



Validity expires on 03.01.2023

Proceedings of the State Environment Impact Assessment Authority, Kerala

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

Sub: SEIAA- Environmental Clearance for the quarry project in Sy. No.1080/2(P) at Onakkoor Village, Muvattupuzha Taluk, Ernakulam District, Kerala State by Sri.Philip George, M/s. Murickans Quarry - Granted – Orders issued.

STATE ENVIRONMENTAL IMPACT ASSESSMENT AUTHORITY, KERALA

No. 915/SEIAA/ EC3/3661/2015

Dated, Thiruvananthapuram 04.01.2018

- Ref:
1. Application dated 08.07.2015 from Sri.Philip George (Proprietor) M/s. Murickans Quarry, Murical house, Periyappuram P.O., Muvattupuzha Taluk, Ernakulam
 2. Minutes of the 56th Meeting of SEAC held on 6th & 7th June 2016
 3. Minutes of the 55th meeting of SEIAA held on 16th July 2016
 4. Minutes of the 67th meeting of SEAC held on 27th January 2017
 5. Minutes of the 73rd meeting of SEAC held on 30th & 31st May 2017.
 6. Minutes of the 71st meeting of SEIAA held on 20th July 2017
 7. Minutes of the 73rd meeting of SEIAA held on 15th September 2017
 8. Minutes of the 81st meeting of SEAC held on 30th & 31st October 2017
 9. Minutes of the 76th meeting of SEIAA held on 16th November 2017
 10. Minutes of the 77th meeting of SEIAA held on 28th November 2017
 11. Affidavit received on 05.12.2017 & 12.12.2017 from Sri.Philip George (Proprietor) M/s. Murickans Quarry

ENVIRONMENTAL CLEARANCE NO.03/2018

Sri.Philip George (Proprietor) M/s. Murickans Quarry, Murical house, Periyappuram P.O., Muvattupuzha Taluk, Ernakulam District vide his application dated 08.07.2015, has sought Environmental Clearance under EIA Notification, 2006 for the proposed Stone Quarry project in Sy. No. 1080/2(P) at Onakkoor village, Muvattupuzha Taluk, Ernakulam District, Kerala State for an area of 1.4761 Hectares. The project comes under Category B, Activity 1(a), (i) as per the Schedule of EIA Notification 2006 (since it is below 50 hectares) and as per O.M. No. L-11011/47/2011-IA.II(M) dated 18th May 2012 of Ministry of Environment

and Forests. It is further categorized as Category B2 as per Notification No.S.O.141 (E) dt.15.01.2016 of Ministry of Environment and Forests, since the area of the project is below 25 hectares.

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

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

PROJECT DETAILS	
File No.	915/SEIAA/EC3/3661/2015
Name /Title of the project	Granite Building Stone Quarry of Shri. Murickans Quarry
Name and address of project proponent.	Sri. Philip George, Proprietor of M/s. Murickans Quarry Murical House, Periyappuram P.O., Muvattupuzha Taluk, Ernakulam District, Kerala state. Mobile No: 09846527937 E-mail: murickansgranites007@gmail.com
Owner of the land	The proposed mine lease area of 1.4761Ha is a patta land and is in lessee possession.
Survey No. District/Taluk/ and Village etc.	1080/2(P) in Onakkoor village, Periyappuram P.O., Muvattupuzha Taluk, Ernakulam District, Kerala
Category/Sub Category and Schedule	Schedule No. – 1(a) Category – B, Sub-category – B2
Details of period of lease or permit with number including the beginning and expiry date of lease/permit period (Copy to be attached)	Recent permit obtained on 04.06.2016 valid up to 03.06.2017
Present Status of the project	Not working
Date & Year of starting the work of the quarry project.	23.12.2009

Whether the quarry is working at present or not?	No
If stopped working since when?	03.12.2016
Date of submission of Application	08 th July 2015
Brief description of the project.	Enclosed as Annexure - 1
GPS Co-ordinate	Latitude (N): N - 9° 52'04.83" to 09° 52'11.14"
	Longitude(E): 76°32'.04.21" to 76°32'08.41"
Details of Authorized Signatory and address for correspondence	Sri. Philip George, Proprietor of M/s. Murickans Quarry Murical House, Periyappuram P.O, Muvattupuzha Taluk, Ernakulam District, Kerala state. Mobile No: 09846527937 E-mail: murickansgranites007@gmail.com
LAND DETAILS	
Extent of area in hectares	1.4761 Ha
Is the property forest land/Govt. land/own land/patta land	Private patta land in lessee's possession
Quantity of top soil/over burden produced and managed	There is some soil capping in the area comprises of top soil as well as overburden / waste. The average thickness of the top soil / overburden is about 1.5 to 2.0 m. The total quantity of waste to be generated from the lease area is 5424 m ³ (13560 Tonne) comprising about 407 m ³ of top soil and 5017 m ³ of over burden / waste. The top soil will be used for reclamation and afforestation purpose. The remaining waste to be generated will be used for road formation, filling of low lying areas or other commercial purpose outside the lease as per norms.
Latitude and Longitude	Latitude (N): N - 9° 52'04.83" to 09° 52'11.14" Longitude(E): 76°32'.04.21" to 76°32'08.41"
Topography of land and elevation	The granite deposit occurs in a gently sloping area with the RL in the range of +52m AMSL to +92 m AMSL with general slope towards south east.
Slope analysis	The bench slopes will be maintained as per DGMS rules and requirement and hence there cannot be any instable slopes.

Will there be any significant land disturbance resulting in soil erosion, subsidence & natural drainage.	This being an opencast mine there will not be any subsidence. The bench slopes will be maintained as per DGMS rules and requirement and hence there cannot be any instable slopes. There will be land disturbance due to mining activity.
Access road to the site width and condition	The project site is approachable from Koothatukulam to Piravom road which is about 250m – South East away from the lease boundary, Width - 4m
Will there be any adverse impact on the aesthetics of the proposal site	No. In mine closure stage, water body will be formed up to 55m AMSL in the quarried void. Out of 1.1359 Ha of mined out area, 0.8492 Ha will be left as water body and the remaining 0.2867Ha will be reclaimed with bench plantation / plantation. The mined area will be properly fenced all around. The mined area will be properly fenced all around. Plantation will be carried out in the safety zone area, all possible area within the lease area and the adjacent land owned by proponent.
MINING DETAILS	
Minimum and Maximum height of excavation.	up to +35m AMSL from the surface RL of 52 m AMSL to 92 m AMSL (Minimum Depth – 17 m & Maximum Depth - 57 m)
Life of mine proposed.	5 years
Underground mining if any proposed	Not Applicable
Method of Mining	Semi-mechanized opencast quarrying method
Distance from the adjacent quarry	Quarry of Edayan Aggregates – 1.42 Ha – adjacent
Cluster condition if any	-
Has “No cluster certificate” submitted?	Yes. Attached in the EIA EMP report as Enclosure – 16.
Distance from nearby habitation	Nearest habitation is more than 102 m away.
Distance from nearby forest, if applicable	Nil
Distance from protected area, Wildlife Sanctuary, National Park etc.	Nil

Distance from nearby streams/rivers/National Highway and Roads	Water bodies: Valiya Todu – 1.2 km - NE (Aerial), Kummadu Todu - 1.6 km- South (Aerial), Perumbadavan Todu- 3.1km- SW (Aerial), Muvattupuzha River – 5.8km - W (Aerial), Roads: Piravom to Koothathutukulam – 250m - SE (Aerial), MC Road – 6.6 km – E (Aerial)
Is ESA applicable? If so distance from ESA limit	Not Applicable
Has approved mining plan, prepared by RQP submitted?	Yes
Capacity of production in TPA	250 TPD
Details of mining process	The mining operation comprises of drilling using jack hammer and compressors, blasting, removal of blasted material using excavator and transportation of material directly to the outside crusher unit.
DETAILS OF PROJECT COST	
Land cost	4 crore
Plant and Machinery	90 lakh
Total Cost	4.9 crore (Land, Plant and Machinery cost)
Financial Statement including funding source and details of insurance etc.	Partly by proponent, partly from loan

MANAGEMENT PLAN

AIR POLLUTION a) Drilling by jack hammer

- Covering of drill holes with wet cloth
- Usage of sharp drill bits for drilling of holes.
- Provision of dust filters / mask to workers working at highly dust prone and affected areas.

b) Blasting operation

- Well-designed blasting parameter, effective stemming to achieve optimum breakage occurs without generating fines.
- Use of appropriate explosives for blasting and avoiding overcharging of blast holes.
- Avoiding blasting during high wind periods where the fine dust is carried out away easily affecting the ambient air quality.
- Use of controlled blasting techniques with milli second delay detonators to keep the dust generation, noise as well as vibration level within the prescribed limits.

c) Excavation and Hauling

- Proper maintenance of HEMM which avoids excessive noise and vibration
- Imparting sufficient training to operators on safety and environmental parameters

- Proper maintenance of hauling equipment's

d) Transportation

- Regular wetting of transport road using water tanker
- Avoiding overloading of tippers
- Covering of loaded tippers with tarpaulins during transportation

- Development of green belt / barriers wherever possible

➤ **WATER POLLUTION** Sewage generated will be properly discharged into septic tanks with soak pits.

➤ The rain water falling in the quarry will be harvested up to +55 m AMSL. This pit will act as a settling pond on the South Western side of the lease area to prevent solids escaping along with discharge, before outlet etc.

➤ Supernatant clear water will be let out of the area after passing through silt traps. Most of the mine water will be used for green belt, dust suppression, etc. The mined area will be properly fenced all around.

➤ Mine sump water can also be utilized

➤ **NOISE** Noise levels can be abated through good preventive maintenance of machineries, green belt creation, provision of ear muffs to workers, etc.,

➤ Sound proof operator's cabin for equipment like dumpers,

	<p>shovel, tippers, etc.,</p> <p>➤ Ground vibration are controlled through optimum design for burden & spacing, inclined drilling practice, using ordinary electric milli second delay detonators, in combination with detonating fuse etc.,</p> <p>➤ Solid waste Management There is some soil capping in the area comprises of top soil as well as overburden / waste. The average thickness of the top soil / overburden is about 1.5 to 2.0 m. The total quantity of waste to be generated from the lease area is 5424 m³ (13560 Tonne) comprising about 407 m³ of top soil and 5017 m³ of over burden / waste.</p> <p>➤ The top soil will be used for reclamation and afforestation purpose. The remaining waste to be generated will be used for road formation, filling of low lying areas or other commercial purpose outside the lease as per norms.</p> <p>➤ Eco</p> <p>➤ restoration In mine closure stage, water body will be formed up to 55m AMSL in the quarried void. Out of 1.1359 Ha of mined out area, 0.8492 Ha will be left as water body and the remaining 0.2867Ha will be reclaimed with bench plantation / plantation.</p> <p>➤ The mined area will be properly fenced all around. Plantation will be carried out in the safety zone area, all possible area within the lease area and the adjacent land owned by proponent.</p>
Whether Environment Management Plan or Eco restoration Plan satisfactory?	Yes
Does it suggest mitigation measures for each activity	Yes
Is Pre-Feasibility Report (PFR) satisfactory	Yes
Does it need public hearing	No. Not Applicable
Details of litigation and Court verdict if any	Not Applicable
Details of public complaint, if any	Not Applicable

Details of statutory sanction required	Environmental clearance applied on September 2015
If CRZ recommendation applicable?	No
<p style="text-align: center;">PART B ENVIRONMENT IMPACT ASSESSMENT AND MITIGATION MEASURES</p>	
Details of water requirement per day in KLD	Total – 6.0KLD, Domestic & sanitary needs – 1.0KLD, Dust suppression, plantation etc., - 5.0KLD
Water source/sources.	The source of water for domestic & sanitary water requirement is being met from well water. For industrial purpose like water sprinkling, plantation etc., mine sump pit water and well will be used.
Expected water use per day in KLD.	Total – 6.0KLD, Domestic & sanitary needs – 1.0KLD, Dust suppression, plantation etc., - 5.0KLD
Details of water requirements met from water harvesting.	Mine sump water will be used for industrial purposes like water sprinkling, plantation etc.
What are the impact of the proposal on the ground water?	The entire water requirement for domestic purpose and industrial activities such as Dust suppression and greenbelt development is met from mine pit water/ well water. Moreover, mining operation require very less quantity of water and as such its impact on water environment is negligible.
How much of the water requirement can be met from the recycling of treated waste water? (Facilities for liquid waste treatment)	Not applicable

What is the incremental pollution load from waste water generated from the proposed activities?	Not applicable
How is the storm water from within the site managed?	<p>The rain water falling in the quarry will be harvested up to +55 m AMSL. This pit will act as a settling pond on the South Western side of the lease area to prevent solids escaping along with discharge, before outlet etc.</p> <p>Supernatant clear water will be let out of the area after passing through silt traps. Most of the mine water will be used for green belt, dust suppression, etc.</p>
IMPACT ON BIODIVERSITY AND ECO RESTORATION PROGRAMMES	
Will the project involve extensive clearing or modification of vegetation (Provide details)	No
What are the measures proposed to minimize the likely impact on vegetation (details of proposal for tree plantation/ landscaping)	<p>In mine closure stage, water body will be formed up to 55m AMSL in the quarried void. Out of 1.1359 Ha of mined out area, 0.8492 Ha will be left as water body and the remaining 0.2867Ha will be reclaimed with bench plantation / plantation. The mined area will be properly fenced all around. The mined area will be properly fenced all around. Plantation will be carried out in the safety zone area, all possible area within the lease area and the adjacent land owned by proponent.</p>
<p>Is there any displacement of fauna – both terrestrial and aquatic. – If so what are the mitigation measures ?</p> <p>Presence of any endangered species or red listed category (in detail)</p>	Nil.
IMPACT ON AIR ENVIRONMENT	

<p>What are the mitigation measures on generation of dust, smoke and air quality</p>	<p>Air pollution in mines is mainly due to:</p> <ul style="list-style-type: none"> ▪ Drilling & Blasting. ▪ Movement of HEMM. ▪ Loading & Unloading. ▪ Transportation of Material. ▪ Drilling & Blasting. ▪ Movement of HEMM. ▪ Loading & Unloading. ▪ Transportation of Material. <p>The following mitigation measures are and will be adopted:</p> <ul style="list-style-type: none"> ▪ Covering of drill holes with wet cloth for controlling dust emission ▪ Usage of sharp drill bits for drilling of holes. ▪ Regular wetting of transport road using water tanker to suppress the dust. ▪ Well-designed blasting parameter, effective stemming to achieve optimum breakage occurs without generating fines. ▪ Avoiding blasting during high wind periods where the fine dust is carried out away easily affecting the ambient air quality. ▪ Use of controlled blasting techniques to keep the dust generation, noise as well as vibration level within the prescribed limits. ▪ Proper maintenance of HEMM which avoids excessive noise and vibration ▪ Acoustic enclosures for operator cabin. ▪ Imparting sufficient training to operators on safety and environmental parameters ▪ Proper maintenance of hauling equipment's ▪ Regular maintenance of the transport vehicles. ▪ Avoiding of overloading of tippers and covering of loaded tippers with tarpaulins during transportation. ▪ Development of Greenbelt. ▪ Periodical monitoring of air quality to take steps to control the pollutants.
<p>Details of internal traffic management of the site.</p>	<p>Only few tippers will be engaged for transporting granite to outside crusher plant. No internal traffic management in the site is needed.</p>

Details of noise from traffic, machines and vibrator and mitigation measures	<p>Noise/Vibration generation in mining operations are mainly due to:</p> <ul style="list-style-type: none">▪ Mechanization adopted.▪ Drilling & Blasting Operation.▪ Movement of Vehicles, etc.▪ Ground Vibration <p>The mitigation measures are given below:</p> <ul style="list-style-type: none">▪ Planting of trees wherever possible to act as acoustic barriers.▪ Sound proof operator's cabin for equipment like dumpers, shovel, tippers, etc.▪ Proper and regular maintenance of equipment may lead to less noise generation.▪ Providing in-built mechanism for reducing sound emissions.▪ Providing earplugs, earmuffs to workers exposed to higher noise level.▪ Conducting regular health check-up of workers including Audiometry test for the workers engaged in noise/vibration prone area. <p>The following mitigation measures will be adopted for noise control:</p> <ul style="list-style-type: none">▪ Optimum design for burden and spacing.▪ Inclined drilling practice, whenever necessary.▪ Reducing explosive charge to minimum.▪ Proper deck charging practices, looking to consolidation and hardness of strata conditions.▪ Using ordinary electric milli second delay detonators, in combination with denoting fuse etc. This sequence of blasting reduces vibration to a large extent, thereby minimizing propagation of shock waves.▪ Avoiding blasting in unfavorable weather condition.																											
Impact of DG sets and other equipment on noise and vibration and ambient air quality around the project site and mitigation measures																												
Air quality monitoring in detail	<p>AAQ monitoring were studied in 3 locations.</p> <table><thead><tr><th>Parameter (in $\mu\text{g}/\text{m}^3$)</th><th>Sample Code & Location</th><th>*Permissible Limits</th></tr></thead><tbody><tr><td></td><td>MA1 MA2 MA3</td><td></td></tr><tr><td></td><td>MINE OFFICE EDIYAR PERIYAPPURAM</td><td></td></tr><tr><td>PM10</td><td>50.7 42.2 48.5</td><td>100</td></tr><tr><td>PM2.5</td><td>22.1 19.4 17.2</td><td>60</td></tr><tr><td>SO2</td><td>3.9 3.3 3.7</td><td>80</td></tr><tr><td>NO2</td><td>8.3 7.0 7.8</td><td>80</td></tr><tr><td>CO</td><td>BDL(DL-1144) BDL(DL-1144)</td><td>BDL(DL-1144)</td></tr><tr><td></td><td>4000</td><td></td></tr></tbody></table> <p>*National Ambient Air Quality Standards from CPCB Remarks: BDL- Below detectable limit, DL- Detectable Limit.</p>	Parameter (in $\mu\text{g}/\text{m}^3$)	Sample Code & Location	*Permissible Limits		MA1 MA2 MA3			MINE OFFICE EDIYAR PERIYAPPURAM		PM10	50.7 42.2 48.5	100	PM2.5	22.1 19.4 17.2	60	SO2	3.9 3.3 3.7	80	NO2	8.3 7.0 7.8	80	CO	BDL(DL-1144) BDL(DL-1144)	BDL(DL-1144)		4000	
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	All monitored values were found to be well within the prescribed NAAQ Limits
ENERGY CONSERVATION	
Details of power requirement and source of supply.	No electricity is needed for quarry operations as only diesel operated mining machinery including jack hammer are used for quarrying. Hence the negligible power requirements of the administrative buildings etc. are and will be met from state grid. The power connection for office use is available near the site.
Details of renewable energy (non – conventional) used.	Nil
RISK MANAGEMENT	
Are there sufficient measures proposed for risk hazards in case of emergency such as accident at the site?	<ul style="list-style-type: none"> ▪ Yes. Bench height, width and slope will be maintained as per direction of DGMS. ▪ The mined area will be properly fenced all around to prevent fall of animals. ▪ Magazine is available outside the lease area. License to store and use of Explosive obtained from Deputy Chief Controller of Explosives, South Circle, Chennai. Explosive License No: E/SC/KL/22/875 (E38974) Dated: 28.03.2014, which is Valid up to: 31.03.2019.
Are proposals for fencing around the quarry satisfactory? Storage of explosives/hazardous substance in detail Facility for solid waste management	<ul style="list-style-type: none"> ▪ The topsoil / waste generated from the remaining un-mined area will be used for road formation, filling of low lying areas and creation of bund around the mine periphery.
SOCIO ECONOMIC IMPACTS	
Will the project cause adverse effects on local communities disturbance to sacred sites or other cultural values. What are the safe guards proposed?	Not Applicable
Will the proposal result in any changes to the demographic structure of local population. If so,	No

provide details.																																																																																								
	<p>The project proponent has carried out beneficial social welfare activities to greatly improve the social and physical infrastructure of the locals around the project site. Its details are as follows:</p> <table><thead><tr><th>S.No</th><th>Particulars</th><th>Amount</th></tr></thead><tbody><tr><td></td><td>In Rs</td><td></td></tr><tr><td>1.</td><td>Study Materials for students in Govt. L.P & H.P. School, Onakkoor village</td><td>15000</td></tr><tr><td>2.</td><td>Donation to Special school (Mentally Challenged) in Uzhavoor & Koothatukulam</td><td>24000</td></tr><tr><td>3.</td><td>Medical aid to needy person</td><td>15000</td></tr><tr><td>4.</td><td>Tar road making in Panchayat Road</td><td>60000</td></tr><tr><td>5.</td><td>Provided Bed sheets, Steel cots, Store well and Aqua Guard- RO for drinking water facility in Community health Centre, Pampakuda</td><td>- 30000</td></tr><tr><td>6.</td><td>Donation to Poor People for home repairing</td><td>6000</td></tr><tr><td></td><td>Total</td><td>150000</td></tr></tbody></table> <p>For future CSR activities, need based assessment for the local community to the tune of Rs. 25.0 lakhs is made and budgetary provision of Rs. 5.0 lakhs per year is provided.</p> <p>CSR components suggested</p> <table><thead><tr><th>S. No</th><th>Description</th><th>Capital Cost in Lakhs</th><th>Recurring Cost in Lakhs</th></tr></thead><tbody><tr><td>1.</td><td>EDUCATION FACILITIES:</td><td></td><td></td></tr><tr><td></td><td>a. Schools in and around Koothatukulam</td><td>Financial support</td><td></td></tr><tr><td></td><td>Special school (Mentally Challenged) Uzhavoor, Koothatukulam (75,000 x 5 yrs)</td><td>-</td><td>3.75</td></tr><tr><td></td><td>Fund/ Provisions to Govt. L.P & H.P School, Onakkoor village (50000 x 5 yrs)</td><td>-</td><td>2.50</td></tr><tr><td></td><td>Extending educational aid in monetary form to poor and nearby persons in Onakkoor village (75,000 x 5 yrs)-</td><td></td><td>3.75</td></tr><tr><td></td><td>Construction of toilet facility in Govt. L.P & H.P School, Onakkoor village</td><td>-</td><td>2.50</td></tr><tr><td>2.</td><td>MEDICAL FACILITIES:</td><td></td><td></td></tr><tr><td></td><td>Medical aid by monetary contribution to the destitute and poor local persons, as necessary (75,000 x 5 yrs)</td><td>-</td><td>3.75</td></tr><tr><td>3.</td><td>Fund/ Provisions to Prathyasa Bhavan, Mulakkulam (75,000 x 5 years)</td><td>-</td><td>3.75</td></tr><tr><td>4.</td><td>AREA DEVELOPMENT: Pampakuda Grama Panchayat</td><td></td><td></td></tr><tr><td></td><td>a. Maintenance of Panchayat road</td><td>2.50</td><td>-</td></tr><tr><td></td><td>b. Providing aggregates free of cost for construction of houses for poor families and at 50% of the cost for lower class families (50,000 x 5 yrs)</td><td>-</td><td>2.50</td></tr><tr><td></td><td>Sub Total Cost</td><td>5.00</td><td>20.00</td></tr><tr><td></td><td>Total Cost (Capital and Recurring)</td><td></td><td>25.00</td></tr></tbody></table>	S.No	Particulars	Amount		In Rs		1.	Study Materials for students in Govt. L.P & H.P. School, Onakkoor village	15000	2.	Donation to Special school (Mentally Challenged) in Uzhavoor & Koothatukulam	24000	3.	Medical aid to needy person	15000	4.	Tar road making in Panchayat Road	60000	5.	Provided Bed sheets, Steel cots, Store well and Aqua Guard- RO for drinking water facility in Community health Centre, Pampakuda	- 30000	6.	Donation to Poor People for home repairing	6000		Total	150000	S. No	Description	Capital Cost in Lakhs	Recurring Cost in Lakhs	1.	EDUCATION FACILITIES:				a. Schools in and around Koothatukulam	Financial support			Special school (Mentally Challenged) Uzhavoor, Koothatukulam (75,000 x 5 yrs)	-	3.75		Fund/ Provisions to Govt. L.P & H.P School, Onakkoor village (50000 x 5 yrs)	-	2.50		Extending educational aid in monetary form to poor and nearby persons in Onakkoor village (75,000 x 5 yrs)-		3.75		Construction of toilet facility in Govt. L.P & H.P School, Onakkoor village	-	2.50	2.	MEDICAL FACILITIES:				Medical aid by monetary contribution to the destitute and poor local persons, as necessary (75,000 x 5 yrs)	-	3.75	3.	Fund/ Provisions to Prathyasa Bhavan, Mulakkulam (75,000 x 5 years)	-	3.75	4.	AREA DEVELOPMENT: Pampakuda Grama Panchayat				a. Maintenance of Panchayat road	2.50	-		b. Providing aggregates free of cost for construction of houses for poor families and at 50% of the cost for lower class families (50,000 x 5 yrs)	-	2.50		Sub Total Cost	5.00	20.00		Total Cost (Capital and Recurring)		25.00
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3.	Fund/ Provisions to Prathyasa Bhavan, Mulakkulam (75,000 x 5 years)	-	3.75																																																																																					
4.	AREA DEVELOPMENT: Pampakuda Grama Panchayat																																																																																							
	a. Maintenance of Panchayat road	2.50	-																																																																																					
	b. Providing aggregates free of cost for construction of houses for poor families and at 50% of the cost for lower class families (50,000 x 5 yrs)	-	2.50																																																																																					
	Sub Total Cost	5.00	20.00																																																																																					
	Total Cost (Capital and Recurring)		25.00																																																																																					
Details of CSR commitment																																																																																								

What are the projects benefits in terms of employment potential?	10 persons find direct employment in the quarry operation. Besides, the mining activity will also create employment indirect employment opportunities.
PART C	
Details of NABET approved EIA Consultant engaged- Their name, address and accreditation details	Creative Engineers & Consultants Address: 9 B/4, Bharathwajar Street, East Tambaram, Chennai – 600059 E-mail: cecgiri@yahoo.com Tel.: 044- 22395170 Mob: 09444133619 Listed in S.No 26 in NABET list of Accredited Consultants
SUMMARY AND CONCLUSION	
Overall justification for implementation of the project.	<ul style="list-style-type: none"> • The final product from the quarry is used in the outside crusher unit for producing aggregates & M-sand which is an essential supply component in road making, construction activities and building works, which are all core sectors for infrastructural growth of the country. • Working of this quarry resulted in overall development of the region in its own way due to provision of direct & indirect employment, improvement in the general living standards and knowledge sharing, improved wage level and the living standard of the local people and continual improvements of the local amenities for the local society. • Under their CSR initiatives, proponent has already carried out excellent activities. About Rs 1.50 Lakhs is spent so far for this purpose. These programmes will continue in future vigorously. Rs. 5.0 lakhs per year will be spent for future CSR activities. Future planned social outreach programmes will further enhance the life style, income levels educational and medical services and infrastructural services of the local area and local community.
Explanation of how adverse impact have been mitigated.	The mitigation measures to control the adverse impact due to this project on various environmental factors are explained in Part B above.

2. The proposal was considered in the 56th Meeting of SEAC held on 6th & 7th June 2016. The proponent admitted that the quarry is at presently operational and hence there is a violation. This may be looked into by SEIAA. The SEAC has decided to Recommend for issuance of EC on completion action against violation subject to the following specific condition along with other general conditions.

1. There is an adjacent quarry named 'Edayan Crushers'. From the presentation, it was observed that there is no set out, between the two. This should be strictly provided as stipulated in rules.

2. Presently bench formation is not followed at all. This should be strictly adhered to.
3. The proposal was considered in the 55th meeting of SEIAA held on 16th July 2016. Authority wanted to get it clarified by SEAC as to when did the violation take place, and whether the case attract the order dated 30-10-2015 of the Hon. Supreme Court in SLP No. 30103/2015 to maintain status quo. SEIAA is the 8th respondent in that case.
4. The proposal was placed in the 67th meeting of SEAC held on 27th January 2017. The Committee examined the suggestions made by SEIAA and decided to defer the item for site inspection.

Subsequently, site visit was conducted on 08.04.2017 by Subcommittee consisting of Er. P. Sreekumaran Nair, Dr.K.G.Padmakumar & Dr.E.A.Jayson. The representatives of the proponent were present at the site at the time of site visit. The report is as follows;

Sri.Philip George (Proprietor) M/s. Murickans Quarry, Murical house, Periyappuram P.O., Muvattupuzha Taluk, Ernakulam District vide his application dated 11.09.2015, has sought Environmental Clearance under EIA Notification, 2006 for the Proposed Building Stone Quarry in Sy. No. 1080/2(P) at Onakkoor village, Muvattupuzha Taluk, Ernakulam District, Kerala State for an area of 1.4761Hectares. The proposed project site falls within Latitude (N) 09°52'04.83" to 09°52'11.14" Longitude (E) 76°32'04.21" to 76°32'08.41" This is an existing quarry of an area 0.286 Ha. The proposed mine lease area of 1.4761Ha is a patta land and is in lessee possession. The total mine lease area is 1.4761 Ha. The proposed project is for quarrying of 50,000 TPA (250 TPD) of building stone.

Distance of the mining area from the nearest human settlement is recorded as approximately about 102m from the lease boundary. The proposed project area is not adjacent to any of the ecologically sensitive features. The project area does not fall into ESZ – I of WGEEP Report and ESA of HLWG. The quarry is at present operational on permit. There is an adjacent quarry named 'Edaayan Crushers'. As observed earlier during the presentation, it was observed that there is no set out, between the two, as stipulated in rules. Presently bench formation is not followed at all. This should be strictly insisted to.

5. The proposal was considered in the 73rd meeting of SEAC held on 30th & 31st May 2017. The Committee opined that the proponent was operating the quarry based on permit without EC. The proponent admitted the fact during his presentation before the committee on 07.06. 2016. Hence, it is a case of violation, which may be looked into by SEIAA.
6. The proposal was placed in the 71st meeting of SEIAA held on 20th July 2017 Authority decided to accept the recommendation of SEAC that the working of the quarry is a case of violation and hence decided to take action on violation.
7. The proponent Mr.Philip George has submitted a request that has been received in this office on 13.09.2017. He has requested to re-evaluate the decision of SEAC committee and to give permission to operate the quarry. He explained that he has operated the quarry only on the permit order of the Hon'ble Supreme Court and after that he has not continued

quarrying after November 2016. He also submitted a Certificate from Village Officer that the quarry was not operational.

8. The proposal was placed in the 73rd meeting of SEIAA held on 15th September 2017. As SEAC in its minutes and inspection report has recorded violation, and the proponent himself has agreed violation to it, and also SEIAA has taken a decision on violation as recommended by SEAC, Authority decided to return the file to SEAC for reconsideration in the light of the representation of the project proponent and also after hearing the proponent.

9. The proposal was placed in the 81st meeting of SEAC held on 30th & 31st October 2017. The committee observed that the proponent was operating the quarry with permit obtained from Government. SEAC had subsequently taken a stand, that in cases where the quarries were operated with the consent of the State Government, violations need not be taken cognizance of. Hence the same yardstick can be followed here also and no further action need be taken against violation.

10. Authority considered the proposal in the 76th meeting held on 16th November 2017. Authority examined the suggestion of SEAC and accepted the recommendation of SEAC and decided to issue EC subject to general conditions in addition to the following specific conditions.

1. There is an adjacent quarry named 'Edayan Crushers'. From the presentation, it was observed that there is no set out, between the two. This should be strictly provided as stipulated in rules.

2. Presently bench formation is not followed at all. This should be strictly adhered to.

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

11. Authority in its 77th meeting held on 28th November 2017 decided that in cases where the CSR already suggested is found inadequate, the amount may be enhanced and revised affidavit may be obtained so as to grant EC. Hence the proponent should set apart Rs.5 lakhs (non-recurring) and 5 lakhs (recurring) per annum for CSR activities for the welfare of the local community. A notarised affidavit should be submitted to this effect. The proponent has submitted the affidavit vide reference 11th cited satisfying all the general and specific conditions and also agreeing the CSR component.

12. Environmental Clearance as per the EIA Notification 2006 is hereby accorded for the proposed quarry project of Sri.Philip George (Proprietor) M/s. Murickans Quarry, Murical house, Periyappuram P.O., Muvattupuzha Taluk, Ernakulam District, in Sy. No.1080/2(P) at Onakkoor Village, Muvattupuzha Taluk, Ernakulam District, Kerala for an area of 1.4761 Ha, subject to the specific conditions as in para 10 above, all the environmental impact mitigation and management measures undertaken by the project proponent in the Form I, EMP, PFR and Mining plan submitted to SEIAA. The assurances and clarifications given by

the proponent will be deemed to be a part of these proceedings as if incorporated herein. Also the general conditions for projects stipulated for mining (items 1 to 61), appended hereto will be applicable and have to be strictly adhered to.

13. The Clearance issued will also be subject to full and effective implementation of all the undertakings given in the application form, mitigation measures as assured in the Environment Management Plan and the mining features including progressive mine closure plan as submitted with the application and relied on for grant of this clearance. The above undertakings and the conditions and the undertakings in Chapter 4 (Mining), Chapter 5 (Blasting), Chapter 6 (Mines Drainage), Chapter 7 (Stacking of Mineral rejects and Disposal of waste), Chapter 11 (EMP) Chapter 12 (Mine Closure Plan) of the Mining Plan as submitted will be deemed to be part of this proceedings as conditions as undertaken by the proponent, as if incorporated herein.

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

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

- i. Necessary assistance for entry and inspection should be provided by the project proponent and those who are engaged or entrusted by him to the staff for inspection or monitoring.
- ii. Instances of violation if any shall be reported to the District Collector, Ernakulam.
- iii. The given address for correspondence with the authorised signatory of the project is Sri.Philip George (Proprietor) M/s. Murickans Quarry, Murical house, Periyappuram P.O., Muvattupuzha Taluk, Ernakulam District.

Sd/-

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

To,

Sri.Philip George (Proprietor)
M/s. Murickans Quarry,
Murical house, Periyappuram P.O.,
Muvattupuzha Taluk, Ernakulam District

Copy to,

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

Forwarded/By order



Administrator, SEIAA



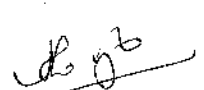
STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY KERALA

GENERAL CONDITIONS (for mining projects)

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

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

44. Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and OB dumps to prevent run off of water and flow of sediments directly into the river and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.
45. Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM₁₀ and PM_{2.5} such as haul Road, loading and unloading points and transfer points – it shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
46. Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.
47. Measures should be taken for control of noise levels below 85 dBA in the work environment.
48. A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.
49. The funds earmarked for environmental protection measures and CSR activate should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the State Environment Impact Assessment Authority (SEIAA) office.
50. The Regional Office of MOEF & CC located at Bangalore shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (S) of the Regional Office by furnishing the requisite data/information/monitoring reports.
51. Any appeal against this Environmental Clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
52. Concealing the factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
53. The SEIAA may revoke or suspend the order, for non implementation of any of the specific or this implementation of any of the above conditions is not satisfactory. The SEIAA reserves the right to alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
54. The above conditions shall prevail notwithstanding anything to the contrary, in consistent, or simplified, contained in any other permit, license on consent given by any other authority for the same project.
55. This order is valid for a period of 5 years or the expiry date of mine lease period issued by the Government of Kerala, whichever is earlier.
56. The Environmental Clearance will be subject to the final order of the courts in any pending litigation related to the land or project, in any court of law.
57. The mining operation shall be restricted to above ground water table and it should not intersect ground water table.
58. All vehicles used for transportation and within the mines shall have 'PUC' certificate from authorized pollution taking centre. Washing of all vehicles shall be inside the lease area'
59. Project proponent should obtain necessary prior permission of the competent authorities for drawal of requisite quantity of surface water and ground water for the project.
60. Regular monitoring of flow rates and water quality upstream and downstream of the springs and perennial nallahs flowing in and around the mine lease area shall be carried out and reported in the six monthly reports to SEIAA.
61. Occupational health surveillance program of the workers should be under taken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.


For Member Secretary, SEIAA Kerala

