING REPORT

Page 1 of 2

Report No. : EEL/LR/24/0023092/702

Issued To:

Issue Date : May 14, 2024

M/s. K L R Granites
Malayalappuzha
Konni, Pathanamthitta.

Customer ref: - Verbal

Project: - Environmental Monitoring at Granite Building Stone Quarry of M/s. K L R Granites,
Lease Area: 3.8717 hectares, Resurvey Block No: 20, Resurvey No: 47/1-9,
Malayalappuzha Village, Konni Taluk, Pathanamthitta District, Kerala State

Sample receipt form Ref. No. : SRF/N/05/702 dt. 08.05.2024

Monitoring done by: Lab field technicians

Sample Particulars: Noise Level Monitoring

Date of monitoring : May 07, 2024 to May 08, 2024
Source of monitoring : Ambient Noise Level monitoring
Sampling method : Monitoring Protocol No. EEL/ENV/MP/01
Lab identification code : N/05/702
Method Used : IS 9989:1981

Presentation of Results

| Sl No. | Time of Monitoring(Hrs) | Value Reported in dB (A) L_{eq} |
|--------|-------------------------|-----------------------------------|
| 1. | 10.00 – 11.00 | 47.9 |
| 2. | 11.00 – 12.00 | 50.3 |
| 3. | 12.00 – 13.00 | 51.8 |
| 4. | 13.00 – 14.00 | 52.1 |
| 5. | 14.00 – 15.00 | 50.7 |
| 6. | 15.00 – 16.00 | 49.8 |
| 7. | 16.00 – 17.00 | 47.1 |
| 8. | 17.00 – 18.00 | 45.3 |
| 9. | 18.00 – 19.00 | 43.1 |
| 10. | 19.00 – 20.00 | 41.8 |
| 11. | 20.00 – 21.00 | 39.7 |
| 12. | 21.00 – 22.00 | 37.5 |
| 13. | 22.00 – 23.00 | 36.1 |

*This test report shall not be reproduced except in full, without the written permission of the laboratory. * The liability of the laboratory is to the extent of the testing charges received. *Sampling is not done by the laboratory unless specified. ** The above results are valid only to the sample(s) tested unless the sampling is performed by the laboratory. The test report issued by the laboratory shall not be used for advertisement, litigation etc. *The sample will be disposed of after 15 days from the date of issue of test report.





ISO 9001:2015, ISO 45001:2018 Certified organisation
 Approved 'A' grade Lab by Kerala State Pollution Control Board
 Accredited Lab by NABL as per ISO 17025:2017 (Cert No: TC-7114)
 Recognised Lab by Ministry of Environment, Forests & Climate Change (Govt. of India) as per E (P) Act 1986

Report No. : EEL/LR/24/0023092/702

| Sl. No. | Time of Monitoring(Hrs) | Value Reported in dB (A) L_{eq} |
|---------|-------------------------|-----------------------------------|
| 14. | 23.00 – 00.00 | 35.8 |
| 15. | 00.00 – 01.00 | 34.2 |
| 16. | 01.00 – 02.00 | 33.1 |
| 17. | 02.00 – 03.00 | 35.2 |
| 18. | 03.00 – 04.00 | 36.1 |
| 19. | 04.00 – 05.00 | 37.5 |
| 20. | 05.00 – 06.00 | 38.3 |
| 21. | 06.00 – 07.00 | 39.7 |
| 22. | 07.00 – 08.00 | 41.8 |
| 23. | 08.00 – 09.00 | 43.9 |
| 24. | 09.00 – 10.00 | 45.3 |

| Sl. No. | Location of Monitoring | Value Reported in dB (A) L_{eq} | |
|---------|--|-----------------------------------|------------|
| | | Day time | Night time |
| 1. | Ambient Noise Level monitoring measured near Main Entrance of the Quarry | 45.5 | 35.8 |

| LIMIT AS PER NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000 | | | | |
|---|-----------------|-----------------|------------------|--------------|
| | Industrial Area | Commercial Area | Residential Area | Silence Zone |
| Day Time | 75 | 65 | 55 | 50 |
| Night Time | 70 | 55 | 45 | 40 |

Note: Day time means - 6.00 AM to 10.00 PM

Night time means - 10.00 PM to 6.00 AM

Instrument used for Monitoring

Name of Instrument : Sound Level Meter, Make: Cygnet, Model: 2511, ID No. : EEL/SLM/02

Susan Abraham
 Technical Manager
 Authorised Signatory
 Envirodesigns Eco Labs

....End of Report.....



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ANNEXURE 10
MINES MATE
CERTIFICATE



Cert No. MR2200209/10

भारत सरकार/Government of India
 खान अधिनियम, 1952/Mines Act, 1952
 खनन परीक्षा बोर्ड/Board of Mining Examinations
 खनन मेट सक्षमता प्रमाण-पत्र
MINING MATE'S CERTIFICATE OF COMPETENCY
 (केवल ओपेनकास्ट खानों तक सीमित)
 (Restricted to mines having opencast workings only)
 (धात्विकीय खान विनियम, 1961 के अन्तर्गत)
 (Under the Metalliferous Mines Regulations, 1961)

श्री शिवशंकर पी सुपुत्र पलानीसामी आर है, को अपनी जिनकी जन्म तिथि ~~02-MARCH-1989~~ है, को अपनी आयु, स्वस्थता, सदाचार, साक्षरता और धात्विकीय खानों में काम करने के विहित अनुभव का सन्तोषजनक प्रमाण प्रस्तुत करने एवं दिनांक दिसम्बर-2022 को बंगलुरु केन्द्र पर आयोजित विहित परीक्षा में उत्तीर्ण होने पर एतद्वारा केवल ओपेनकास्ट खानों तक सीमित मेट सक्षमता प्रमाण-पत्र प्रदान किया जाता है। यह प्रमाण पत्र 11-जनवरी-2023 से प्रभावी है।

Shri SIVASANKAR P SON OF PALANISAMY R born on 02-MARCH-1989 having given satisfactory evidence of his age, medical fitness, good character, literacy and prescribed experience of working in metalliferous mines and having passed the prescribed examination held at BENGALURU centre on DECEMBER - 2022 is hereby granted MINING MATE'S CERTIFICATE OF COMPETENCY restricted to mines having opencast workings only.

The certificate is effective from 11-JANUARY-2023.

बाएं हाथ के अंगूठे का निशान
Left hand thumb impression

अंचल सचिव
 खनन परीक्षा बोर्ड
 Zonal Secretary
 Board of Mining
 Examinations

सचिव
 खनन परीक्षा बोर्ड
 Board of Mining Examinations

अध्यक्ष
 खनन परीक्षा बोर्ड
 Chairman
 Board of Mining
 Examinations

Signed and Sealed
Date 26.01.2023

P.शिवशंकर

ANNEXURE 11
FOREMEN CERTIFICATE

Cert No. FR/4790



PITCHAIMUTHU.A



ENTHIL KUMARAN,
Reg No: 73683
SECRETARY

भारत सरकार/Government of India
खान अधिनियम, 1952/Mines Act, 1952
खनन परीक्षा बोर्ड/Board of Mining Examinations
खान फोरमैन सक्षमता प्रमाण-पत्र
(केवल ओपेनकास्ट खानों तक सीमित)
(Restricted to mines having opencast workings only)
MINE FOREMAN'S CERTIFICATE OF COMPETENCY
(घात्विकीय खान विनियम, 1961 के अन्तर्गत)
(Under the Metalliferous Mines Regulations, 1961)

श्री पिच्चामुथु ए

जिनकी जन्म तिथि 25.05.1981

सुपुत्र श्री. अरुमुगम पिळ्लाई

है, को विहित अर्हताएं एवं अनुभव प्राप्त करने का सन्तोषजनक प्रमाण प्रस्तुत करने एवं अगस्त, 2016 में आयोजित विहित परीक्षा में उत्तीर्ण होने पर एतद्वारा केवल ओपेनकास्ट घात्विकीय खान के लिए फोरमैन प्रमाण-पत्र प्रदान किया जाता है। यह प्रमाण-पत्र दिनांक 20.06.2017 से प्रभावी है।

Shri Pitchaimuthu A
born on 25th May, 1981

son of Mr. Arumugam Pillai

having given satisfactory evidence of possessing the prescribed qualifications and experience and having passed the examination held in August, 2016 is hereby granted MINE FOREMAN'S CERTIFICATE OF COMPETENCY for metalliferous mine having opencast workings only. This certificate is effective from 20.06.2017

सचिव

खनन परीक्षा बोर्ड

Secretary
Board of Mining
Examinations

Signed and Sealed
Date 22.08.18

Attested
A. Pte Mutte

अध्यक्ष

खनन परीक्षा बोर्ड

Chairman
Board of Mining
Examinations