



सत्यमेव जयते

File No.: 9619  
Government of India  
Ministry of Environment, Forest and Climate Change  
(Issued by the State Environment Impact Assessment  
Authority(SEIAA), TAMIL NADU)

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Dated 04/04/2024



To,

KANNAN SUDHAKARAN  
KANNAN SUDHAKARAN

Thiru.K.Sudhakaran , S/o.Kannan, No.782, Mariamman kovil street, Jambodai village, Azhividaithangi post, Vembakkam Taluk, Tiruvannamalai District., TIRUVANNAMALAI, TAMIL NADU, 604402  
sudhakarantvm923@gmail.com

**Subject:**

Grant of prior Environmental Clearance (EC) to the proposed Mining Project under the provisions of EIA Notification 2006-regarding

**Sir/Madam,**

This is in reference to your application submitted to SEIAA vide proposal number SIA/TN/MIN/451035/2023 dated 20/12/2023 for grant of prior Environmental Clearance (EC) to the project under the provision of the EIA Notification 2006-and as amended thereof.

**Ref:**

- 1.Your application for Terms of Reference dated:16.12.2022.
2. ToR Issued Vide Letter Lr.No.SEIAA-TN/F.No.9619/SEAC/ToR-1354/2023, Dated.10.02.2023.
3. Public Hearing conducted on 18.08.2023.
4. Online Proposal No (EIA)SIA/TN/MIN/451035/2023 dated: 02.11.2023
5. EIA Report Submitted on 03.01.2024.

2. The particulars of the proposal are as below :

(i) EC Identification No.	EC23B0108TN5553150N
(ii) File No.	9619
(iii) Clearance Type	Fresh EC
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	Rough Stone and Gravel Quarry of Thiru.K.Sudhakaran
(ix) Location of Project (District, State)	TIRUVANNAMALAI, TAMIL NADU
(x) Issuing Authority	SEIAA
(xii) Applicability of General Conditions	No

3. In view of the particulars given in the Para 1 above, the project proposal interalia including Form-2(Part A, B and C)/ EIA & EMP Reports were submitted to the SEIAA for an appraisal by the SEIAA under the provision of EIA notification 2006 and its subsequent amendments.
  4. The above-mentioned proposal has been considered by SEIAA in the meeting held on 18/03/2024. The minutes of the meeting and all the project documents are available on PARIVESH portal which can be accessed from the PARIVESH portal by scanning the QR Code above.
  5. The SEAC, based on information submitted viz: Form 1 (Part A, B and C), EIA/EMP report etc., & clarifications provided by the project proponent and after detailed deliberations on all technical aspects and public hearing issues and compliance thereto furnished by the Project Proponent, recommended the proposal for grant of Environment Clearance under the provision of EIA Notification, 2006 and as amended thereof subject to stipulation of Specific and Standard EC conditions as detailed in the point below..
  6. The SEIAA has examined the proposal in accordance with the provisions contained in the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and based on the recommendations of the SEIAA hereby accords Environment Clearance for the instant proposal to Mr. KANNAN SUDHAKARAN under the provisions of EIA Notification, 2006 and as amended thereof subject to compliance of the Specific and Standard EC conditions as given in Annexure (2)
  7. The Ministry/SEIAA-TN reserves the right to stipulate additional conditions, if found necessary.
  8. The Environmental Clearance to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.
  9. The PP is under obligation to implement commitments made in the Environment Management Plan, which forms part of this EC.
- 10. Salient features of the proposal:**

Sl. No	Salient Features of the Proposal		
1.	Name of the Owner/Firm	:	Thiru. K. Sudhakaran, S/o. Kannan, No.782, Mariamman Kovil Street, Jambodai village, Azhividaithangi Post, Vembakkam taluk, Thiruvannamalai - 604 402.
2.	Type of quarrying (Ordinary Stone/Sand/Granite/Limestone)	:	Rough Stone & Gravel Quarry
3.	S.F Nos. of the quarry site	:	7, 8/1, 8/2, 8/3, 8/4, 8/5 and 214/5
4.	Village in which situated	:	Vada Aalapirandan
5.	Taluk in which situated	:	Cheyyar
6.	District in which situated	:	Tiruvannamalai
7.	Extent of quarry (in ha.)	:	2.57.0 Ha
8.	Latitude & Longitude of all corners of the quarry site	:	12°38'20.50" N to 12°38'28.14" N 79°35'53.58" E to 79°36'01.61"E
9.	Topo Sheet No.	:	57-P/10
10.	Type of mining	:	Opencast Semi-Mechanized Mining
11.	Period of Current Mine Plan	:	5 years
12.	Production (Quantity in m <sup>3</sup> )	:	2,37,440m <sup>3</sup> of rough stone and 19,125m <sup>3</sup> of gravel
13.	Depth of Quarrying	:	27m below ground level
14.	Depth of water table	:	48m below ground level
15.	Man Power requirement per day:	:	25 Nos.
16.	Water requirement:	:	5.0 KLD

	1. Drinking & Domestic 2. Dust suppression 3. Green belt		1.0 KLD 3.0 KLD 1.0 KLD
17.	Power requirement	:	79,744 Litres of HSD for the life of the Project.
18.	Precise area communication approved by the Deputy Director, Dept. of G&M	:	Rc.No.155/Kanimam/2022, dated 21.09.2022.
19.	Mining Plan approved by the Deputy Director, Dept. of Geology & Mining.	:	Rc.No.155/Kanimam/2022, dated 03.10.2022.
20.	500m cluster letter issued by the Deputy Director, Dept. of Geology and Mining with date	:	Rc.No.155/Kanimam/2022, dated 13.10.2022.
21.	VAO Certificate Regarding Structures within 300m Radius	:	Letter Dated: 21.10.2022.
22.	Project Cost (excluding EMP cost)	:	70,42,000/-
23.	EMP cost (in Rs. Lakhs).	:	Capital Cost – Rs. 40.70 Lakhs Recurring Cost – Rs. 27.17 Lakhs
24.	CER cost (in Rs. Lakhs).	:	Rs. 7,00,000 /-
<b>Validity:</b>			
<b>This Environmental Clearance is accorded for quantity of 2,37,440m<sup>3</sup> of rough stone and 19,125m<sup>3</sup> of gravel up to the depth of 27m below ground level and the annual peak production should not exceed 49,025m<sup>3</sup> of rough stone and 11,040m<sup>3</sup> of gravel.</b>			
<b>The Environmental Clearance issued is valid as per the approved mine plan period and as per MoEF&amp;CC's notification S.O.1533(E) dated.14.09.2006 and S.O. 1807(E) dated 12.04.2022</b>			

#### 11. General Instructions:

1. The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of SEIAA website where it is displayed.
  2. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn must display the same for 30 days from the date of receipt.
  3. The project proponent shall have a well laid down environmental policy duly approved by the Board of Directors (in case of Company) or competent authority, duly prescribing standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions.
  4. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the project proponent (during construction phase) and authorized entity mandated with compliance of conditions (during operational phase) shall be prepared. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Six monthly progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six-Monthly Compliance Report.
  5. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
  6. The Regional Office of this SEIA Ashall 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.
  7. Any appeal against this EC 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.
12. This issue with an approval of the Competent Authority. For information on deliberations, refer to the minutes of SEAC and SEIAA available in the PARIVESH Portal.

### **Copy To**

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Additional Chief Secretary to Government, Environment, Climate Change Forests Department, Tamil Nadu.
3. The Additional Chief Secretary to Government, Natural Resource Department, Tamil Nadu.
4. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
5. The Chairperson, TNPC Board, 76, Mount Salai, Guindy, Chennai-32
6. The District Collector, Thiruvannamalai District
7. The Commissioner of Geology and Mines, Guindy, Chennai-32
8. The Assistant Director, Department of Geology & Mining, Thiruvannamalai District.
9. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
10. Integrated Regional office of MoEF&CC, Sasthri Bhawan,, Nungambakkam, Chennai.
11. File Copy.

### **Annexure 1**

#### **Specific EC Conditions for (Mining Of Minerals)**

#### **1. Seiaa Specific Conditions**

<b>S. No</b>	<b>EC Conditions</b>
<b>1.1</b>	<ol style="list-style-type: none"><li>1. Keeping in view of MoEF&amp;CC's notification S.O.1533(E) dated.14.09.2006 and S.O. 1807(E) dated.12.04.2022, this Environmental Clearance is valid as per the approved mine plan period.</li><li>2. The EC granted is subject to review by District Collector, Mines Dept. and TNPCB on completion of every 5 years and also during the mine plan period, till the project life so as to review the EC conditions and to ensure that they have all been adhered to and implemented.</li><li>3. The project proponent shall submit a Certified Compliance Report obtained from IRO of MoEF&amp;CC to the monitoring, regulatory and other concerned authorities including SEIAA, while seeking a renewal of the mining plan to cover the project life.</li><li>4. There should be regular monitoring of air quality, water quality, ground water level and noise quality and reports regarding the same should be submitted to TNPCB, SEIAA &amp; IRO of MoEF&amp;CC once in every 6 months.</li><li>5. The proponent shall strictly adhere to the mining plan and half yearly and annual returns shall be submitted to the Director of Geology and Mining Department with copy marked to TNPCB, SEIAA &amp; IRO of MoEF&amp;CC.</li><li>6. Ground &amp; surface water in and around the project area should be monitored frequently and water quality and quantity reports should be submitted every year to IRO of MoEF&amp;CC &amp; TNPCB.</li><li>7. Biodiversity in and around the project area should be monitored frequently and detailed biodiversity report should be submitted every year to IRO of MoEF&amp;CC &amp; TNPCB.</li><li>8. The progressive and final mine closure plan including the green belt implementation and environmental norms should be strictly followed as per the EMP and as per the amount committed and approved in EC for EMP. Status of progressive mine closure and green belt implementation should be included in the half yearly compliance report submitted to TNPCB, SEIAA &amp; IRO of MoEF&amp;CC.</li><li>9. As per the OM vide F. No. IA3-22/1/2022-IA-III [E- 172624] Dated: 14.06.2022, the Project Proponents are directed to submit the six-monthly compliance on the environmental conditions prescribed in the priorenvironmental clearance letter(s) through newly developed compliance module in the PARIVESH Portal from the respective login.</li><li>10. The amount allocated for EMP should be kept in a separate account and both the capital and recurring expenditures should be done year wise for the works identified, approved and as committed. The work &amp; expenditure made under EMP should be elaborated in the bi-annual compliance report submitted and also should be brought to the notice of IRO of MoEF&amp;CC,</li></ol>

S. No	EC Conditions
	TNPCB and other concerned authorities during inspections.

## 2. Mining Conditions - Site Specific

S. No	EC Conditions
2.1	<p>1) The prior Environmental Clearance granted for this mining project shall be valid for the project life including production value as laid down in the mining plan approved and renewed by competent authority, from time to time, subject to a maximum of thirty years, whichever is earlier, vide MoEF&amp;CC Notification S.O, 1807(E) dated 12.04.2022.</p> <p>2) The PP shall mark the DGPS reference pillars painted with blue &amp; white colour indicating the safety barrier of 7.5 m to be left under the Rule 13 (1) of MCDR, 1988 within the lease boundary and protective bunds, before obtaining the CTO from the TNPCB.</p> <p>4) The PP shall install the Environmental Management Cell headed by the statutory Mines Manager of the concerned mine and the cell shall include a dedicated full-time Environmental Engineer exclusively to look in to the effective implementation of Environmental Management Plan besides the reviewing the compliance reports with the regulatory authorities.</p> <p>5) The proponent shall maintain the 'S3 (or) G2' type of fencing all around the boundary of the proposed working quarry with gates for entry/exit before the commencement of the operation as recommended in the DGMS Circular, 11/1959 and shall furnish the photographs to TNPCB.</p> <p>6) Further, the PP shall maintain the garland drain with proper size, gradient and length along the boundary of the pit leaving behind the mandatory safety zone of 7.5 / 10 m as it is designed to take care of run-off water.</p> <p>7) The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.,</p> <p>8) The PP shall carry out Initial Medical Examination and Periodic Medical Examination for the persons to be employed accordingly before the execution of the lease, in the Occupational Health Medical centers duly approved by the Directorate General of Mines Safety, Dhanbad.</p> <p>9) No 'Deep-hole large diameter drilling and blasting' is permitted in the proposed quarry without obtaining prior permission from the Director of Mines Safety, Chennai Region under the provisions of Reg. 106 of MMR 1961.</p> <p>10) The PP shall ensure that the blasting operations shall be carried out during a prescribed time interval with a prior notice to the habitations situated around the proposed quarry after having posted the sentries/guards adequately to confirm the non-exposure of public within the danger zone of 500 m from the boundary of the quarry.</p> <p>11) The PP shall carry out the advanced tools in the blasting operation such as advance vibration monitoring models, electronic detonators, etc. such that the ground vibration due to blasting is reduced to negligible PPV level and no fly rock is produced.</p> <p>12) The PP shall carry out the scientific studies to assess the slope stability of the benches and quarry wall after three years from the commencement of mining operation for ensuring safety of the persons employed in the mine, by involving a reputed Research and Academic Institution such as CSIR-Central Institute of Mining &amp; Fuel Research (CIMFR) / Dhanbad, NIRM, IIT(ISM)/Dhanbad, IIT-Madras, NIT-Dept of Mining Engg, Surathkal etc. A copy of such scientific study report shall be submitted to the SEIAA, MoEF, TNPCB, AD/Mines-DGM and DMS, Chennai as a part of Environmental Compliance without any deviation.</p> <p>13) The PP shall carry out the socio-economics studies in the villages located within 2 km from the site by involving reputed institutions such as Madras School of Economics, Chennai, Department of Management Studies, Pondicherry University and Madras School of Social Work, etc. during the 3<sup>rd</sup> year after the commencement of quarrying operations. A copy of such scientific study report shall</p>

S. No	EC Conditions
	<p>be submitted to the SEIAA, MoEF, and the DEE/TNPCB, as a part of Environmental Compliance without any deviation.</p> <p>14) The Project Proponent shall ensure that the funds earmarked for environmental protection measures should be kept in separate bank account and should not be diverted for other purpose. Year-wise expenditure should be reported to the MoEF&amp; CC and its Integrated Regional Office (IRO) located in Chennai.</p> <p>15) The PP shall send the Notice of Opening and the details on the appointment of a statutory Mine Manager possessing the I / II Class Mines Manager Certificate of Competency (R/UR) under MMR 1961 to the Regional inspector of Mines (DMS), Chennai Region <b>before obtaining the CTO from the TNPCB</b> and a copy of such appointment shall be sent to the AD (Mines) at the time of lease execution without fail.</p> <p>16) The PP shall not employ any external agency for carrying out the blasting operation and he shall also install the temporary magazines approved by the concerned licensing authority before the execution of the lease, for storing the authorized explosives &amp; detonators separately in accordance with the Explosive Rules, 2008.</p> <p>17) Considering the village/highway roads are located within 300m from the lease boundary, the PP shall carry out the small-scale blasting involving 30 to 40 holes in a round at a time with keeping the total aggregate explosive charge/round is limited to 2 kg only in accordance with the provisions of MMR 1961.</p> <p>18) However, <b>since the structures and village roads are situated within a radial distance of 500</b>, the PP shall carry out the scientific studies <b>within a period of six months</b> from the commencement of quarrying operations with prior permission from the DMS/Chennai Region, to design the controlled blast parameters for reducing the blast-induced ground/air- vibrations and eliminating the fly rock from the blasting operations carried out in the quarry, by involving anyone of these reputed Research and Academic Institution such as CSIR-Central Institute of Mining &amp; Fuel Research / Dhanbad, NIRM/Bangalore, IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. A copy of such scientific study report shall be submitted to the SEIAA, MoEF, TNPCB, AD/Mines-DGM and DMS, Chennai as a part of Environmental Compliance without any deviation.</p> <p>19) As a part of monitoring the implementation of eco-friendly blasting operation, the PP shall monitor the blast-induced ground &amp; air vibration (noise) caused in the cluster environment <b>on daily basis</b> by installing the DGMS approved 'Vibration Monitoring System (VMS)' at a distance of 300m, 500m, 750 m through a statutory person appointed for the purposes. A copy of such post-monitoring report shall be submitted to the AD/Mines-DGM, Director of Mines Safety / Chennai Region, the SEIAA-TN, and the IRO/MoEF, as a part of Environmental Compliance without any deviation</p> <p>20) The PP shall furnish an affidavit indicating the Standard Operating Procedures (SoP) for carrying out the 'Best Mining Practices' in the areas of drilling, blasting excavation, transportation, and green belt development, in securing the safety of the persons living within a radial distance of 500 m (danger zone) to the concerned AD (Mines) at the time of lease execution.</p> <p>21) The PP shall not carry out the deep hole larger diameter blasting and the secondary blasting of oversize fragments /boulders during the life of the lease period.</p> <p>22) The PP shall only carry out the NONEL-based (or) Electronic Detonator based blasting operation for controlling the environmental impacts with keeping the security guards at either side of the National Highway (NH-67) &amp; Village road (@distance of 500 m) by ensuring that no vehicles are allowed to pass through the road and all persons within such area have taken proper shelter during the blasting.</p> <p>23) For the safety of the persons employed in the quarry, the PP shall carry out the scientific studies to assess the slope stability of the working benches and existing quarry wall within a period six months from the commencement of mining operation after obtaining the prior permission from the DMS/Chennai Region, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining &amp; Fuel Research / Dhanbad, NIRM/Bangalore, Division of</p>

S. No	EC Conditions
	<p>Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. A copy of such scientific study report shall be submitted to the SEIAA, MoEF, TNPCB, AD/Mines-DGM and DMS, Chennai as a part of Environmental Compliance without any deviation.</p> <p>24) The PP shall only carry out the blasting operation involving only the NONEL (or) Electronic Detonator initiation system for controlling the environmental impacts with keeping the security guards at a radial distance of 500 m by ensuring that all persons within such area have taken proper shelter.</p> <p>25) Considering the cluster of quarries are located, the PP shall ensure that the haul road dust is constructed with bitumen to minimize dust generation but however the suppression/watering are being done to maintain the required moisture level in all active haul roads. A fleet of water trucks with adequate water spray systems are available and operational at all times.</p> <p>26) As a part of Ground Water Management, the PP shall carry out the scientific studies to assess the existing hydrogeological condition and impacts of the quarrying operation on the ground water level present in the core zone, within 2 years from the commencement of mining operations, by involving any one of the reputed Research and Academic Institution - CSIR-Central Institute of Mining &amp; Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, University of Madras – Centre for Environmental Studies, and Anna University Chennai-Dept of Geology, CEG Campus. A copy of such scientific study report shall be submitted to the SEIAA, MoEF, TNPCB, AD/Mines-DGM and DMS, Chennai as a part of Environmental Compliance without any deviation.</p> <p>27) The PP shall <b>annually</b> carry out an Occupational Health Survey (OHS) <b>in accordance with the guidelines &amp; period of examination laid in the DGMS (Tech.) (S&amp;T) Circular No. 01 of 2011</b>, on OHS of the persons working in mines prone to generate the airborne dust, under Section 9A of Mines Act, 1952 by actively involving State Government officials and Non-Government Organizations (NGO) working in the Occupational Health Survey (Medical Examination). A copy of such annual compliance certificate shall be submitted to the SEIAA, MoEF, TNPCB, AD/Mines-DGM and DMS, Chennai as a part of Environmental Compliance without any deviation.</p> <p>28) Within a period of six months from the commencement of mining operation, the PP shall install a Disaster Management Cell with prior approval obtained from the DMS/Chennai Region for carrying out the continuous monitoring activities in related to the slopes of the quarry walls and other mining components as observed by the DGMS, Chennai Region.</p>

### 3. Special Mitigation Measures For The Quarries Located In Close Proximity To The Windmills, If Applicable

S. No	EC Conditions	
3.1	<b>Existing (or) Virgin Quarry</b>	
	<b>Wind Mills located at a distance of 150 m to 300 m</b>	<b>Wind Mills located beyond 300 m Up to 500 m</b>
	1. Appointment of I/II Class Mines Manager Certificate of Competency under MMR 1961.	Appointment of I/II Class Mines Manager Certificate of Competency under MMR 1961.
	2. Special precautions are to be taken during blasting within danger zone such as posting guards, etc.	Blast design parameters should be mentioned in mining plan/scheme. and may be reviewed by a competent mining engineer.
	3. Blast design parameters should be mentioned in mining plan/scheme.	MCPD and total charge should be fixed such that it should not exceed 1.3 kg and 26.50 kg respectively.
4. The recommendations of scientific	Fresh scientific study may be conducted if mine	

S. No	EC Conditions	
	organisation need to be incorporated in the mining plan/scheme before its approval.	management wants to increase the MCPD and total explosive charge above the quantity of 1.30 kg and 26.50 kg respectively. Continuous monitoring using seismograph should also be done in such cases by the mine management.
5.	Engagement of blasting in-charge having Diploma/Degree in mining engineering for day-to-day blasting.	Engagement of blasting in-charge having Diploma/Degree in mining engineering for day-to-day blasting.
6.	Training of the blasting crew on controlled blasting practices before engaged in operation.	Training of the blasting crew on controlled blasting practices before engaged in operation.
7.	Submission of monthly report on blast design pattern and detailed explosive consumption as well as volume of rock excavation to a statutory body viz. DGMS, DMG, PESO or SPCB.	Submission of monthly report on blast design pattern and detailed explosive consumption as well as volume of rock excavation to a statutory body viz. DGMS, DMG, SPCB. Report of recorded ground vibration need to be added in monthly report.
8.	Report of recorded ground vibration need to be added in monthly report which shall be sent to all the statutory body viz. DGMS, DMG, SPCB.	Report of recorded ground vibration need to be added in monthly report which shall be sent to all the statutory body viz. DGMS, DMG, SPCB.
9.	Small diameter emulsion cartridge of 25 mm diameter (125 gm weight per cartridge) shall be used. However, ANFO explosives may also be used as main explosive charge.	Small diameter emulsion cartridge of 25 mm diameter (125 gm weight per cartridge) shall be used. However, ANFO explosives may also be used as main explosive charge.
10.	Electronic (or) Non-electric detonators (Nonel) shall be used in all the blasts for in-hole explosive initiation and surface hole-to-hole firing.	Non-electric detonators (Nonel) shall be used in all the blasts for in-hole explosive initiation and surface hole-to-hole firing.
11.	Max. number of holes in a round: 30.	Max. number of holes in a round: 40 to 60.

**4. Special Mitigation Measures For The Quarries Located Within 1 Km From The Reserve Forests, If Applicable**

S. No	EC Conditions	
4.1	<p>1. Since the R.F is located very close to the proposed quarry site, the PP shall develop Green Belt (Thick Tree plantation in two to three rows) along the boundary of the mine lease area before obtaining the CTO from the TNPCB.</p> <p>2. The proponent shall construct and maintain proper fencing all around the boundary of the proposed working quarry adjacent to the direction of the location of the Reserved Forest before the commencement of the operation and shall furnish the photographs showing the same before obtaining the CTO from TNPCB.</p> <p>3. The PP shall take steps so that the overburden, waste rock, rejects and fines generated during the mining operations shall be stored in separate dumps positioned in opposite direction to the location of the reserved forest.</p> <p>4. The PP shall ensure that such waste/reject dumps shall be properly secured to prevent escape of</p>	

S. No	EC Conditions
	<p>material there from in harmful quantities which may cause degradation of environment and to prevent causation of floods.</p> <p>5. The PP shall select the site for dumps on impervious ground to ensure minimum leaching effects due to precipitations.</p> <p>6. The PP shall take necessary steps that wherever possible, the waste rock, overburden etc. shall be back-filled into the mine excavations with a view to restoring the land to its original use as far as possible.</p> <p>7. Wherever back-filling of waste rock in the area excavated during mining operations is not feasible, the PP shall take adequate steps in discussion with the concerned DFO to suitably terrace the waste dumps ensuring the stability through vegetation to consolidate the green belt development in the areas adjacent to the reserved forest location.</p> <p>8. The PP shall carry out the scientific investigations in order to keep the ground and noise vibrations caused by blasting operations and movement of HEMM such as Excavators, Trucks within safe limit.</p> <p>9. The PP shall not perform secondary breakage involving the drilling &amp; blasting in the quarrying operations and it can be replaced with non-conventional methods such as noise-controlled rock breakers, usage of non-explosive expansive materials/chemicals, Hydraulic Splitting based on the suitable scientific studies carried out by any reputed scientific and academic institutions.</p> <p>10. The PP shall take adequate steps to control the air pollution due to fines, dust, smoke or gaseous emissions during the quarrying operations within 'Permissible Limits' specified under the environmental laws.</p> <p>11. The Quarrying and Mining activities shall be restricted in the Eco-sensitive Zone of 60 m from the boundary of the Reserved area and hence the PP shall not even indulge in constructing the haul roads in these areas.</p> <p>12. No development on existing steep hill slopes or slopes with a high degree of erosion shall be permitted. Hence, the PP shall not carry out the quarrying on steep hill slopes with a gradient of 20<sup>0</sup> or more or areas with a high degree of erosion on forestland.</p> <p>13. The PP shall give an affidavit at the time of lease execution that there will be no felling of trees (or) any encroachment will not be made on these Reserved Forest lands and also within the Eco-sensitive Zone of 60 m without the prior permission of the State Government in case of reserve forest land as per the procedures laid down by the State Government.</p> <p>14. The PP shall not use plastic carry bags within the quarry area.</p> <p>15. The PP shall ensure that all the haul roads within the quarry lease shall be provided with adequate number of road side drains and these drains shall be kept free from blockage for runoff disposals. This run off from the road side drainage shall relate to the natural drainage system in the area.</p> <p>16. The PP shall adhere to the provisions of the MoEF had issued Notification No. S.O. 1545 dated 25th June 2009 regulating certain activities in the eco-sensitive zone to conserve and protect the reserved forest area from ecological and environmental point of view.</p>

### 5. Seac Standard Conditions

S. No	EC Conditions
5.1	<p>1) The PP shall inform send the 'Notice of Opening' of the quarry to the Director of Mines Safety, Chennai Region before obtaining the CTO from the TNPCB.</p> <p>2) The proponent shall appoint the statutory competent persons relevant to the proposed quarry size as per the provisions of Mines Act 1952 and Metalliferous Mines Regulations, 1961, as amended from time to time.</p> <p>3) Within a period one month from the execution of lease deed, the PP shall ensure that the persons deployed in the quarry including all the contractual employees/truck drivers shall undergo initial/periodical training in the DGMS approved GVTC situated in Trichy / Salem / Hosur.</p> <p>4) The PP shall construct a garland drain of size, gradient and length around the proposed quarry incorporating garland canal, silt traps, siltation pond and outflow channel connecting to a natural drain should be provided prior to the commencement of mining. Garland drain, silt-traps, siltation ponds and outflow channel should be de-silted periodically and geo-tagged photographs of the process should be included in the HYCR.</p> <p>5) Monitoring of drainage water should be carried out at different seasons by an NABL accredited lab and clear water should only be discharged into the natural stream. Geo-tagged photographs of the drainage and sampling site should be submitted along with HYCR.</p> <p>6) The proponent shall install the 'S3 (or) G2' type of fencing all around the boundary of the proposed working quarry with gates for entry/exit before the commencement of the operation as recommended in the DGMS Circular, 11/1959 and shall furnish the photographs showing the same before obtaining the CTO from TNPCB.</p> <p>7) The Proponent shall submit a conceptual 'Slope Stability Action Plan' incorporating the benches &amp; accessible haul road approved by the concerned AD (Mines) for the proposed quarry to the DEE/TNPCB at the time of obtaining the CTO.</p> <p>8) The PP shall ensure that the persons employed in the quarry whether permanent, temporary or contractual are undergoing the initial/periodical medical examination in the DGMS approved OHS Clinics/Hospitals as per the DGMS Circular No. 01 of 2011 before they are engaged in mining activities.</p> <p>9) The PP shall ensure that the persons employed in the quarry whether permanent, temporary or contractual are provided with adequate PPEs before engaged in mining operations.</p> <p>10) Proper barriers to reduce noise level and dust pollution should be established by providing greenbelt along the boundary of the quarrying site and suitable working methodology should be adopted by considering the wind direction.</p> <p>11) The Project Proponent shall ensure that the funds earmarked for environmental protection measures are kept in a separate bank account and should not be diverted for other purposes. Year-wise expenditure should be included in the HYCR.</p> <p>12) The Project Proponent shall send a copy of the EC to the concerned Panchayat/local body.</p> <p>13) Perennial maintenance of haulage road/village / Panchayat Road shall be done by the project proponent as required, in coordination with the concerned Govt. Authority.</p> <p>14) Perennial sprinkling arrangements shall be in place on the haulage road for fugitive dust suppression. Fugitive emission measurements should be carried out during the mining operation at regular intervals and submit the consolidated report to TNPCB once in six months.</p> <p>15) The Proponent shall ensure that the noise level is monitored during mining operation at the project site for all the machineries deployed and adequate noise level reduction measures are undertaken accordingly. The report on the periodic monitoring shall be included in the HYCR.</p> <p>16) The purpose of green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.</p> <p>17) Taller/one year old saplings raised in appropriate size of bags (preferably eco-friendly bags) should be planted in proper spacing as per the advice of local forest</p>

S. No	EC Conditions
	<p>authorities/botanist/horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner.</p> <p>18) <b>Noise and Vibration Related:</b> (i) Appropriate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs/muffs, (ii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone.</p> <p>19) The PP shall carry out maximum of only one round of controlled blast per day, restricted to the maximum of 30 to 40 number of holes per round with maintaining maximum charge per delay in such a manner that the blast-induced ground vibration level (Peak Particle Velocity) measured in the houses/structures located at a distance of 500 m shall not exceed 2.0 mm/s and no fly rock shall travel beyond 20 m from the site of blasting.</p> <p>20) The PP shall also ensure that the blasting operations are not carried out on a 'day after day' basis and a minimum 24 hours break should be observed between blasting days to reduce the environmental impacts effectively.</p> <p>21) If 'Deep-hole large diameter drilling and blasting' is required, then the PP shall obtain special permission from DGMS.</p> <p>22) The PP shall ensure that the blasting operations shall be carried out during a prescribed time interval with a prior notice to the habitations situated around the proposed quarry after having posted the sentries/guards adequately to confirm the non-exposure of public within the danger zone of 500 m from the boundary of the quarry. The PP shall use the jack hammer drill machine fitted with the dust extractor for the drilling operations such that the fugitive dust is controlled effectively at the source.</p> <p>23) The PP shall ensure that the blasting operations are carried out by the blaster/Mine Mate/Mine Foreman employed by him in accordance with the provisions of MMR 1961 and it shall not be carried out by the persons other than the above statutory personnel.</p> <p>24) The proponent shall undertake in a phased manner restoration, reclamation and rehabilitation of lands affected by the quarrying operations and shall complete this work before the conclusion of such operations as per the Environmental Management Plan &amp; the approved Mine Closure Plan.</p> <p>25) Ground water quality monitoring should be conducted once in every six months and the report should be submitted to TNPCB.</p> <p>26) The operation of the quarry should not affect the agricultural activities &amp; water bodies near the project site and a 50 m safety distance from water body should be maintained without carrying any activity. The proponent shall take appropriate measures for "Silt Management" and prepare a SOP for periodical de-siltation indicating the possible silt content and size in case of any agricultural land exists around the quarry.</p> <p>27) The proponent shall provide sedimentation tank / settling tank with adequate capacity for runoff management.</p> <p>28) The proponent shall ensure that the transportation of the quarried granite stones shall not cause any hindrance to the Village people/Existing Village Road and shall take adequate safety precautionary measures while the vehicles are passing through the schools / hospital. The Project Proponent shall ensure that the road may not be damaged due to transportation of the quarried granite stones; and transport of granite stones will be as per IRC Guidelines with respect to complying with traffic congestion and density.</p> <p>29) To ensure safety measures along the boundary of the quarry site, security guards are to be posted during the entire period of the mining operation.</p> <p>30) The Project Proponent shall comply with the provisions of the Mines Act, 1952, MMR 1961 and Mines Rules 1955 for ensuring safety, health and welfare of the people working in the mines and the surrounding habitants.</p> <p>31) The project proponent shall ensure that the provisions of the MMDR Act, 1957 &amp; the MCDR 2017 and Tamil Nadu Minor Mineral Concession Rules 1959 are complied by carrying out the</p>

S. No	EC Conditions
	<p>quarrying operations in a skillful, scientific and systematic manner keeping in view proper safety of the labour, structure and the public and public works located in that vicinity of the quarrying area and in a manner to preserve the environment and ecology of the area.</p> <p>32) The quarrying activity shall be stopped if the entire quantity indicated in the Mining plan is quarried even before the expiry of the quarry lease period and the same shall be informed to the District AD/DD (Geology and Mining) District Environmental Engineer (TNPCCB) and the Director of Mines Safety (DMS), Chennai Region by the proponent without fail.</p> <p>33) All the conditions imposed by the Assistant/Deputy Director, Geology &amp; Mining, concerned District in the mining plan approval letter and the Precise area communication letter issued by concerned District Collector should be strictly followed.</p> <p>34) That the grant of this E.C. is issued from the environmental angle only, and does not absolve the project proponent from the other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility, to comply with the conditions laid down in all other laws for the time-being in force, rests with the project proponent.</p> <p>35) As per the directions contained in the OM F.No.22-34/2018-IA.III dated 16th January 2020 issued by MoEF&amp;CC, 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.</p> <p>36) The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.</p> <p>37) As per the MoEF&amp;CC Office Memorandum F.No. 22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall adhere to the EMP as committed.</p>

#### 6. Seiaa Standard Conditions

S. No	EC Conditions
6.1	<p><b>a) EC Compliance:</b></p> <ol style="list-style-type: none"> <li>1. The Environmental Clearance is accorded based on the assurance from the project proponent that there will be full and effective implementation of all the undertakings given in the Application Form, Pre-feasibility Report, mitigation measures as assured in the Environmental Impact Assessment/ Environment Management Plan and the mining features including Progressive Mine Closure Plan as submitted with the application.</li> <li>2. All the conditions as presented by the proponent in the PPT during SEAC appraisal should be addressed in Full.</li> <li>3. The proponent shall submit Compliance Reports on the status of compliance of the stipulated EC conditions including results of monitored data. It shall be 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).</li> <li>4. 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.</li> </ol> <p><b>b) Applicable Regulatory Frameworks:</b></p> <ol style="list-style-type: none"> <li>5. The project proponent shall strictly adhere to the provisions of Water (Prevention &amp; Control of Pollution) Act, 1974, the Air (Prevention &amp; Control of Pollution) Act, 1981, the Environment</li> </ol>

S. No	EC Conditions
	<p>(Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, Minor Mineral Conservation &amp; Development Rules, 2010 framed under MMDR Act 1957, National Commission for protection of Child Right Rules, 2006, Wildlife Protection Act, 1972, Forest Conservation Act, 1980, Biodiversity Conservation Act, 2016, the Biological Diversity Act, 2002, Biological diversity Rules, 2004 &amp; TN Forest Act, 1882 and Rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter</p> <p><b>c) Safe mining Practices:</b></p> <p>6. The AD/DD, Dept. of Geology &amp; Mining shall ensure operation of the proposed quarry after the submission of slope stability study conducted through the reputed research &amp; Academic Institutions such as NIRM, IITs, NITS Anna University, and any CSIR Laboratories etc and ensure strict compliance and implementation of bench wise recommendations/action plans as recommended in the scientific slope stability study.</p> <p>7. 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.</p> <p><b>d) Water Environment – Protection and mitigation measures:</b></p> <p>8. The proponent shall ensure that the activity does not disturb the water bodies, neighboring open wells, bore wells and natural flow of surface and groundwater, nor cause any pollution, to water sources in the area nor effect the water quality and water quantity in the water sources.</p> <p>9. Water level in the nearest dug well in the downstream side of the quarry should be monitored regularly and included in the Compliance Report.</p> <p>10. Quality of water discharged from the quarry should be monitored regularly as per the norms of State Pollution Control Board and included in the Compliance Report.</p> <p>11. Rain Water Harvesting facility should be installed as per the prevailing provisions of TNMBR/TNCDBR, unless otherwise specified. Maximum possible solar energy generation and utilization shall be ensured as an essential part of the project.</p> <p>12. 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 compliance reports to SEIAA. At 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.</p> <p>13. 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.</p> <p><b>e) Air Environment – Protection and mitigation measures:</b></p> <p>14. The activity should not result in CO2 release and temperature rise and add to micro climate alternations.</p> <p>15. The proponent shall ensure that Monitoring is carried out with reference to the quantum of particulate matter during excavation; blasting; material transport and also from cutting waste dumps and haul roads.</p> <p><b>f) Soil Environment – Protection and mitigation measures:</b></p>

S. No	EC Conditions
	<p>16. The proponent shall ensure that the operations neither result in loss of soil biological properties and nutrients nor deplete the indigenous soil seed bank and disturb the mycorrhizal fungi, soil organism, soil community and result in eutrophication of soil and water. Further, the activities should not disturb the soil properties and seed and plant growth. Soil amendments as required to be carried out, to improve soil health.</p> <p>17. Bio remediation using microorganisms should be carried out to restore the soil environment to enable carbon sequestration.</p> <p>18. The proponent shall ensure that the mine restoration is done using mycorrhizal VAM, vermin-composting, Biofertilizers and the topsoil is protected and used in planting activities, site restoration and establishment of green belt in the area to ensure soil health and biodiversity conservation.</p> <p>19. The top soil 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 OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. At critical points, use of geotextile 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.</p> <p>20. Activities should not result in invasion of site by exotic and alien plant and animal species and disturb the native biodiversity and soil micro flora and fauna.</p> <p><b>g) Noise Environment – Protection and mitigation measures:</b></p> <p>21. The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines. The activity of the proponent should not effect the biological clock of the villages resulting in stress, sleeping disorders affecting health.</p> <p><b>h) Biodiversity - Protection and mitigation measures:</b></p> <p>22. The proponent should ensure that there is no disturbance to the agriculture plantations, social forestry plantations, waste lands, forests, sanctuary or national parks. There should be no impact on the land, water, soil and biological environment and other natural resources due to the mining activities.</p> <p>23. No trees in the area should be removed and all the trees numbered and protected. In case trees fall within the proposed quarry site the trees may be transplanted in the Greenbelt zone. The proponent shall ensure that the activities in no way result in disturbance to forest and trees in vicinity. The proponent shall ensure that the activity does not disturb the movement of grazing animals and free ranging wildlife. The proponent shall ensure that the activity does not disturb the biodiversity, the flora &amp; fauna in the ecosystem. The proponent shall ensure that the activities do not disturb the resident and migratory birds. The proponent shall ensure that the activities do not disturb the vegetation and wildlife in the adjoining reserve forests and areas around. Also, the activities should not disturb the agro biodiversity, agro farms, green lands and grazing fields of all types. Actions to be taken to promote agroforestry, mixed plants to support biodiversity conservation in the mine restoration effort.</p> <p>24. The proponent shall ensure that all mitigation measures listed in the EIA/EMP are taken to protect the biodiversity and natural resources in the area.</p> <p><b>i) Climate Change:</b></p> <p>25. There should be least disturbance to landscape resulting in land use change, contamination and alteration of soil profiles leading to Climate Change.</p> <p>26. Operations should not result in GHG releases and extra power consumption leading to Climate</p>

S. No	EC Conditions
	<p>Change.</p> <p>27. Mining through operational efficiency, better electrification, energy use, solar usage, use of renewable energy should try to decarbonize the operations.</p> <p>28. Mining should not result in water loss from evaporation, leaks and wastage and should support to improve the ground water.</p> <p>29. Mining activity should be flood proof with designs and the drainage, pumping techniques shall ensure climate-proofing and socio-economic wellbeing in the area and vicinity.</p> <p><b>j) Reserve Forests &amp; Protected Areas:</b></p> <p>30. The activities should provide nature based support and solutions for forest protection and wildlife conservation.</p> <p>31. The project activities should neither result in forest fires, encroachments nor create forest fragmentation and disruption of forest corridors and alter the geodiversity and geological heritage of the area.</p> <p>32. There should be no disturbance to the freshwater flow from the forest impacting the water table and wetlands.</p> <p>33. The project proponent should support all activities of the forest department in creating awareness to local communities on forest conservation.</p> <p>34. The activities should not result in temperature rise due to increased fossil fuels usage disrupting the behaviour of wildlife and flora.</p> <p>35. The activities should support and recognise the rights and roles of indigenous people and local communities and also support sustainable development.</p> <p>36. The project activities should support the use of renewables for carbon capture and carbon storage in the project site and forest surrounds.</p> <p>37. The project activities should not result in changes in forest structure, habitats and genetic diversity within forests.</p> <p><b>k) Green Belt Development:</b></p> <p>38. The proponent shall ensure that in the green belt development more indigenous trees species as suggested in Appendix of SEAC Minutes are planted and that the area is restored and rehabilitated with native trees .</p> <p><b>l) Workers and their protection:</b></p> <p>39. 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.</p> <p>40. The proponent has to provide insurance protection to the workers and the working hours and wages shall be implemented/enforced as per the Mines Act, 1952 in the case of existing mining or provide the affidavit in case of fresh lease before execution of mining lease.</p> <p><b>m) Transportation:</b></p> <p>41. No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a bypass road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing</p>

S. No	EC Conditions
	<p>village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.</p> <p>42. The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.</p> <p><b>n) Storage of wastes</b></p> <p>43. The project proponent shall store/dump the waste generated within the earmarked area of the project site for mine closure as per the approved mining plan.</p> <p><b>o) CER/EMP:</b></p> <p>44. The CER should be fully Implemented and fact reflected in the Half-yearly compliance report.  45. The EMP shall also be implemented in consultation with local self-government institutions &amp; Govt. departments as indicated in SEAC meeting.</p> <p><b>p) Directions for Reclamation of mine sites:</b></p> <p>46. The mining closure plan should strictly adhere to appropriate soil rehabilitation measures to ensure ecological stability of the area. Reclamation/Restoration of the mine site should ensure that the Geotechnical, physical, chemical properties are sustainable that the soil structure composition is buildup, during the process of restoration. The proponent shall ensure that the mine closure plan is followed as per the mining plan and the mine restoration should be done with native species, and site restored to near original status. The proponent shall ensure that the area is ecologically restored to conserve the ecosystems and ensure flow of goods and services.</p> <p>47. A crucial factor for success of reclamation site is to select sustainable species to enable develop a self-sustaining eco system. Species selected should easily establish, grow rapidly, and possess good crown and preferably be native species. Species to be planted in the boundary of project site should be un palatable for cattle's/ goats and should have proven capacity to add leaf-litter to soil and decompose. The species planted should be adaptable to the site conditions. Should be preferably pioneer species, deciduous in nature to allow maximum leaf-litter, have deep root system, fix atmospheric nitrogen and improve soil productivity. Species selected should have the ability to tolerate altered pit and toxicity of and site. They should be capable of meeting requirement of local people in regard to fuel fodder and should be able to attract bird, bees and butterflies. The species should be planted in mixed association.</p> <p>48. Top soil with a mix of beneficial microbes (Bacteria/Fungi) to be used for reclamation of mine spoils. AM Fungi (Arbuscular mycorrhizal fungi), plant growth promoting Rhizo Bacteria and nitrogen fixing bacteria to be utilized. Soil and moisture conservation and water harvesting structures to be used where ever possible for early amelioration and restoration of site. Top soil is most important for successful rehabilitation of mined sites. Topsoil contains majority of seeds and plant propagation, soil microorganism, Organic matter and plant nutrients. Wherever possible the topsoil should be immediately used in the area of the for land form reconstruction, to pre mining</p>

S. No	EC Conditions
	<p>conditions.</p> <p>49. Over burdens may be analyzed and tested for soil characteristics and used in the site for revegetation. Wherever possible seeds, rhizome, bulbs, etc., of pioneering spices should be collected, preserved and used in restoring the site. Native grasses seeds may be used as colonizers and soil binders, to prevent erosion and allow diverse self- sustaining plant communities to establish. Grasses may offer superior tolerance to drought, and climatic stresses.</p> <p>50. Reclamation involves planned topographical reconstruction of site. Care to be taken to minimize erosion and runoff. Topsoil should have necessary physical, chemical, ecological, properties and therefore should be stored with precautions and utilized for reclamation process. Stocked topsoil should be stabilized using grasses to protect from wind. Seeds of various indigenous and local species may be broad casted after topsoil and treated overburden are spread. Alkaline soils, acidic soils, Saline soils should be suitably treated/amended using green manure, mulches, farmyard manure to increase organic carbon. The efforts should be taken to landscape and use the land post mining. The EMP and mine closure plan should provide adequate budget for re-establishing the site to pre-mining conditions. Effective steps should be taken for utilization of over burden. Mine waste to be used for backfilling, reclamation, restoration, and rehabilitation of the terrain without affecting the drainage and water regimes. The rate of rehabilitation should be similar to rate of mining. Efforts should be taken to aesthetically improve the mine site. Action taken for restoration of the site should be specifically mentioned in the EC compliances.</p>

**Standard EC Conditions for (Mining of minerals)**

**1. Statutory Compliance**

S. No	EC Conditions
1.1	The Environmental clearance shall be subject to orders of Hon'ble Supreme Court of India, Hon'ble High Courts, NGT and any other Court of Law, from time to time, and as applicable to the project
1.2	The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
1.3	The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
1.4	The project proponent shall prepare a Site-Specific Conservation Plan & Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report (in case of the presence of schedule-I species in the study area).
1.5	The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee.
1.6	The project proponent shall obtain the necessary permission from the Central Ground Water Authority
1.7	Solid/hazardous waste generated in the mines needs to be addressed in accordance to the Solid Waste Management Rules, 2016/Hazardous & Other Waste Management Rules, 2016.

S. No	EC Conditions
1.8	Permission of power supply to be taken from the concerned authority for meeting power demand of the project site.
1.9	The maximum production or peak production at any given time shall not exceed the limit as prescribed in the EC.
1.10	Validity of EC is as per life of the mine mentioned in EC letter or 30 years as per EIA Notification, 2006 and its amendments therein

## 2. Air Quality Monitoring And Mitigation Measure

S. No	EC Conditions
2.1	Adequate ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely particulates, SO <sub>2</sub> and NO <sub>x</sub> . Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive receptors in consultation with the State Pollution Control Board. Online ambient air quality monitoring station/stations may also be installed in addition to the regular air monitoring stations as per the requirement and/or in consultation with the SPCB
2.2	Transportation of mineral, to the extent if permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water sprinkling/rain gun/ Fog cannon /mist sprinkling etc., shall be carried out in critical areas prone to air pollution with higher level of particulate matter all through the transport roads, loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the ambient air quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.
2.3	Major approach roads shall be black topped and properly maintained.
2.4	PP to install solar lights along the road used for transportation of mineral to avoid the accidents at night and also seek its maintenance.
2.5	The transportation of mineral shall be carried out as per the provisions and route proposed in the approved mining plan. Transportation of the mineral through the existing road passing through any village shall be avoided. In case, it is proposed to construct a 'bypass' road, it should be so constructed that the impact of sound, dust and accidents could be appropriately mitigated.
2.6	Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centres.
2.7	Adequate number of Fog canon (mist sprayer) shall be installed to reduce the impact of air pollution at dust generating sources with time bound action plan.
2.8	Post environmental closure third party monitoring by reputed instituted in air quality, water, land & soil etc shall be carried out and analysed with EMP measures at regular interval. A suitable recommendation in this regard, shall be furnished to IRO, MoEF&CC for compliance. The data used for analysis shall be obtained from continuos AQMS, site specific water regime. Also third party shall analyses the implementation of river diversion, meeting to the requirement of project

S. No	EC Conditions
	report.

### 3. Water Quality Monitoring And Mitigation Measures

S. No	EC Conditions
3.1	The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No.J-20012/1/2006-1A.11 (M) dated 27th May, 2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.
3.2	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.
3.3	Monitoring of water quality upstream and downstream of river including ponds, lakes, tanks shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office.
3.4	Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.
3.5	The project proponent shall not alter major water channels around the site. Appropriate embankment shall be provided along the side of the river/nallah flowing near or adjacent to the mine. The embankment constructed along the river/nallah boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side, stabilized with plantation so as to withstand the peak water pressure preventing any chance of mine inundation.
3.6	Garland drains (of suitable size, gradient and length) around the critical areas i.e. mine shaft and low lying areas, shall be designed keeping at least 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine sites. The sump capacity shall also provide adequate retention period to allow proper settling of silt material of the surface runoff
3.7	The water pumped out from the mine, after siltation, shall be utilized for industrial purpose viz. watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly
3.8	Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.
3.9	The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations shall be prepared, considering the presence of any river/rivulet/pond/lake etc., with impact of mining activities on it, and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the provisions of the approved Mining Plan/ EIA-EMP submitted to this Ministry/SEIAA-TN and

S. No	EC Conditions
	the same should be done with due approval of the concerned State/GoI Authority. The construction of embankment to prevent any danger against inrush of surface water into the mine should be as per the approved mining plan and as per the permission of DGMS.

#### 4. Noise And Vibration Monitoring And Prevention

S. No	EC Conditions
4.1	Adequate measures shall be taken for control of noise levels as per Noise Pollution Rules, 2016 in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs/muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness programme for users to be conducted. Progress in usage of such accessories to be monitored.
4.2	The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six-monthly basis.

#### 5. Mining Plan

S. No	EC Conditions
5.1	Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.
5.2	No change in mining method i.e. UG to OC, calendar programme and scope of work shall be made without obtaining prior approval of the Ministry of Environment, Forests and Climate Change (MoEFCC)/SEIAA-TN.
5.3	Mining shall be carried out as per the approved mining plan (including Mine Closure Plan) abiding by mining laws related to non - coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).
5.4	Underground work place environmental conditions shall be rendered ergonomic and air breathable with adequate illumination in conformance with DGMS standards.
5.5	No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980 and also adhering to The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 read with provisions of Indian Forest Act, 1927.
5.6	Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.

#### 6. Land Recalvation

S. No	EC Conditions
6.1	Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be

S. No	EC Conditions
	carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change(MOEFCC) from time to time shall be submitted to MOEFCC/Regional Office (RO).
6.2	Regular monitoring of subsidence movement on the surface over and around the working areas and its impact on natural drainage pattern, water bodies, vegetation, structure, roads and surroundings shall be continued till movement ceases completely. In case of observation of any high rate of subsidence beyond the limit prescribed, appropriate effective mitigation measures shall be taken to avoid loss of life and materials. Cracks should be effectively plugged in with ballast and clay soil/suitable material.
6.3	Fly ash shall be used for external dump of overburden, backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any, along with fly ash for external dump of overburden, backfilling of mines. Compliance report shall be submitted to Regional Office of MoEF&CC, CPCB and SPCB.
6.4	A separate team for subsidence monitoring and surface mitigation measures shall be constituted and continuous monitoring & implementation of mitigation measures be carried out.
6.5	Native tree species shall be selected and planted over areas affected by subsidence.
6.6	The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.

## 7. Public Hearing And Human Health Issues

S. No	EC Conditions
7.1	Adequate illumination shall be ensured in all mine locations (as per DGMS standards) and monitored.
7.2	The project proponent shall undertake occupational health survey for initial and periodical medical examination of the personnel engaged in the project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS circulars. Besides regular periodic health check-up, 20% of the personnel identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, as amended time to time.
7.3	Personnel (including outsourced employees) working in core zone shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.
7.4	Skill training as per safety norms specified by DGMS shall be provided to all workmen including the outsourcing employees to ensure high safety standards in mines.

S. No	EC Conditions
7.5	Effective arrangement shall be made to provide and maintain at suitable points conveniently situated, a sufficient supply of drinking water for all the persons employed.
7.6	Implementation of the time bound action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the tasks/measures as per the time bound action plan submitted with budgetary provisions during the public hearing. Land oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.
7.7	The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.
7.8	PP to conduct need based assessment survey of the area to for in order to decide the activities to be carried under the CSR and to provide detail of the activity carried out with adequate budgetary provision and time bound action plan.
7.9	PP must ensure an emergency action plan during pandemic in order to provide assistance to the nearby villages located within the 10 km radius buffer zone (If required)
7.10	PP is asked to also identify the rural areas for installation of solar light with its maintenance within the study area of 10 km radius buffer zone with time bound action plan
7.11	PP to take measure for installation of Renewable Energy sources in nearby area falling within 10 km radius

## 8. Corporate Environment Responsibility

S. No	EC Conditions
8.1	The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental/forest/wildlife norms/conditions. The company shall have defined system of reporting infringements/deviation/violation of the environmental/forest/wildlife norms/conditions and/or shareholders/stake holders.
8.2	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
8.3	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
8.4	Self environmental audit shall be conducted annually. Every three years third party environmental

S. No	EC Conditions
	audit shall be carried out.
8.5	PP should establish in house (at project site) environment laboratory for measurement of environment parameter with respect to air quality and water (surface and ground. A dedicated team to oversee environment management shall be setup which should comprise of Environment Engineers, Laboratory chemist and staff for monitoring of air, water quality parameters on routine basis. Any non- compliance or infringement should be reported to the concerned authority

## 9. Miscellaneous

S. No	EC Conditions
9.1	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
9.2	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
9.3	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
9.4	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
9.5	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
9.6	The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.
9.7	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
9.8	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the State Expert Appraisal Committee.
9.9	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC)/SEIAA-TN.
9.10	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act,

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	1986.
9.11	The Ministry/SEIAA-TN may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
9.12	The Ministry/SEIAA-TN reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
9.13	The Regional Office of this Ministry 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.
9.14	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
9.15	The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report and also that during presentation to the SEAC. All the commitments made on the issues raised during public hearing shall also be implemented in letter and spirit.
9.16	Compensation of the land acquired for the project shall be settled as per the R&R Policy. Adequate facility of drinking water, plantation and other social amenities should be provided to established R&R villages.
9.17	Persons of nearby villages shall be given training on livelihood and skill development to make them employable with its proper records.
9.18	The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours