

**DRAFT ENVIRONMENTAL IMPACT ASSESSMENT  
AND  
ENVIRONMENT MANAGEMENT PLAN  
FOR OBTAINING**

**Environmental Clearance under EIA Notification – 2006**

**Schedule Sl. No. 1 (a) (i): Mining Project**

**“B1” CATEGORY- MINOR MINERAL- CLUSTER- NON- FOREST LAND**

**CLUSTER EXTENT = 6.98.0hectares**

**Black Granite Quarry**

**At**

**Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District,**

**Tamil Nadu State**

**ToR File No. 11777**

**ToR Identification No. TO25B0108TN5878289N, Dated.08/04/2025**

**NAME AND ADDRESS OF THE PROPOSED PROJECT PROPONENT**

| <b>Name and address</b>                                                                                         | <b>Extent &amp; S.F.No.</b>                  | <b>Mineral Production</b>                         |
|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------|
| <b>Tvl. KMB TRADING COMPANY<br/>No.3/50, Bangalore Main Road,<br/>Five Roads,<br/>Salem District – 636 004.</b> | <b>4.50.0Ha &amp;<br/>823(P) &amp; 824/3</b> | <b>Black Granite<br/>20% Recovery<br/>20918MT</b> |

**ENVIRONMENTAL CONSULTANT**

**GEO TECHNICAL MINING SOLUTIONS**



No: 1/213-B, Ground Floor, Natesan Complex

Oddapatti, Collectorate Post office,

Dharmapuri-636705. Tamil Nadu.

E-mail: [info.gtmsdpi@gmail.com](mailto:info.gtmsdpi@gmail.com),

Website: [www.gtmsind.com](http://www.gtmsind.com)

NABET ACC. NO: NABET/EIA/23-26/RA 0319

Valid till: 31.12.2026

**ENVIRONMENTAL LAB**

**INTERSTELLAR TESTING CENTRE Pvt. Ltd**

Plot.No.2, Site No.12/2A, Industrial Estate, Perungudi, Chennai, Tamil Nadu

NABL Certificate Number: TC-6952,

Valid Until: 30.07.2026

**Baseline study period- March- 2025 to May- 2025**

**OCTOBER- 2025**

# TERMS OF REFERENCE (ToR) COMPLIANCE

ToR File No.11777

ToR Identification No. TO25B0108TN5878289N, dated. 08/04/2025,

Tvl. KMB Trading Company, Black Granite Quarry,

## 1. SEAC Conditions - Site Specific

| S. No | Terms of Reference |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Remaraks                                                                                                                                           |
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| 1.1   | 1                  | A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of required statutory personnel, appropriate environmental management, system of maintaining the haul roads and village/panchayat roads, authorized blasting operation, Monitoring system of the environmental & other statutory compliances & its reporting methodology, etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal: |                                                                                                                                                    |
|       | (a)                | Copy of the agreement forming CMC.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | The Cluster Management Committee (CMC) regarding following these conditions and same documents will be submitted during the EIA appraisal meeting. |
|       | (b)                | The Organisation chart of the Committee with defining the role of the members                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                    |
|       | (c)                | The 'Standard Operating Procedures' (SoP) executing the planned activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                    |
|       | 2                  | The Geo referenced Boundary pillars to be erected on the field as per the mine rules and the evidence should be submitted along with the EIA report                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | After getting the EC the boundary pillars will be erected.                                                                                         |
|       | 3                  | Since the Cauvery Wildlife Sanctuary is located at 8.74km from the proposed site as on date, the PP shall furnish the prior NBWL Clearance along with the EIA report.                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Clearance from NBWL will be submitted in final EIA report.                                                                                         |
|       | 4                  | The PP should indicate the proposed mining area at the bottom and top levels with respect to the ground level (mean Reduced Level) and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | The revised mining plan attached in Annexure III.                                                                                                  |

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|  |   | make appropriate corrections in the Approved Mine Plan and the same shall be submitted along with the EIA report.                                                                                                                                                                                                                                                                                                           |                                                                                                                  |
|  | 5 | The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report                                                                                                                                                                                                                                                                                  | Details of enumeration of structures will be submitted in final EIA report.                                      |
|  | 6 | The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m & upto 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations. | Structures within 1km radius will be submitted final EIA report.                                                 |
|  | 7 | The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.                                                                                                            | Photocopy of fencing and garland drainage system will be submitted in final EIA report.                          |
|  | 8 | The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report.                                                                                                                                                                                                                                                                                                      | The biodiversity study is conducted and discussed in section 3.6 under chapter III in the EIA report page 67-80. |
|  | 9 | The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.                                                                                                                                                                                                                                                                         | The sworn affidavit will be submitted in final EIA report.                                                       |

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|  | 10 | The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures. | This matter is discussed in section 7.4 under chapter VII in the EIA report page 128-131. |
|  | 11 | The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report                                                            | The photocopy of CCTV installation will be submitted in final EIA report.                 |

## 2.SEAC Standard Conditions

| S.No | Terms of Reference |                                                                                                                                                 | Remarks                                                     |
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| 2.1  | 1                  | In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following: | As it is a fresh quarry, the conditions are not applicable. |
|      |                    | (i) Original pit dimension                                                                                                                      |                                                             |
|      |                    | (ii) Quantity achieved vs EC Approved Quantity                                                                                                  |                                                             |
|      |                    | (iii) Balance Quantity as per Mineable Reserve calculated.                                                                                      |                                                             |
|      |                    | (iv) Mined out Depth as on date Vs EC Permitted depth                                                                                           |                                                             |
|      |                    | (v) Details of illegal/illicit mining                                                                                                           |                                                             |
|      |                    | (vi) Violation in the quarry during the past working.                                                                                           |                                                             |
|      |                    | (vii) Quantity of material mined out outside the mine lease area                                                                                |                                                             |
|      |                    | (viii) Condition of Safety zone/benches                                                                                                         |                                                             |
|      |                    | (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.                      |                                                             |



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|  | 2 | Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.                                                                                                                                                                                                                                                                                                                              | The VAO certificate is attached in Annexure IV.                                                                                              |
|  | 3 | The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc | The map showing the details of structures within the radius of 500m is shown in the Figure 3.30 under Chapter III in the EIA report page 98. |
|  | 4 | The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry.                                                                                                                                                                                                                                                                                                | Detailed hydrological study will be submitted in the final EIA report.                                                                       |
|  | 5 | The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.                                                                                                                                                                                                                                                                                                                                                                             | The details of Bio diversity from the reputed institution will be submitted in the final EIA report.                                         |
|  | 6 | The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc, up to a radius of 25 km from the proposed site.                                                                                                                                                                                                                                                                                                                                 | The DFO letter has enclosed in Annexure V.                                                                                                   |
|  | 7 | In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project                                                                                                                                                                                                                                                                                                                                        | As it is a fresh lease area, the Slope Stability report is not required.                                                                     |

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|  |    | Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC. |                                                                          |
|  | 8  | However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.                                                                                                                                                                                                                                                                                                                                                                                    | As it is a fresh lease area, the Slope Stability report is not required. |
|  | 9  | The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.                                                                                                                                                                                                                                                                                                                                                                             | The affidavit for blasting will be enclosed in the final EIA report.     |
|  | 10 | The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | A conceptual design of blasting has been given in Section 2.6            |

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|  |    | blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.                                                      | under Chapter II in the EIA report page 13-19.                                                                |
|  | 11 | The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences. | It is fresh quarry project.                                                                                   |
|  | 12 | If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,                       |                                                                                                               |
|  | 13 | What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?                                                                                          | As it is a new quarry, the conditions are not applicable.                                                     |
|  | 14 | Quantity of minerals mined out.                                                                                                                                                                                  |                                                                                                               |
|  |    | <ul style="list-style-type: none"> <li>Highest production achieved in any one year.</li> </ul>                                                                                                                   |                                                                                                               |
|  |    | <ul style="list-style-type: none"> <li>Detail of approved depth of mining.</li> </ul>                                                                                                                            |                                                                                                               |
|  |    | <ul style="list-style-type: none"> <li>Actual depth of the mining achieved earlier.</li> </ul>                                                                                                                   |                                                                                                               |
|  |    | <ul style="list-style-type: none"> <li>Name of the person already mined in that leases area. If EC and CTO already obtained, the copy of the same shall be submitted.</li> </ul>                                 |                                                                                                               |
|  |    | <ul style="list-style-type: none"> <li>Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.</li> </ul>                                                    |                                                                                                               |
|  | 15 | All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Toposheet, topographic sheet, geomorphology, lithology and geology of                                                   | All corner coordinates of the mine lease area have been superimposed on a high-resolution Google Earth Image, |

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|  |    | the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).                                                                                                                                                                              | as shown in Figure 2.3 under Chapter II in the EIA report page 11.                                                                                                                                                                                                              |
|  | 16 | The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.                                                                                                                                                                                                                                                                            | The drone video will be submitted during final EIA presentation.                                                                                                                                                                                                                |
|  | 17 | The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.                                                                                                                 | Photographs of adequate fencing, green belt along the periphery of the project area and the photographs showing nearby water bodies will be included in final EIA report.                                                                                                       |
|  | 18 | The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.                                                                   | The Resources and Reserves of Black Granite were calculated based on cross-section method by plotting sections to cover the maximum lease area for the proposed project. The details reserve estimation has been shown in Table 2.7 under Chapter II in the EIA report page 13. |
|  | 19 | The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment. | Details of manpower required for this project have been given in Table 2.17 under Chapter II in the EIA report page 20.                                                                                                                                                         |

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|  | 20 | <p>The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping &amp; open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.</p> | <p>The hydrogeological study is discussed in the Section 3.3.3 under Chapter III in the EIA report page 43.51.</p>                                                                                                                         |
|  | 21 | <p>The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality &amp; flora/fauna including traffic/vehicular movement study.</p>                                                                                                                                                                                                                                                                                                                                                                          | <p>The baseline data were collected for the environmental components including land, soil, water, air, noise, biology, socio-economy, and traffic and the results have been discussed under Chapter III in the EIA report page 22-100.</p> |
|  | 22 | <p>The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control &amp; health impacts. Accordingly, the Environment Management plan should be prepared</p>                                                                                                                                                                                                                                                | <p>Results of cumulative impact study due to mining operations are given in Section 7.4 under Chapter VII in the EIA report page 128-131.</p>                                                                                              |

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|  |    | keeping the concerned quarry and the surrounding habitations in the mind.                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|  | 23 | Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.                                                                                                                                                                                                                                                                                                             | As part of rainwater harvesting measures, the rain water from garland drainage system will be diverted to nearby check dams after treating the water in settling tanks. The detailed rain water harvesting report will be submitted in the final EIA report.                                                                                                                                                                                                                                                                                                                                        |
|  | 24 | Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given. | Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features has been discussed in Chapter III in the EIA report page 22-100. The details of surrounding sensitive ecological features have been provided in Table 3.39 under Chapter III in the EIA report page 97. Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Table 2.11 under Chapter II in the EIA report page 16. |

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| 25 | Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.                                                                                                                                                                                                  | This condition is not applicable to this project because no dumps have been proposed outside the lease area.                                                            |
| 26 | Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered. | Not Applicable.<br>Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range.                                     |
| 27 | Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.                                                                                                                                                                                                                       | As part of rainwater harvesting measures, the rain water from garland drainage system will be diverted to nearby check dams after treating the water in settling tanks. |
| 28 | Impact on local transport infrastructure due to the Project should be indicated.                                                                                                                                                                                                                                                                                                                             | Details regarding the impact of the project on traffic are given in Section 3.8 under Chapter III in the EIA report page 94-96.                                         |
| 29 | A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.                                                                                                                                                                                                            | A detailed tree survey was carried out within 300 m radius and the results have been discussed in Section 3.6 under Chapter III in the EIA report page 67-80.           |

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| 30 | A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.                                                                                                                                                                                                                                                                                                                                                                                                 | A progressive mine closure plan has been attached with the approved mining plan report in Annexure III. The budget details for the progressive mine closure plan are shown in Table 2.12 under Chapter II in the EIA report page 16. |
| 31 | As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.                                                                                                                                                                                                                                                              | The EIA coordinator and the FAE for ecology and biodiversity visited the study area and educated the local students about the importance of protecting the biological environment.                                                   |
| 32 | 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-I in consultation with the DFO, State Agriculture University. 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. | A detailed greenbelt development plan has been provided in Section 4.6 under Chapter IV in the EIA report page 110-114.                                                                                                              |
| 33 | Taller/one year old Saplings raised in appropriate size of bags; preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The                                                                                                                                                                                                                                                                                           | The FAE of ecology and biodiversity has advised the project proponent that saplings of one year old raised in the eco-friendly bags should be purchased and planted with the                                                         |



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|  |    | 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                                                                                                                                                                                                        | spacing of 3 m between each plant around the proposed project area as per the advice of local forest authorities/botanist.                                                                          |
|  | 34 | A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.                                                                                                                                                                                                                        | A disaster management plan for the project has been provided in Section 7.3 under Chapter VII in the EIA report page 127-128.                                                                       |
|  | 35 | A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.                                                                                                                                                                                                             | A risk assessment plan for the project has been provided in Section 7.2 under Chapter VII in the EIA report page 124-127.                                                                           |
|  | 36 | Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed. | Occupational health impacts of the project and preventive measures have been discussed in detail in Section 4.8 under Chapter IV in the EIA report 115-116.                                         |
|  | 37 | Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.                                                                                                                                                          | No public health implications are anticipated due to this project. Details of CSR and CER activities have been discussed in Sections 8.6 and 8.7 under Chapter VIII in the EIA report page 134-135. |

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| 38 | The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation. | No negative impact on socio-economic environment of the study area is anticipated and this project shall benefit the socio-economic environment by offering employment for 22 people directly as discussed in Section 8.1 under Chapter VIII in the EIA report page 133. |
| 39 | Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.                                                                                                                                                                                                      | No litigation is pending in any court against this project.                                                                                                                                                                                                              |
| 40 | Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.                                                                                                                                                             | The benefits of the project are discussed in the Chapter VIII in the EIA report page 133-135.                                                                                                                                                                            |
| 41 | If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF & CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.        | It is fresh lease area and the condition is not applicable.                                                                                                                                                                                                              |
| 42 | The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.                                                                                                                                                                                                   | A detailed environment management plan has been prepared following the suggestion made by SEAC, as shown in Chapter X in the EIA report page 137-144. The sworn affidavit stating to abide                                                                               |

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|  |    |                                                                                                                                                                                                                                                                                | the EMP for the entire life of mine will be submitted during final EIA report.                                                                                                                                                                                                                                                             |
|  | 43 | Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986. | The EIA report has been prepared keeping in mind the fact that concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may lead to withdrawal of this terms of reference besides attracting penal provisions in the Environment (Protection) Act, 1986. |

### 3.SEIAA Specific Conditions:

| S.No | Terms of Reference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| 3.1  | The authority noted that the subject was placed in the 538th SEAC meeting held on 01.03.2025. SEAC has furnished its recommendations for granting Terms of Reference subject to the conditions stated therein. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant Terms of Reference (ToR) along with Public Hearing for the RoM quantity of 39,465m <sup>3</sup> of Black granite and 7,893m <sup>3</sup> of Recovery @20% upto the depth of 45m BGL as per the approved mining plan, under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal conditions & the conditions mentioned in this minutes & in addition to the following ToR: 1.The details of enumeration of structures within 500m including schools, colleges, primary health centres should be submitted along with the EIA report. |

### 4.SEIAA Standard Conditions:

| S.No | Terms of Reference                                                        | Remarks                                                            |
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|      | <b>Cluster Management Committee</b>                                       |                                                                    |
| 4.1  | 1 Cluster Management Committee shall be framed which must include all the | A cluster management committee including all the proponents of the |

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|   | proponents in the cluster as members including the existing as well as proposed quarry.                                                                                                                                                                                               | Granite quarrying projects within the cluster of 500 m radius will be constituted for the effective implementation of green belt development plan, water sprinkling, blasting, etc. |
| 2 | The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.                                                                                                  | The members of the cluster management committee will be instructed to carry out EMP in coordination.                                                                                |
| 3 | The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.                                                                                                             | The list of members of the committee formed will be submitted to AD/Mines before the execution of mining lease.                                                                     |
| 4 | Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.                                               | All the information has been discussed in Section 2.6 under Chapter II in the EIA report page 13-20.                                                                                |
| 5 | The committee shall deliberate on risk & emergency management plan, fire safety & evacuation plan and sustainable development goals pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the | It will be informed to the committee.                                                                                                                                               |

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|  |    | inundation of the cluster and evacuation plan.                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                         |
|  | 6  | The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail. | It will be advised to the cluster management committee to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised will be given in detail.                                                      |
|  | 7  | The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.                                                                                                              | A proper action plan regarding the restoration will be followed by the committee.                                                                                                                                                                                                                                       |
|  | 8  | The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity.                                                                                                                                 | The information on the health of the workers and the local people will be updated periodically.                                                                                                                                                                                                                         |
|  | 9  | Impact on surrounding agricultural fields around the proposed mining Area.                                                                                                                                                                                                    | There shall be negligible air emissions or effluents from the project site. During loading the truck, dust generation will be likely. This shall be a temporary effect and not anticipated to affect the surrounding vegetation significantly, as shown in Section 4.6 under Chapter IV in the EIA report page 110-114. |
|  | 10 | Impact on soil flora & vegetation around the project site.                                                                                                                                                                                                                    | The details on flora have been provided in Section 3.6 under Chapter III in the EIA report page 67-80. There is no schedule I species of animals observed within study area as per                                                                                                                                      |

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|    |                                                                                                                                                                                                                                     | Wildlife Protection Act, 1972 and no species falls in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.                                                                    |
| 11 | Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP. | Details of vegetation in the lease area have been provided in Section 3.6 under Chapter III in the EIA report page 67-80. Details about transplantation of plants have been provided in Section 4.6 under Chapter IV in the EIA report page 110-114. |
| 12 | The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.                                   | The ecological details have been provided in Section 3.6 under Chapter III in the EIA report page 67-80 and measures have been provided in Section 4.6 under Chapter IV in the EIA report page 110-114.                                              |
| 13 | Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.                                                                                              | All the essential environmental protective measures will be followed by the proponent to manage the surrounding environment and restore the ecosystem, as discussed in Chapter IV in the EIA report page 101-117.                                    |
| 14 | The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.                                                                               | The impact of project on the land environment has been discussed in Section 4.1 under Chapter IV in the EIA report page 101-102.                                                                                                                     |
| 15 | The project proponent shall detail study on impact of mining on Reserve forests free ranging wildlife.                                                                                                                              | The project proponent shall do barbed wire fencing work and develop a green belt around the lease area to prevent wildlife from entering the site.                                                                                                   |

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|  | 16                       | The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.                                                                                                                                                                                                                                                                                                                                                                      | The impacts of the project on ecology and biodiversity have been discussed in Section 4.6 under Chapter IV in the EIA report page 110-114.                                              |
|  | 17                       | The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.                                                                                                                                                                                                                                                                                                                                                           | The impacts of the project on standing trees and the existing trees have been discussed in Section 4.6 under Chapter IV in the EIA report page 110-114.                                 |
|  | 18                       | The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.                                                                                                                                                                                                                                                                                                                                                   | The protected areas, National Parks, Corridors and Wildlife pathways near project site within 10 km radius has been provided in Table 3.39 under Chapter III in the EIA report page 97. |
|  | <b>Water Environment</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                         |
|  | 19                       | Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period. | The detailed hydro-geology will be submitted in the final EIA report.                                                                                                                   |
|  | 20                       | Erosion Control measures.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Garland drainage structures will be constructed around the lease area to control the erosion, as discussed in                                                                           |

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|    |                                                                                                                                                                                                                                                                       | Section 4.3 under Chapter IV in the EIA report page 102-103.                                                                                                        |
| 21 | Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas.                                                                                   | The matter has been discussed under Chapter IV in the EIA report page 101-117.                                                                                      |
| 22 | The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.                                                                                                                                               | An analysis for food chain in aquatic ecosystem has been discussed in Section 3.6 under Chapter III in the EIA report page 67-80.                                   |
| 23 | The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities.                                                                                                                                | The impacts of the proposed project on the surrounding environment have discussed in Chapter IV in the EIA report page 101-117.                                     |
| 24 | The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts. | The impact of the proposed project on aquatic plants and animals in water bodies has been discussed in Section 4.6 under Chapter IV in the EIA report page 110-114. |
| 25 | The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.                                                                                                                | The impact of mining on soil environment has been discussed in Section 4.2 under Chapter IV in the EIA report page 102.                                             |
| 26 | The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.                                                                                                                                                   | The impacts on water bodies, streams, lakes have been discussed in Section 4.3 under Chapter IV in the EIA report page 102-103.                                     |
| 27 | The EIA shall include the impact of mining activity on the following:                                                                                                                                                                                                 |                                                                                                                                                                     |



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|  |    | a. Hydrothermal / Geothermal effect due to destruction in the Environment                                                                                                                                                                                                      | a. The average geothermal gradient of earth is 25 <sup>0</sup> C/km. As the proposed depth of mining is 40m below the local ground level, the temperature will increase by 1 <sup>0</sup> C at the depth of mining.                                                         |
|  |    | b. Bio-geochemical processes and its foot prints including environmental stress.                                                                                                                                                                                               | b. No, Bio-geochemical processes and its foot prints including environmental stress are anticipated and at the end of life of mine the proposed quarry shall be left as an artificial reservoir structure and allowed to collect rain water and shall enrich the ecosystem. |
|  |    | c. Sediment geochemistry in the surface streams                                                                                                                                                                                                                                | c. The details of sediment geochemistry are discussed in the Table 3.4 under Chapter III in the EIA report page 36.                                                                                                                                                         |
|  | 28 | The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.                                                                                                                                          | The measures taken to control noise, air, water, and dust have been given under Chapter IV in the EIA report page 101-117.                                                                                                                                                  |
|  | 29 | The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities. | The carbon emission and the measures to mitigate carbon emission have been discussed in Section 4.6 under Chapter IV in the EIA report page 101-117.                                                                                                                        |
|  | 30 | The Environmental Impact Assessment should study impact on climate change, temperature rise,                                                                                                                                                                                   | The matter has been discussed in Chapter IV in the EIA report page 101-117                                                                                                                                                                                                  |

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|    | pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features.                                                                 |                                                                                                                                                                                                                                      |
| 31 | Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood.                                                                        | There is no emission impact to local livelihood from this quarry project. All the vehicles used for transportation of the quarry materials will be maintained regularly to keep the GHGs emissions within statutory limits.          |
| 32 | Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.                                                                   | A progressive mine closure plan has been attached with the approved mining plan report in Annexure III. The budget details for the progressive mine closure plan are shown in Table 2.12 under Chapter II in the EIA report page 16. |
| 33 | Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued. | A detailed Environment Management plan has been given under Chapter X in the EIA report page 137-144.                                                                                                                                |
| 34 | The Environmental Impact Assessment should hold detailed study on EMP with budget for green belt development and mine closure plan including disaster management plan.             | A detailed Environment Management plan has been given in Tables 10.1 & 10.2 under Chapter X in the EIA report page 138-144.                                                                                                          |
| 35 | To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.                                     | The risk assessment and management plan for this project has been provided in Section 7.2 under Chapter VII in the EIA report page 124-127.                                                                                          |
| 36 | To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce                                                                      | The disaster management plan for this project has been provided in Section                                                                                                                                                           |

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|  |    | vulnerability to hazards & to cope with disaster/unfavorable accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.                                        | 7.3 under Chapter VII in the EIA report page 127-128.                                                        |
|  | 37 | The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.                                           | The VAO certificate is attached in the attached in the Annexure IV.                                          |
|  | 38 | As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.                                                      | The concerns raised during the public consultation will be submitted in the final EIA report.                |
|  | 39 | The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported. | The plastic waste management has been given in Section 7.5 under Chapter VII in the EIA report page 131-132. |

#### **Standard Terms of Reference for (Mining of minerals)**

1.

| S.No | Terms of Reference                                                                                                                                                                                                                                                                                                                    | Remarks                                                                                                                                                       |
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| 1.1  | Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994 | Not applicable. This is not a violation category project. This proposal falls under B1 category.                                                              |
| 1.2  | A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given                                                                                                                                                                                                                   | It's a government poramboke land.                                                                                                                             |
| 1.3  | All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee                                                                      | All the documents are in the name of the lessee.                                                                                                              |
| 1.4  | All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone)        | All corner coordinates of the mine lease area have been superimposed on a high- resolution Google Earth Image, as shown in Figure 2.3 under Chapter II, p.11. |
| 1.5  | Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the                                                                                                                             | Toposheets of Survey of India have been used for showing sampling locations of air, soil, water, and noise, as shown in Chapter III.                          |

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|     | area, important water bodies, streams and rivers and soil characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                            |
| 1.6 | Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | The lease area was inspected by the officers of Department of Geology along with revenue officials and found that the land is fit for quarrying under the policy of State Government.                                      |
| 1.7 | It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report | The proponent has framed Environmental Policy and the same has been discussed in Section 10.1 under Chapter X, pp.137-138.                                                                                                 |
| 1.8 | Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | It is an opencast quarrying operation proposed to operate in Manual method. The Black granite formation is a hard, compact and homogeneous body. The height and width of the bench will be maintained as 5m with 90° bench |

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|      |                                                                                                                                                                                                                                                                                                                                                                                                                                         | angles. Quarrying activities will be carried out under the supervision of Competent Persons like Mines Manager, Mines Foreman and Mining Mate. Necessary permissions will be obtained from DGMS after obtaining Environmental Clearance.                                                                                                                                                                                                                                                                                                                  |
| 1.9  | The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period                                                                                                                                                                                                                                 | The study area considered for this study is of 5 km radius for air, soil, water, and noise level sample collections, while the study area is 10 km radius for ecology and biodiversity studies and all data contained in the EIA report such as waste generation etc., is for the life of the mine / Lease period.                                                                                                                                                                                                                                        |
| 1.10 | Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given | Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features has been discussed in Section 3.1 under Chapter III, pp.28-33 The details of surrounding sensitive ecological features have been provided in Table 3.38 under Chapter III, p.90. Land use plan of the project area showing pre- operational, operational and post- operational phases are discussed in Table 2.7 under Chapter II, p.20. |
| 1.11 | Details of the land for any Over Burden Dumps outside the mine lease, such as                                                                                                                                                                                                                                                                                                                                                           | It is not applicable as no dumps have been proposed outside the lease area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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|      | extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | The entire quarried out Black granite will be transported to the needy customers.                                                                                                                                                                                                             |
| 1.12 | A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the State Expert Appraisal Committees | It is not applicable as there is no forest land involved within the proposed project area. The details have been discussed in Table 3.39 under Chapter III, p.97.                                                                                                                             |
| 1.13 | Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished                                                                                                                                                                                                                                                                                                                                                                   | It is not applicable as the proposed project area does not involve any forest land.                                                                                                                                                                                                           |
| 1.14 | Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Not Applicable.<br>The project doesn't attract Recognition of Forest Rights Act, 2006 as there are neither forests nor forest dwellers / forest dependent communities in the mine lease area. There shall be no forest impacted families (PF) or people (PP). Thus, the rights of Traditional |

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|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Forest Dwellers will not be compromised on account of the project.                                                                                                                                                                                                                                    |
| 1.15 | The vegetation in the RF / PF areas in the study area, with necessary details, should be given.                                                                                                                                                                                                                                                                                                                                                                                                                                        | No Reserve Forest is found within the study area. The details of reserve forest within 10km have been discussed Table 3.39 under Chapter III, p.97. Flora and Fauna vegetation details are given in section 3.6.1 and 3.6.2 under chapter III, pp.67-80.                                              |
| 1.16 | A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted                                                                                                                                                                                                   | There is no any wildlife/protected area from the periphery of the project area. Information regarding wildlife /protected area within 10km has been given in Table 3.39 under Chapter III, p.97. Flora and Fauna vegetation details are given in section 3.6.1 and 3.6.2 under chapter III, pp.67-80. |
| 1.17 | Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished | The details of National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/Elephant Reserves within 10 km radius from the periphery of the project area has been given in Table 3.39 under Chapter III, p.97.                                                                                   |
| 1.18 | A detailed biological study of the study area [core zone and buffer zone (10 km radius of                                                                                                                                                                                                                                                                                                                                                                                                                                              | A detailed biological study was carried out in both core and buffer zones and                                                                                                                                                                                                                         |



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|      | the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost. | the results have been discussed in Section 3.6 under Chapter III, pp.67-80                                                          |
| 1.19 | Proximity to Areas declared as Critically Polluted or the Project areas likely to come under the Aravali Range, (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered                                                                                                                                                                                                              | Not Applicable.<br>Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range. |
| 1.20 | Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to                                                                                                                                                                                                                                                                                                                                     | Not Applicable<br>The project doesn't attract the C.R.Z. Notification, 2018.                                                        |

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|      | obtain approval of the concerned Coastal Zone Management Authority)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                |
| 1.21 | <p>R&amp;R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&amp;R Plan, the relevant State/National Rehabilitation &amp; Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&amp;R and socio-economic aspects should be discussed in the Report</p> | <p>Not Applicable.</p> <p>There are no approved habitations of SCs/STs and other weaker sections in the lease area. Therefore, R&amp;R Plan / Compensation Plan for the Project</p>                                            |
| 1.22 | <p>One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season); December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site- specific meteorological data should also be collected. The location of the monitoring</p>                                                                                                                                                                                                                                                                                                                        | <p>Baseline data were collected for the period of October 2023 - December 2023 as per CPCB notification and MoEF &amp; CC Guidelines. Primary baseline data and the results have been included in Chapter III, pp. 22-100.</p> |

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|      | stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given                                                                                                                                                                                   |                                                                                                                                                                                                     |
| 1.23 | Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map | Air quality modelling for prediction of incremental GLCs of pollutants was carried out using AERMOD view 11.2.0. The model results have been given in Section 4.4 under the Chapter IV, pp.103-108. |
| 1.24 | The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated                                                                                                                                                                                                                                                                                                                                                                | The water requirement for the project, its availability and source have been provided in Table 2.14 under Chapter II, p.17.                                                                         |
| 1.25 | Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided                                                                                                                                                                                                                                                                                                                                                                                                                                         | Not Applicable.<br>Water for dust suppression, greenbelt development and domestic use will be sourced from accumulated rainwater/seepage water in mine pits                                         |

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|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | and purchased from local water vendors through water tankers on daily requirement basis. Drinking water will be sourced from the approved water vendors.                                                                                                                                                                                                                |
| 1.26 | Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided                                                                                                                                                                                                                                                                                                                                                           | Part of the working pit will be allowed to collect rain water during the spell of rain. The water thus collected will be used for greenbelt development and dust suppression. The mine closure plan has been prepared for converting the excavated pit into rain water harvesting structure and serve as water reservoir for the project village during draught season. |
| 1.27 | Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided                                                                                                                                                                                                                                                                                                                                                                              | Impact studies and mitigation measures of water environment including surface water and ground water have been discussed in Section 4.3 under Chapter IV, pp. 102-103.                                                                                                                                                                                                  |
| 1.28 | Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from State Ground Water Authority for working below ground water and for pumping of ground | Not Applicable.<br><br>The ground water table is found at the depth of 60 m below ground level. The ultimate depth of quarry is 21 m BGL. Therefore, the mining activity will not intersect the ground water table. Data regarding the occurrence of groundwater table have been provided in Section 3.3.3.2 under Chapter III, pp.50-51.                               |

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|      | water should also be obtained and copy furnished                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                      |
| 1.29 | Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Not Applicable.<br><br>There are no streams, seasonal or other water bodies passing within the project area. Therefore, no modification or diversion of water bodies is anticipated. |
| 1.30 | Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | The highest elevation of the project area is 422 m AMSL. Ultimate depth of the mine is 21m BGL. Depth to the water level in the area is 60 m BGL                                     |
| 1.31 | A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution | Greenbelt development plan has been given in Section 4.6 under Chapter IV, pp.10-114.                                                                                                |
| 1.32 | Impact on local transport infrastructure due to the Project should be indicated. Projected                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Traffic density survey was carried out to analyze the impact of transportation                                                                                                       |

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|      | <p>increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines</p> | <p>in the study area as per IRC guidelines 1961 and it is inferred that there is no significant impact due to the proposed transportation from the project area. Details have been provided in Section 3.8 under Chapter III, pp.94-96.</p> |
| 1.33 | <p>Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report</p>                                                                                                                                                                                                                                                                                                                                                                  | <p>Infrastructure &amp; other facilities will be provided to the mine workers after the grant of quarry lease and the same has been discussed in Section 2.6 under Chapter II, pp.13-21.</p>                                                |
| 1.34 | <p>Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report</p>                                                                                                                                                                                                                                                                                                                | <p>Progressive mine closure plan has been prepared for this project and is given in Table 2.12 under Section 2.6.4 under Chapter II, p.16.</p>                                                                                              |
| 1.35 | <p>Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed</p>                                                                                             | <p>Occupational health impacts of the project and preventive measures have been explained in detail in Section 4.8 under Chapter IV, pp.115-116.</p>                                                                                        |

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| 1.36 | Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations                                                         | No public health implications are anticipated due to this project. Details of CSR and CER activities have been discussed in Sections 8.6 and 8.7 under Chapter VIII, pp.134-135.                                                                     |
| 1.37 | Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation                                          | No negative impact on socio-economic environment of the study area is anticipated and this project shall benefit the socio-economic environment by offering employment for 22 people directly as discussed in Section 8.1 under Chapter VIII, p.133. |
| 1.38 | Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project | A detailed Environment Management Plan has been prepared and provided in Tables 10.1 & 10.2 under Chapter X, pp.138-144.                                                                                                                             |
| 1.39 | Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project                                   | The outcome of public hearing will be submitted during the final EIA report.                                                                                                                                                                         |
| 1.40 | Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given                                                                                                                                          | No litigation is pending in any court against this project.                                                                                                                                                                                          |
| 1.41 | The cost of the Project (capital cost and recurring cost) as well as the cost towards                                                                                                                                                                                                    | CER Cost is <b>Rs. 10,00,000/-</b>                                                                                                                                                                                                                   |

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|      | implementation of EMP should be clearly spelt out                                                                                                                                        | In order to implement the environmental protection measures, an amount of <b>Rs.3242300</b> as capital cost and <b>Rs.1390430</b> as recurring cost/annum is proposed considering present market price considering present market scenario for the proposed project. After the adjustment of 5% inflation per year, the total recurring cost over 5 years is <b>Rs.7683003</b> and the overall EMP cost for 5 years will be <b>Rs.10925303</b> , as shown in Table 10.2 under Chapter X, p.144. |
| 1.42 | A Disaster management Plan shall be prepared and included in the EIA/EMP Report                                                                                                          | The disaster management plan for this project has been provided in Section 7.3 under Chapter VII, pp.127-128.                                                                                                                                                                                                                                                                                                                                                                                   |
| 1.43 | Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc | Benefits of the project details have been given under Chapter VIII, pp.133-135.                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 1.44 | Besides the above, the below mentioned general points are also to be followed                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| a)   | All documents to be properly referenced with index and continuous page numbering                                                                                                         | All the documents have been properly referenced with index and continuous page numbering                                                                                                                                                                                                                                                                                                                                                                                                        |
| b)   | Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated                                             | List of tables and source of the data collected have been mentioned.                                                                                                                                                                                                                                                                                                                                                                                                                            |
| c)   | Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL                                                                  | Original Baseline monitoring report will be submitted in final EIA report.                                                                                                                                                                                                                                                                                                                                                                                                                      |



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|    | accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                            |
| d) | Where the documents provided are in a language other than English, an English translation should be provided.                                                                                                                                                                                                                                                                                                                                                                          | All the documents provided here are in English language.                                                                                                   |
| e) | The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.                                                                                                                                                                                                                                                                                                                                                | The questionnaire will be submitted in final EIA report.                                                                                                   |
| f) | While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.                                                                                                                                                                                                                        | Instructions issued by MoEF & CC O.M. No. J-11013/41/2006-IA. II (I) dated 4 <sup>th</sup> August, 2009 have been followed while preparing the EIA report. |
| g) | Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation. | No changes are made in the basic scope and the project parameters.                                                                                         |
| h) | As per the circular no. J 11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for                                                                                                                                                                                                                                                                                                          | It is a new lease area, the condition is not applicable.                                                                                                   |

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|    | the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.                                                                                                                                         |                                                                                                                      |
| i) | The EIA report should also include<br>(i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area. | All the plans including surface & geological plans, and progressive closure plan have been included in Annexure III. |

#### A. Standard Terms of Reference

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| 1. | Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994. | Not applicable. This is not a violation category project. This proposal falls under B1 category. |
| 2. | A copy of the document in support of the fact that the proponent is the rightful lessee of the mine should be given.                                                                                                                                                                                                                   | It's a government poramboke land.                                                                |
| 3. | All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.                                                                      | All the documents are in the name of the lessee.                                                 |

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| 4. | All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).                | All corner coordinates of the mine lease area have been superimposed on a high-resolution Google Earth Image, as shown in Figure 2.2 under Chapter II in the EIA report page 10.      |
| 5. | Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.                                                           | Toposheets of Survey of India have been used for showing sampling locations of air, soil, water, and noise, as shown in Chapter III in the EIA report.                                |
| 6. | Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.                                                                                 | The lease area was inspected by the officers of Department of Geology along with revenue officials and found that the land is fit for quarrying under the policy of State Government. |
| 7. | It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the. prescribed operating process/ procedures to bring into focus any infringement/ deviation/ violation of the environmental or forest | The Environmental Policy is discussed in the Section 10.1 under Chapter X in the EIA report page 137-138.                                                                             |

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|     | <p>norms/conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 8.  | <p>Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided</p>                                                                                                                                                        | <p>It is an opencast quarrying operation proposed to operate in Mechanized method. The Black Granite formation is a hard, compact and homogeneous body. The height and width of the bench will be maintained as 5m with 90° bench angles. Quarrying activities will be carried out under the supervision of Competent Persons like Mines Manager, Mines Foreman and Mining Mate. Necessary permissions will be obtained from DGMS after obtaining Environmental Clearance.</p> |
| 9.  | <p>The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc., should be for the life of the mine / lease period.</p>                                                                                                                                                                                                 | <p>The study area considered for this study is of 5 km radius for air, soil, water, and noise level sample collections, while the study area is 10 km radius for ecology and biodiversity studies and all data contained in the EIA report such as waste generation etc., is for the life of the mine / lease period.</p>                                                                                                                                                      |
| 10. | <p>Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park,</p>                                                                                                                                                                                                                                                                                   | <p>Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory</p>                                                                                                                                                                                                                                                                                                                                       |

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|     | <p>migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.</p>                                                                                                                                                                                                                                                                                                                | <p>routes of fauna, water bodies, human settlements and other ecological features has been discussed in Section 3.1 under Chapter III in the EIA report page 24-30. The details of surrounding sensitive ecological features have been provided in Table 3.39 under Chapter III in the EIA report page 97. Land use plan of the project area showing pre- operational, operational and post- operational phases are discussed in Table 2.11 under Chapter II in the EIA report page 16.</p> |
| 11. | <p>Details of the land for any over burden dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&amp;R issues, if any, should be given.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p>It is not applicable as no dumps have been proposed outside the lease area.</p>                                                                                                                                                                                                                                                                                                                                                                                                          |
| 12. | <p>Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.</p> | <p>It is not applicable as there is no forest land involved within the proposed project area. The details have been discussed in Table 3.39 under Chapter III in the EIA report page 97.</p>                                                                                                                                                                                                                                                                                                |

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| 13. | Status of forestry clearance for the broken- up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.                                                                | It is not applicable as the proposed project area does not involve any forest land.                                                                                                                                                                                                                                                                                  |
| 14. | Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.                                                                                                                                                  | Not Applicable.<br><br>The project doesn't attract Recognition of Forest Rights Act, 2006 as there are neither forests nor forest dwellers / forest dependent communities in the mine lease area. There shall be no forest impacted families (PF) or people (PP). Thus, the rights of Traditional Forest Dwellers will not be compromised on account of the project. |
| 15. | The vegetation in the RF / PF areas in the study area, with necessary details, should be given.                                                                                                                                                                                                                                       | There is no any reserve forest in the study area. The details of reserve forest is discussed in the Table 3.39 under Chapter III in the EIA report page 97.                                                                                                                                                                                                          |
| 16. | A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted. | There is no any wildlife/protected area within 10 km radius from the periphery of the project area. Information regarding the same has been given in Table 3.39 under Chapter III in the EIA report page 97.                                                                                                                                                         |
| 17. | Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/ (existing as well as proposed), if any,                                                                                                                                                                        | There are No National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/Elephant Reserves within 10 km radius from the periphery of the project                                                                                                                                                                                                               |

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|     | <p>within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.</p>                                                                                                                                                                                                                                                                                                                                                           | <p>area. Information regarding the same has been given in Table 3.39 under Chapter III in the EIA report page 97.</p>                                                               |
| 18. | <p>A detailed biological study of the study area [core zone and buffer zone (10 KM radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.</p> | <p>A detailed biological study was carried out in both core and buffer zones and the results have been discussed in Section 3.6 under Chapter III in the EIA report page 67-80.</p> |

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| 19. | Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravalli Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered. | Not Applicable.<br><br>Project area / Study area is not declared. in 'Critically Polluted' Area and does not come under 'Aravalli Range.                                                                         |
| 20. | Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).                                                              | Not Applicable<br><br>The project doesn't attract the C.R.Z. Notification, 2018.                                                                                                                                 |
| 21. | R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need-based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and        | Not Applicable.<br><br>There are no approved habitations of SCs/STs and other weaker sections in the lease area. Therefore, R&R Plan / Compensation Plan for the Project Affected People (PAP) are not provided. |



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|    | submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspect should be discussed in the Report                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                     |
| 22 | <p>One season (non-monsoon) [i.e., March-May (Summer Season); October-December (post monsoon season); December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.</p> | Baseline data were collected for the period of October - December 2024 as per CPCB notification and MoEF & CC Guidelines. Primary baseline data and the results have been included under Chapter III in the EIA report page 22-100. |

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| 23. | Air quality modelling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modelling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map | Air quality modelling for prediction of incremental GLCs of pollutants was carried out using AERMOD view 11.2.0. The model results have been given in Section 4.4 under the Chapter IV in the EIA report page 103-108.                                                                                               |
| 24. | The water requirement for the project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the project should be indicated.                                                                                                                                                                                                                                                                                                                                                                 | The water requirement for the project, its availability and source have been provided in Table 2.14 under Chapter II in the EIA report page 17.                                                                                                                                                                      |
| 25. | Necessary clearance from the competent Authority for drawl of requisite quantity of water for the project should be provided.                                                                                                                                                                                                                                                                                                                                                                                                                                          | Not Applicable.<br>Water for dust suppression, greenbelt development and domestic use will be sourced from accumulated rainwater/seepage water in mine pits and purchased from local water vendors through water tankers on daily requirement basis. Drinking water will be sourced from the approved water vendors. |
| 26. | Description of water conservation measures proposed to be adopted in the Project should be given. Details of                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Part of the working pit will be allowed to collect rain water during the spell of rain. The water thus collected will be used for                                                                                                                                                                                    |

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|     | rainwater harvesting proposed in the Project, if any, should be provided.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | greenbelt development and dust suppression. The mine closure plan has been prepared for converting the excavated pit into rain water harvesting structure and serve as water reservoir for the project village during draught season.                                                                                                              |
| 27. | Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.                                                                                                                                                                                                                                                                                                                                                                                                                                 | Impact studies and mitigation measures of water environment including surface water and ground water have been discussed in Section 4.3 under Chapter IV in the EIA report page 102-103.                                                                                                                                                           |
| 28. | Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished. | The ground water table is found at the depth of 60m below ground level. The ultimate depth of quarry is 45m (24m AGL+ 21m BGL). Therefore, the mining activity will not intersect the ground water table. Data regarding the occurrence of groundwater table have been provided in Section 3.3.3.2 under Chapter III in the EIA report page 50.51. |
| 29. | Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out                                                                                                                                                                                                                                                                                                                                                                                                       | Not Applicable.<br>There are no streams, seasonal or other water bodies passing within the project area. Therefore, no modification or diversion of water bodies is anticipated                                                                                                                                                                    |

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| 30. | Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and BGL. A schematic diagram may also be provided for the same.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | The highest elevation of the project area is 422m AMSL. Ultimate depth of the mine is 45m (24m AGL+ 21m BGL). Depth to the water level in the area is 60m below the ground level.                                                                                                                                                       |
| 31. | A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up. Front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution. | Greenbelt development plan has been given in Section 4.6 under Chapter IV in the EIA report page 110-114.                                                                                                                                                                                                                               |
| 32. | Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the                                                                                                                                                                                                                                                                                                                                                                                                              | Traffic density survey was carried out to analyses the impact of transportation in the study area as per IRC guidelines 1961 and it is inferred that there is no significant impact due to the proposed transportation from the project area. Details have been provided in Section 3.8 under Chapter III in the EIA report page 94-96. |

|     |                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                     |
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|     | infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.                                                                                                                                                        |                                                                                                                                                                                                     |
| 33. | Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.                                                                                                                                                                                                                                                                      | Infrastructure & other facilities will be provided to the mine workers after the grant of quarry lease and the same has been discussed in Chapter II in the EIA report.                             |
| 34. | Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.                                                                                                                                                                                                                    | Progressive mine closure plan has been prepared for this project and is given in Section 2.6.4 under Chapter II in the EIA report page 16.                                                          |
| 35. | Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed. | Occupational health impacts of the project and preventive measures have been explained in detail in Section 4.8 under Chapter IV in the EIA report page 115-116.                                    |
| 36. | Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be                                                                                                                                                                                                     | No public health implications are anticipated due to this project. Details of CSR and CER activities have been discussed in Sections 8.6 and 8.7 under Chapter VIII in the EIA report page 134-135. |

|     |                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                               |
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|     | detailed along with budgetary allocations.                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                               |
| 37. | Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.                                          | No negative impact on socio-economic environment of the study area is anticipated and this project shall benefit the socio-economic environment by offering employment for 22 people directly as discussed in Section 8.1 under Chapter VIII. |
| 38. | Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project. | A detailed Environment Management Plan has been prepared and provided in Table 10.1 & 10.2 under Chapter X in the EIA report page 138-144.                                                                                                    |
| 39. | Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.                                   | The outcome of public hearing will be submitted during the final EIA report.                                                                                                                                                                  |
| 40. | Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given                                                                                                                                           | No litigation is pending in any court against this project.                                                                                                                                                                                   |
| 41  | The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.                                                                                                                                                  | CER Cost is <b>Rs. 10,00,000/-</b><br><br>In order to implement the environmental protection measures, an amount of <b>Rs.3242300</b> as capital cost and <b>Rs.1390430</b>                                                                   |

|     |                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                               |
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|     |                                                                                                                                                                                           | as recurring cost/annum is proposed considering present market price considering present market scenario for the proposed project. After the adjustment of 5% inflation per year, the total recurring cost over 5 years is <b>Rs.7683003</b> and the overall EMP cost for 5 years will be <b>Rs.10925303</b> , as shown in Table 10.2 under Chapter X, p.144. |
| 42. | A disaster management plan shall be prepared and included in the EIA/EMP Report.                                                                                                          | The disaster management plan for this project has been provided in Section 7.3 under Chapter VII in the EIA report page 127-128.                                                                                                                                                                                                                              |
| 43. | Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc. | Benefits of the project details have been given under Chapter VIII in the EIA report page 133-135.                                                                                                                                                                                                                                                            |
| 44  | Besides the above, the below mentioned general points are also to be followed:                                                                                                            |                                                                                                                                                                                                                                                                                                                                                               |
| a)  | Executive Summary of the EIA/EMP Report.                                                                                                                                                  | Executive summary has been enclosed as a separate booklet.                                                                                                                                                                                                                                                                                                    |
| b)  | All documents to be properly referenced with index and continuous page numbering.                                                                                                         | All the documents have been properly referenced with index and continuous page numbering.                                                                                                                                                                                                                                                                     |
| c)  | Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.                                             | List of tables and source of the data collected have been mentioned.                                                                                                                                                                                                                                                                                          |
| d)  | Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF & CC/NABL accredited laboratories. All the original                       | Original Baseline monitoring reports will be submitted in the final EIA report.                                                                                                                                                                                                                                                                               |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                           |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | analysis/testing reports should be available during appraisal of the Project.                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                           |
| e) | Where the documents provided are in a language other than English, an English translation should be provided.                                                                                                                                                                                                                                                                                                                                                                            | All the documents provided here are in English language.                                                                                                  |
| f) | The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.                                                                                                                                                                                                                                                                                                                                                  | The questionnaire will be submitted in the final EIA report.                                                                                              |
| g) | While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF & CC vide O.M. No. J-11013/41/2006-IA. II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.                                                                                                                                                                                                                    | Instructions issued by MoEF & CC O.M. No. J-11013/41/2006-IA. II (I) dated 4 <sup>th</sup> August, 2009 have been followed while preparing the EIA report |
| h) | Changes, if any made in the basic scope and project parameters (as submitted in Form- I and the PFR for securing the TOR) should be brought to the attention of MoEF & CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation | No changes are made in the basic scope and the project parameters.                                                                                        |
| i) | As per the circular no. J-11011/618/2010- IA. II(I) Dated: 30.5.2012, certified report of the status                                                                                                                                                                                                                                                                                                                                                                                     | As it is a new lease area, the condition is not applicable.                                                                                               |



|    |                                                                                                                                                                                                                                                                                                       |                                                                                                                      |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
|    | of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.                                                          |                                                                                                                      |
| j) | The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area. | All the plans including surface & geological plans, and progressive closure plan have been included in Annexure III. |

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## **CHAPTER I**

### **INTRODUCTION**

#### **1.0 PREAMBLE**

Environmental Impact Assessment (EIA) study is a process used to identify the environmental, social and economic impacts of a project prior to decision- making. EIA systematically examines both beneficial and adverse consequences of the proposed project and ensure that these impacts are considered during the project designing. According to the Ministry of Environment and Forests, Govt.of India, EIA notification S.O. 1533(E) of 14th September 2006 and its subsequent amendments the projects are categorized into A, B1 & B2 to determine the level of scrutiny and process. The mining projects whose extent is  $\geq 5$  ha or the cluster of quarries (if homogeneous mineral) within 500m radius extent is greater than 5ha falls under category B1. These projects require preparation and submission of an EIA report after public consultation to SEIAA to obtain environmental clearance as per the Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018.

#### **1.1 PURPOSE OF THE REPORT**

The purpose of the report is to evaluate the project's potential environmental, social and economic effects of the before it is implemented adhering to the guidelines outlined in the MoEF & CC Notification, S.O. 996 (E) dated 10.04.2015 and MoEF & CC Office Memorandum dated 29.08.2017.

#### **1.2 ENVIRONMENTAL CLEARANCE**

The Environmental Clearance process for the project will comprise of four stages. These stages are screening, scoping, public consultation & appraisal.

##### **Screening**

The project proponent has applied in PARIVESH 2.0 proposal no SIA/TN/MIN/520786/2025, dated: 28.01.2025 to obtain terms of reference. Therefore, the proponent submitted application for Terms of Reference (ToR) on 30.01.2025.

##### **Scoping**

The mechanism for issuing online system generated Standard ToR as well as reference to SEAC has been enabled on the PARIVESH Portal on the acceptance of the complete application online. The concerned Member Secretary of SEAC shall refer the project to the concerned SEAC for prescribing additional ToR as per the circular F.No. IA 3-22/15/2022-IA-III [Computer No 178038] Dated: 6th May 2022.

### ***Public Consultation***

In this stage, an application along with the draft EIA and EMP report will be made to the Member Secretary of the Tamil Nadu Pollution Control Board (TNPCB) and request to conduct Public Hearing as per EIA notification 2006. The outcome of the public hearing will be submitted in final EIA report.

### ***Appraisal***

In this stage, the final EIA report will submit in PARIVESH 2.0 to SEIAA, TN. Based on the recommendations of SEAC the SEIAA, TN will grant EC or castoff.

### **1.3 TERMS OF REFERENCE (ToR)**

The total extent of quarries within the 500m radius is greater than 5ha. The details of the quarries within the cluster are given in Table 1.1 & Figure 1.1.

**Table 1.1 Details of quarries within the cluster area of 500 m radius**

| <b>Proposed Quarries</b>    |                          |                |                |                    |                     |
|-----------------------------|--------------------------|----------------|----------------|--------------------|---------------------|
| <b>Code</b>                 | <b>Name of the Lease</b> | <b>S.F. No</b> | <b>Village</b> | <b>Extent (ha)</b> | <b>Lease Period</b> |
| <b>P1</b>                   | M/s. KMB Trading Company | 823(P) & 824/3 | Ajjanahalli    | 4.50.00            | Proposed Area       |
| <b>P2</b>                   | Thiru.M.Vikneshkumar     | 810/2 (P)      | Ajjanahalli    | 2.48.0             | Proposed Area       |
| <b>Total Cluster Extent</b> |                          |                |                | <b>6.98.0</b>      | <b>---</b>          |

**Source:** DD Letter – Rc.No.176/2020/Mines dated 10.05.2023

**Note:** Cluster area is calculated as per MoEF & CC Notification – S.O. 2269 (E) Dated: 01.07.2016.

File was appraised in 538<sup>th</sup> SEAC meeting on 01.03.2025 and issued terms of reference (ToR) identification no **TO25B0108TN5878289N on 08.04.2025** by SEIAA, TN.

### **1.4 POST ENVIRONMENT CLEARANCE MONITORING**

- The project proponent shall prominently advertise in the newspapers indicating that the project has been accorded environmental clearance and the details of the website where it is displayed.
- The project proponent will submit a half-yearly compliance report of the stipulated environmental conditions to Regional Office, MoEF & CC & SEIAA on 1<sup>st</sup> June and 1<sup>st</sup> December of every year.

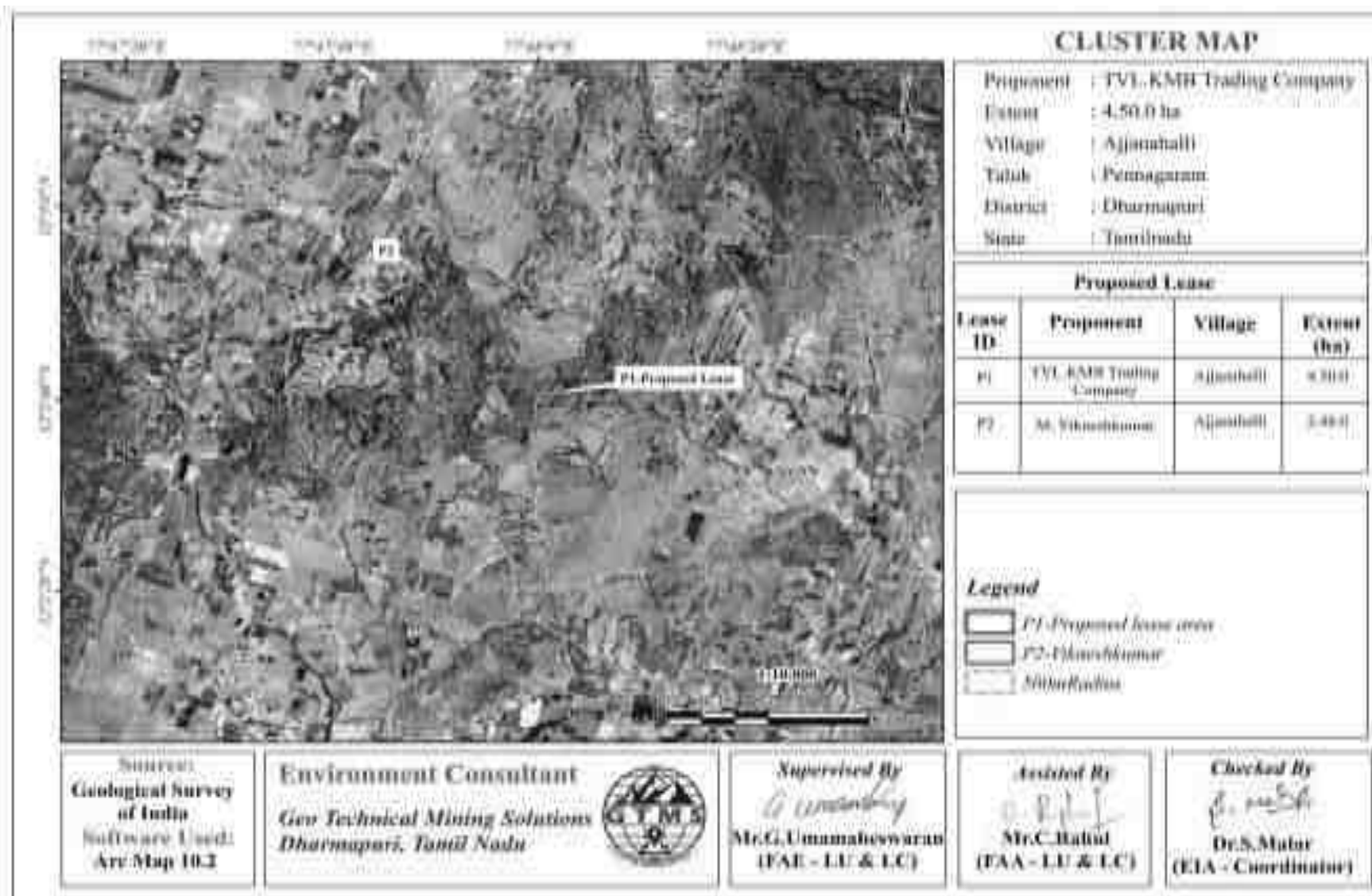


**Figure 1.1 Location of Proposed and Existing Quarries in the Cluster of 500m Radius**

## 1.5 TRANSFERABILITY OF ENVIRONMENTAL CLEARANCE

The prior environmental clearance granted for a project or activity may be transferred as per the provisions of para 11 of the Environmental Impact Assessment Notification, 2006 and its subsequent amendments and the office memorandum File No. IA3-22/19/2023-IA.III [E226246] Dated: 3<sup>rd</sup> November 2023.

## 1.6 IDENTIFICATION OF THE PROJECT PROPONENT

The profile of the project proponent who has involved in this quarrying project has been given in Table 1.2.

**Table 1.2 Details of Project Proponent**

| Name of the Project Proponent | Tvl. KMB Trading Company                                                  |
|-------------------------------|---------------------------------------------------------------------------|
| Address                       | No.3/50, Bangalore Main Road,<br>Five Roads,<br>Salem District – 636 004. |
| Status                        | Proprietor                                                                |

## 1.7 BRIEF DESCRIPTION OF THE PROJECT

The method adopted for Black granite excavation is open cast semi-mechanized method involving formation of benches with 5m height and 5m width and the overall bench slope is should not exceed 45°. The quarry operation involves shallow jackhammer drilling, Diamond Wire Saw cutting, excavation, loading and transportation.

The overall extent of the project site is 4.50.0ha and it is located in Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District, Tamil Nadu. The proposed project deals with excavation of Black Granite which is primarily used in construction projects. The increasing demand for Black Granite fuelled by a booming construction industry presents a valuable opportunity. This project will not only meet the rising demand for Black Granite but also create jobs for the surrounding villages.

*Source: Approved mining plan book*

## 1.8 SCOPE OF THE STUDY

The main scope of the EIA study is to quantify the cumulative impact of the quarries in the cluster on the study area and formulate the effective mitigation measures for each individual lease. A detailed account of the emission sources, emissions control equipment, background air quality levels, meteorological measurements, dispersion model and all other aspects of pollution like effluent discharge, and dust generation has been provided in this report. The baseline monitoring study has been carried out during the period of **March – May 2025** for various environmental components such as land, soil, air, water, noise, ecology, etc. to assess the anticipated impacts of the cluster quarry projects on the environment and suggest suitable



mitigation measures for likely adverse impacts due to the proposed project. The sampling methodologies for the various environmental parameters required for the study, frequency of sampling, method of sample analysis, etc., are given in Table 3.1 in chapter III.

### **1.9 Legislation Applicable to Mining of Mineral Sector**

A few important legislations are given below:

- ❖ The Mines Act, 1952.
- ❖ The Mines and Mineral (Development and Regulation) Act, 1957.
- ❖ Mines Rules, 1955.
- ❖ Mineral Concession Rules, 1960
- ❖ Mineral Conservation and Development Rules, 1988.
- ❖ State Minor Mineral Concession Rules, 1960.
- ❖ Granite Conservation and Development Rule, 1999.
- ❖ The Water (Prevention and Control of pollution) Act, 1974.
- ❖ The Air (Prevention and Control of pollution) Act, 1981.
- ❖ The Environment (Protection) Act, 1986.
- ❖ The Forest (Conservation) Act, 1988.
- ❖ The Wildlife (Protection) Act, 1972.

## CHAPTER II

### PROJECT DESCRIPTION

#### 2.1 DECSRIPTION OF THE PROJECT

The proponent M/s. KMB Granite Enterprises, Black Granite is involved in the mining and its auxiliary activities. The proponent had applied for quarry lease on 20.09.2020 to extract granite and produce dimension stones. The precise area communication letter was issued by Industries (MME.2) Department, Secretariat Chennai Letter No.274/MME.2/2021-1, Dated.23.02.2021. Based on the precise area communication letter, mining plan was prepared. The mining plan thus prepared was approved by Director of Geology and Mining, Chennai (Rc.No.6164/MM4/2020, dated:02.05.2023). The overall view of the project site is shown in Figure 2.1.

#### History of the Project

It's a fresh quarry lease.

**Table 2.1 Proposed project area and excavation details**

|                                 |                                                                                                                                 |                              |               |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------|------------------------------|---------------|
| Name of the Quarry              | Tvl. KMB Trading Company, Black granite                                                                                         |                              |               |
| S.F. No.                        | 823 (P) & 824/3                                                                                                                 |                              |               |
| Land Type                       | Government Poramboke land                                                                                                       |                              |               |
| Extent                          | 4.50.0ha                                                                                                                        |                              |               |
| Proposed Depth for 5 years      | 45m                                                                                                                             |                              |               |
| Toposheet No                    | 57-L/7                                                                                                                          |                              |               |
| Latitude between                | 12°02'48.7413"N to 12°02'36.9302"N                                                                                              |                              |               |
| Longitude between               | 77°47'52.0568"E to 77°47'57.6795"E                                                                                              |                              |               |
| Highest Elevation               | 422m ASML                                                                                                                       |                              |               |
| Topography                      | Undulated Terrain                                                                                                               |                              |               |
| Geological Reserves             | Black Granite Recovery 20% (MT)                                                                                                 | Black Granite Waste 80% (MT) | Top Soil (MT) |
|                                 | 125111                                                                                                                          | 519310                       | 161984        |
| Mineable Reserves               | 93901                                                                                                                           | 375597                       | 95280         |
| Proposed production for 5 years | 20918                                                                                                                           | 83666                        | 31680         |
| Method of Mining                | It is an Eco – friendly quarry operation, no blasting is proposed. Diamond wire saw cutting method is adopted by the applicant. |                              |               |
| Machinery proposed              | Jack Hammer                                                                                                                     | 4                            |               |
|                                 | Compressor                                                                                                                      | 2                            |               |
|                                 | Tippers                                                                                                                         | 2                            |               |
|                                 | Excavator                                                                                                                       | 1                            |               |

|                              |                   |
|------------------------------|-------------------|
| Proposed manpower deployment | 22                |
| Project cost                 | Rs. 5,97,20,000/- |
| CER cost                     | Rs 10,00,000/-    |
| Proposed Water Requirement   | 4.0 KLD           |

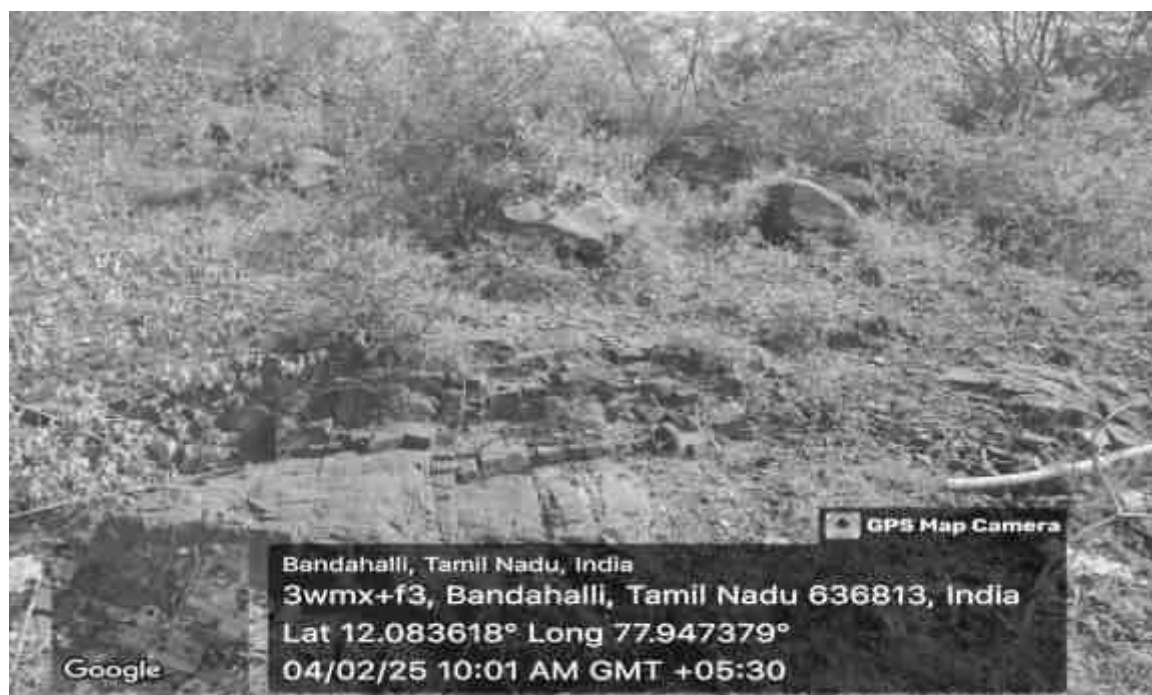


**Figure 2.1 Overall View of Proposed Project Site**

## 2.2 LOCATION AND ACCESSIBILITY

The proposed project area is Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District as shown in Figure 2.2.

**Table 2.2 Site Connectivity to the Project Area**

| Nearest Road            | Name of Place  | Distance | Direction |
|-------------------------|----------------|----------|-----------|
| Nearest Railway Station | Sivadi         | 34.4km   | NE        |
| Nearest Hospital        | Pennagaram     | 14.0km   | NE        |
| Nearest Town            | Pennagaram     | 14.0km   | NE        |
| Nearest Airport         | Salem          | 40.64km  | SE        |
| Nearest Seaport         | Chennai        | 310.0km  | NE        |
| Nearest Village         | Sigaralahalli  | NW       | N         |
|                         | Ajjanahalli    | SE       | E         |
|                         | M.Thanda       | SW       | S         |
|                         | Badanavadi R.F | West     | W         |

## 2.3 LEASEHOLD AREA

The details of the field survey number, subdivision and their extent and the overall extent of the proposed project site is given in Table 2.3.

**Table 2.3 Lease hold area details**

| Survey No.          | Sub division | Total Extent in Hect | Name of the Land Owner         | Mine lease Applied S.F. No. | Mine lease Applied Area out of total area in hect. |
|---------------------|--------------|----------------------|--------------------------------|-----------------------------|----------------------------------------------------|
| 823                 | -            | 4.98.0               | Government                     | 823 (P)                     | 2.38.5                                             |
| 824                 | 3            | 2.11.5               | Poramboke Land                 | 824/3                       | 2.11.5                                             |
| <b>Total Extent</b> |              | <b>7.09.5</b>        | <b>Total lease area extent</b> |                             | <b>4.50.0</b>                                      |

The proposed project is site specific. There is no mineral beneficiation or processing proposed inside the project area. There is no forest land involved in the proposed area.

The overall extent of the project area is 4.50.0 Ha as per the precise area communication letter was issued by Industries (MME.2) Department, Secretariat Chennai Letter No.274/MME.2/2021-1, Dated 23.02.2021. The breakup of the existing land use for mining and ancillary feature is given in Table 2.4.

**Table 2.4 Present Land use pattern of the project area**

| Description       | Present Area (ha) |
|-------------------|-------------------|
| Area under quarry | 0.07.0            |
| Dumps             | Nil               |

|                 |               |
|-----------------|---------------|
| Infrastructure  | Nil           |
| Roads           | Nil           |
| Green Belt      | Nil           |
| Unutilized Area | 4.43.0        |
| <b>Total</b>    | <b>4.50.0</b> |

### **Corner Coordinates**

The extent of the proposed project site is **4.50.0ha**. The boundary corner coordinates are given in Table 2.5 and the location of 4 boundary corners are shown in Figure 2.3.

**Table 2.5 Corner Coordinates of Proposed Project**

| <b>Pillar ID</b> | <b>Latitude</b>  | <b>Longitude</b>  |
|------------------|------------------|-------------------|
| 1                | 12°02'44.3356" N | 77°47'52.0568" E  |
| 2                | 12°02'48.3253" N | 77°47'52.9547" E  |
| 3                | 12°02'48.7413" N | 77°47'55.7122" E  |
| 4                | 12°02'43.7631" N | 77°47'57.3776" E  |
| 5                | 12°02'42.8893" N | 77° 47'59.0373" E |
| 6                | 12°02'43.5471" N | 77° 48'01.3070" E |
| 7                | 12°02'44.3090" N | 77° 48'04.1131" E |
| 8                | 12°02'44.5198" N | 77°48'05.2343" E  |
| 9                | 12°02'39.6314" N | 77° 47'57.9847" E |
| 10               | 12°02'36.9302" N | 77° 47'57.6795" E |

*Source: Approved Mining plan*

## **2.4 GEOLOGY**

The lease area geologically occurs on black granite (Dolerite dyke) rock is medium Coard grained, medium dark in colour. It shows sub-ophitic texture. The colour of the rock change depending on the texture of the rock.

**Table 2.6 Order of Superposition of the proposed lease area**

| <b>Age</b>                    | <b>Group</b> | <b>Rock Formation</b>                 |
|-------------------------------|--------------|---------------------------------------|
| Recent to Sub recent          | ----         | Topsoil and weathered rock (5m thick) |
| Archaean to lower Proterozoic | --           | Black granite (Dolerite)              |

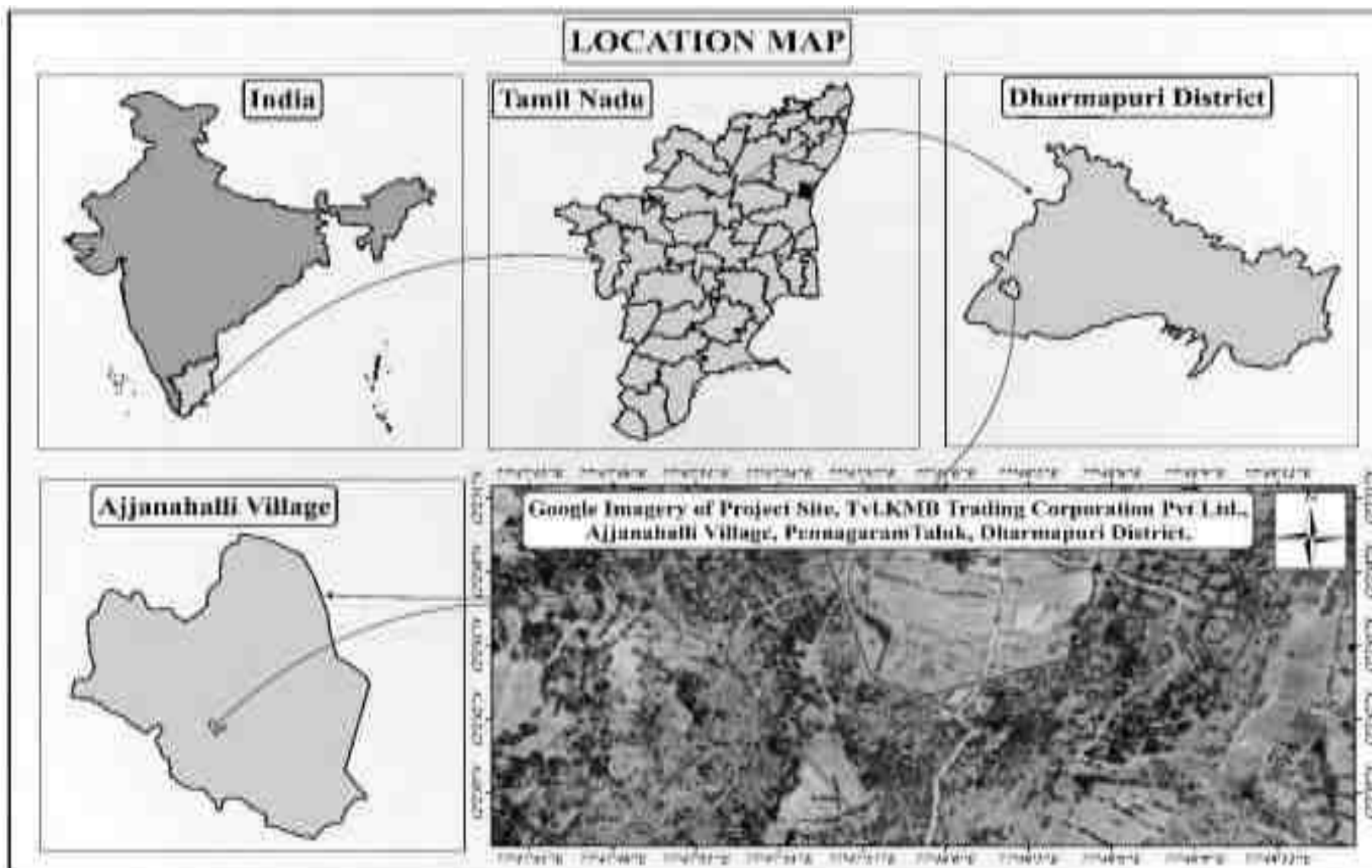


Figure 2.2 Location Map Showing the Project Site

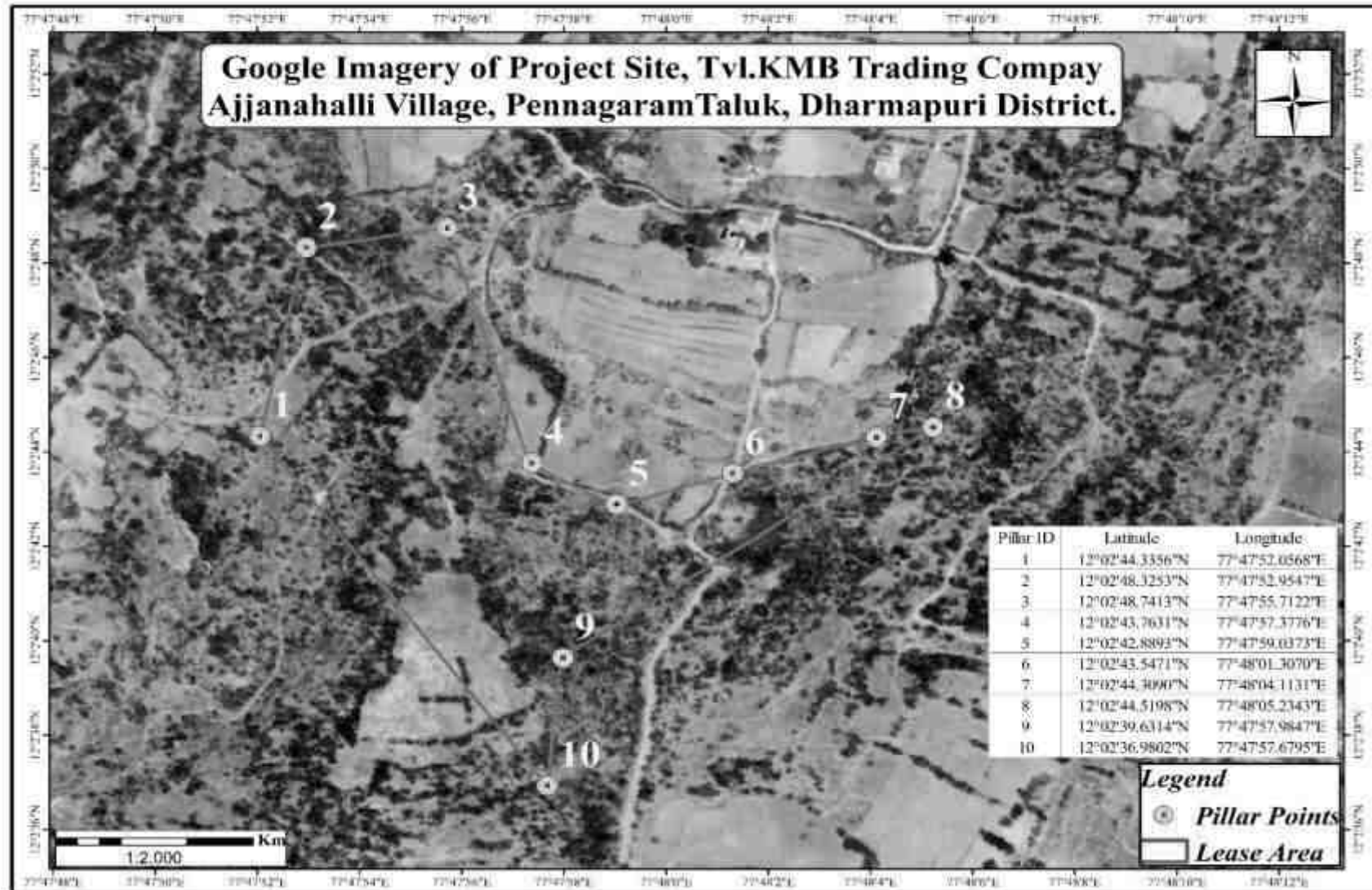


**Figure 2.3 Google Earth Image Showing Lease Area with Pillar**

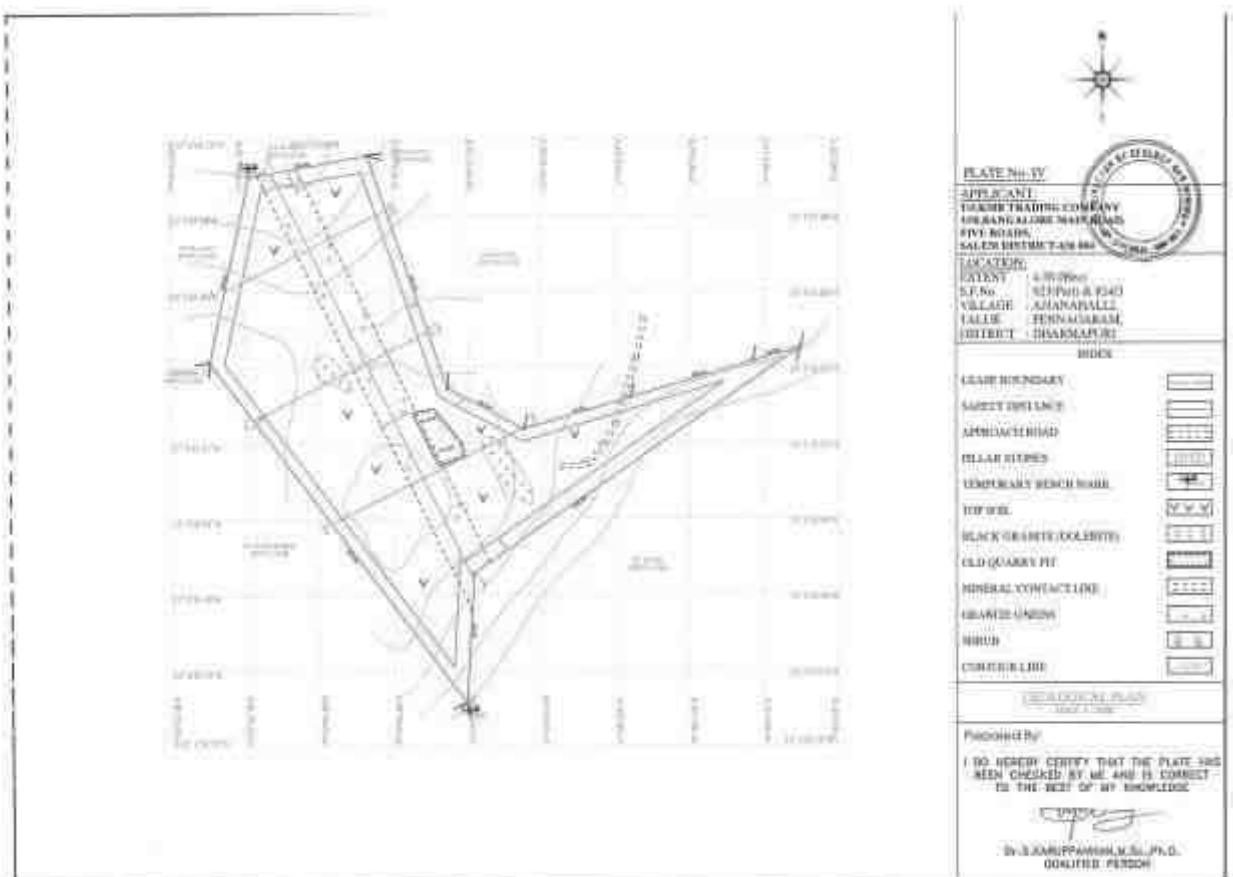
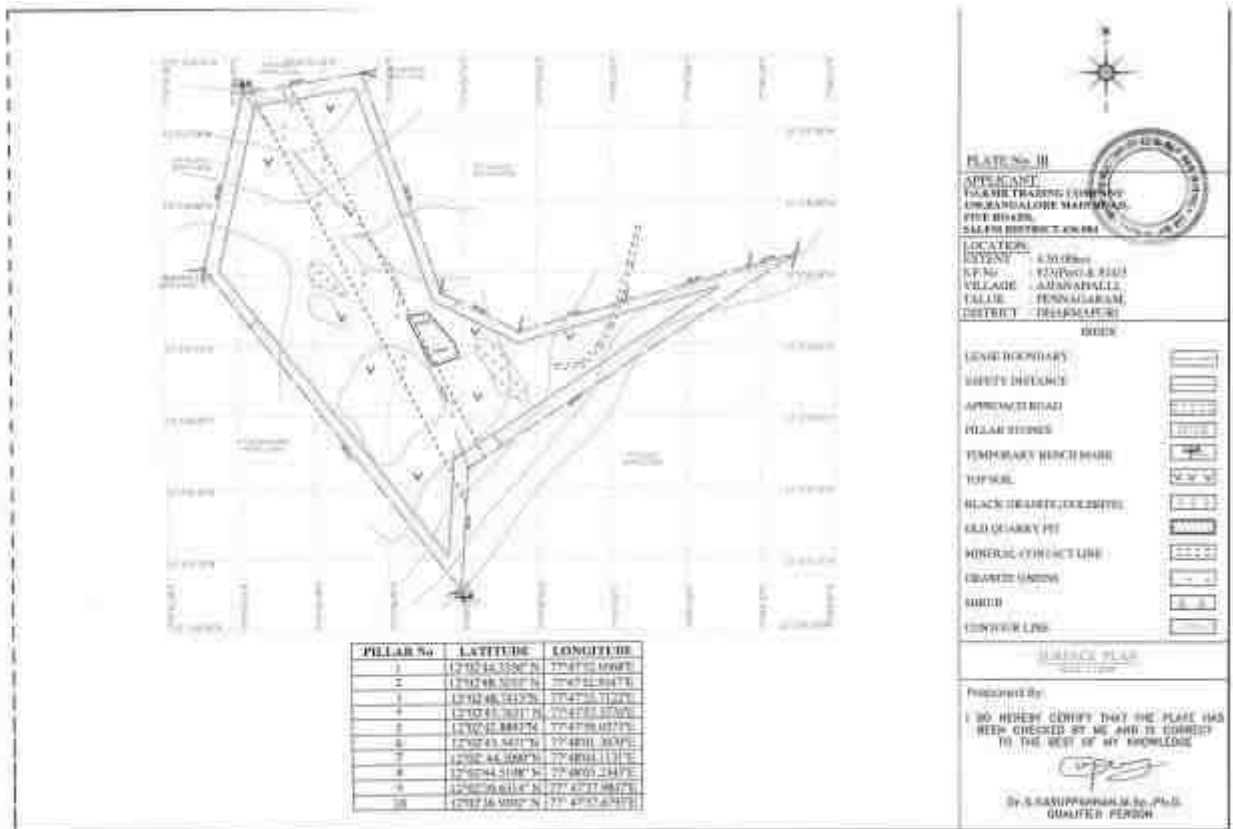


Figure 2.4 Surface & Geological Plan and Sections



## 2.5 RESOURCES AND RESERVES

The Resources and Reserves of Grey Granite were calculated based on cross-section method by plotting sections to cover the maximum lease area for the proposed project. Based on the availability of geological resources, the mineable reserves are calculated by considering excavation system of bench formation and leaving essential safety distance of 7.5 m and 10m safety distance as per precise area communication letter and deducting the locked-up reserves during bench formation (also called as Bench Loss). The mineable reserves are calculated up to the depth of 45m (24m AGL+21m BGL). considering there is 20% recovery, 80% waste for the proposed project. The plate used for reserve estimation has been attached in approved mining plan results of geological resources and reserves have been shown in Table 2.7.

**Table 2.7 Estimated Resources and Reserves of the Project**

| <b>Description</b>                    | <b>ROM in MT</b> | <b>Black Granite @ 20% Recovery (MT)</b> | <b>Black Granite @ 80% Waste (MT)</b> | <b>Top Soil (MT)</b> |
|---------------------------------------|------------------|------------------------------------------|---------------------------------------|----------------------|
| Geological Resources                  | 3710887          | 125111                                   | 519310                                | 161984               |
| Mineable Reserves                     | 1181575          | 93901                                    | 375597                                | 95280                |
| Proposed production for 5 years in MT | 315871           | 20918                                    | 83666                                 | 31680                |

### ***Year - Wise Production***

On the basis of year- wise development plan and its sections, as shown in Figures 2.5 year-wise production details are given in Table 2.8.

**Table 2.8 Year wise Production Details**

| <b>Year</b> | <b>ROM in MT</b> | <b>Black Granite @ 20% Recovery (MT)</b> | <b>Black Granite @ 80% Waste MT</b> | <b>Topsoil in MT</b> |
|-------------|------------------|------------------------------------------|-------------------------------------|----------------------|
| I           | 117657           | 3824                                     | 15296                               | 31680                |
| II          | 63275            | 4505                                     | 18020                               | ---                  |
| III         | 51113            | 3843                                     | 15370                               | ---                  |
| IV          | 35700            | 3180                                     | 12720                               | ---                  |
| V           | 42126            | 5566                                     | 22260                               | ---                  |
| Total       | <b>315871</b>    | <b>20918</b>                             | <b>83666</b>                        | <b>31680</b>         |

*Source: Approved Mining plans*

## 2.6 MINING METHOD

The quarrying operation is proposed to be carried out by open cast semi- mechanized mining method with the bench height and width of 5m each. It is Eco-friendly quarry operation.

No blasting is proposed; diamond wire saw cutting methods is adopted by the lessee. Nowadays the splitting within the sheet rock is affected by diamond wire-sawing, which largely reduces the use of explosives in granite mining.

#### **Blasting pattern:**

It is an Eco-friendly quarry operation, no blasting is proposed, Diamond wire saw cutting method is adopted by the applicant. Nowadays, the splitting within the sheet rock is affected by diamond wire-sawing, which largely reduces the use of explosives in granite mining. Besides, chemical powder called as “Rock breaking Powder”  $[Ca(OH)_2]$  are also used for splitting. Many adverse effects of blasting are avoided and hence diamond wire cutting will substantially increase the recovery. Since primary cutting comprising splitting from the sheet rock is affected by diamond wire-sawing there will not be any drilling or blasting involved. Hence, there will not any adverse effects and vibration due to this type of mining operation

#### **2.6.1. Magnitude of Operation**

Based on the results of estimated production for the 5 years as shown in Table 2.9, details about the size of operation have been provided.

**Table 2.9 Operational Details for Proposed Project**

|                                                       | <b>Black Granite Recovery @ 20% in MT</b> |
|-------------------------------------------------------|-------------------------------------------|
| Quantity of Material to be Quarried out in five years | 20918                                     |
| Number of working days/ Annum                         | 270                                       |
| Production of /Day (MT)                               | 78                                        |
| No. of Lorry Loads                                    | 5                                         |

#### **2.6.2 Extent of Mechanization**

To achieve the above-mentioned production, various machineries are proposed for the quarrying operation, as given in Table 2.10.

**Table 2.10 Machinery Details**

| <b>Drilling Equipment</b> |                    |                             |                      |             |                     |
|---------------------------|--------------------|-----------------------------|----------------------|-------------|---------------------|
| <b>Type</b>               | <b>No. of Unit</b> | <b>Dia. of Hole (mm)</b>    | <b>Size capacity</b> | <b>Make</b> | <b>Motive Power</b> |
| Compressor                | 2                  | -                           | Air                  | -           | Diesel              |
| Jack Hammer               | 4                  | 32                          | Hand held            | -           | Compressed Air      |
| Tipper                    | 3                  | -                           | -                    | -           | Diesel              |
| Excavator                 | 1                  | 2.9-4.5m <sup>3</sup><br>HP | -                    | -           | Diesel              |



### 2.6.3 Post Mining land use

The progressive quarry closure plan of the proposed project showing present, and future land use statistics is provided in Table 2.11. According to data shown in the table, at the end of the quarry life, about 0.71.00 ha of land would have been utilized for quarrying, 0.01.00ha of land for waste dump, 0.02.00 ha for infrastructures, 0.71.00ha for roads, 0.20.00ha for green belt development for first five years plan period.

**Table 2.11 Land use data at present, during scheme of mining and at the end of mine life**

| Description             | Present Area (Ha) | Land Use Area at the end of mine life (ha) |
|-------------------------|-------------------|--------------------------------------------|
| Area under Mining       | 0.07.0            | 0.71.00                                    |
| Waste dump              | Nil               | 0.01.00                                    |
| Office (Infrastructure) | Nil               | 0.02.00                                    |
| Road                    | Nil               | 0.71.00                                    |
| Green Belt              | Nil               | 0.20.00                                    |
| Unutilized area         | 4.43.0            | 2.85.00                                    |
| <b>Grand Total</b>      | <b>4.50.0</b>     | <b>4.50.0</b>                              |

### 2.6.4 Progressive Quarry closure plan

As the proposed project has the enormous potential for continuous operations even after the expiry of lease period, mine closure plan is not proposed for now. Based on the progressive mine closure plan for the scheme period, the mine closure cost is given in Table 2.12.

**Table 2.12 Progressive Mine Closure Budget**

| Activity                           | Capital Cost     |
|------------------------------------|------------------|
| 1000 plants inside the lease area  | 2,00,000         |
| 1250 plants outside the lease area | 3,75,000         |
| Wire Fencing                       | 9,00,000         |
| Garland Drain                      | 45,000           |
| <b>Total</b>                       | <b>15,20,000</b> |

*Source: Environment Management Plan*

### 2.6.5 Conceptual Mining Plan

The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc. Details of ultimate pit dimensions have been derived from given in Table 2.13. Conceptual Plan has been shown in Figure 2.7.

**Table 2.13 Ultimate Pit Dimension**

| Pit | Length (m) | Width (m) (Max) | Depth (m) |
|-----|------------|-----------------|-----------|
| I   | 103        | 90              | 45        |

## 2.6.6 Infrastructures

Infrastructures like mines office, temporary rest shelters for workers, latrine and urinal facilities have been proposed as per the mine rule and will be established after the grant of quarry lease. There is no proposal for the mineral processing or ore beneficiation plants in this project.

### 2.6.6.1 Other Infrastructure Requirement

No workshops are proposed inside the project area. Hence, there will not be any process effluent generation from the proposed lease area. Domestic effluent from the mine office will be discharged to septic tank and soak pit. As there is no toxic effluent expected to generate in the form of solid, liquid or gaseous form, there is no requirement of waste treatment plant.

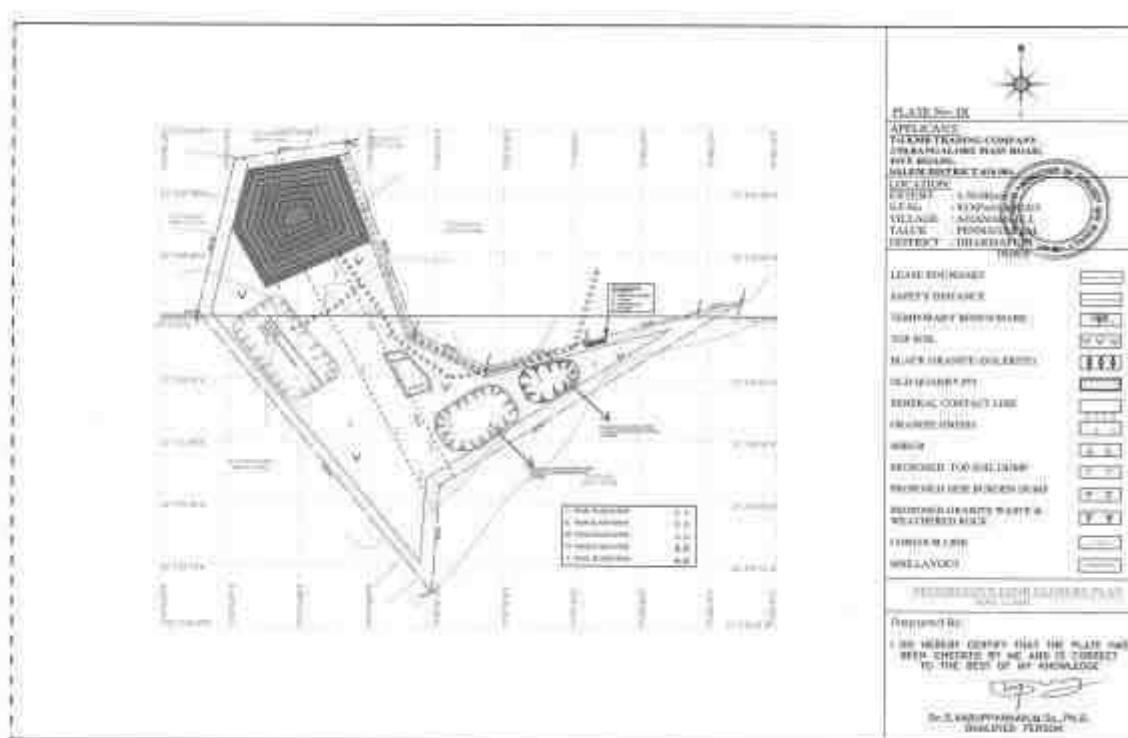


**Figure 2.6 Progressive Quarry Closure Plan**

## 2.6.7 Water Requirement

Detail of water requirement in 3.2KLD is given in Table 2.14.

**Table 2.14 Water Requirement for the Project**

| Purpose             | Quantity Required (KLD) | Source                                                                                                                                                             |
|---------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Domestic & Drinking | 1.2                     | Water for domestic, dust suppression, and green belt development purposes will be sourced from existing bore wells and drinking water from approved water vendors. |
| Dust Suppression    | 1.0                     |                                                                                                                                                                    |
| Green Belt          | 1.0                     |                                                                                                                                                                    |
| <b>Total</b>        | <b>3.2</b>              |                                                                                                                                                                    |

Source: Prefeasibility Report

### 2.6.8 Energy Requirement

The electricity from high tension power supply is utilized for diamond wire saw cutting machine, disc double blade cutting machine, air compressor, derrick crane and pumps for de-watering and is also used for mines office and lighting purpose

In addition to electricity, around **15,84,505** litres of HSD are used for total diesel consumption for Excavator, Compressor and Tipper. It will be brought to the site from nearby diesel pumps. Details on the estimation of fuel requirements are provided in Table 2.15.

**Table 2.15 Fuel Requirement Details**

| <b>Fuel Requirement for Excavator</b>                               |                                               |                                           |                          |                             |
|---------------------------------------------------------------------|-----------------------------------------------|-------------------------------------------|--------------------------|-----------------------------|
| <b>Details</b>                                                      | <b>Black Granite Recovery @20% (20918 MT)</b> | <b>Black Granite Waste @80% (83666MT)</b> | <b>Top Soil 31680 MT</b> | <b>Total Diesel (litre)</b> |
| Average Rate of Fuel Consumption (l/hr)                             | 16                                            | 16                                        | 10                       | ---                         |
| Working Capacity (MT/hr)                                            | 62                                            | 62                                        | 120                      | ---                         |
| Time Required (hours)                                               | 3793                                          | 15170                                     | 1056                     | ---                         |
| Total Diesel Consumption for 5 years (litre)                        | 60683                                         | 242725                                    | 16896                    | <b>3,20,304</b>             |
| <b>Fuel Requirement for Tipper</b>                                  |                                               |                                           |                          |                             |
| Average Rate of Fuel Consumption/Trip (litre)                       | 20                                            | 20                                        | --                       | ---                         |
| Carrying Capacity in MT                                             | 18.6                                          | 18.6                                      | --                       | ---                         |
| Number of Trips / days                                              | 9                                             | 37                                        | --                       | ---                         |
| Number of Trips / 5 years                                           | 12642                                         | 50568                                     | --                       | ---                         |
| Total Diesel Consumption for 5 years (litre)                        | 252846                                        | 1011354                                   | --                       | <b>12,64,201</b>            |
| <b>Total Diesel Consumption by Excavator, Compressor and Tipper</b> |                                               |                                           |                          | <b>15,84,505</b>            |



### 2.6.9 Capital Requirement

The summary of capital required for the project is provided in Table 2.16.

**Table 2.16 Capital Requirement Details**

| S. No.                    | Description      | Cost (Rs.)           |
|---------------------------|------------------|----------------------|
| 1                         | Fixed Asset Cost | 4,15,00,000/-        |
| 2                         | Machinery Cost   | 1,78,00,000/-        |
| 3                         | Expenditure Cost | 4,20,000/-           |
| <b>Total Project Cost</b> |                  | <b>5,97,20,000/-</b> |

*Source: Mining plan report*

### 2.7 Employment Requirement

The skilled, competent qualified statutory persons will be engaged for quarrying operation, preference will be given to the local community. Number of employees required for this project have been provided in Table 2.17.

**Table 2.17 Employment Potential for the proposed project**

| S. No.      | Category       | Role                   | Nos.   |
|-------------|----------------|------------------------|--------|
| 1           | Highly Skilled | Quarry Manager         | 1No.   |
|             |                | Mines Forman           | 1No    |
|             |                | Mechanical Engineer    | 1No    |
|             |                | Accountant cum & admin | 1No.   |
| 2           | Skilled        | Earth moving Operator  | 1No    |
|             |                | Line drilling Operator | 1 Nos. |
|             |                | Wire saw Operator      | 2 No.  |
|             |                | Driver                 | 1No    |
| 3           | Semi-Skilled   | Helpers, Greaser's     | 1 No   |
| 4           | Unskilled      | Cutter                 | 4Nos   |
|             |                | Musdoor / Labours      | 8 Nos  |
| Grand Total |                |                        | 22Nos  |

*Source: Approved Mining Plan*

### 2.8 PROJECT IMPLEMENTATION SCHEDULE

The commercial operation will commence after the grant of Environmental Clearance. CTO and CTE will be obtained from the Tamil Nadu State Pollution Control Board. The conditions imposed during the environmental clearance will be compiled before the start of mining operation. Expected time schedule for the quarrying operation is given Table 2.18.



**Table 2.18 Expected Time Schedule**

| S.No.                                                                                    | Particulars             | Time Schedule<br>(in months) |                 |                 |                 |                 | Remarks if any                |
|------------------------------------------------------------------------------------------|-------------------------|------------------------------|-----------------|-----------------|-----------------|-----------------|-------------------------------|
|                                                                                          |                         | 1 <sup>st</sup>              | 2 <sup>nd</sup> | 3 <sup>rd</sup> | 4 <sup>th</sup> | 5 <sup>th</sup> |                               |
| 1                                                                                        | Environmental Clearance |                              |                 |                 |                 |                 |                               |
| 2                                                                                        | Consent to Establish    |                              |                 |                 |                 |                 |                               |
| 3                                                                                        | Consent to operate      |                              |                 |                 |                 |                 | Project establishment period. |
|                                                                                          |                         |                              |                 |                 |                 |                 | Production starting period.   |
| Time line may vary; subjected to rules and regulations /& other unforeseen circumstances |                         |                              |                 |                 |                 |                 |                               |

*Source: Anticipated based on Timelines framed in EIA Notification & CPCB Guidelines*

## CHAPTER III

### DESCRIPTION OF THE ENVIRONMENT

#### 3.0 GENERAL

This chapter presents a regional background to the baseline data at the very onset, which will help in better appreciation of micro-level field data, generated on several environmental and ecological attributes of the study area. The baseline status of the project environment is described section wise for better understanding of the broad-spectrum conditions. The baseline environment quality represents the background environmental scenario of various environmental components such as land, water, air, noise, biological and socio-economic status of the study area. Field monitoring studies to evaluate the base line status of the project site were carried out covering **March through May, 2025** with CPCB guidelines. Environmental baseline data were collected by an NABL accredited and MoEF notified **Interstellar Testing Centre Pvt. Ltd** for the environmental attributes including soil, water, air, and noise and by FAEs for ecology and biodiversity, traffic and socio-economy.

#### *Study Area*

The study area has been divided into two zones: core zone and buffer zone. Core zone is considered as lease area and buffer zone as 5 km radius from the periphery of the cluster, except for ecological study, which considers 10 km as buffer zone. Both core and buffer zones are taken as the study area. The data was collected from the study area to understand the existing environment conditions of the above-mentioned environmental components. Sampling methodologies for the various environmental parameters, including frequency of sampling, method of sample analysis, etc., are briefly given in Table 3.1.

**Table 3.1 Monitoring Attributes and Frequency of Monitoring**

| Attribute               | Parameters                                                     | Frequency of Monitoring         | No. of Locations                       | Protocol                                                                 |
|-------------------------|----------------------------------------------------------------|---------------------------------|----------------------------------------|--------------------------------------------------------------------------|
| Land Use/<br>Land Cover | Land-use<br>Pattern within 5<br>km radius of the<br>study area | Once during the<br>study period | Study Area                             | Satellite Imagery &<br>Primary Survey                                    |
| *Soil                   | Physico-<br>Chemical<br>characteristics                        | Once during the<br>study period | 5<br>(1 core & 4<br>in buffer<br>zone) | IS 2720<br>Agriculture<br>Handbook - Indian<br>Council of<br>Agriculture |

|                        |                                                                                                     |                                                          |                                         |                                                                                     |
|------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------|
|                        |                                                                                                     |                                                          |                                         | Research, New Delhi                                                                 |
| *Water Quality         | Physical, Chemical and Bacteriological Parameters                                                   | Once during the study period                             | 5<br>(1 surface water & 4 ground water) | IS 10500 & CPCB Standards                                                           |
| Meteorology            | Wind speed<br>Wind direction<br>Temperature<br>Cloud cover<br>Dry bulb temperature<br>Rainfall      | 1 hourly continuous mechanical/automatic weather station | 1                                       | Site specific primary data & secondary data from IMD Station                        |
| *Ambient Air Quality   | PM <sub>10</sub> , PM <sub>2.5</sub><br>SO <sub>2</sub> , NO <sub>x</sub> , and Fugitive dust       | 24 hours, twice a week                                   | 4<br>(1 core & 3 buffer)                | IS 5182 Part 1-23<br>National Ambient Air Quality Standards, CPCB                   |
| *Noise Levels          | Ambient noise                                                                                       | Hourly observation for 24 hours per location             | 4<br>(1 core & 3 buffer zone)           | IS 9989<br>As per CPCB Guidelines                                                   |
| Ecology                | Existing flora and fauna                                                                            | Through field visit during the study period              | Study area                              | Primary Survey by Quadrate & Transect Study<br>Secondary Data – Forest Working Plan |
| Socio Economic Aspects | Socio-economic characteristics, population statistics and existing infrastructure in the study area | Site visit & Census Handbook, 2011                       | Study area                              | Primary Survey, Census Handbook & need based assessments.                           |

*\*All monitoring and testing have been carried out as per the guidelines of CPCB and MoEF & CC.*

### 3.1 LAND ENVIRONMENT

#### 3.1.1 Geology and Geomorphology

##### ***Geology:***

The proposed quarry lease area is falling under Granite gneiss as shown in Figure 3.1 & 3.1a. It forms through high-grade metamorphism of existing rocks typically igneous or sedimentary under intense heat and pressure. The process involves the transformation of these rocks leading to the formation of characteristic layers and the crystallization of minerals like garnet. The presence of garnet a red-colored mineral is a key indicator of this high-grade rough stone process.

##### ***Geomorphology:***

The geomorphic unit's pediment and pediplain complex dominate the study area as shown in Figure 3.2 & 3.2a. Pediments are gently sloping bedrock surfaces typically found at the base of mountains that are formed by lateral erosion and sheet flooding. Pediplains are broad, flat plains formed by the joining of multiple pediments resulting in a vast featureless landscape. This process known as pediplanation occurs primarily in arid and semi-arid regions.

#### 3.1.2 Land Use/ Land Cover

Land Use and Land Cover (LU/LC) map, as shown in Figure 3.3 & 3.3a was prepared using Sentinel II image for the study area of 5 km radius. Totally, 7 LULCs were mapped. The areal extent of each LULC is provided in Table 3.2. Of the total area, mining area covers only 12.83 ha of which lease area of 4.50.0ha contributes only about 0.02%. This small percentage of mining activities shall not have any significant impact on the land environment.

**Table 3.2 LULC Statistics of the Study Area**

| S. No        | Classification             | Extent (ha)    | Area (%)     |
|--------------|----------------------------|----------------|--------------|
| 1            | Barren Rocky/stony waste   | 219.32         | 2.87         |
| 2            | Crop Land                  | 3357.04        | 43.99        |
| 3            | Dense Forest               | 238.65         | 3.13         |
| 4            | Land with or without scrub | 1308.64        | 17.15        |
| 5            | Mining / Industrial lands  | 12.83          | 0.17         |
| 6            | Plantations                | 2482.33        | 32.53        |
| 7            | Settlements                | 11.87          | 0.16         |
| <b>Total</b> |                            | <b>7630.67</b> | <b>100.0</b> |

*Source: Sentinel II Satellite Imagery*

### **3.1.3 Topography**

The applied lease area exhibits an elevated topography, which is elevation difference of 15 m. The highest elevation observed in lease area is 474m AMSL, whereas the lowest elevation is 459m AMSL.

### **3.1.4 Drainage Pattern**

Drainage pattern is the pattern formed by the streams, rivers, and lakes in a particular drainage basin over time that reveals characteristics of the kind of rocks and geological structures in a landscape. The proposed area shows dendritic drainage pattern indicating uniform lithology beneath the surface, as shown in Figure 3.4.

### **3.1.5 Seismic Sensitivity**

The proposed lease area is situated in a Seismic Zone II, as defined by National Centre for Seismology ([Official Website of National Center of Seismology](#)). The Zone II is defined as the region where only minor damage is expected from seismic events. In this respect, the proposed lease area is located in a low earthquake hazard area.

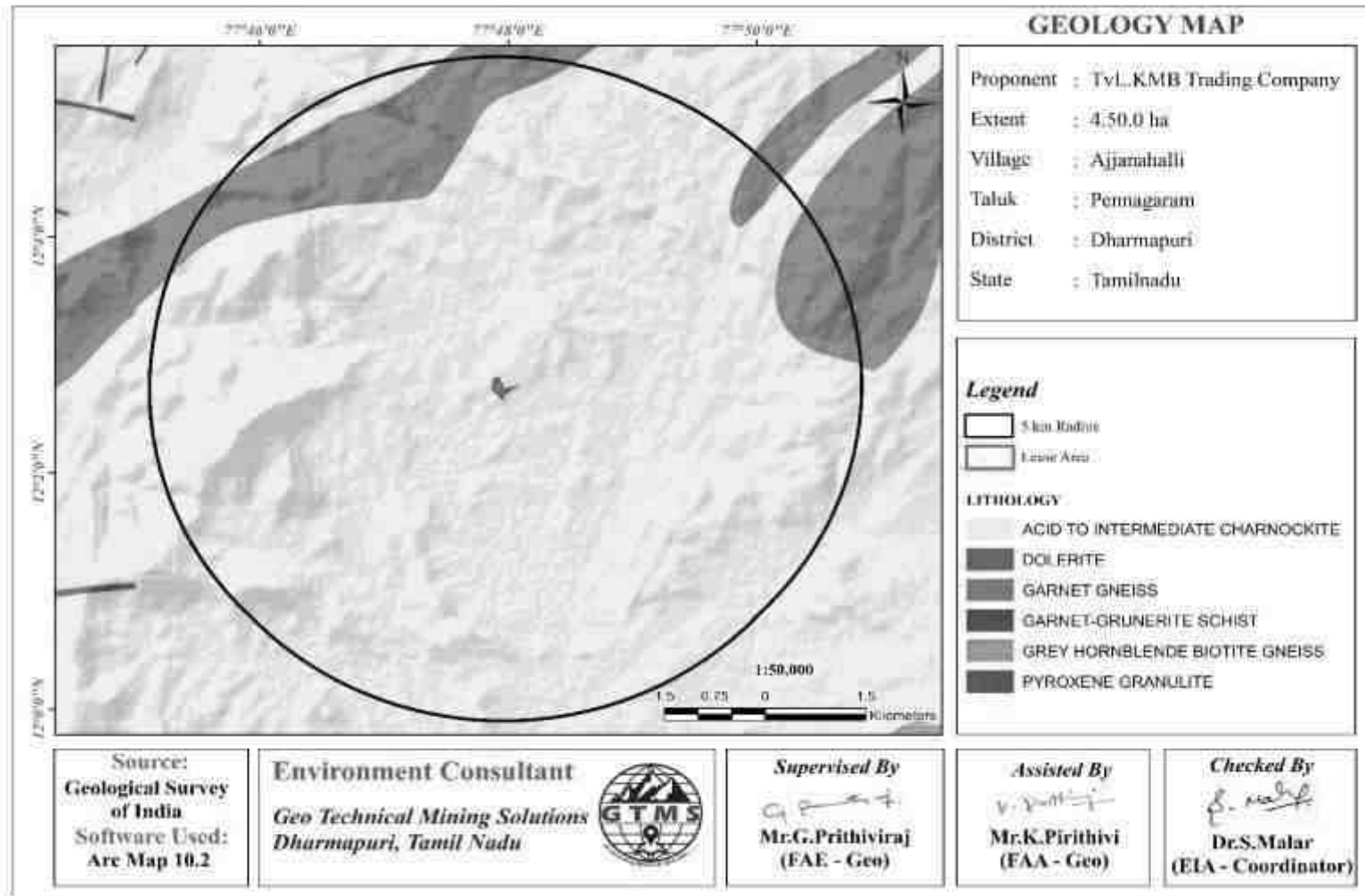


Figure 3.1 Geology Map of 5km Radius from the Proposed Project Site

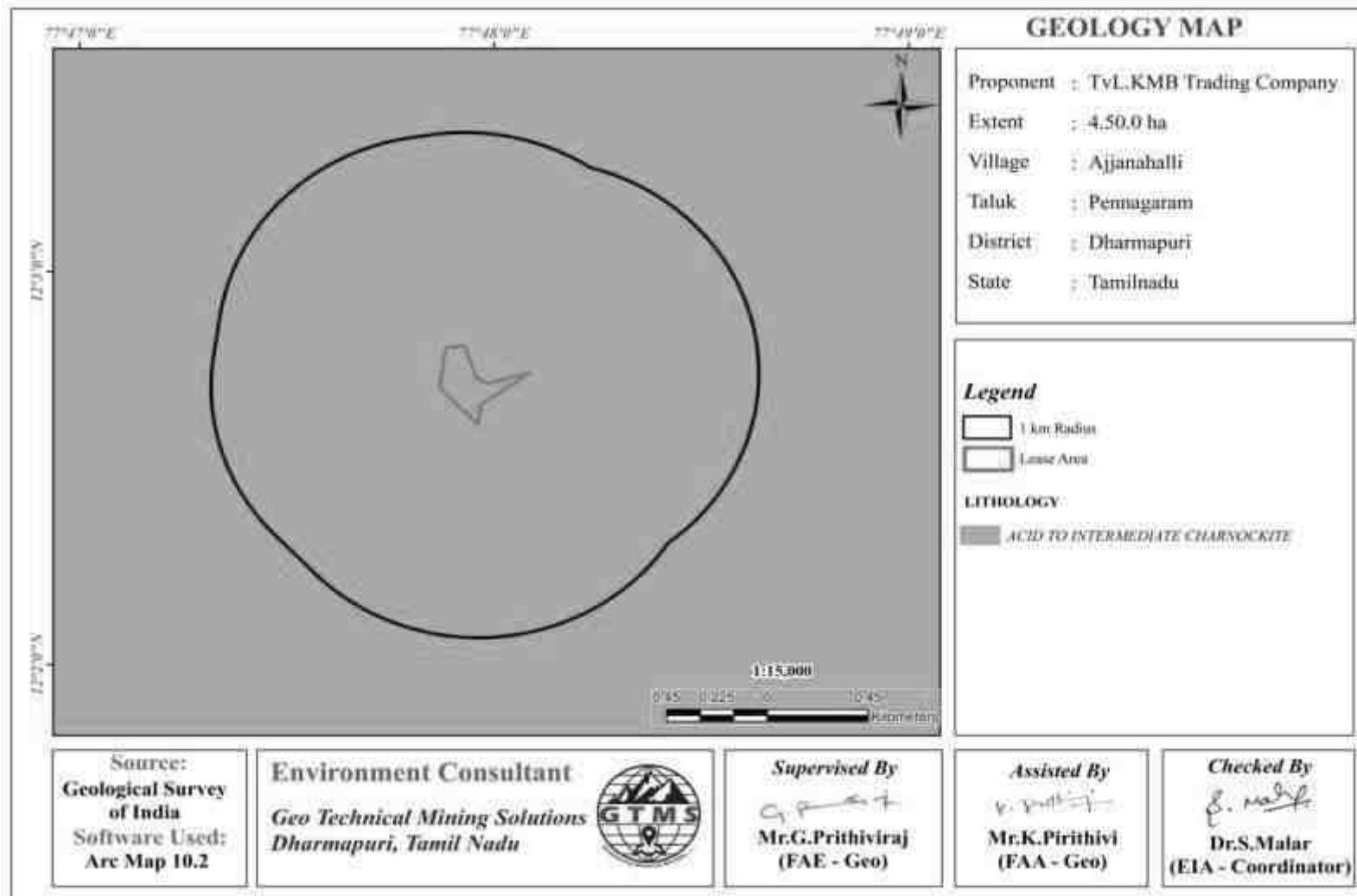


Figure 3.1a Geology Map of 1km Radius from the Proposed Project Site

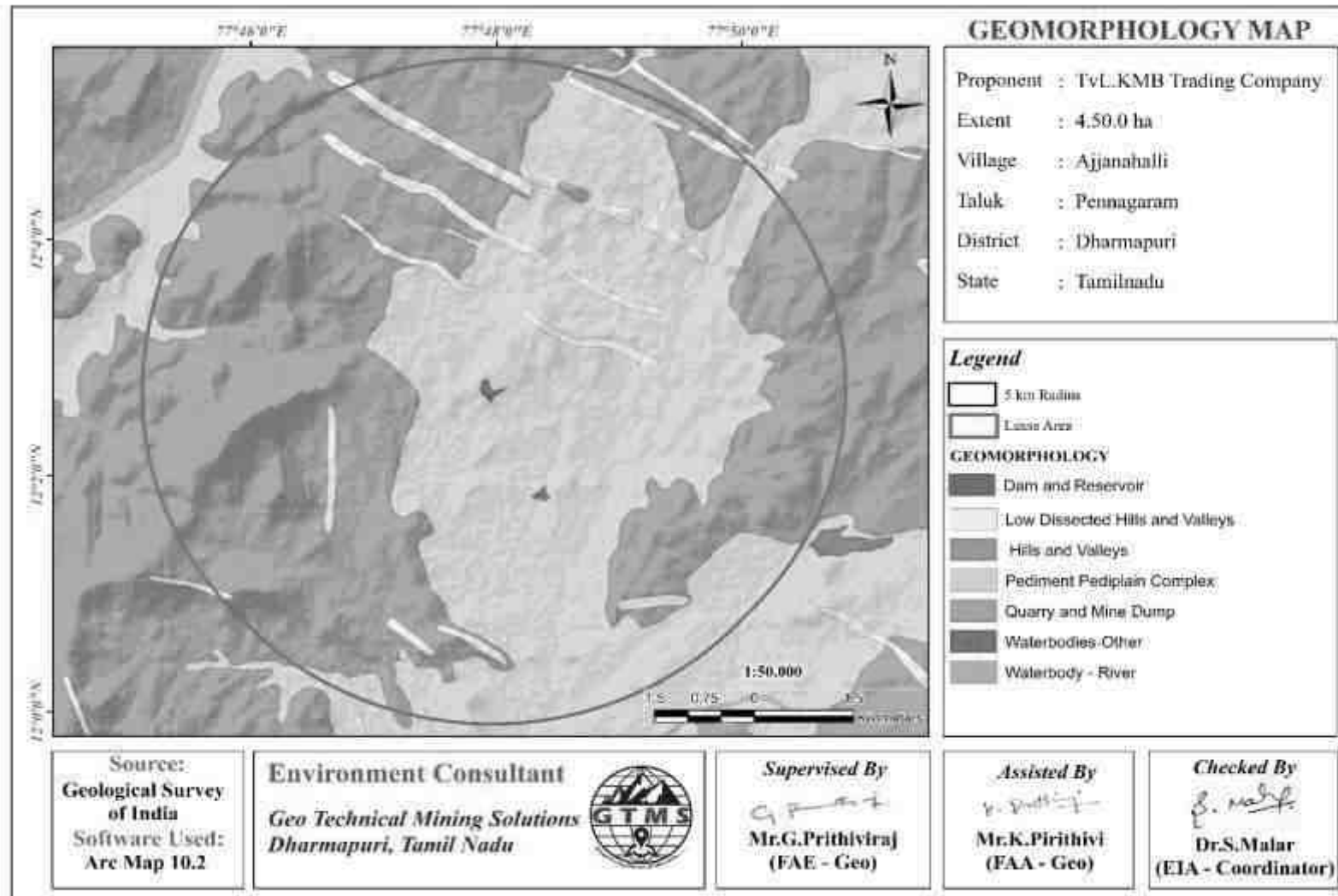


Figure 3.2 Geomorphology Map of 5km Radius from the Proposed Project Site



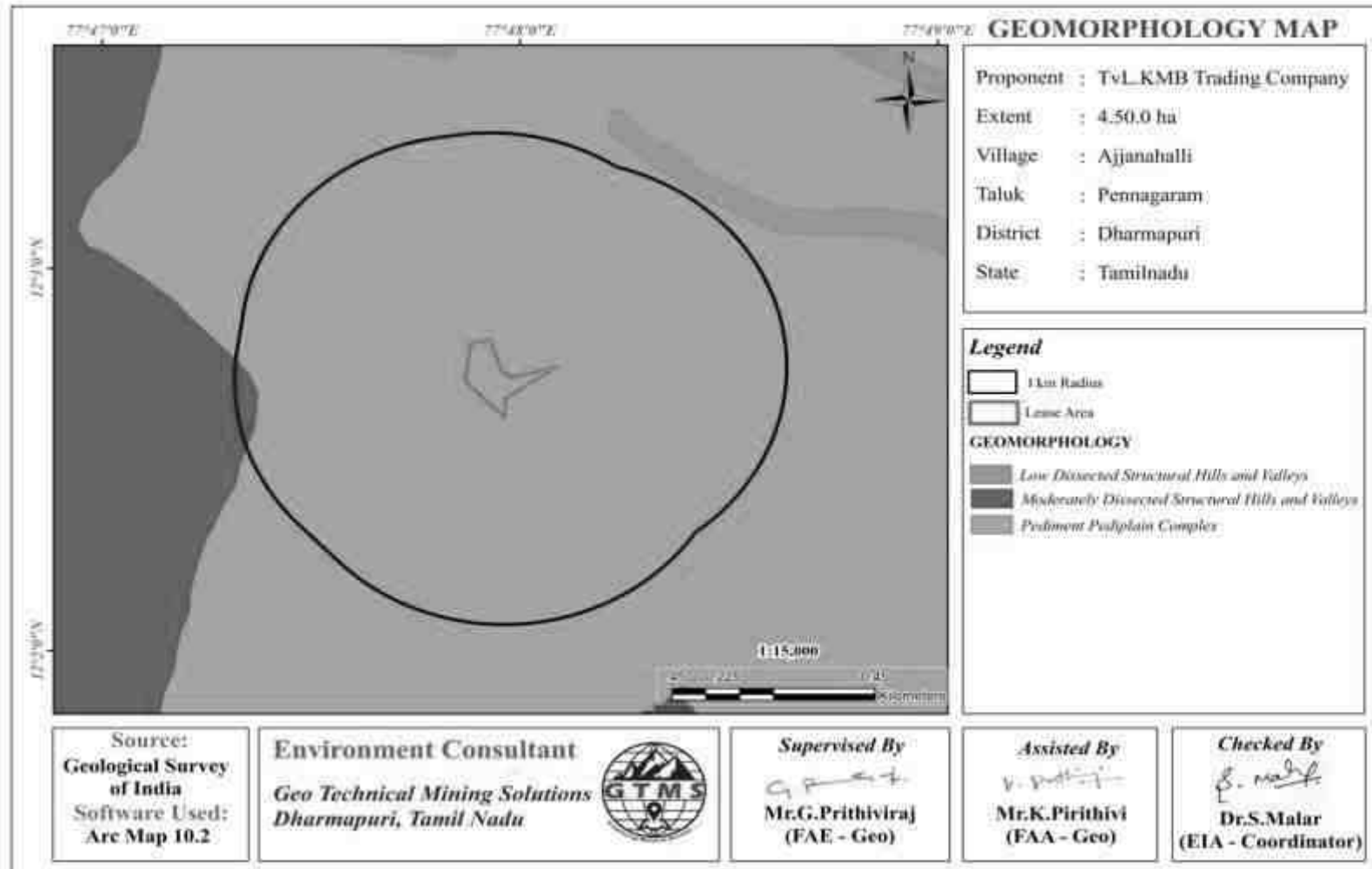


Figure 3.2a Geomorphology Map of 1km Radius from the Proposed Project Site

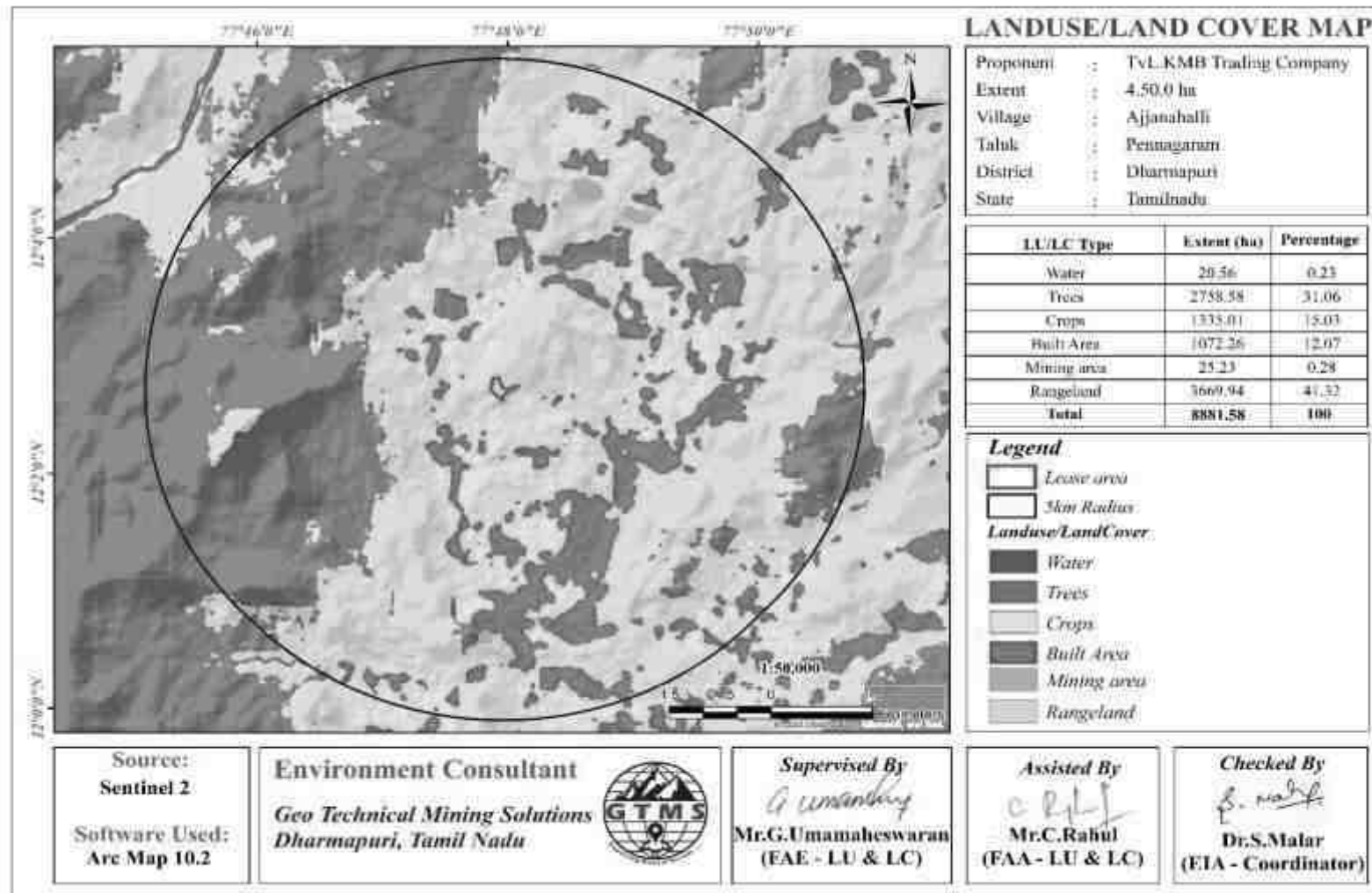


Figure 3.3 LULC Map of 5km Radius from the Proposed Project Site

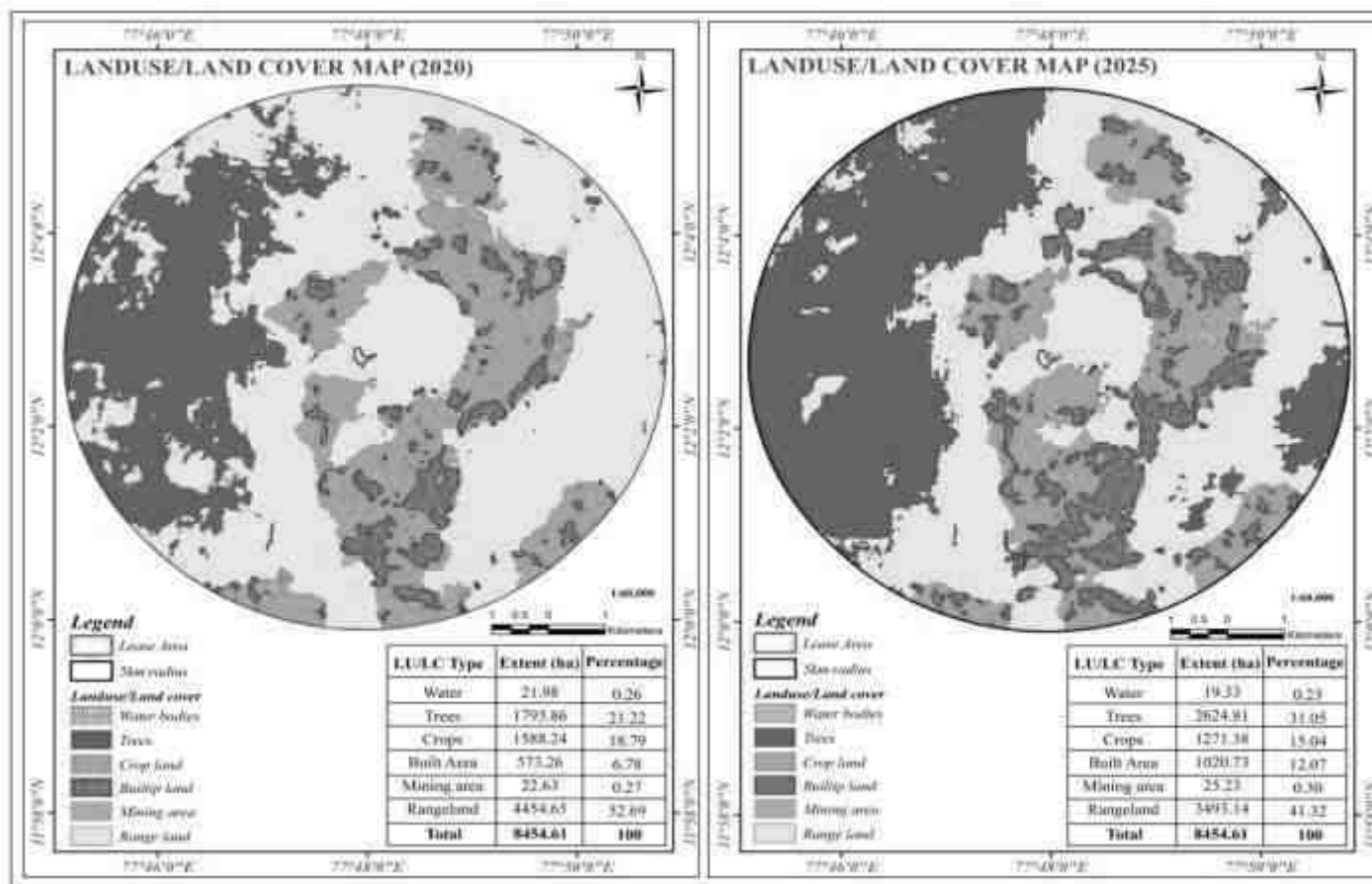


Figure 3.3a LULC Map (2024- 2025) 3km Radius from the Proposed Project Site

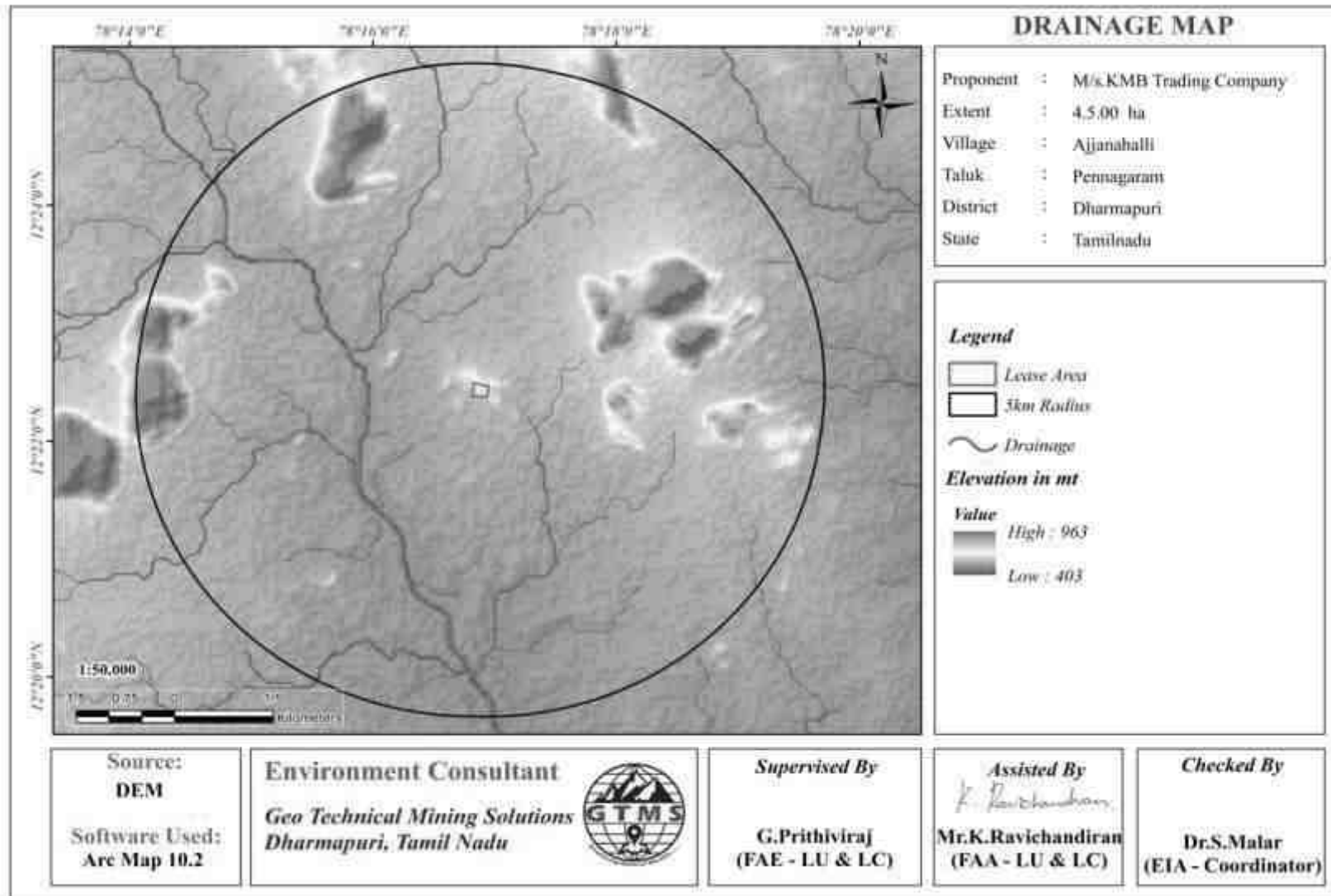


**Figure 3.4 Drainage Map of 5km Radius from the Proposed Project Site Showing Dendritic Pattern**

### 3.2 SOIL ENVIRONMENT

Soil may be defined as a thin layer of earth's crust a medium for the growth of plants. The soil characteristics include both physical properties. The soil survey and soil sample were carried out/ collected to assess the soil characteristics of the study area. Soil samples were collected from 05 location & analysed as per CPCB norms. The locations of the sampling sites are shown in Table 3.3 and Figure 3.5. The physical and chemical characteristic of soil samples is given in Table 3.4.

**Table 3.3 Soil Sampling Locations**

| Sampling ID | Location       | Distance | Coordinates                  |
|-------------|----------------|----------|------------------------------|
| S1          | Nearby core    | --       | 12° 2'43.80"N, 77°47'58.09"E |
| S2          | Ajjanahalli    | 1.58- NE | 12° 2'14.60"N, 77°48'44.83"E |
| S3          | Sigaralahalli  | 1.06- NW | 12° 3'22.55"N, 77°47'48.89"E |
| S4          | Sunchalnattham | 0.53- SW | 12° 2'22.32"N, 77°47'47.54"E |
| S5          | Sigaralahalli  | 0.46- W  | 12° 2'52.28"N, 77°47'38.32"E |

Source: On-site monitoring/sampling by *Interstellar Testing Centre Pvt. Ltd*, in association with GTMS.

#### 3.2.1 Soil Characteristic

##### A. Physical Characteristics

Physical characteristics of soils were determined through specific parameters viz. particle size distribution, bulk density, porosity, water holding capacity, texture are presented in Table 3.4.

- **Texture:** In lease area the soil is Silt Loam. They are mostly Silt to clay loamy and characterised by the hard and compact layer of lime. In other places the soil found is brown in colour.
- **Structure:** The grain size is greater than 2mm in the lease area and in other places where the samples collected ranges from 0.002mm to 2mm.
- **Density:** The soil samples collected within 5km radius are generally characterized by higher bulk densities typically ranging from 1.088 to 1.658g/cc. This is due to the presence of brownish and in some areas with Light brown, soil. The dominant soil types include. Sandy soils have larger pore spaces between them compared to finer-grained soils like silt and clay.

- **Consistence:** Coarse (sandy) soils may require slightly higher moisture content while fine (clay) soils may require slightly lower. This range falls within the 50- 75% available water zone where plants are at risk of stress if a water deficit is prolonged.

#### ***B. Chemical Characteristics of Soil***

- Chemical characteristics of soils through selected parameters viz. pH, soluble cations and anions, exchangeable cations, organic content and fertility status in the form of NPK values and organic matter are presented in Table 3.4. pH is an important parameter indicative of alkaline or acidic nature of soil. It greatly affects the microbial population as well as solubility of metal ions and regulates nutrient availability. Variation in the pH of the soil in the study area is presented in Table 3.4 and it is found to be from slightly acidic to neutral (7.54 – 8.62) in reaction. Electrical conductivity a measure of soluble salts in the soil is in the range of 0.159 to 0.891mS/m as shown in Table 3.4.
- The important water- soluble cations in the soil are Nitrogen, Phosphate and Potassium whose concentration levels ranged from N- 0.023%- 0.068%, P- 0.0012%- 0.0067% and K- 0.0014% - 0.0032 respectively. Chloride (Cl) is in the range of 0.0029%- 0.0169.
- The soil samples in the study area show loamy textures varying between Silt Loam and sandy loam. pH of the soil varies from 7.54m- 8.62 indicating slightly acidic to slightly alkaline nature. Electrical conductivity of the soil varies from 0.159 to 0.891mS/m. The physical and chemical properties of soil is shown in the Table 3.4.

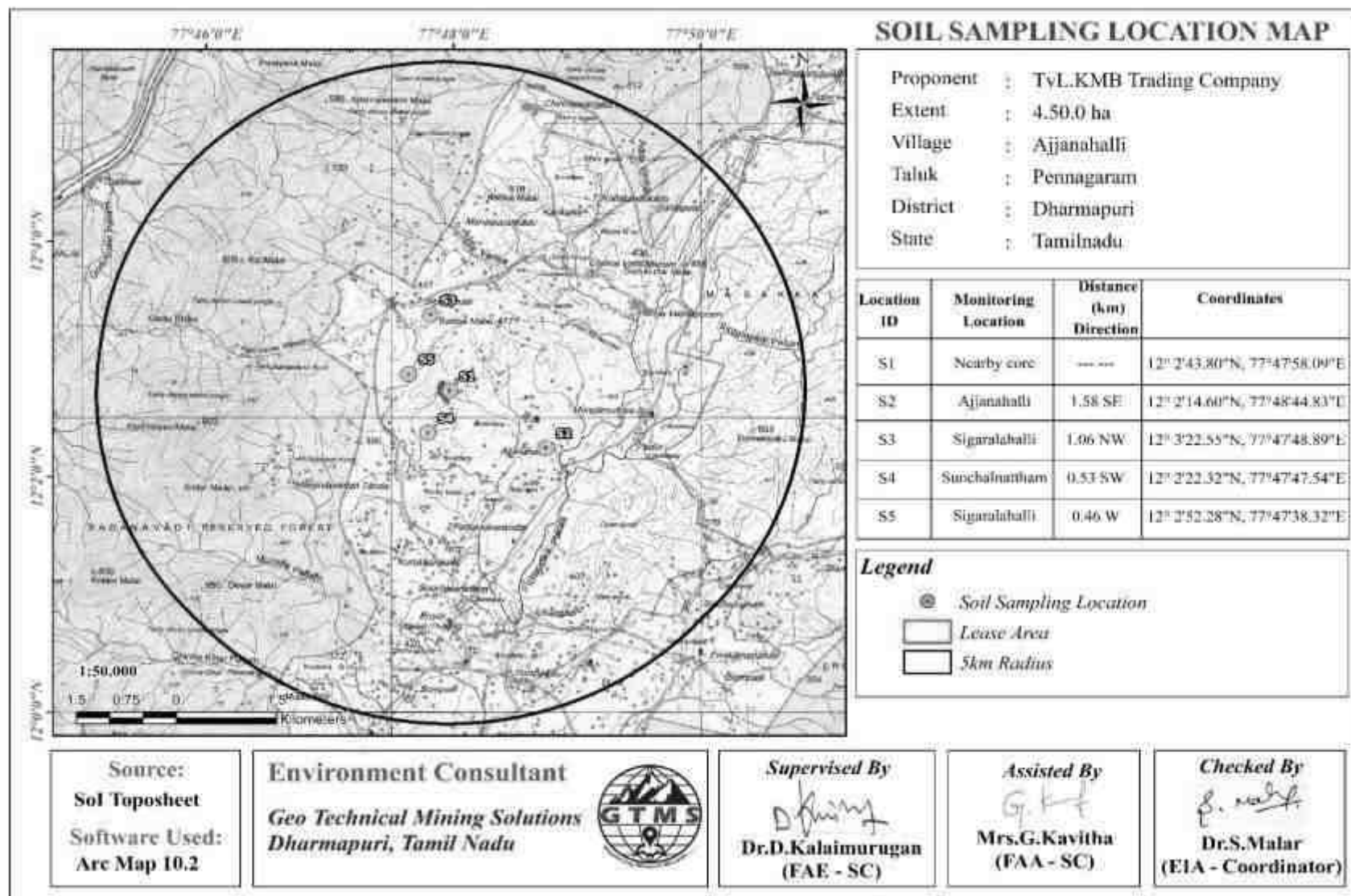


Figure 3.5 Map Showing Soil Sampling Locations within 5km Radius around the Proposed Project Site

**Table 3.4 Soil Quality of the Study Area**

| <b>S. No</b> | <b>Name of the Test</b>      | <b>Units</b> | <b>S1- Core</b> | <b>S2<br/>Ajjanahalli</b> | <b>S3<br/>Sigaralahalli</b> | <b>S4<br/>Sunchalnattham</b> | <b>S5<br/>Sigaralahalli</b> |
|--------------|------------------------------|--------------|-----------------|---------------------------|-----------------------------|------------------------------|-----------------------------|
| 1.           | pH value @ 25°C              | ---          | 8.21            | 8.62                      | 7.54                        | 8.11                         | 8.13                        |
| 2.           | Electrical Conductivity@25°C | mS/m         | 0.156           | 0.891                     | 0.258                       | 0.192                        | 0.253                       |
| 3.           | Total Organic Carbon         | %            | 0.15            | 0.09                      | 0.07                        | 0.17                         | 0.12                        |
| 4.           | Total Nitrogen               | %            | 0.041           | 0.023                     | 0.068                       | 0.050                        | 0.066                       |
| 5.           | Potassium                    | %            | 0.0021          | 0.0014                    | 0.0024                      | 0.0032                       | 0.0014                      |
| 6.           | Phosphorous                  | %            | 0.0012          | 0.0067                    | 0.0019                      | 0.0014                       | 0.0019                      |
| 7.           | Chloride                     | %            | 0.0029          | 0.0169                    | 0.0049                      | 0.0036                       | 0.0048                      |
| 8.           | Bulk Density                 | g/cc         | 1.168           | 1.658                     | 1.512                       | 1.088                        | 1.458                       |
| 9.           | Total Organic Matter         | %            | 0.26            | 0.16                      | 0.12                        | 0.29                         | 0.21                        |
| 10.          | Total Soluble Sulphate       | %            | 0.0094          | 0.0540                    | 0.0156                      | 0.0116                       | 0.0153                      |
| 11.          | Texture                      | -            | Silt Loam       | Silt Loam                 | Silt Loam                   | Silt Loam                    | Silt Loam                   |
| 12.          | Sand                         | %            | 76.10           | 79.6                      | 73.6                        | 75.3                         | 81.3                        |
| 13.          | Silt                         | %            | 14.31           | 11.3                      | 13.6                        | 11.6                         | 10.1                        |
| 14.          | Clay                         | %            | 9.59            | 9.1                       | 12.8                        | 13.1                         | 8.6                         |
| 15.          | Cation Exchange Capacity     | Meg/100g     | 23.35           | 25.30                     | 28.6                        | 28.74                        | 37.87                       |

Source: Sampling Results by *Interstellar Testing Centre Pvt. Ltd.*, in association with GTMS



### 3.3 WATER ENVIRONMENT

The water resources, both surface and groundwater play a significant role in the development of the area. The purpose of this study is to assess the baseline quality of surface and ground water.

**Table 3.5 Water Sampling Locations**

| S. No | Sampling Id | Sampling Location | Distance (km)<br>Direction | Coordinates                  |
|-------|-------------|-------------------|----------------------------|------------------------------|
| 1     | OW1         | Nearby Core       | 0.40 SW                    | 12° 2'27.12"N, 77°47'48.69"E |
| 2     | OW2         | Sigaralahalli     | 1.02 N                     | 12° 3'21.28"N, 77°47'50.38"E |
| 3     | OW3         | Sunchalnattam     | 0.98 SW                    | 12° 2'22.21"N, 77°47'28.95"E |
| 4     | BW1         | Sigaralahalli     | 0.41 NW                    | 12° 2'51.80"N, 77°47'36.52"E |
| 5     | SW1         | Koorkampatty Lake | 1.53 SE                    | 12° 1'52.91"N, 77°48'20.96"E |

Source: On-site monitoring/sampling by **Interstellar Testing Centre Pvt. Ltd.**, in association with GTMS.

#### 3.3.1 Ground Water Quality Result

##### 3.3.1.1 Physical Parameter of ground water:

The basic physical parameters of water include. The baseline water quality result as shown in Table 3.7.

##### **Colour:**

- Value observed in Project Site (True/Apparent Color): 5-10 Hazen unit.
- Acceptable and permissible limits: 5 Hazen units and 15 Hazen units respectively. The value in the project site is within the acceptable and permissible limits prescribed by IS 10500: 2012 (referred as “Standards” from herein).

##### **Odour & Taste:**

- The water is odour less. The taste of the water is slightly salty which is due to the presence of hardness in water which is attributed to the presence of calcium and magnesium in the water. As per the standards the odour and taste should be agreeable.

##### **pH:**

- Value observed in the Project Site: Min. 7.12 & Max. 8.12 mg/L.
- Acceptable and permissible limits: 6.5-8.5. The pH value is the measure of acid – base equilibrium. The value of pH in the project site clearly indicates that water is neutral in nature.

##### **Turbidity:**

- Value observed in the Project Site: less than 1.

- Acceptable and permissible limits: 1 NTU & 5 NTU respectively. The value of turbidity generally indicates the presence of phytoplankton, Zooplankton and other sediments.

#### **Total Dissolved Solids:**

- Value observed in the Project Site: Min. 563 & Max. 842 mg/L.
- Acceptable and permissible limits: 500 mg/L and 2000 mg/L respectively. The value of total dissolved solids in the project site clearly indicates that water is suitable for drinking purpose.
- TDS is the presence of inorganic salts and small amounts of organic matter present in the water.

#### **3.3.1.2 Chemical parameters of water:**

The chemical parameters of the drinking water include,

##### **Calcium:**

- Value observed in Min. 73.8 & Max. 106.0 mg/L.
- Acceptable and permissible limits: 75mg/L and 200 mg/L respectively.
- Calcium is an essential macronutrient. The value of the calcium is within the prescribed permissible standards. The higher level of calcium may cause hardening in domestic equipment and will also reduce the detergent efficiency. Higher levels of calcium will lead to constipation, gas, and bloating. Apart from that, extra calcium may also increase the risk of kidney stones. If the calcium deposit in blood is high, it may lead to hypercalcemia.

##### **Magnesium:**

- Value observed in Min. 3.3& Max. 14 mg/L.
- Acceptable and permissible limits: 30 mg/L and 100 mg/L respectively.
- The value of Magnesium in the project site is within acceptable limit. The increase in the level of magnesium will cause diarrhea and vomiting in children.

##### **Fluoride**

- Value observed in Min. 0.35 & Max. 0.58 mg/L.
- Acceptable and permissible limits: 1.0 mg/L and 1.5 mg/L respectively.
- The value of fluoride in the project site is within acceptable and permissible limit. The increase in the level of fluoride will cause dental and skeletal fluorosis in children and adults.

##### **Chloride**

- Value observed in Min. 157.7 & Max. 224 mg/L.

- Acceptable and permissible limits: 250 mg/L and 1000 mg/L respectively.
- The chloride level in the project site is within the acceptable and permissible limit. If the level of chloride is more, it may cause galvanic and pitting corrosion, increases level of metals. It imparts bitter taste to the water.

#### **Total Alkalinity as CaCO<sub>3</sub>:**

- Value observed in Min. 146.6 & Max. 240 mg/L.
- Acceptable and permissible limits: 200 mg/L and 600 mg/L respectively.
- Total Alkalinity is the measure of the concentration of all alkaline substances dissolved in the water which includes carbonates, bicarbonates and hydroxides. The value of the total alkalinity is slightly greater than acceptable limit, but within permissible limit, which will impart soda taste to the water.

#### **Hardness:**

- Value observed in Min. 191.5 & Max. 296 mg/L.
- Acceptable and permissible limits: 200 mg/L and 600 mg/L respectively.
- The value of Hardness in the project site is within the permissible limit and slightly higher than the acceptable limit. The increase in the level of hardness may cause corrosion and scaling problems, increased soap consumption and it also contributes to the salty taste of water.

#### **3.3.2 Surface water**

Koorkampatty Lake is the prominent surface water resources present in the study area. This lake was ephemeral in nature which convey water only after rainfall events. The surface water sample known as SW1 were collected from the Koorkampatty Lake (1.53 km SE) to assess the baseline water quality as shown in Table 3.6 and Figure 3.6.

**Inference:** The surface water quality is compared with the CPCB Water Quality Criteria against A, B, C, D & E class of water. From the test result, it is found that both the water does not fit Class A (Drinking Water Source without conventional treatment but after disinfection). But they can be used for outdoor bathing as it meets the requirements shown for class B water.

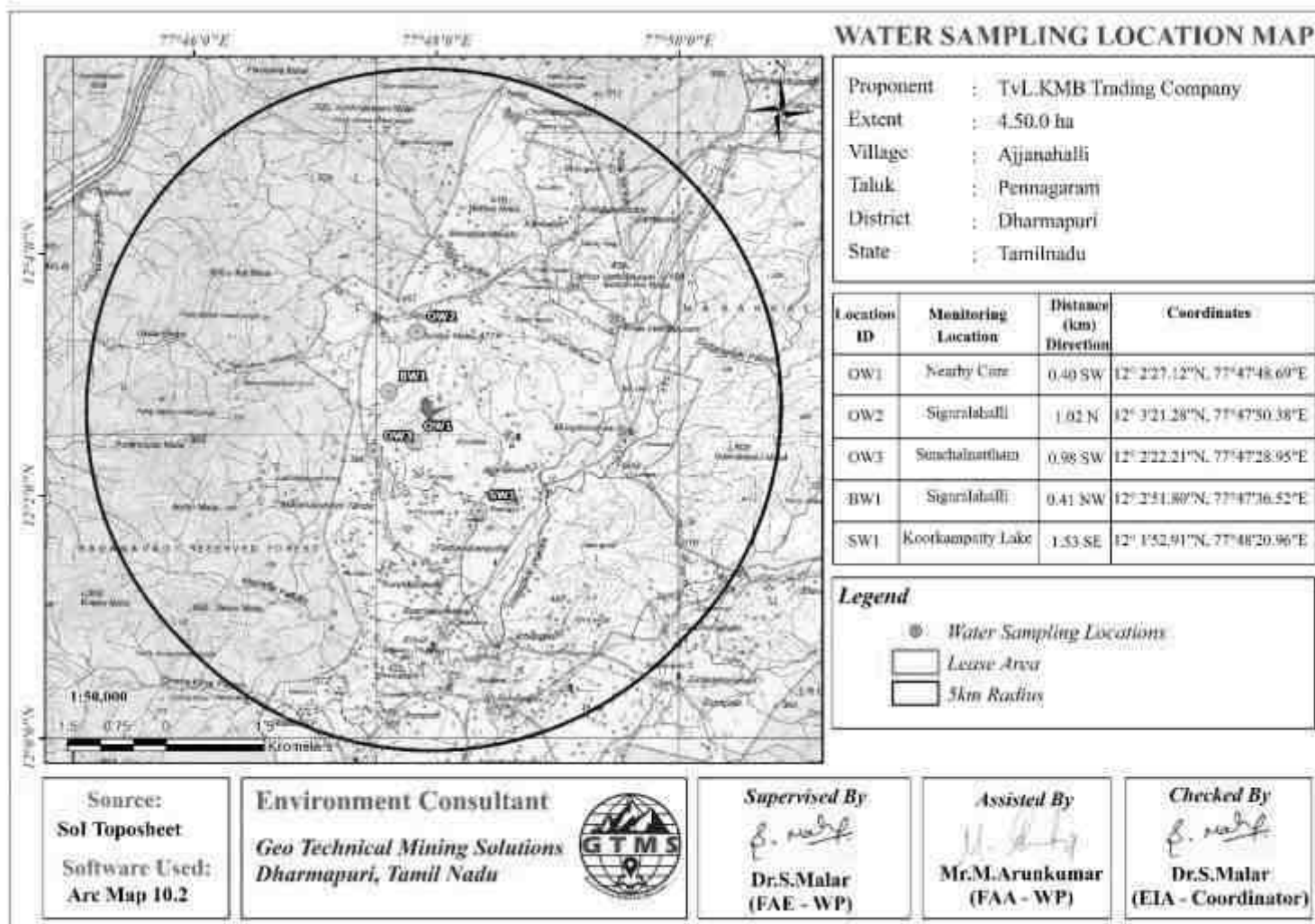


Figure 3.6 Map showing water sampling locations within 5 km radius around the proposed project site

**Table 3.6 Ground and Surface Water Quality Result**

| S. No. | Parameters                                                    | Units | Results      |              |              |              |              | Acceptable Limit as Per IS 10500:2012 | Permissible Limits as Per IS 10500:2012 |
|--------|---------------------------------------------------------------|-------|--------------|--------------|--------------|--------------|--------------|---------------------------------------|-----------------------------------------|
|        |                                                               |       | OW1          | OW2          | OW3          | BW1          | SW1          |                                       |                                         |
| I      | Organoleptic & Physical Parameter                             |       |              |              |              |              |              |                                       |                                         |
| 1      | Odour                                                         | NA    | Agreeable    | Agreeable    | Agreeable    | Agreeable    | Agreeable    | Agreeable                             | Agreeable                               |
| 2      | pH value @ 25°C                                               | mg/l  | 7.12         | 7.92         | 8.12         | 7.50         | 7.58         | 6.5 – 8.5                             | No Relaxation                           |
| 3      | Colour                                                        | Hazen | 5            | 10           | 10           | 10           | 5            | 5                                     | 15                                      |
| 4      | Taste                                                         | NA    | Agreeable    | Agreeable    | Agreeable    | Agreeable    | Agreeable    | Agreeable                             | Agreeable                               |
| 5      | Turbidity                                                     | NTU   | 0.9          | 1.1          | 0.8          | 1.2          | 1.1          | 1.0                                   | 5.0                                     |
| 6      | TDS                                                           | mg /l | 563          | 612          | 842          | 757          | 591          | 500                                   | 2000                                    |
| II     | Parameters concerning Undesirable Substances in excess amount |       |              |              |              |              |              |                                       |                                         |
| 1      | Calcium (Ca)                                                  | mg/l  | 74.1         | 80.5         | 73.8         | 106.0        | 77.8         | 75                                    | 200                                     |
| 2      | Ammonia (NH <sub>3</sub> )                                    | mg/l  | BLQ(LOQ:0.1) | BLQ(LOQ:0.1) | BLQ(LOQ:0.1) | BLQ(LOQ:0.1) | BLQ(LOQ:0.1) | 0.5                                   | No Relaxation                           |
| 3      | Iron (Fe)                                                     | mg /l | 0.31         | 0.28         | 0.32         | 0.37         | 0.29         | 1                                     | No Relaxation                           |
| 4      | Magnesium (Mg)                                                | mg/l  | 3.3          | 3.6          | 14.0         | 11.2         | 3.5          | 30                                    | 100                                     |
| 5      | Chlorides (Cl)                                                | mg/l  | 157.7        | 171.4        | 224          | 214          | 165.5        | 250                                   | 1000                                    |
| 6      | Sulphates (SO <sub>4</sub> )                                  | mg/l  | 33.3         | 36.2         | 54.0         | 44.7         | 35.0         | 200                                   | 400                                     |
| 7      | Free Residual Chloride                                        | mg/l  | BLQ(LOQ:0.1) | BLQ(LOQ:0.1) | BLQ(LOQ:0.1) | BLQ(LOQ:0.1) | BLQ(LOQ:0.1) | 0.2                                   | 1.0                                     |
| 8      | Fluoride (F)                                                  | mg/l  | 0.35         | 0.42         | 0.58         | 0.49         | BLQ(LOQ:0.1) | 1.0                                   | 1.5                                     |
| 9      | Nitrate (NO <sub>3</sub> )                                    | mg/l  | 11.83        | 12.86        | 24.90        | 27.80        | 12.42        | 45                                    | No Relaxation                           |

|     |                                                   |          |               |               |               |               |               |                  |                  |
|-----|---------------------------------------------------|----------|---------------|---------------|---------------|---------------|---------------|------------------|------------------|
| 10  | Total Alkalinity<br>(CaCO <sub>3</sub> )          | mg/l     | 146.6         | 159.4         | 185.7         | 240           | 153.9         | 200              | 600              |
| 11  | Total Hardness<br>(CaCO <sub>3</sub> )            | mg/l     | 191.5         | 208.2         | 242.5         | 296           | 201           | 200              | 600              |
| III | General Parameters                                |          |               |               |               |               |               |                  |                  |
| 1   | Carbonate<br>Hardness<br>(CaCO <sub>3</sub> )     | mg/l     | 146.6         | 159.4         | 185.7         | 120.6         | 153.9         | Not<br>Specified | Not<br>Specified |
| 2   | Phenolphthalein<br>Alkalinity                     | mg/l     | BLQ(LOQ:1.0)  | BLQ(LOQ:1.0)  | BLQ(LOQ:1.0)  | BLQ(LOQ:1.0)  | BLQ(LOQ:1.0)  | Not<br>Specified | Not<br>Specified |
| 3   | Non-Carbonate<br>Hardness<br>(CaCO <sub>3</sub> ) | mg/l     | 44.90         | 48.80         | 56.80         | 36.90         | 47.10         | Not<br>Specified | Not<br>Specified |
| 4   | EC @ 25°C                                         | µmhos/cm | 958.1         | 1070          | 1456          | 1282          | 936.5         | Not<br>Specified | Not<br>Specified |
| 5   | Phosphate<br>(PO <sub>4</sub> )                   | mg/l     | BLQ(LOQ:0.05) | BLQ(LOQ:0.05) | BLQ(LOQ:0.05) | BLQ(LOQ:0.05) | BLQ(LOQ:0.05) | Not<br>Specified | Not<br>Specified |
| 6   | Appearance                                        | mg/l     | Clear Liquid  | Clear Liquid  | Clear Liquid  | Clear Liquid  | Clear Liquid  | Not<br>Specified | Not<br>Specified |
| 7   | Silica (SiO <sub>2</sub> )                        | mg/l     | 31.60         | 23.60         | 43.10         | 47.80         | 28.50         | Not<br>Specified | Not<br>Specified |

Source: Sampling Results by **Interstellar Testing Centre Pvt. Ltd** in association with GTMS.

### 3.3.3 Hydrogeological Studies

The area within 2km radius consists of numerous open wells and deep wells. Groundwater level data were collected both from open wells and bore wells for two monsoon seasons as discussed in the following section.

#### Rainfall

Rainfall data for the study area were collected for the period of 1981-2023 ([POWER | Data Access Viewer \(nasa.gov\)](#)). Long term monthly average rainfall was estimated from the data of 1981-2022 and compared with the monthly rainfall for the year 2024, shown in Figure 3.7. The Figure 3.7 shows that rainfall is generally high in the months of August through November in every year. Particularly, rainfall in May and August through November of 2024 is higher than the previous years.

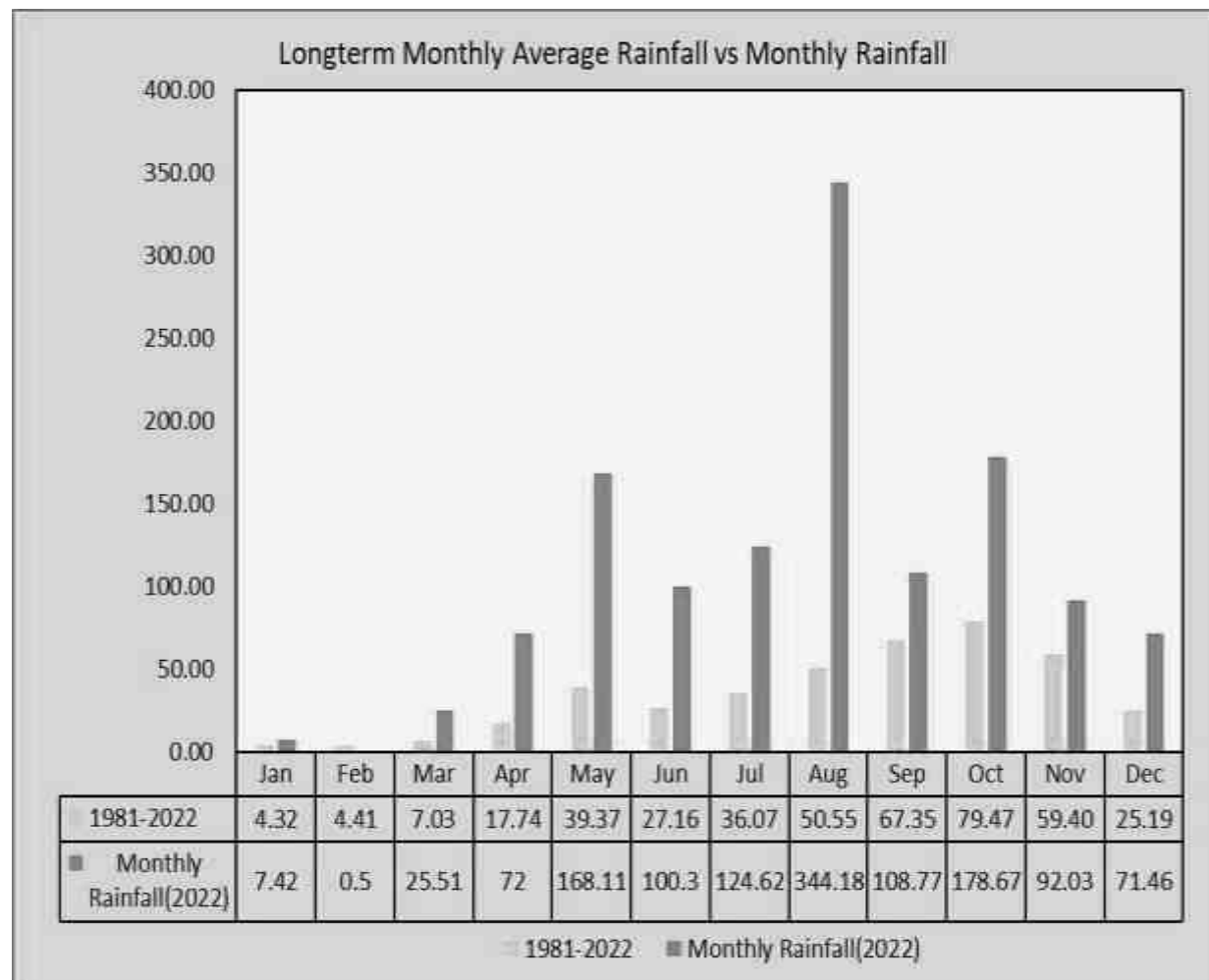


**Figure 3.7 Long-term monthly average rainfall vs monthly rainfall**

The area within 2km radius consists of numerous open wells and deep wells. Groundwater level data were collected both from open wells and bore wells for two monsoon seasons as discussed in the following section.

### 3.3.3.1 Groundwater Levels and Flow Direction

Data regarding depth to groundwater levels are essential to infer the direction of groundwater movement within the study area. Knowledge of groundwater flow direction is must in choosing location for background groundwater quality monitoring well and in locating recharge and discharge areas. Therefore, data regarding groundwater elevations were collected from 9 open wells and 9 bore wells at various locations within 2 km radius around the proposed project sites for the period from March through May, 2025 (Pre- Monsoon Season) and from October through December, 2024 (Post Monsoon Season).

The open well water level data thus collected onsite are provided in Tables 3.7 and 3.8. According to the data, average depths to the static water table in open wells range from 8.9 to 12.9 m BGL in pre monsoon and 8.2 to 11.4m BGL in post monsoon. The bore well data thus collected onsite are provided in Tables 3.9 and 3.10. The average depths to static potentiometric surface in bore wells for the period of October through December 2023 (Post- Monsoon Season) vary from 59.4 to 63.5 m and from 64.1 to 66.9 m for the period of March through May, 2024 (Pre-Monsoon Season). Data on the depths to static water table and potentiometric surface were used to draw contour lines connecting groundwater elevation (also known as equipotential hydraulic head) to determine the groundwater flow direction perpendicular to the contour lines.

From the maps of open well groundwater flow direction shown in Figures 3.8 -3.9, it is understood that most of the open well groundwater for the post- and pre-monsoon seasons flows towards the open well number 2 & 9 located in SE direction of the proposed project site. The groundwater flow maps in Figure 3.10-3.11 show that most of the bore well groundwater for the post- and pre-monsoon seasons flow towards the bore well number 5. It is located in Southwest direction of the proposed project site. On the basis of the groundwater flow information, both open wells and bore wells mentioned above can be chosen for water quality monitoring purpose as the wells may get easily affected by the contaminants resulting from the mining activities of the sites in future.

**Table 3.7 Pre-Monsoon Water Level of Open Wells within 2km Radius**

| Station ID | Depth to Static Water Table BGL (m) |          |           |         | Latitude      | Longitude     |
|------------|-------------------------------------|----------|-----------|---------|---------------|---------------|
|            | Mar-2025                            | Apr-2025 | May- 2025 | Average |               |               |
| OW01       | 10.2                                | 10.5     | 10.9      | 10.53   | 12° 2'25.92"N | 77°47'25.48"E |
| OW02       | 10.4                                | 10.8     | 11.2      | 10.80   | 12° 2'26.82"N | 77°48'2.34"E  |
| OW03       | 9.6                                 | 10.2     | 10.6      | 10.13   | 12° 2'28.33"N | 77°48'20.86"E |
| OW04       | 10.6                                | 11.1     | 11.5      | 11.07   | 12° 2'42.24"N | 77°48'34.46"E |



|      |      |      |      |       |               |               |
|------|------|------|------|-------|---------------|---------------|
| OW05 | 12.5 | 12.7 | 12.9 | 12.70 | 12° 3'0.05"N  | 77°48'16.04"E |
| OW06 | 11.2 | 11.8 | 12.2 | 11.73 | 12° 2'49.31"N | 77°47'40.96"E |
| OW07 | 11.8 | 12.2 | 12.7 | 12.23 | 12° 3'5.54"N  | 77°47'42.11"E |
| OW08 | 9.2  | 10.4 | 10.9 | 10.17 | 12° 2'9.65"N  | 77°47'25.75"E |
| OW09 | 8.9  | 9.5  | 10.2 | 9.53  | 12° 2'6.99"N  | 77°48'18.15"E |

Source: Onsite monitoring data

**Table 3.8 Post-Monsoon Water Level of Open Wells within 2 km Radius**

| Station ID | Depth to Static Water Table BGL (m) |          |          |         | Latitude      | Longitude     |
|------------|-------------------------------------|----------|----------|---------|---------------|---------------|
|            | Oct-2024                            | Nov-2024 | Dec-2024 | Average |               |               |
| OW01       | 10.1                                | 9.5      | 9.2      | 9.60    | 12° 2'25.92"N | 77°47'25.48"E |
| OW02       | 10.2                                | 9.7      | 9.4      | 9.77    | 12° 2'26.82"N | 77°48'2.34"E  |
| OW03       | 9.4                                 | 8.9      | 8.7      | 9.00    | 12° 2'28.33"N | 77°48'20.86"E |
| OW04       | 10.1                                | 9.4      | 9.1      | 9.53    | 12° 2'42.24"N | 77°48'34.46"E |
| OW05       | 11.4                                | 10.2     | 9.8      | 10.47   | 12° 3'0.05"N  | 77°48'16.04"E |
| OW06       | 10.7                                | 10.2     | 9.9      | 10.27   | 12° 2'49.31"N | 77°47'40.96"E |
| OW07       | 11.1                                | 10.7     | 10.4     | 10.73   | 12° 3'5.54"N  | 77°47'42.11"E |
| OW08       | 9.1                                 | 8.9      | 8.6      | 8.87    | 12° 2'9.65"N  | 77°47'25.75"E |
| OW09       | 8.4                                 | 8.5      | 8.2      | 8.37    | 12° 2'6.99"N  | 77°48'18.15"E |

Source: Onsite monitoring data

**Table 3.9 Pre-Monsoon Water Level of Bore Wells within 2 km Radius**

| Station ID | Depth to Static Potentiometric Surface BGL(m) |          |           |         | Latitude      | Longitude     |
|------------|-----------------------------------------------|----------|-----------|---------|---------------|---------------|
|            | Mar-2025                                      | Apr-2025 | May- 2025 | Average |               |               |
| BW01       | 65.4                                          | 66.2     | 66.8      | 66.13   | 12° 3'24.23"N | 77°47'25.87"E |
| BW02       | 64.1                                          | 64.7     | 65.1      | 64.63   | 12° 1'55.40"N | 77°47'35.51"E |
| BW03       | 63.8                                          | 64.2     | 64.8      | 64.27   | 12° 2'14.26"N | 77°48'48.01"E |
| BW04       | 65.2                                          | 65.8     | 66.2      | 65.73   | 12° 3'2.44"N  | 77°47'24.44"E |
| BW05       | 64.2                                          | 64.6     | 65.1      | 64.63   | 12° 2'28.09"N | 77°47'23.03"E |
| BW06       | 65.8                                          | 66.1     | 66.5      | 66.13   | 12° 2'56.79"N | 77°48'10.21"E |
| BW07       | 63.4                                          | 63.7     | 64.2      | 63.77   | 12° 2'9.83"N  | 77°48'17.67"E |
| BW08       | 64.9                                          | 65.3     | 65.8      | 65.33   | 12° 2'38.98"N | 77°48'30.55"E |
| BW09       | 65.9                                          | 66.7     | 66.9      | 66.50   | 12° 3'12.45"N | 77°48'4.45"E  |

Source: Onsite monitoring data

**Table 3.10 Post-Monsoon Water Level of Bore Wells within 2km Radius**

| Station ID | Depth to Static Potentiometric Surface BGL(m) |          |           |         | Latitude      | Longitude     |
|------------|-----------------------------------------------|----------|-----------|---------|---------------|---------------|
|            | Mar-2025                                      | Apr-2025 | May- 2025 | Average |               |               |
| BW01       | 63.2                                          | 62.8     | 62.1      | 62.70   | 12° 3'24.23"N | 77°47'25.87"E |
| BW02       | 62.4                                          | 62.1     | 61.5      | 62.00   | 12° 1'55.40"N | 77°47'35.51"E |
| BW03       | 61.7                                          | 60.4     | 59.8      | 60.63   | 12° 2'14.26"N | 77°48'48.01"E |
| BW04       | 63.5                                          | 62.6     | 61.4      | 62.50   | 12° 3'2.44"N  | 77°47'24.44"E |
| BW05       | 62.4                                          | 61.4     | 60.6      | 61.47   | 12° 2'28.09"N | 77°47'23.03"E |
| BW06       | 63.5                                          | 62.3     | 61.2      | 62.33   | 12° 2'56.79"N | 77°48'10.21"E |
| BW07       | 61.2                                          | 60.5     | 59.4      | 60.37   | 12° 2'9.83"N  | 77°48'17.67"E |
| BW08       | 62.7                                          | 61.4     | 60.2      | 61.43   | 12° 2'38.98"N | 77°48'30.55"E |
| BW09       | 63.5                                          | 62.3     | 61.4      | 62.40   | 12° 3'12.45"N | 77°48'4.45"E  |

Source: Onsite monitoring data

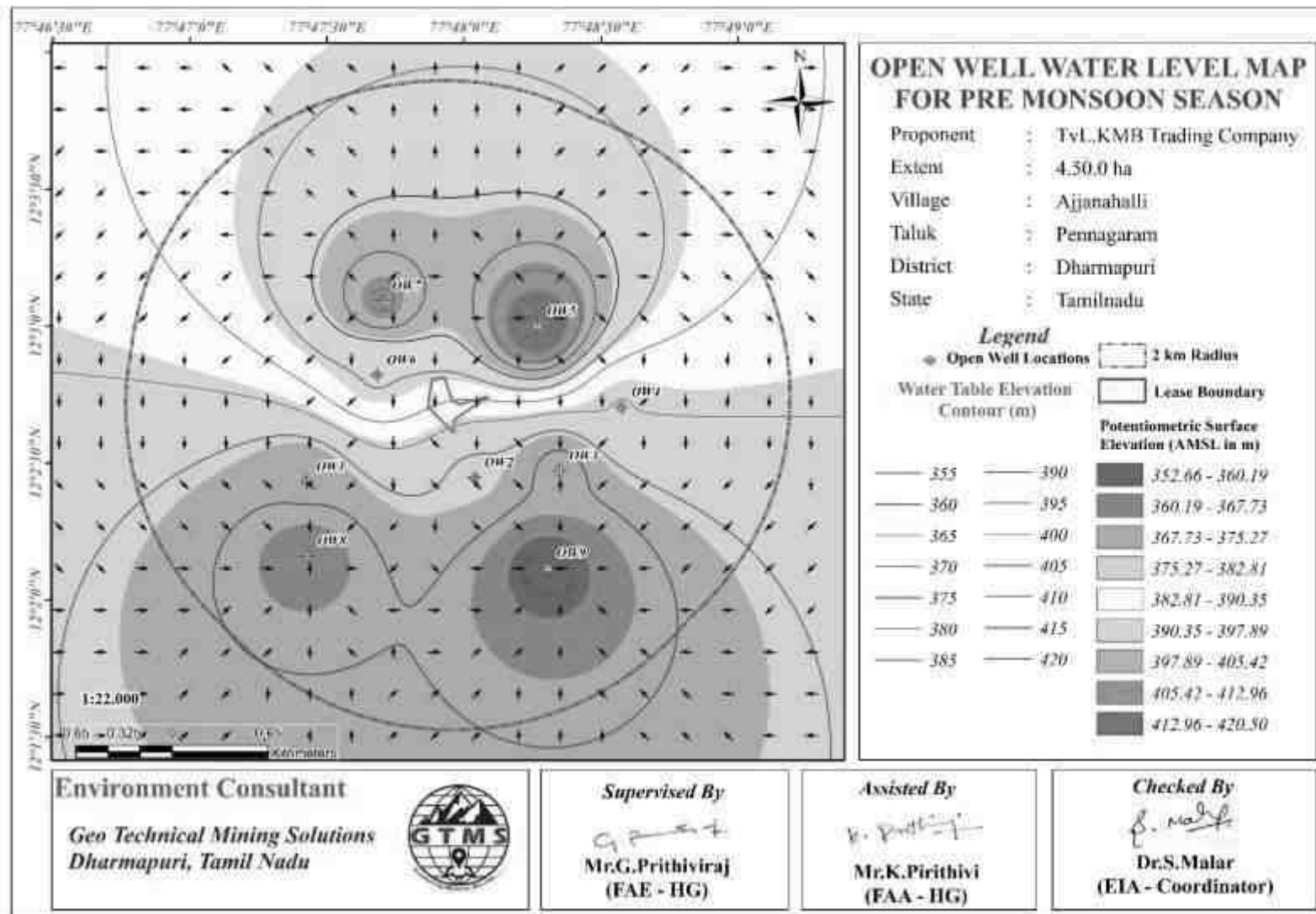


Figure 3.8 Open well Static Groundwater Elevation Map Showing Direction of Groundwater Flow during Pre-Monsoon Season

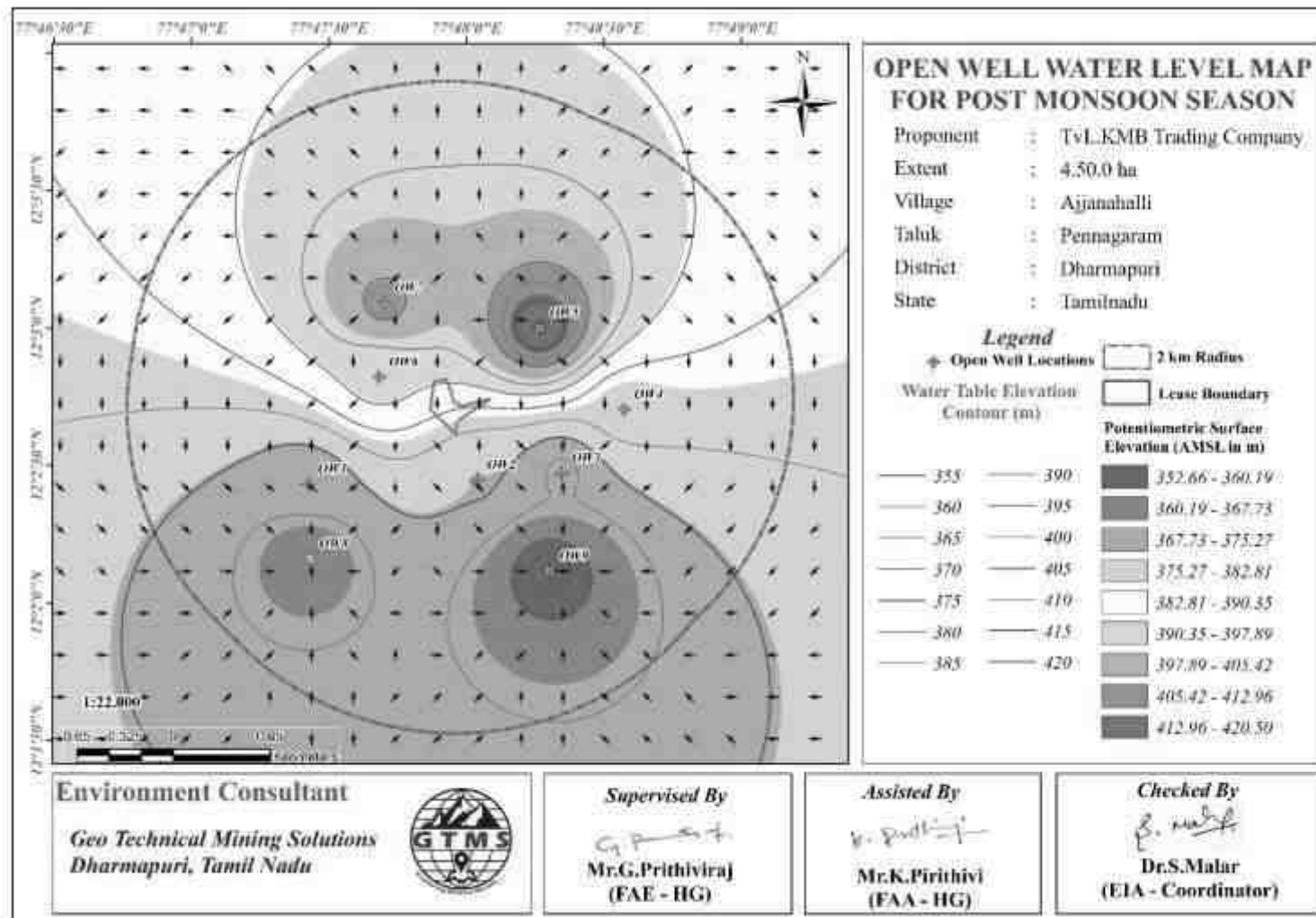


Figure 3.9 Open well Static Groundwater Elevation Map Showing Direction of Groundwater Flow during Post-Monsoon Season

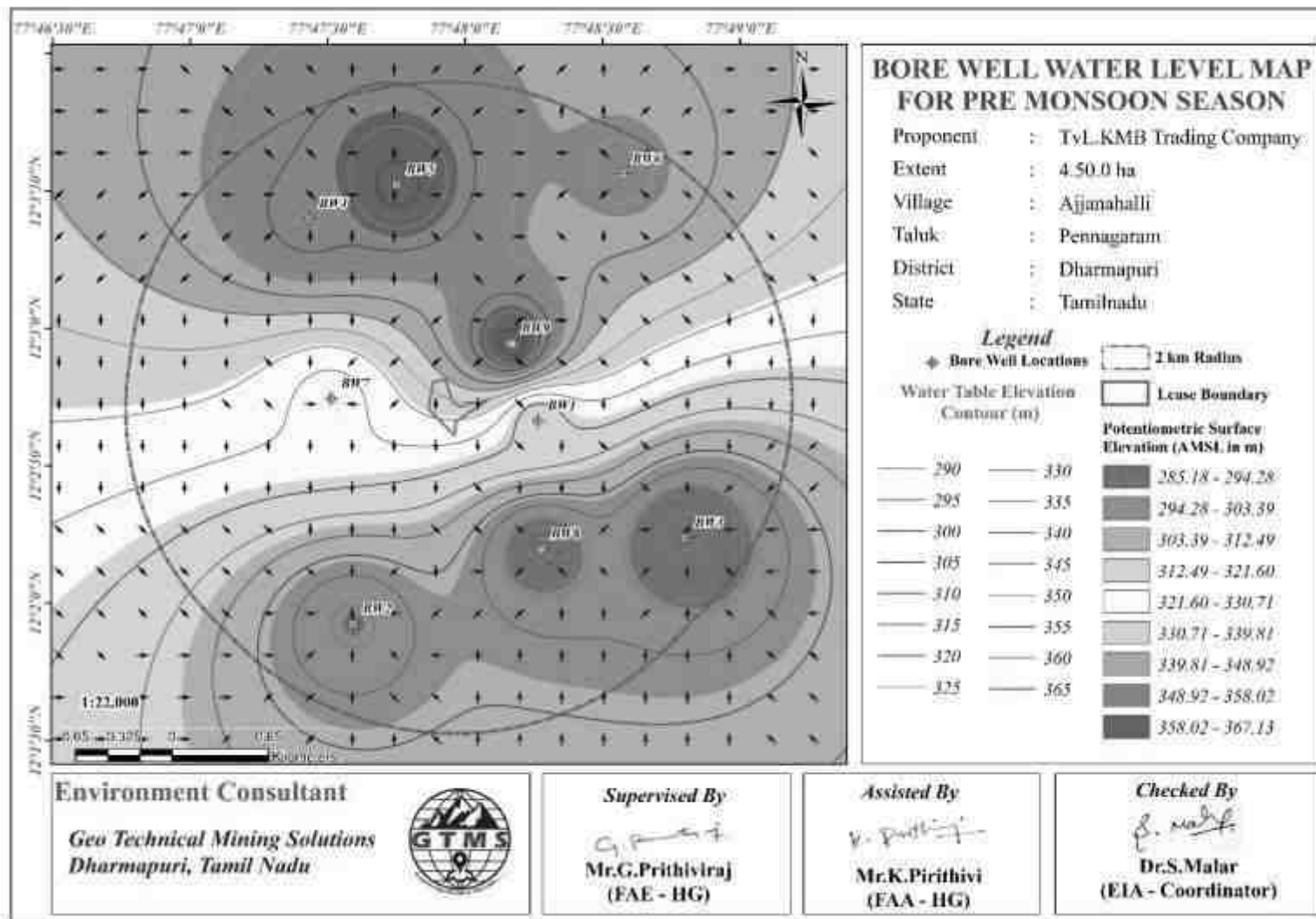


Figure 3.10 Borewell Static Groundwater Elevation Map Showing Direction of Groundwater Flow during Pre-Monsoon Season

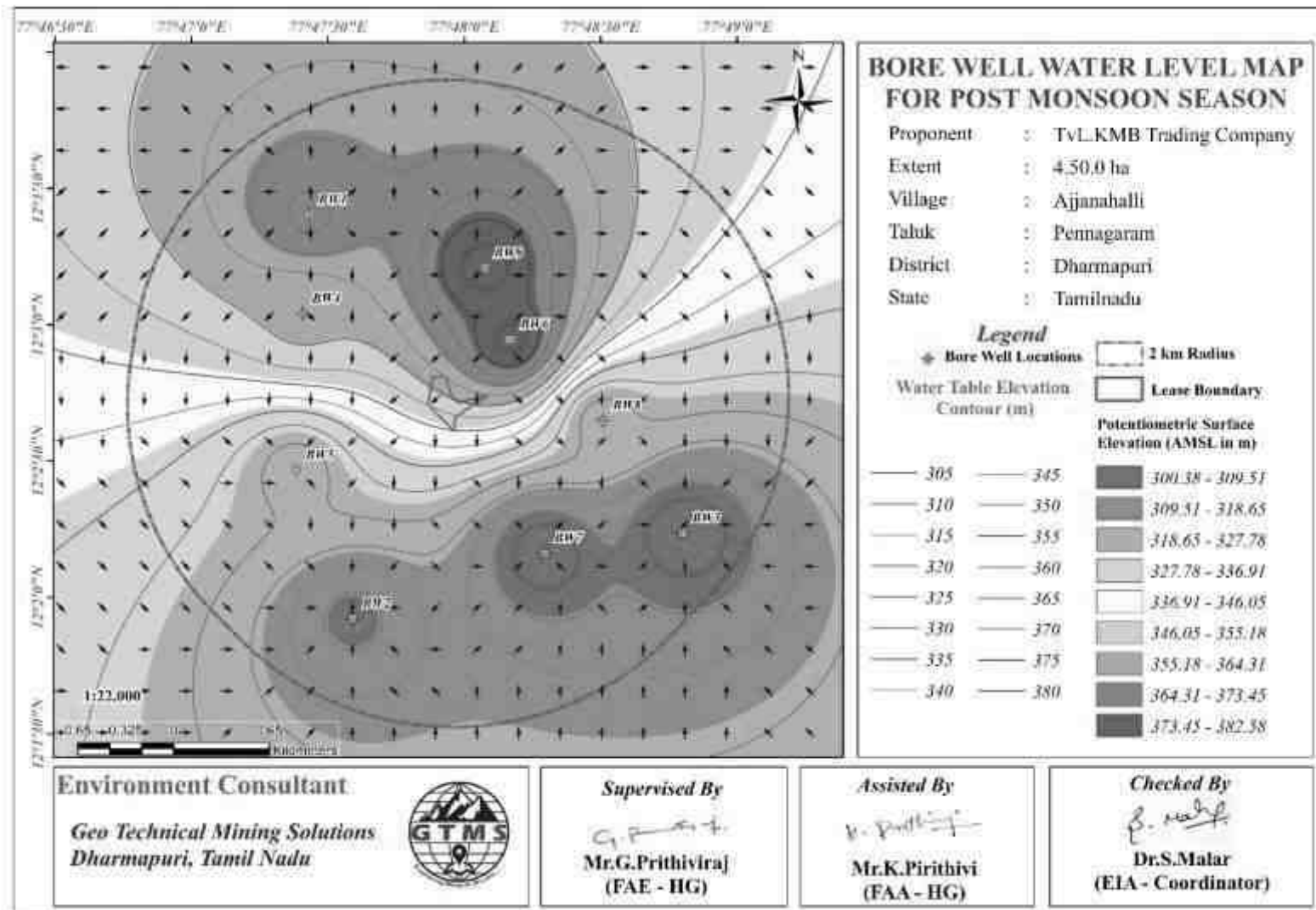


Figure 3.11 Borewell Static Groundwater Elevation Map Showing Direction of Groundwater Flow during Post-Monsoon Season

### 3.3.3.2 Electrical Resistivity Investigation

Electrical resistivity investigation is especially useful in the areas where there are no adequate exploratory well data about the aquifer conditions. The present study makes use of vertical electric sounding (VES) to delineate earth's subsurface layers. The electrical resistivity investigation uses four electrodes set up where current is sent through outer electrodes into the ground and the inner electrodes measure the potential difference.

#### **Result**

The Geophysical VES data obtained from the project site have been shown in Table 3.11. The field data obtained from a detailed geophysical investigation were plotted using excel spreadsheet for interpretation. The plot for the purpose of interpretation has been shown in Figure 3.12.

**Table 3.11 Vertical Electrical Sounding Data**

| Location Coordinates - 12° 2'43.88"N, 77°47'55.26"E |             |             |                           |                           |                                             |
|-----------------------------------------------------|-------------|-------------|---------------------------|---------------------------|---------------------------------------------|
| S. No.                                              | AB/2<br>(m) | MN/2<br>(m) | Geometrical<br>Factor (G) | Resistance in<br>$\Omega$ | Apparent<br>Resistivity in $\Omega\text{m}$ |
| 1                                                   | 5           | 2           | 16.5                      | 2.317                     | 38.23                                       |
| 2                                                   | 10          | 2           | 75.43                     | 0.870                     | 65.65                                       |
| 3                                                   | 15          | 5           | 62.86                     | 2.291                     | 137.76                                      |
| 4                                                   | 20          | 5           | 117.86                    | 1.869                     | 220.31                                      |
| 5                                                   | 25          | 5           | 188.58                    | 1.646                     | 310.45                                      |
| 6                                                   | 30          | 10          | 82.5                      | 1.438                     | 394.67                                      |
| 7                                                   | 35          | 10          | 125.72                    | 1.177                     | 443.95                                      |
| 8                                                   | 40          | 10          | 176.79                    | 1.150                     | 569.47                                      |
| 9                                                   | 45          | 10          | 235.73                    | 1.301                     | 818.23                                      |
| 10                                                  | 50          | 10          | 302.51                    | 0.995                     | 774.64                                      |

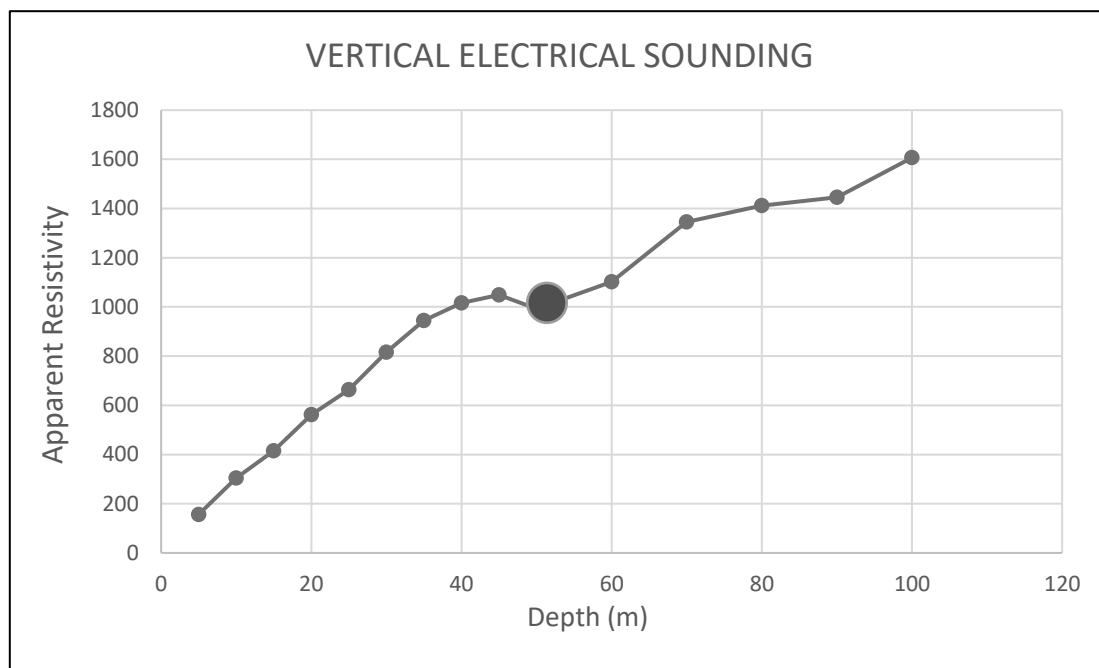


**Figure 3.12 Graph Showing Occurrence of Water Bearing Fracture Zones at the Depth of 50m Below Ground Level in the Proposed Project Area**

The rock formation of low resistivity values indicates occurrence of water at the depth of about 60m below ground level. The maximum depth proposed for the proposed project is 21 m below ground level. Therefore, the mining operation will not affect the aquifer throughout the entire mine life period.

### 3.4 AIR ENVIRONMENT

The baseline studies on air environment include identification of specific air pollutants and their existing levels in ambient air. The sources of air pollution in the region are mostly due to vehicular traffic, dust arising from unpaved village road and domestic & agricultural activities.

#### 3.4.1 Meteorology

##### 3.4.1.1 Climatic Variables

A temporary meteorological station was installed at the project sites by covering cluster quarries. The station was installed at a height of 3 m above the ground level as there are no obstructions facilitating flow of wind, wind speed, wind direction, humidity and temperature. Meteorological data obtained from the onsite monitoring station are provided in Table 3.12. According to the onsite data, the temperature in March, 2025 varied from 16.99 to 38.3<sup>0</sup>C with the average of 27.39<sup>0</sup>C; in April, 2025 from 20.65 to 38.28<sup>0</sup>C with the average of 28.52<sup>0</sup>C; and in May, 2025 from 21.6 to 38.65<sup>0</sup>C with the average of 28.11<sup>0</sup>C. In March, 2025, relative

humidity ranged from 9.32 to 100 % with the average of 50.62%; in April, 2025, from 18.39 to 95.23 % with the average of 56.91%; and in May,2025, from 23.85 to 97.57 % with the average of 65.30%. The wind speed in March, 2025 varied from 0.04 to 3.2 m/s with the average of 1.18 m/s; in April, 2025 from 0.04 to 2.21m/s with the average of 0.94 m/s; and in May,2025 from 0.05 to 4.43 m/s with the average of 1.34m/s. In March,2025, wind direction varied from 9.5 to 353.7 with the average of 126.09<sup>0</sup>; in April, 2025, from 1.4 to 358.3<sup>0</sup> with the average of 149.49<sup>0</sup>; and in May,2025, from 9.0to 357.9<sup>0</sup> with the average of 228.83<sup>0</sup>. In March,2025, surface pressure varied from 93.27 to 94.44kPa with the average of 93.87Pa; in April, 2025, from 93.28 to 94.18kPa with the average of 93.70 kPa; and in May,2025, from 93.25 to 94.23 kPa with the average of 93.70 kPa.

**Table 3.12 Onsite Meteorological Data**

| S. No. | Parameters              |     | MARCH 2025 | APRIL 2025 | MAY 2025 |
|--------|-------------------------|-----|------------|------------|----------|
| 1      | Temperature (°C)        | Min | 16.99      | 20.65      | 21.6     |
|        |                         | Max | 38.3       | 38.28      | 38.65    |
|        |                         | Avg | 27.39      | 28.52      | 28.11    |
| 2      | Relative Humidity (%)   | Min | 9.32       | 18.39      | 23.85    |
|        |                         | Max | 100.00     | 95.23      | 97.57    |
|        |                         | Avg | 50.62      | 56.91      | 65.30    |
| 3      | Wind Speed (m/s)        | Min | 0.04       | 0.04       | 0.05     |
|        |                         | Max | 3.2        | 2.21       | 4.43     |
|        |                         | Avg | 1.18       | 0.94       | 1.34     |
| 4      | Wind Direction (degree) | Min | 9.5        | 1.4        | 9.0      |
|        |                         | Max | 353.7      | 358.3      | 357.9    |
|        |                         | Avg | 126.09     | 149.49     | 228.83   |
| 5      | Surface Pressure(kPa)   | Min | 93.27      | 93.28      | 93.25    |
|        |                         | Max | 94.44      | 94.18      | 94.23    |
|        |                         | Avg | 93.87      | 93.70      | 93.70    |

*Source: Sampling Results by **Interstellar Testing Centre Ltd**, in association with GTMS*

### 3.4.1.2 Wind Pattern

Wind pattern will largely influence the dispersion pattern of air pollutants and noise from the proposed project site. Analysis of wind pattern requires hourly site-specific data of wind speed and direction. Two types of wind rose were generated: historical seasonal wind rose for the period of March through May of the years from 2021 to 2024 and the seasonal wind rose for the study period of March through May 2025. The wind rose diagrams thus produced are shown in Figures 3.13-3.13a, 13b, 13c & 14. Figure 3.15 reveals that:



- ❖ The measured average wind velocity during the study period is 1.12m/s.
- ❖ Predominant wind was dominant in the directions ranging from Southeast to Northwest.

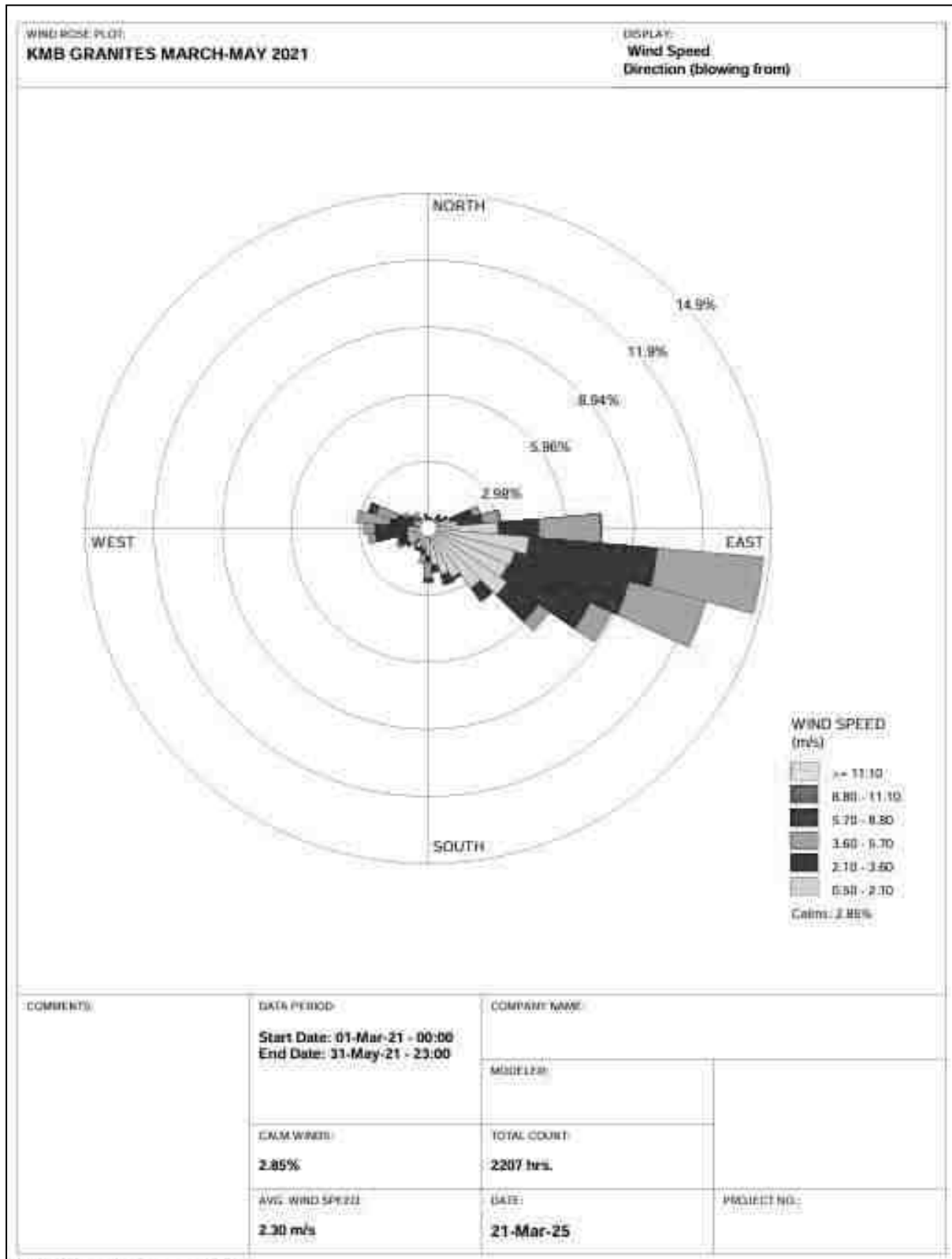


**Figure 3.13 Windrose Diagram for 2021 (March -May)**

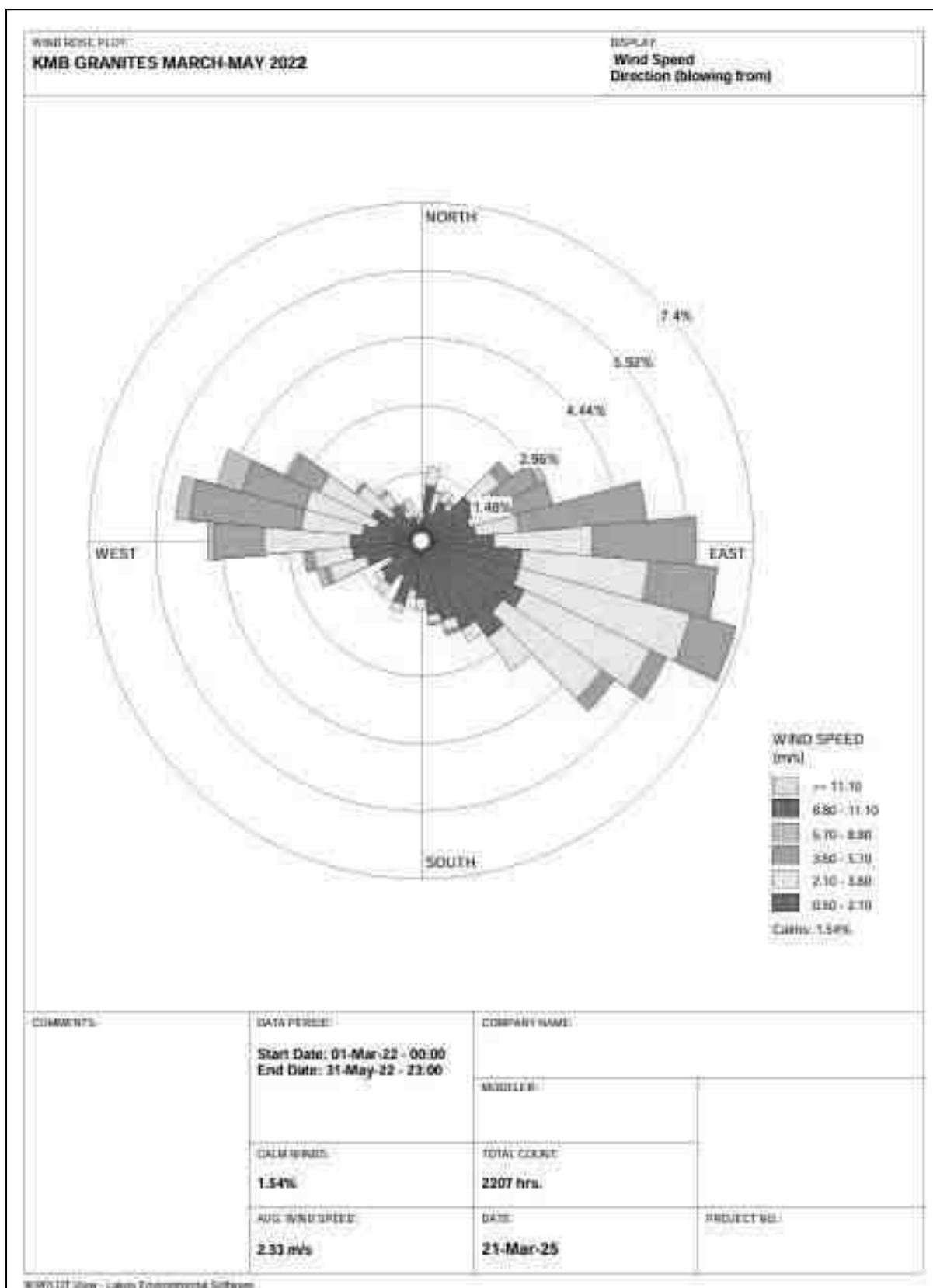
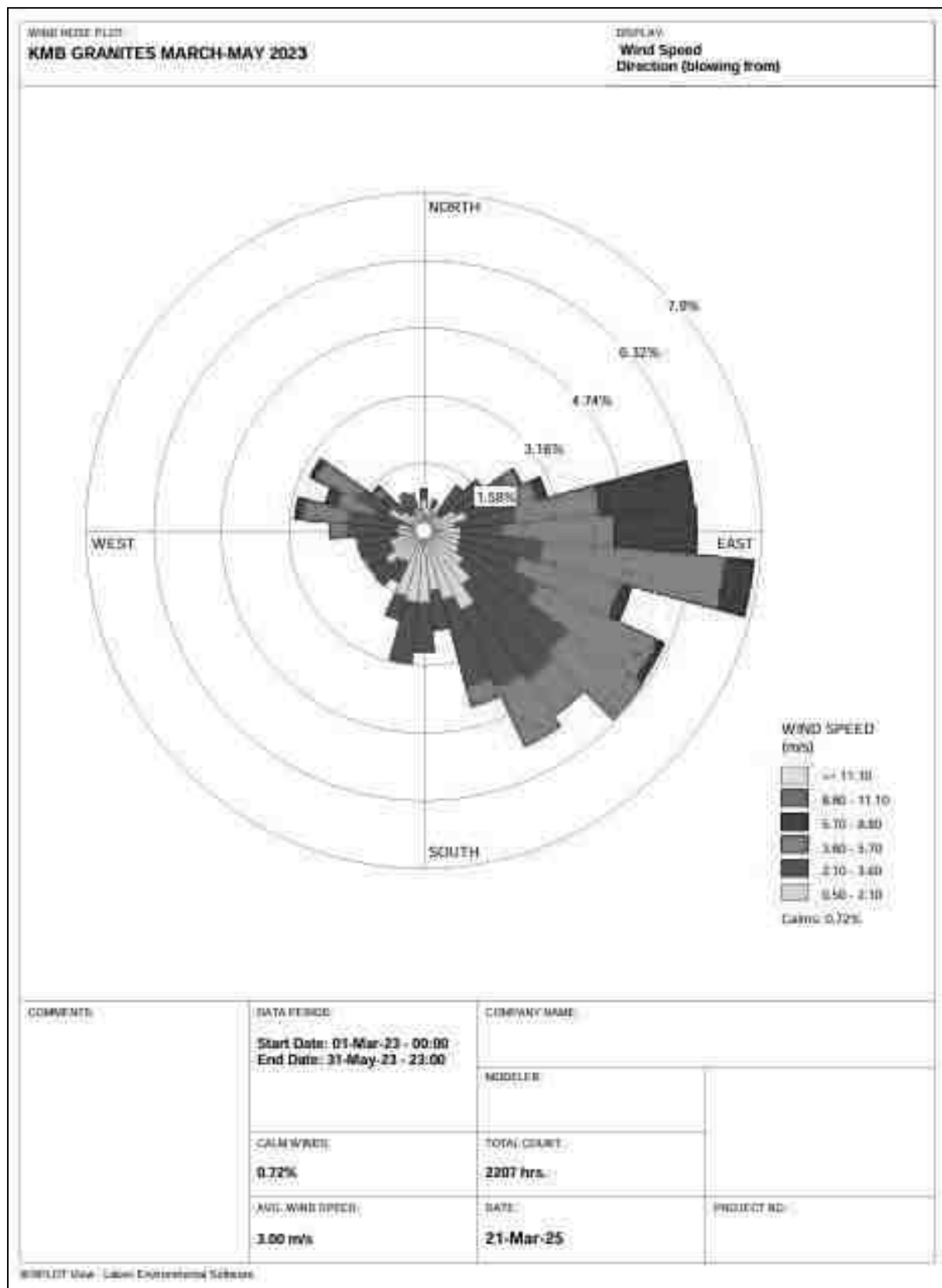


Figure 3.13a Windrose Diagram for 2022 (March -May)



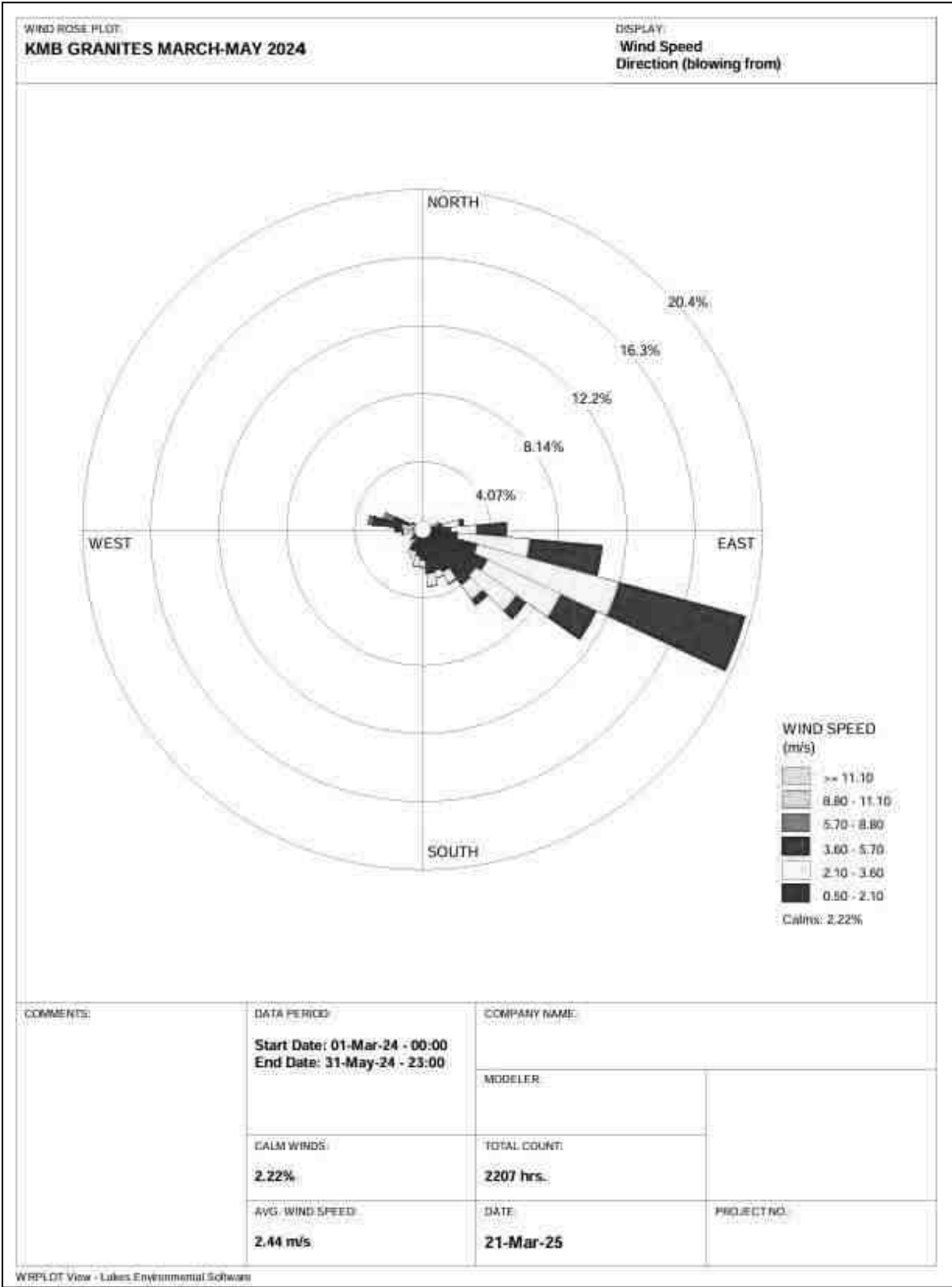


Figure 3.13c Windrose Diagram for 2024 (March to May)

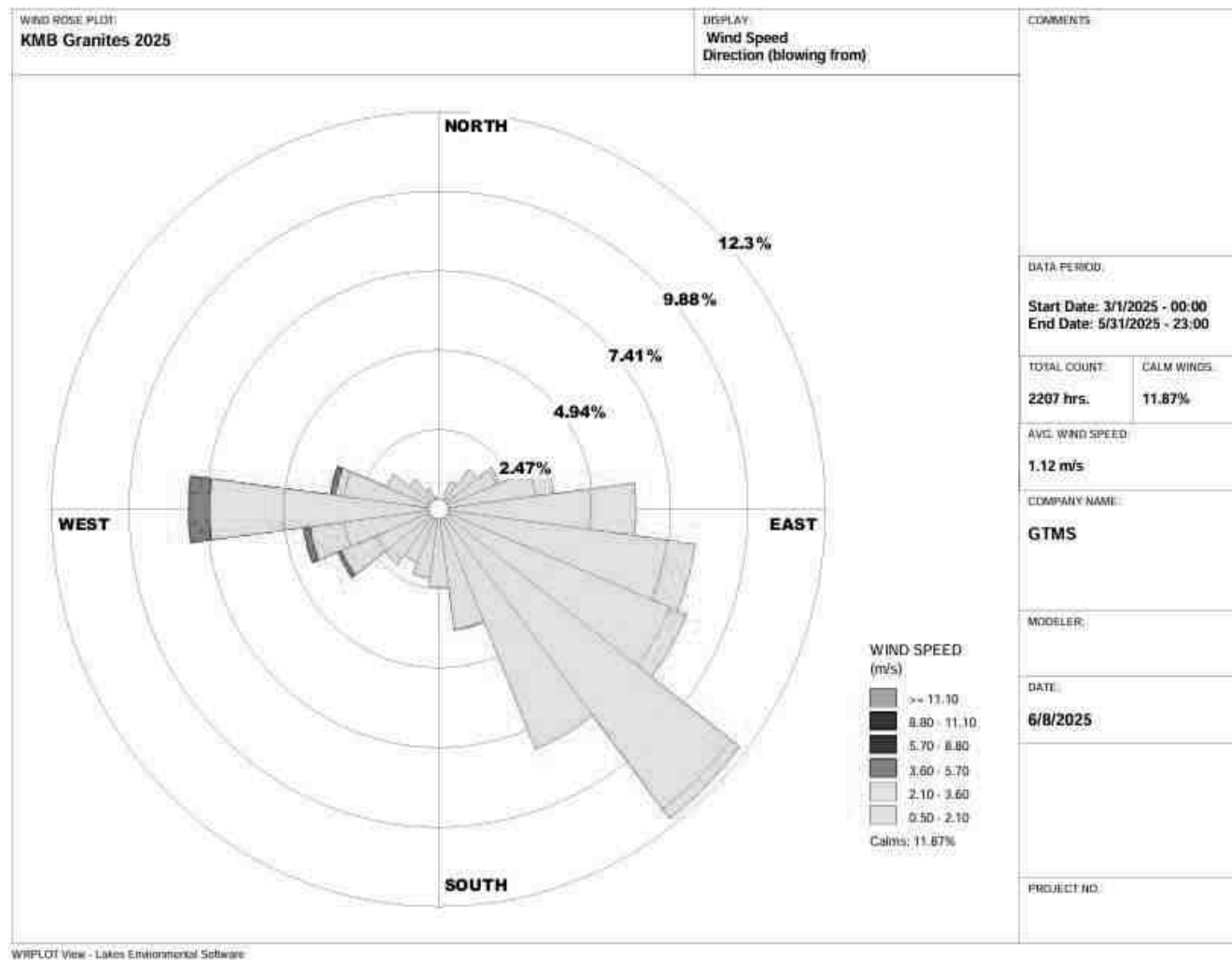


**Figure 3.14 Onsite Windrose Diagram**

### 3.4.2 Ambient Air Quality Study

The baseline ambient air quality is studied through a scientifically designed ambient air quality monitoring network considering the followings:

- ❖ Meteorological condition on synoptic scale
- ❖ Topography of the study area
- ❖ Representatives of regional background air quality for obtaining baseline status
- ❖ Location of residential areas representing different activities
- ❖ Accessibility and power availability

**Table 3.13 Methodology and Instrument Used for AAQ Analysis**

| Parameter         | Method                                                   | Instrument                                                                    |
|-------------------|----------------------------------------------------------|-------------------------------------------------------------------------------|
| PM <sub>2.5</sub> | Gravimetric method<br>Beta attenuation method            | Fine Particulate Sampler<br>Make – Thermo Environmental Instruments – TEI 121 |
| PM <sub>10</sub>  | Gravimetric method<br>Beta attenuation method            | Respirable Dust Sampler<br>Make –Thermo Environmental Instruments – TEI 108   |
| SO <sub>2</sub>   | IS-5182 Part II<br>(Improved West & Gaeke method)        | Respirable Dust Sampler with gaseous attachment                               |
| NO <sub>x</sub>   | IS-5182 Part II<br>(Jacob & Hoch heiser modified method) | Respirable Dust Sampler with gaseous attachment                               |
| Free Silica       | NIOSH – 7601                                             | Visible Spectrophotometry                                                     |

Source: Sampling Results by *Interstellar Testing Centre Ltd*, in association with GTMS

**Table 3.14 National Ambient Air Quality Standards**

| S. No. | Pollutant                              | Time Weighted Average      | Concentration in ambient air                 |                                                         |
|--------|----------------------------------------|----------------------------|----------------------------------------------|---------------------------------------------------------|
|        |                                        |                            | Industrial, Residential, Rural & other areas | Ecologically Sensitive area (Notified by Central Govt.) |
| 1      | SO <sub>2</sub> (µg/m <sup>3</sup> )   | Annual Avg.*<br>24 hours** | 50.0<br>80.0                                 | 20.0<br>80.0                                            |
| 2      | NO <sub>2</sub> (µg/m <sup>3</sup> )   | Annual Avg.<br>24 hours    | 40.0<br>80.0                                 | 30.0<br>80.0                                            |
| 3      | PM <sub>10</sub> (µg/m <sup>3</sup> )  | Annual Avg.<br>24 hours    | 60.0<br>100.0                                | 60.0<br>100.0                                           |
| 4      | PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | Annual Avg.<br>24 hours    | 40.0<br>60.0                                 | 40.0<br>60.0                                            |

Source: NAAQS CPCB Notification No. B-29016/20/90/PCI-I Dated: 18<sup>th</sup> Nov 2009

## Methodology

Ambient air quality monitoring was carried out with a frequency of two samples per week at Four (04) locations, adopting a continuous 24 hourly (3 shift of 8-hour) schedule for the period March-May, 2025 as per the CPCB, MoEF guidelines and notifications.

It was ensured that the equipment was placed preferably at a height of at least  $3 \pm 0.5$  m above the ground level at each monitoring station for negating the effects of wind-blown ground dust. The equipment was placed at space free from trees and vegetation which otherwise act as a sink of pollutants resulting in lower levels in monitoring results. The baseline data of ambient air were generated for PM<sub>10</sub>, PM<sub>2.5</sub>, sulphur dioxide (SO<sub>2</sub>) and nitrogen dioxide (NO<sub>x</sub>). The sampling locations are shown in Figure 3.16 and average concentrations of air pollutants are summarized in Tables 3.15.

**Table 3.15 Ambient Air Quality (AAQ) Monitoring Locations**

| S. No | Location Code | Monitoring Locations | Distance (km) | Direction | Coordinates   |               |
|-------|---------------|----------------------|---------------|-----------|---------------|---------------|
|       |               |                      |               |           | Lat           | Long          |
| 1     | AAQ1          | Nearby Core          | 0.22          | SE        | 12°2'30.22"N, | 77°47'59.95"E |
| 2     | AAQ2          | Sunchalnattham       | 1.29          | NW        | 12°2'5.34"N,  | 77°47'35.90"E |
| 3     | AAQ3          | Sigaralahalli        | 1.10          | NW        | 12°3'21.49"N, | 77°47'39.04"E |
| 4     | AAQ4          | Ajjanahalli          | 1.61          | SE        | 12°2'15.61"N, | 77°48'46.42"E |

Source: Sampling Results by *Interstellar Testing Centre Ltd*, in association with GTMS.

## Results

As per the monitoring data, PM<sub>2.5</sub> ranges from 16.9 µg/m<sup>3</sup> to 20.1 µg/m<sup>3</sup>; PM<sub>10</sub> from 43.8 µg/m<sup>3</sup> to 52.2µg/m<sup>3</sup>; SO<sub>2</sub> from 5.1 µg/m<sup>3</sup> to 6.1 µg/m<sup>3</sup>; NO<sub>x</sub> from 12.1 µg/m<sup>3</sup> to 14.6 g/m<sup>3</sup>. The concentration levels of the pollutants fall within the acceptable limits of NAAQS prescribed by CPCB.

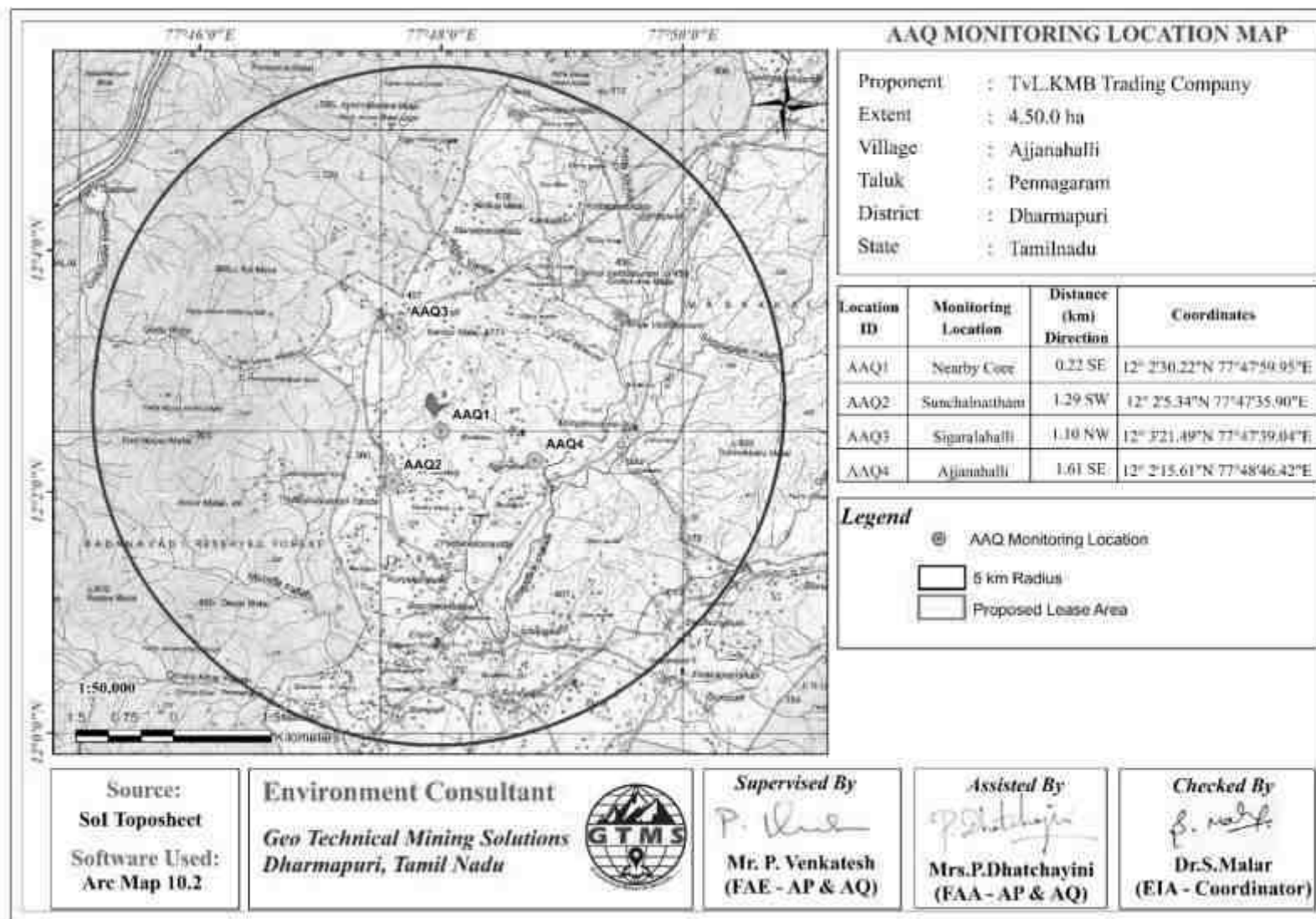


Figure 3.15 Map Showing Ambient Air Quality Monitoring Station Locations around 5 km Radius from the Proposed Project Site



**Table 3.16 Summary of AAQ Result**

| PM <sub>2.5</sub> |      |      |      |                             | PM <sub>10</sub> |      |      |                             |
|-------------------|------|------|------|-----------------------------|------------------|------|------|-----------------------------|
| Station ID        | Max  | Min  | Mean | 98 <sup>th</sup> Percentile | Max              | Min  | Mean | 98 <sup>th</sup> Percentile |
| AAQ1              | 22.0 | 17.7 | 19.2 | 21.7                        | 57.2             | 46.1 | 49.5 | 55.3                        |
| AAQ2              | 20.4 | 17.1 | 18.0 | 20.3                        | 55.3             | 43.9 | 46.4 | 53.0                        |
| AAQ3              | 18.7 | 16.2 | 17.3 | 17.3                        | 48.6             | 42.2 | 44.6 | 48.0                        |
| AAQ4              | 19.1 | 16.5 | 17.4 | 19.0                        | 49.6             | 42.8 | 44.9 | 49.4                        |
| SO <sub>2</sub>   |      |      |      |                             | NO <sub>2</sub>  |      |      |                             |
| AAQ1              | 6.8  | 5.4  | 5.9  | 6.7                         | 13.6             | 10.8 | 11.8 | 13.3                        |
| AAQ2              | 6.1  | 5.0  | 5.3  | 5.9                         | 13.0             | 10.7 | 11.3 | 12.9                        |
| AAQ3              | 5.9  | 5.1  | 5.4  | 5.8                         | 15.8             | 13.2 | 14.4 | 15.6                        |
| AAQ4              | 5.6  | 5.0  | 5.3  | 5.6                         | 16.1             | 13.9 | 14.6 | 16.0                        |

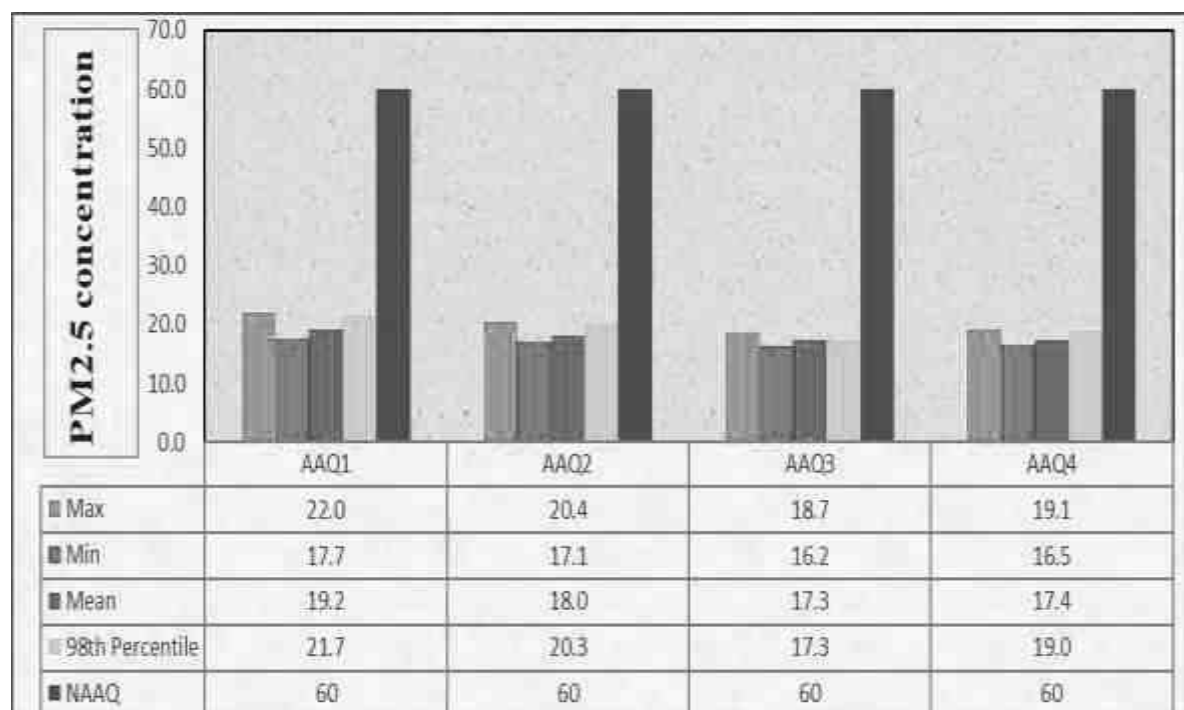


**Figure 3.16 Bar Chart Showing Maximum, Minimum, and Average Concentrations of PM<sub>2.5</sub> Measured from 4 Air Quality Monitoring Stations within 5 km Radius**

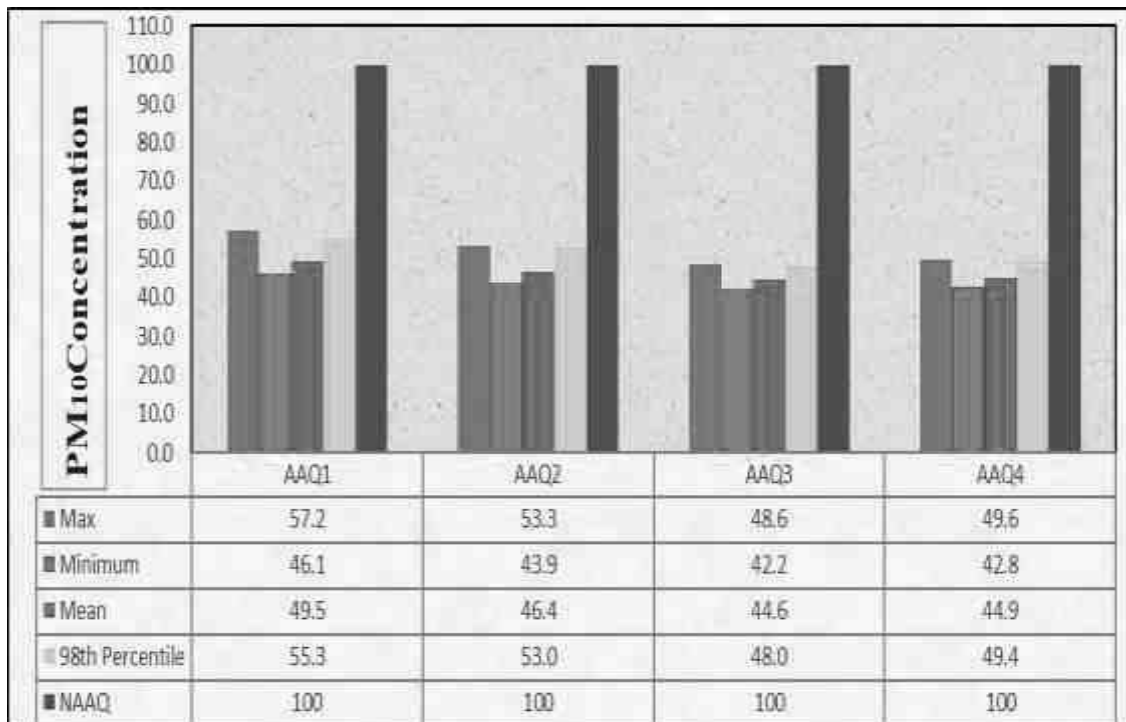


**Figure 3.17 Bar Chart Showing Maximum, Minimum, and Average Concentrations of PM<sub>10</sub> Measured from 4 Air Quality Monitoring Stations within 5 km Radius**

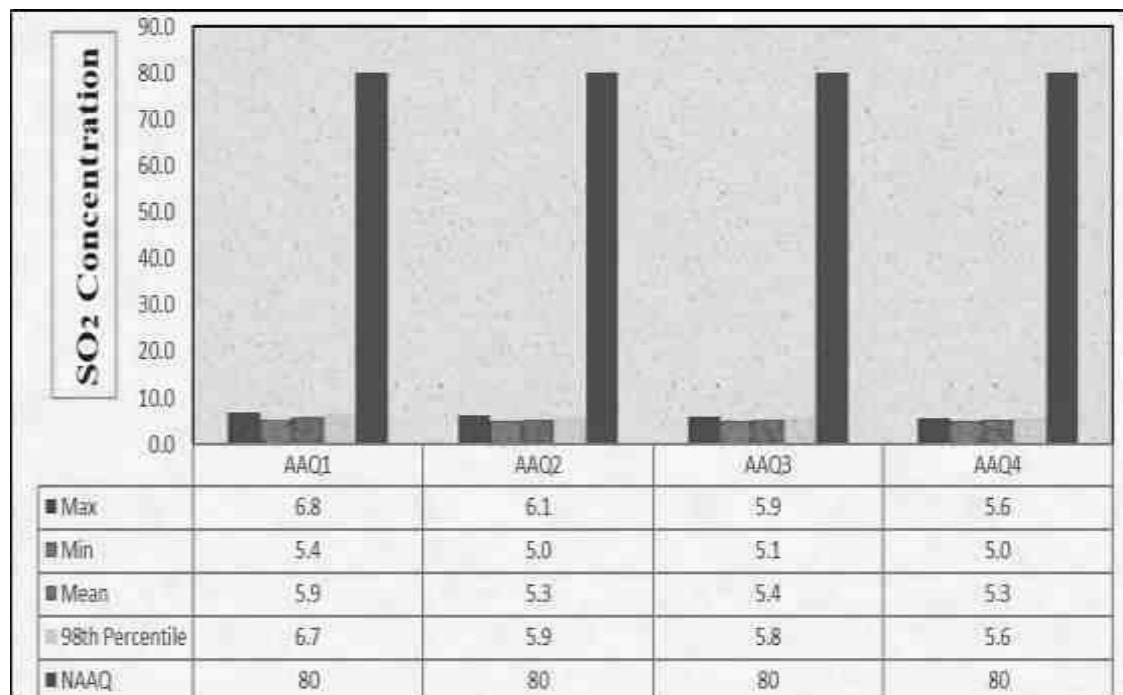


**Figure 3.18 Bar Chart Showing Maximum, Minimum, and Average Concentrations of SO<sub>2</sub> Measured from 4 Air Quality Monitoring Stations within 5 km Radius**

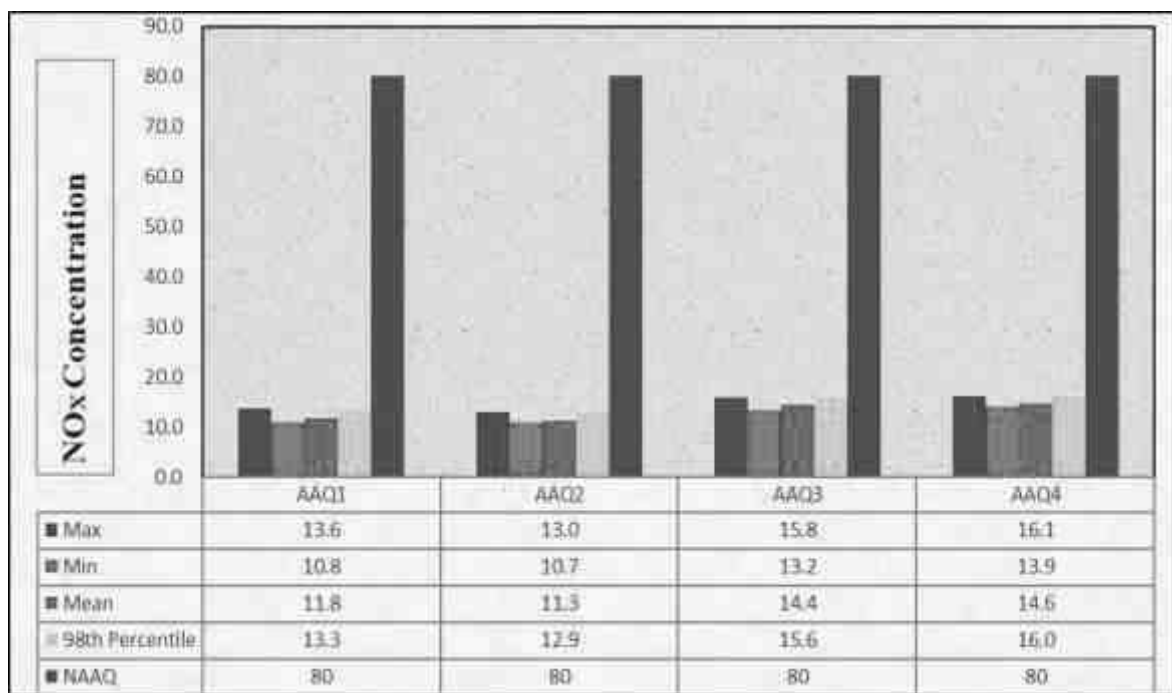


**Figure 3. 19 Bar Chart Showing Maximum, Minimum, And Average Concentrations of NO<sub>x</sub> Measured from 4 Air Quality Monitoring Stations within 5 km Radius**

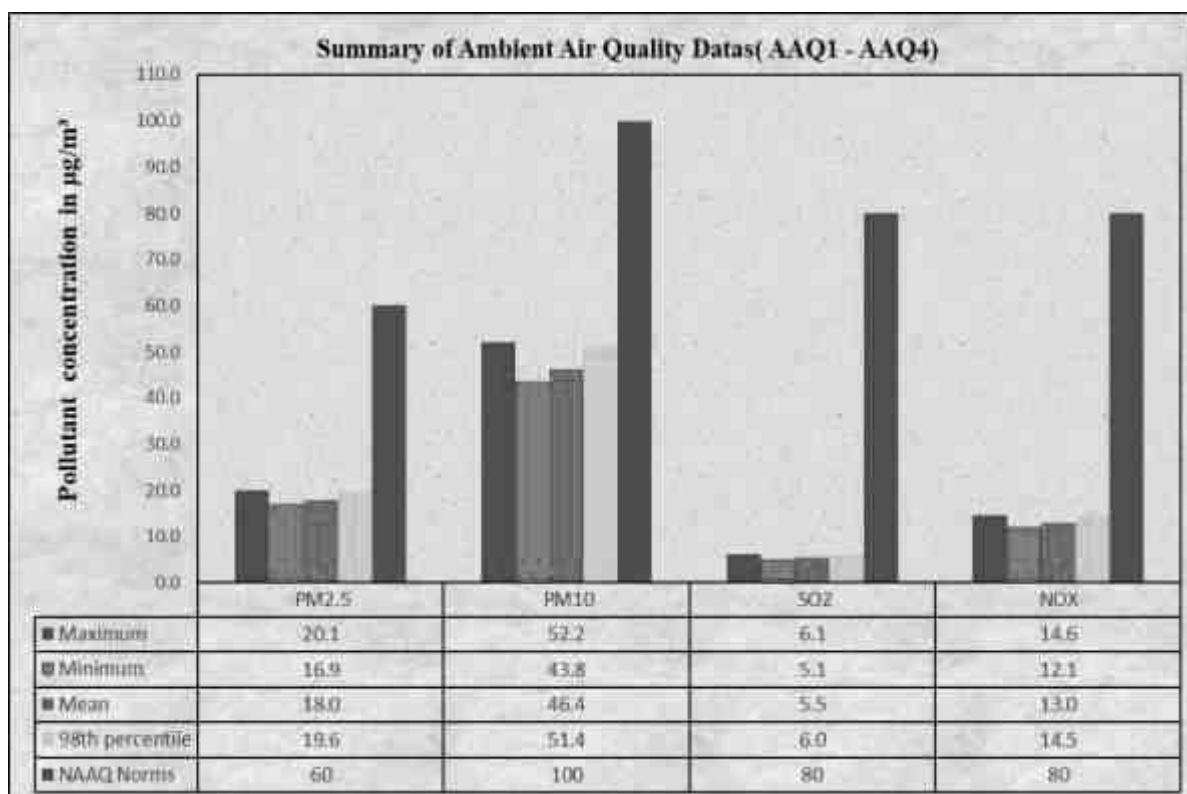


**Figure 3.20 Bar Chart Showing Maximum, Minimum, and Average Concentrations of Pollutants in the Atmosphere within 5 km Radius**

### 3.5 NOISE ENVIRONMENT

The vehicular movement on road and mining activities is the major sources of noise in the study area. The main objective of noise monitoring in the study area is to establish the baseline noise level, which will in turn be used to assess the impact of the total noise expected to be generated during the project operations around the project site. In order to assess the ambient noise levels within the study area, noise monitoring was carried out at Seven (07) locations covering commercial, residential, rural areas within the radius of 5 km. Details of noise monitoring locations are provided in Table 3.17 and spatial occurrence of the locations are shown in Figure 3.23.

**Table 3.17 Noise Monitoring Locations**

| Location Code | Monitoring Locations | Distance in km | Direction | Coordinates   |               |
|---------------|----------------------|----------------|-----------|---------------|---------------|
|               |                      |                |           | Lat           | Long          |
| N1            | Core                 | --             | --        | 12° 2'41.66"N | 77°47'59.47"E |
| N2            | Sunchalnattham       | 1.20           | SW        | 12° 2'5.65"N  | 77°47'33.84"E |
| N3            | Sigaralahalli        | 1.21           | NW        | 12° 3'23.62"N | 77°47'34.79"E |
| N4            | Ajjanahalli          | 1.79           | SE        | 12° 2'12.93"N | 77°48'50.91"E |

Source: Sampling Results by *Interstellar Testing Centre Pvt. Ltd.*, in association with GTMS

**Table 3.18 Ambient Noise Quality Result**

| Location       | Environment al setting | Average day noise level(dB(A)) | Average night noise level (dB(A)) | Day time (6.00 AM – 10.00 PM)       | Night time (10.00 PM – 6.00 AM) |
|----------------|------------------------|--------------------------------|-----------------------------------|-------------------------------------|---------------------------------|
|                |                        |                                |                                   | Standard (L <sub>eq</sub> in dB(A)) |                                 |
| Core           | Industrial area        | 45.1                           | 40.6                              | 75                                  | 70                              |
| Sunchalnattham | Residential area       | 44.0                           | 40.7                              | 55                                  | 45                              |
| Sigaralahalli  |                        | 43.2                           | 39.4                              | 55                                  | 45                              |
| Ajjanahalli    |                        | 40.3                           | 37.6                              | 55                                  | 45                              |

Source: Sampling Results by *Interstellar Testing Centre Pvt. Ltd.*, in association with GTMS

The Table 3.18 shows that noise level in core zone was 45.1dB (A) Leq during day time and 40.6dB (A) Leq during night time. Noise levels recorded in buffer zone during day time varied from 37.6 to 41.1 dB (A) Leq and during night time from 37.6 to 40.7 dB (A) Leq. Thus, the noise level for industrial and residential area meets the requirements of CPCB. The results are also depicted below in Figures 3.21 and 3.22.

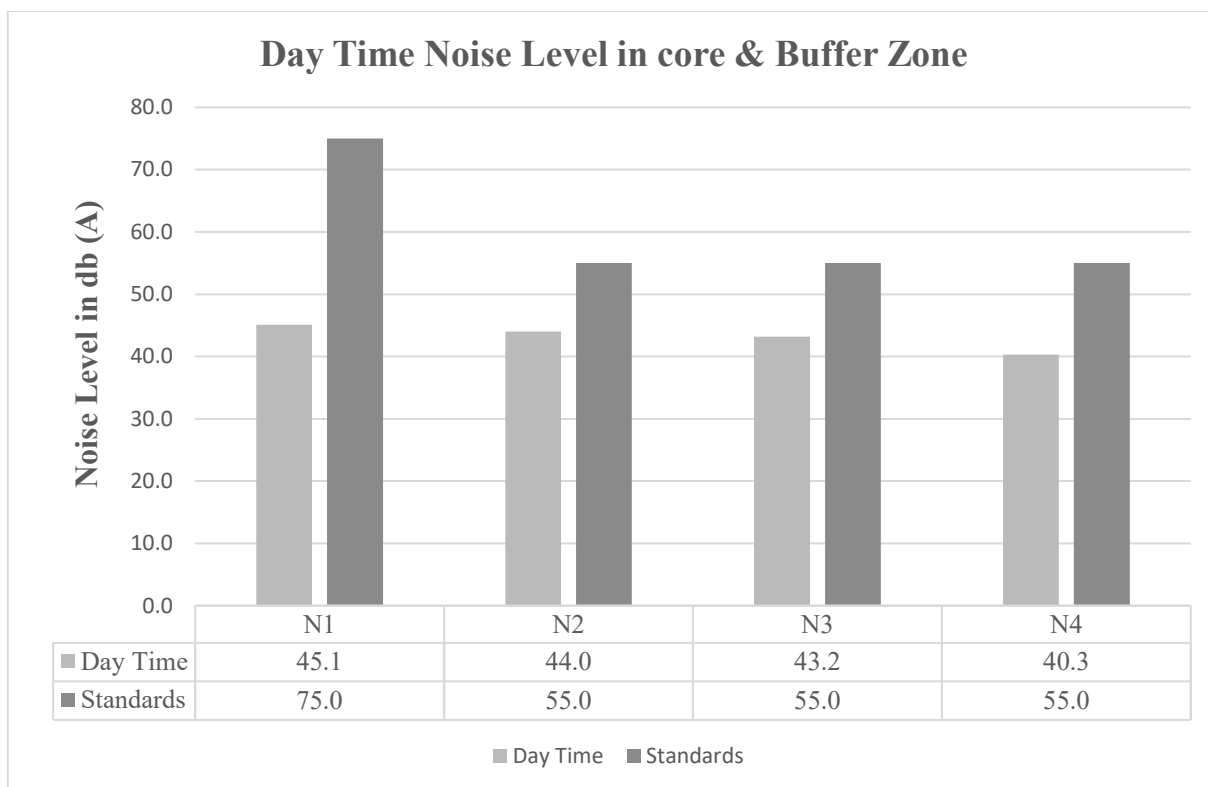


**Figure 3.21 Bar Chart Showing Day Time Noise Levels Measured in Core and Buffer Zones**

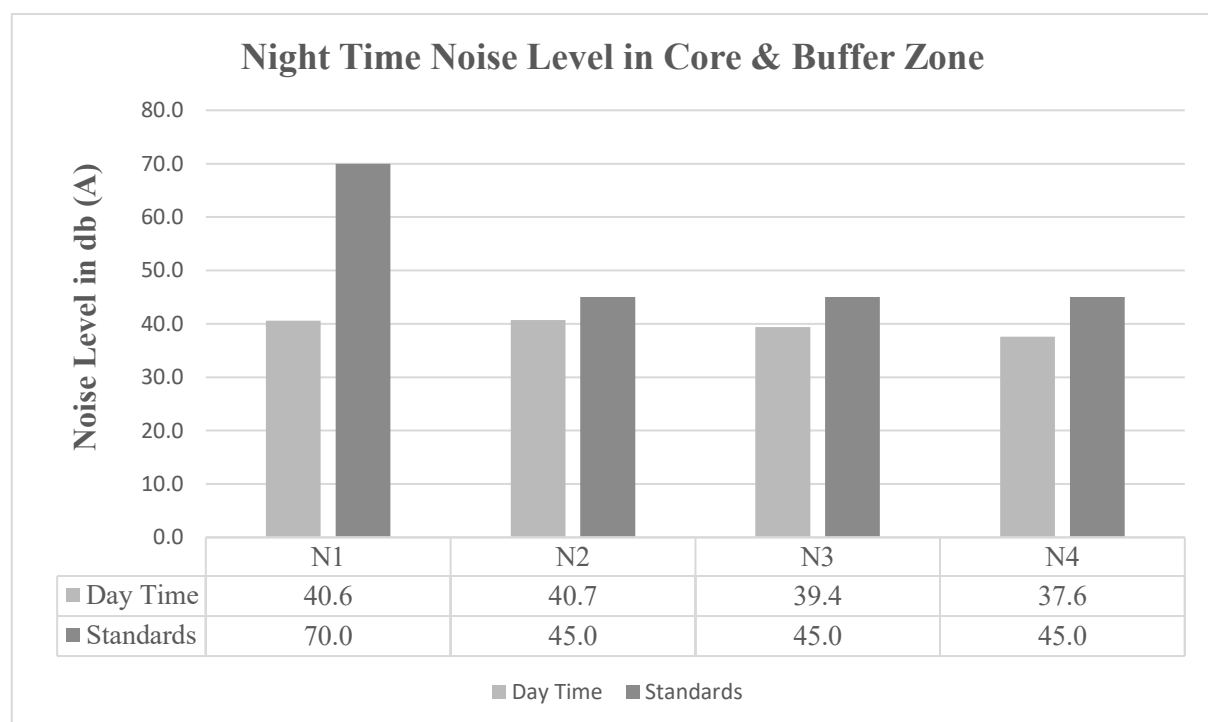


**Figure 3.22 Bar Chart Showing Night Time Noise Levels Measured in Core and Buffer Zones**

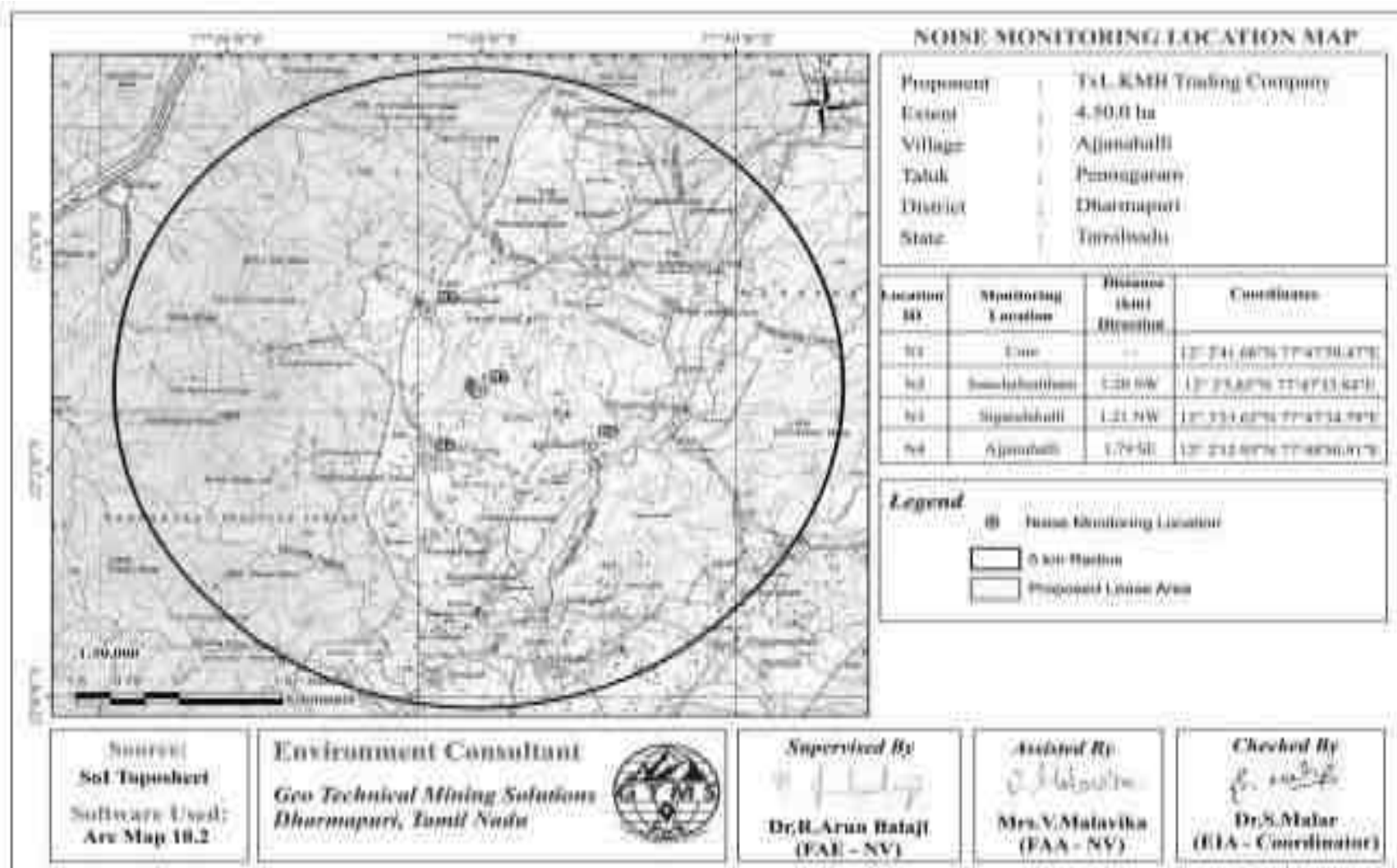


**Figure 3.23 Map Showing Noise Level Monitoring Station Locations around 5 km Radius from the Proposed Project Site**

### 3.6 BIOLOGICAL ENVIRONMENT

An ecological survey was conducted to collect the baseline data regarding flora and fauna in the study area of 10km radius. Data were also collected from different sources, i.e., government departments such as District Forest Office, Government of Tamil Nadu. On the basis of onsite observations as well as forest department records the checklist of flora and fauna was prepared.

#### *Methodology*

Nested quadrat sampling method was used for the study of community structure of the vegetation. The sampling consisted of randomly placed quadrats of 10m × 10m were laid down to assess trees, and sub quadrats of 5m × 5m were laid down for shrubs, 1m x 1m were laid down for herbs. The size and number of quadrats needed were determined using the species-area curve (Misra, 1968). The data on vegetation were quantitatively analysed for abundance, density, frequency as per Curtis & McIntosh (1950). The Important Value Index (IVI) for trees was determined as the sum of relative density, relative frequency and relative dominance (Curtis, 1959).



**Figure 3.24 Quadrates Sampling Methods of Flora**

### **Important Value Index (IVI)**

The concept of 'Important Value Index (IVI)' has been developed for expressing the dominance and ecological success of any species, with a single value (Mishra, 1968, Sharma, 2005). This index utilizes three characteristics, they are (i) Relative frequency and (ii) Relative density. The three characteristics computed using frequency, density and abundance for all the species falling in all the quadrat by using the following formula. The relative frequency, relative density and relative abundance have been calculated to calculate the IVI value

$$\text{IVI} = \text{Relative frequency} + \text{Relative abundance} + \text{Relative density} [\text{RF} + \text{RA} + \text{RD}]$$

**Relative Value Index (RVI)** = Relative Density + Relative Frequency [ RD + RF].

Relative Value Index used for Expressing dominance and Ecological success of Shrub and herb Species in a particular area.

### **Shannon – Wiener Index, Evenness and Richness**

Biodiversity index is a quantitative measure that reflects how many different types of species, there are in a dataset, and simultaneously takes into account how evenly the basic entities (such as individuals) are distributed among those types of species. The value of biodiversity index increases both when the number of types increases and when evenness increases. For a given number of type of species, the value of a biodiversity index is maximized when all type of species is equally abundant.

The **Shannon Diversity Index** (sometimes called the Shannon-Wiener Index) is a way to measure the diversity of species in a community.

The species diversity index (H) for floral and faunal diversity is calculated by the use of Shannon Wiener Index (Shannon Wiener, 1963) as:

$$H = - \sum (n_i/n) \times \ln (n_i/n)$$

- 📖 Where,  $n_i$  is individual density of a species and  $n$  is total density of all the species
- 📖 The Evenness Index (E) is calculated by using Shannon's Evenness formula (Magurran, 2004).
- 📖 The higher the value of H, the higher the diversity of species in a particular community. The lower the value of H, the lower the diversity. A value of  $H = 0$  indicates a community that only has one species

$$\text{Evenness Index (E)} = H / \ln(S)$$

Where, H is Shannon Wiener Diversity index; S is number of species

The Shannon evenness Index is a way to measure the evenness of species in a community. The term “evenness” simply refers to how similar the abundances of different species are in the community.



### 3.6.1 Floral diversity Analysis

Flora study was conducted using the above said methodology to inventory the existing terrestrial plants in both core and buffer zones. Details of plants have been described in the succeeding sections.

#### *Flora in mine lease area (core zone)*

The mine lease area contains total of 14 species belonging to 9 families have been recorded from the mine lease area. 2 trees, 4 shrubs, 8 herbs were identified. It is a grassy land. There are no endangered species in mine lease area. Details of vegetation with scientific name indicated in Table 3.19.

**Table 3.19 Flora in mine lease area**

| S.no                   | Local name      | Scientific name              | Family name    | No of plants |
|------------------------|-----------------|------------------------------|----------------|--------------|
| <b>Tree</b>            |                 |                              |                |              |
| 1                      | Karuvelam maram | <i>Vachellia nilotica</i>    | Fabaceae       | 4            |
| 2                      | Seemaikaruvelam | <i>Prosopis juliflora</i>    | Fabaceae       | 6            |
| <b>Shrubs</b>          |                 |                              |                |              |
| 1                      | Earuku          | <i>Calotropis gigantea</i>   | Apocynaceae    | 6            |
| 2                      | Communist pacha | <i>Chromolaena odorata</i>   | Asteraceae     | 12           |
| 3                      | Unnichadi       | <i>Lantana camara</i>        | Verbenaceae    | 8            |
| 4                      | Thuthi          | <i>Abutilon indicum</i>      | Meliaceae      | 7            |
| <b>Herbs / Climber</b> |                 |                              |                |              |
| 1                      | Perandai        | <i>Cissus quadrangularis</i> | Vitaceae       | 2            |
| 2                      | Thathapondur    | <i>Tridax procumbens</i>     | Asteraceae     | 12           |
| 3                      | Kolunji chadi   | <i>Tephrosia purpurea</i>    | Fabaceae       | 11           |
| 4                      | Nayuruvi        | <i>Achyranthes aspera</i>    | Amaranthaceae  | 7            |
| 5                      | Nearunji mull   | <i>Tribulus zeyheri</i> Sond | Zygophyllaceae | 10           |
| 6                      | Pill            | <i>Cenchrus ciliaris</i>     | Poaceae        | 12           |
| 7                      | American mint   | <i>Hyptis suaveolens</i>     | Lamiaceae      | 9            |
| 8                      | Tumbai          | <i>Leucas aspera</i>         | Lamiaceae      | 14           |

#### *Flora in 300m radius*

The mine lease area is containing a total of 38 species belonging to 23 families have been recorded from the buffer zone. 10 Trees, 11 Shrubs and 11 Herbs, Climbers & Grass 6 were identified. Details of flora with the scientific name details and of diversity species Richness index were mentioned in Table 3.20 and Figure 3.25. There is no threat to the Flora species in 300m radius.

Table. 3.20 Flora in 300meter radius

| S. No         | Local Name       | Scientific name             | Family name   | Total No. of species | Total of Quadrants with species | Total No. of Quadrants | Density | Frequency (%) | Abundance | Relative Density | Relative Frequency | IVI  | IUCN Conservation Status |
|---------------|------------------|-----------------------------|---------------|----------------------|---------------------------------|------------------------|---------|---------------|-----------|------------------|--------------------|------|--------------------------|
| <b>Trees</b>  |                  |                             |               |                      |                                 |                        |         |               |           |                  |                    |      |                          |
| 1             | Karuvelam maram  | <i>Vachellia nilotica</i>   | Fabaceae      | 3                    | 2                               | 5                      | 0.6     | 40.0          | 1.5       | 7.5              | 6.7                | 14.2 | Not Listed               |
| 2             | Unjai maram      | <i>Albizia amara</i>        | Fabaceae      | 4                    | 3                               | 5                      | 0.8     | 60.0          | 1.3       | 10.0             | 10.0               | 20.0 | Not Listed               |
| 3             | Wetpalai maram   | <i>Wrightia tinctoria</i>   | Apocynaceae   | 5                    | 4                               | 5                      | 1.0     | 80.0          | 1.3       | 12.5             | 13.3               | 25.8 | Not Listed               |
| 4             | Velikathan maram | <i>Prosopis juliflora</i>   | Fabaceae      | 3                    | 2                               | 5                      | 0.6     | 40.0          | 1.5       | 7.5              | 6.7                | 14.2 | Not Listed               |
| 5             | Pongam oiltree   | <i>Pongamia pin nata</i>    | Fabaceae      | 4                    | 3                               | 5                      | 0.8     | 60.0          | 1.3       | 10.0             | 10.0               | 20.0 | Not Listed               |
| 6             | Panai maram      | <i>Borassus flabellifer</i> | Arecaceae     | 5                    | 4                               | 5                      | 1.0     | 80.0          | 1.3       | 12.5             | 13.3               | 25.8 | Not Listed               |
| 7             | Nochi            | <i>Vitex negundo</i>        | Lamiaceae     | 4                    | 3                               | 5                      | 0.8     | 60.0          | 1.3       | 10.0             | 10.0               | 20.0 | Not Listed               |
| 8             | Nuna maram       | <i>Morinda citrifolia</i>   | Rubiaceae     | 3                    | 2                               | 5                      | 0.6     | 40.0          | 1.5       | 7.5              | 6.7                | 14.2 | Not Listed               |
| 9             | Vembu            | <i>Azadirachta indica</i>   | Meliaceae     | 4                    | 3                               | 5                      | 0.8     | 60.0          | 1.3       | 10.0             | 10.0               | 20.0 | Not Listed               |
| 10            | Manga Tree       | <i>Mangifera indica</i>     | Anacardiaceae | 5                    | 4                               | 5                      | 1.0     | 80.0          | 1.3       | 12.5             | 13.3               | 25.8 | Not Listed               |
| <b>Shrubs</b> |                  |                             |               |                      |                                 |                        |         |               |           |                  |                    |      |                          |
| 1             | Erukku           | <i>Calotropis gigantea</i>  | Apocynaceae   | 7                    | 6                               | 10                     | 0.7     | 60.0          | 1.2       | 12.7             | 12.5               | 25.2 | Not Listed               |
| 2             | Unichedi         | <i>Lantana camara</i>       | Verbenaceae   | 9                    | 8                               | 10                     | 0.9     | 80.0          | 1.1       | 16.4             | 16.7               | 33.0 | Not Listed               |
| 3             | Avarai           | <i>Senna auriculata</i>     | Fabaceae      | 8                    | 7                               | 10                     | 0.8     | 70.0          | 1.1       | 14.5             | 14.6               | 29.1 | Not Listed               |
| 4             | Sundaika         | <i>Solanum torvum</i>       | Solanaceae    | 10                   | 9                               | 10                     | 1.0     | 90.0          | 1.1       | 18.2             | 18.8               | 36.9 | Not Listed               |
| 5             | Umathai          | <i>Datura metel</i>         | Solanaceae    | 6                    | 5                               | 10                     | 0.6     | 50.0          | 1.2       | 10.9             | 10.4               | 21.3 | Not Listed               |

|                             |                 |                                 |                |    |    |    |     |      |     |      |      |      |            |
|-----------------------------|-----------------|---------------------------------|----------------|----|----|----|-----|------|-----|------|------|------|------------|
| 6                           | Karunochi       | <i>Vitex negundo</i>            | Lamiaceae      | 7  | 6  | 10 | 0.7 | 60.0 | 1.2 | 12.7 | 12.5 | 25.2 | Not Listed |
| 7                           | Thuthi          | <i>Abutilon indicum</i>         | Meliaceae      | 8  | 7  | 10 | 0.8 | 70.0 | 1.1 | 14.5 | 14.6 | 29.1 | Not Listed |
| 8                           | Thottalchinungi | <i>Mimosa pudica</i>            | Mimosaceae     | 9  | 8  | 10 | 0.9 | 80.0 | 1.1 | 16.4 | 16.7 | 33.0 | Not Listed |
| 9                           | Sappathikalli   | <i>Cereus pterogonus</i>        | Cactus         | 8  | 7  | 10 | 0.8 | 70.0 | 1.1 | 14.5 | 14.6 | 29.1 | Not Listed |
| 10                          | Kattamanaku     | <i>Jatropha gossypifolia L</i>  | Euphorbiaceae  | 10 | 9  | 10 | 1.0 | 90.0 | 1.1 | 18.2 | 18.8 | 36.9 | Not Listed |
| <b>Herbs</b>                |                 |                                 |                |    |    |    |     |      |     |      |      |      |            |
| 1                           | Thumbai         | <i>Leucas aspera</i>            | Lamiaceae      | 9  | 8  | 15 | 0.6 | 53.3 | 1.1 | 5.6  | 5.7  | 11.2 | Not Listed |
| 2                           | Parttiniyam     | <i>Parthenium hysterophorus</i> | Asteraceae     | 7  | 6  | 15 | 0.5 | 40.0 | 1.2 | 4.3  | 4.3  | 8.6  | Not Listed |
| 3                           | Thulasi         | <i>Ocimum tenuiflorum</i>       | Lamiaceae      | 11 | 10 | 15 | 0.7 | 66.7 | 1.1 | 6.8  | 7.1  | 13.9 | Not Listed |
| 4                           | Kuppamani       | <i>Acalypha indica</i>          | Euphorbiaceae  | 8  | 7  | 15 | 0.5 | 46.7 | 1.1 | 4.9  | 5.0  | 9.9  | Not Listed |
| 5                           | Nayuruvi        | <i>Achyranthes aspera</i>       | Amaranthaceae  | 6  | 5  | 15 | 0.4 | 33.3 | 1.2 | 3.7  | 3.5  | 7.2  | Not Listed |
| 6                           | Katrzhai        | <i>Aloe vera</i>                | Asphodelaceae  | 7  | 6  | 15 | 0.5 | 40.0 | 1.2 | 4.3  | 4.3  | 8.6  | Not Listed |
| 7                           | Sirukeerai      | <i>Amaranthus polygonoides</i>  | Amaranthaceae  | 8  | 7  | 15 | 0.5 | 46.7 | 1.1 | 4.9  | 5.0  | 9.9  | Not Listed |
| 8                           | Mullukkeerai    | <i>Amaranthus spinosus</i>      | Amaranthaceae  | 9  | 8  | 15 | 0.6 | 53.3 | 1.1 | 5.6  | 5.7  | 11.2 | Not Listed |
| 9                           | Eli-yotti       | <i>Argemone mexicana</i>        | Papaveraceae   | 6  | 5  | 15 | 0.4 | 33.3 | 1.2 | 3.7  | 3.5  | 7.2  | Not Listed |
| 10                          | Mukurattai      | <i>Boerhavia diffusa</i>        | Nyctaginaceae  | 7  | 6  | 15 | 0.5 | 40.0 | 1.2 | 4.3  | 4.3  | 8.6  | Not Listed |
| 11                          | Keelaneeli      | <i>Phyllanthus niruri</i>       | Phyllanthaceae | 8  | 7  | 15 | 0.5 | 46.7 | 1.1 | 4.9  | 5.0  | 9.9  | Not Listed |
| <b>Climbers &amp; Grass</b> |                 |                                 |                |    |    |    |     |      |     |      |      |      |            |
| 1.                          | Perandai        | <i>Cissus quadrangularis</i>    | Vitaceae       | 7  | 6  | 15 | 0.5 | 40.0 | 1.2 | 4.3  | 4.3  | 8.6  | Not Listed |
| 2.                          | Kovai sedi      | <i>Coccinia grandis</i>         | Convolvulaceae | 8  | 7  | 15 | 0.5 | 46.7 | 1.1 | 4.9  | 5.0  | 9.9  | Not Listed |
| 3.                          | Musumusukkai    | <i>Mukia maderaspatana</i>      | Cucurbitaceae  | 6  | 5  | 15 | 0.4 | 33.3 | 1.2 | 3.7  | 3.5  | 7.2  | Not Listed |
| 4.                          | Sirupunaikkali  | <i>Passiflora foetida</i>       | Passifloraceae | 9  | 8  | 15 | 0.6 | 53.3 | 1.1 | 5.6  | 5.7  | 11.2 | Not Listed |
| 5.                          | Chevvarakupul   | <i>Chloris barbata</i>          | Amaranthaceae  | 7  | 6  | 15 | 0.5 | 40.0 | 1.2 | 4.3  | 4.3  | 8.6  | Not Listed |
| 6.                          | Koraipul        | <i>Cyperus rotandus</i>         | Poaceae        | 8  | 7  | 15 | 0.5 | 46.7 | 1.1 | 4.9  | 5.0  | 9.9  | Not Listed |

**Table 3.21 Calculation of Species Diversity in 300m Radius**

| S. No                                     | Common name      | Scientific name                 | No. of Species | Pi   | ln (Pi) | Pi x ln (Pi) |
|-------------------------------------------|------------------|---------------------------------|----------------|------|---------|--------------|
| <b>Trees</b>                              |                  |                                 |                |      |         |              |
| 1                                         | Karuvelam maram  | <i>Vachellia nilotica</i>       | 3              | 0.08 | -2.59   | -0.19        |
| 2                                         | Unjai maram      | <i>Albizia amara</i>            | 4              | 0.10 | -2.30   | -0.23        |
| 3                                         | Wetpalai maram   | <i>Wrightia tinctoria</i>       | 5              | 0.13 | -2.08   | -0.26        |
| 4                                         | Velikathan maram | <i>Prosopis juliflora</i>       | 3              | 0.08 | -2.59   | -0.19        |
| 5                                         | Pongam oiltree   | <i>Pongamia pin nata</i>        | 4              | 0.10 | -2.30   | -0.23        |
| 6                                         | Panai maram      | <i>Borassus flabellifer</i>     | 5              | 0.13 | -2.08   | -0.26        |
| 7                                         | Nochi            | <i>Vitex negundo</i>            | 4              | 0.10 | -2.30   | -0.23        |
| 8                                         | Nuna maram       | <i>Morinda citrifolia</i>       | 3              | 0.08 | -2.59   | -0.19        |
| 9                                         | Vembu            | <i>Azadirachta indica</i>       | 4              | 0.10 | -2.30   | -0.23        |
| 10                                        | Manga Tree       | <i>Mangifera indica</i>         | 5              | 0.13 | -2.08   | -0.26        |
| <b>H (Shannon Diversity Index) = 2.28</b> |                  |                                 |                |      |         |              |
| <b>Shrubs</b>                             |                  |                                 |                |      |         |              |
| 1                                         | Erukku           | <i>Calotropis gigantea</i>      | 7              | 0.13 | -2.06   | -0.26        |
| 2                                         | Unichedi         | <i>Lantana camara</i>           | 9              | 0.16 | -1.81   | -0.30        |
| 3                                         | Avarai           | <i>Senna auriculata</i>         | 8              | 0.15 | -1.93   | -0.28        |
| 4                                         | Sundaika         | <i>Solanum torvum</i>           | 10             | 0.18 | -1.70   | -0.31        |
| 5                                         | Umathai          | <i>Datura metel</i>             | 6              | 0.11 | -2.22   | -0.24        |
| 6                                         | Karunochi        | <i>Vitex negundo</i>            | 7              | 0.13 | -2.06   | -0.26        |
| 7                                         | Thuthi           | <i>Abutilon indicum</i>         | 8              | 0.15 | -1.93   | -0.28        |
| 8                                         | Thottalchinungi  | <i>Mimosa pudica</i>            | 7              | 0.13 | -2.06   | -0.26        |
| 9                                         | Sappathikalli    | <i>Cereus pterogonus</i>        | 8              | 0.15 | -1.93   | -0.28        |
| 10                                        | Kattamanaku      | <i>Jatropha gossypifolia L</i>  | 7              | 0.13 | -2.06   | -0.26        |
| <b>H (Shannon Diversity Index) =1.93</b>  |                  |                                 |                |      |         |              |
| <b>Herbs</b>                              |                  |                                 |                |      |         |              |
| 1                                         | Thumbai          | <i>Leucas aspera</i>            | 9              | 0.06 | -2.89   | -0.16        |
| 2                                         | Parttiniyam      | <i>Parthenium hysterophorus</i> | 7              | 0.04 | -3.14   | -0.14        |
| 3                                         | Thulasi          | <i>Ocimum tenuiflorum</i>       | 11             | 0.07 | -2.69   | -0.18        |
| 4                                         | Kuppamani        | <i>Acalypha indica</i>          | 8              | 0.05 | -3.01   | -0.15        |
| 5                                         | Nayuruvi         | <i>Achyranthes aspera</i>       | 6              | 0.04 | -3.30   | -0.12        |
| 6                                         | Katrashai        | <i>Aloe vera</i>                | 7              | 0.04 | -3.14   | -0.14        |
| 7                                         | Sirukeerai       | <i>Amaranthus polygonoides</i>  | 8              | 0.05 | -3.01   | -0.15        |
| 8                                         | Mullukkeerai     | <i>Amaranthus spinosus</i>      | 9              | 0.06 | -2.89   | -0.16        |
| 9                                         | Eli-yotti        | <i>Argemone mexicana</i>        | 6              | 0.04 | -3.30   | -0.12        |
| 10                                        | Mukurattai       | <i>Boerhavia diffusa</i>        | 7              | 0.04 | -3.14   | -0.14        |
| 11                                        | Keelaneeli       | <i>Phyllanthus niruri</i>       | 8              | 0.05 | -3.01   | -0.15        |
| <b>H (Shannon Diversity Index) =3.03</b>  |                  |                                 |                |      |         |              |

**Table 3.22 Species Richness (Index) in 300m Radius**

| Details | H    | H max | Evenness | Species Richness |
|---------|------|-------|----------|------------------|
| Trees   | 2.28 | 2.42  | 0.94     | 2.35             |
| Shrubs  | 1.93 | 1.70  | 0.97     | 1.53             |
| Herbs   | 3.03 | 3.12  | 1.00     | 3.95             |

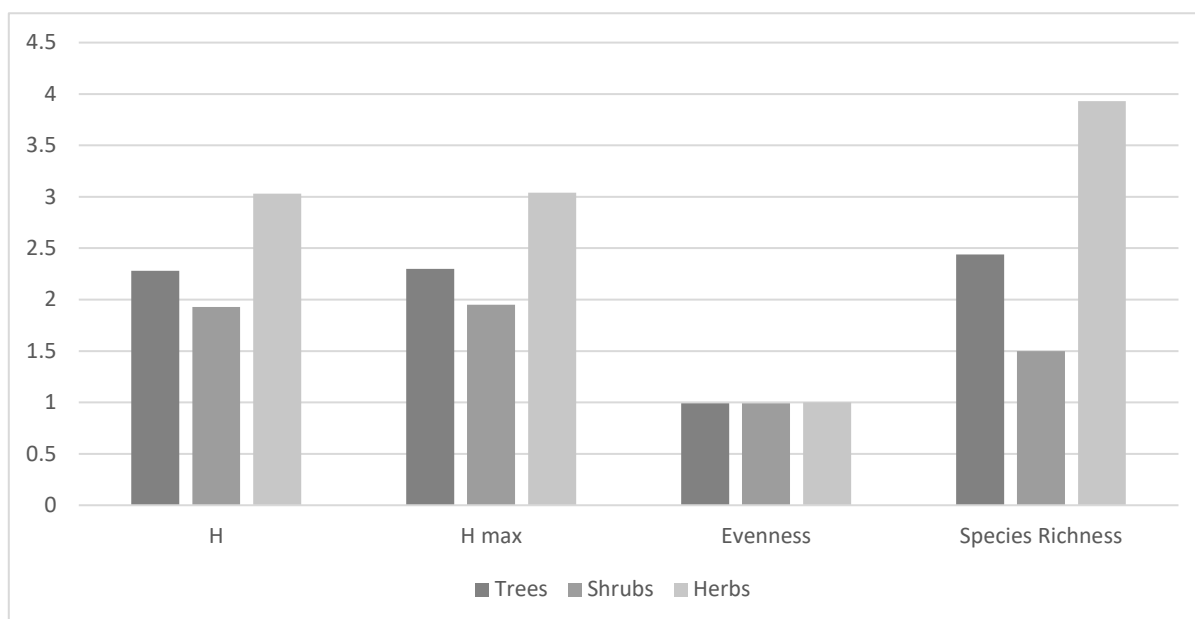


**Figure. 3.25 Species Richness (Index) in 300meter radius  
Flora within 10km radius buffer zone**

Similar type of environment also in buffer area but with more flora diversity compare than core zone area. It contains a total of species belonging to 41 families have been recorded from the buffer zone. The floral (71) varieties among them 22 Trees, 11 Shrubs, Herbs and Climbers, Creeper, Grass & Cactus, 38 were identified. Details of flora with the scientific name details of diversity species rich ness index were mentioned in Table 3.23

**Table 3.23 Flora in Buffer Zone**

| S. No        | Local Name       | Scientific name               | Family name    |
|--------------|------------------|-------------------------------|----------------|
| <b>Trees</b> |                  |                               |                |
| 1.           | Karuvelam        | <i>Acacia nilotica</i>        | Mimosaceae     |
| 2.           | Neem             | <i>Azadirachta indica</i>     | Meliaceae      |
| 3.           | Puliyamaram      | <i>Tamarindus indica</i>      | Legumes        |
| 4.           | Pongam oiltree   | <i>Pongamia pinnata</i>       | Fabaceae       |
| 5.           | Punnai           | <i>Calophyllum inophyllum</i> | Calophyllaceae |
| 6.           | Nettilinkam      | <i>Polylathia longifolia</i>  | Annonaceae     |
| 7.           | Perumungil       | <i>Bambusa bambos</i>         | Poaceae        |
| 8.           | Navalmaram       | <i>Syzygium cumini</i>        | Myrtaceae      |
| 9.           | Ezhumuchai maram | <i>Citrus lemon</i>           | Rutaceae       |
| 10.          | Alamaram         | <i>Ficus benghalensis</i>     | Moraceae       |
| 11.          | Panai maram      | <i>Borassus flabellifer</i>   | Arecaceae      |
| 12.          | Manga            | <i>Mangifera indica</i>       | Anacardiaceae  |
| 13.          | Thekku           | <i>Tectona grandis</i>        | Verbenaceae    |
| 14.          | Athi             | <i>Ficus recemosa</i>         | Moraceae       |
| 15.          | Vazhaimaram      | <i>Musa</i>                   | Musaceae       |
| 16.          | Kadukka puli     | <i>Terminalia chebula</i>     | Combretaceae   |
| 17.          | Sapota           | <i>Manilkara zapota</i>       | Sapotaceae     |
| 18.          | Eucalyptus       | <i>Eucalyptus globules</i>    | Myrtaceae      |
| 19.          | Nelli            | <i>Embllica officinalis</i>   | Phyllanthaceae |
| 20.          | Nettilinkam      | <i>Polylathia longifolia</i>  | Annonaceae     |

|                                                    |                  |                                  |                |
|----------------------------------------------------|------------------|----------------------------------|----------------|
| 21.                                                | Vellai Karuvelam | <i>Vachellia nilotica</i>        | Fabaceae       |
| 22.                                                | Palamaram        | <i>Artocarpus heterophyllus</i>  | Moraceae       |
| <b>Shrubs</b>                                      |                  |                                  |                |
| 1                                                  | Avarai           | <i>Senna auriculata</i>          | Fabaceae       |
| 2                                                  | Sundaika         | <i>Solanum torvum</i>            | Solanaceae     |
| 3                                                  | Arali            | <i>Nerium indicum</i>            | Apocynaceae    |
| 4                                                  | Idlipoo          | <i>xoracoc cineia</i>            | Rubiaceae      |
| 5                                                  | Neermulli        | <i>Hydrophila auriculata</i>     | Acanthaceae    |
| 6                                                  | Icham            | <i>Phoenix pusilla</i>           | Arecaceae      |
| 7                                                  | Chaturakalli     | <i>Euphorbia antiquorum</i>      | Euphorbiaceae  |
| 8                                                  | Kattamanakku     | <i>Jatropha curcas</i>           | Euphorbiaceae  |
| 9                                                  | Thuthi           | <i>Abutilon indicum</i>          | Meliaceae      |
| 10                                                 | Chemparuthi      | <i>Hibiscus rosa-sinensis</i>    | Malvaceae      |
| 11                                                 | Erukku           | <i>Calotropis gigantea</i>       | Apocynaceae    |
| <b>Herbs, Climber, Creeper, Grass &amp; Cactus</b> |                  |                                  |                |
| 1                                                  | Thumbai          | <i>Leucas aspera</i>             | Lamiaceae      |
| 2                                                  | Partiniyam       | <i>Parthenium</i>                | Asteraceae     |
| 3                                                  | Thoiya keera     | <i>Digeria muricata</i>          | Amaranthaceae  |
| 4                                                  | Pulliyari        | <i>Oxalis corniculata</i>        | Oxalidaceae    |
| 5                                                  | Mukurathai       | <i>Boerhavia diffusa</i>         | Nyctaginaceae  |
| 6                                                  | Thulasi          | <i>Ocimum tenuiflorum</i>        | Lamiaceae      |
| 7                                                  | Arugampul        | <i>Cynodon dactylon</i>          | Poaceae        |
| 8                                                  | Manjal           | <i>Curcuma longa</i>             | Zingiberaceae  |
| 9                                                  | Manathakkali     | <i>Solanumnigrum</i>             | Solanaceae     |
| 10                                                 | Nai kadugu       | <i>Celome viscosa</i>            | Capparidaceae  |
| 11                                                 | Koraikkilangu    | <i>Cyperus articulatus</i>       | Cyperaceae     |
| 12                                                 | Karisilanganni   | <i>Eclipta prostrata</i>         | Asteraceae     |
| 13                                                 | Korai            | <i>Cyperus rotundus</i>          | Cyperaceae     |
| 14                                                 | Kunnakora        | <i>Cyperus compressus</i>        | Cyperaceae     |
| 15                                                 | Mukurattai       | <i>Boerhavia diffusa</i>         | Nyctaginaceae  |
| 16                                                 | Kovai            | <i>Coccinia grandis</i>          | Cucurbitaceae  |
| 17                                                 | Perandai         | <i>Cissus quadrangularis</i>     | Vitaceae       |
| 18                                                 | Mudakkotan       | <i>Cardiospermum helicacabum</i> | Sapindaceae    |
| 19                                                 | Sangupoo         | <i>Clitoria ternata</i>          | Fabaceae       |
| 20                                                 | Malli            | <i>Jasminum augustifolium</i>    | Oleaceae       |
| 21                                                 | Vallikeera       | <i>Ipomoea aquatica</i>          | Convolvulaceae |
| 22                                                 | Siru puladi      | <i>Desmodium triflorum</i>       | Fabaceae       |
| 23                                                 | Sithrapaalavi    | <i>Euphorbia prostrata</i>       | Euphorbiaceae  |
| 24                                                 | mookuthi poondu  | <i>Wedelia trilobata</i>         | Asteraceae     |
| 25                                                 | Pullu            | <i>Eragrostis ferruginea</i>     | Poaceae        |
| 26                                                 | Chevvarakupul    | <i>Chloris barbata</i>           | Amaranthaceae  |
| 27                                                 | Nagathali        | <i>Opuntia dillenii</i>          | Nagathali      |
| 28                                                 | Nayuruvi         | <i>Achyranthes aspera</i>        | Amaranthaceae  |
| 29                                                 | Veetukaayapoonu  | <i>Tridax procumbens</i>         | Asteraceae     |
| 30                                                 | Kaattu piral     | <i>Hibiscus hispidissimus</i>    | Malvaceae      |
| 31                                                 | Kuppaimeni       | <i>Acalypha indica</i>           | Euphorbiaceae  |
| 32                                                 | Karisilanganni   | <i>Eclipta prostrata</i>         | Asteraceae     |
| 33                                                 | Korai            | <i>Cyperus rotundus</i>          | Cyperaceae     |
| 34                                                 | Kumattikkirai    | <i>Allmania nodiflora</i>        | Amaranthaceae  |

|    |                 |                               |                |
|----|-----------------|-------------------------------|----------------|
| 35 | Kunnakora       | <i>Cyperus compressus</i>     | Cyperaceae     |
| 36 | Keelaneeli      | <i>Phyllanthus niruri</i>     | Phyllanthaceae |
| 37 | Kanamvazhalai   | <i>Commelina benghalensis</i> | Commelinaceae  |
| 38 | Thottalchinungi | <i>Mimosa pudica</i>          | Mimosaceae     |

### **Aquatic Vegetation**

The field survey for assessing the aquatic vegetation was also undertaken during the study period. The list of aquatic plants observed in the study area is given in Table 3.24.

**Table 3.24 Aquatic Vegetation**

| S.No.                | Scientific name                | Common Name         | IUCN Red List Status |
|----------------------|--------------------------------|---------------------|----------------------|
| 1                    | <i>Eichornia crassipes</i>     | Water hyacinth      | NA                   |
| 2                    | <i>Aponogeton natans</i>       | Floating lace plant | NA                   |
| 3                    | <i>Carex cruciata</i>          | Cross Grass         | NA                   |
| 4                    | <i>Cynodon dactylon</i>        | Scutch grass        | LC                   |
| <b>Aquatic fauna</b> |                                |                     |                      |
| 5                    | <i>Oreochromis mossambicus</i> | Jalebi              | VU                   |
| 6                    | <i>Labeo catla</i>             | Catla catla         | LC                   |
| 7                    | <i>Channa striata</i>          | Korava meen         | LC                   |

\*LC- Least Concern, NA-Not yet assessed

The food chain in aquatic ecosystems often begins with the algae or phytoplankton producers, and then the zooplankton that feed on them. Table 3.25 lists the aquatic plants and animals commonly found in rivers, ponds and lakes within a radius of 5km from the quarry. Phytoplankton, zooplankton, fish and Artiola form this food chain.

Eg: Phytoplankton → zooplankton → small fish → large fish

### **Forest details**

There are no or Biosphere Reserves or Wildlife Sanctuaries or National Parks or Bird Areas (IBAs) and faunal migration routes within 10 km radius. The area under study (mining lease area and 10km buffer zone) is not ecologically sensitive. There is no reserve forest in 1km radius and reserve forest details mention in Table 3.39

### **Endangered and endemic species as per the IUCN Red List**

There are no rare, endangered and endemic species found in the study area. There are no biosphere reserves or wildlife sanctuaries or National parks or Important Bird Areas (IBAs), ecologically sensitive zone in 10km radius.

### **3.6.2 Fauna**

The faunal survey was carried out for Mammals, Birds, Reptiles, Amphibians and Butterflies. There are no rare, endangered, threatened (RET) and endemic species present in core area.

**Table 3.25 Methodology Applied during Survey of Fauna**

| S. No. | Taxa       | Method of Sampling                      | References                      |
|--------|------------|-----------------------------------------|---------------------------------|
| 1      | Insects    | Random walk, Opportunistic observations | Pollard (1977); Kunte (2000)    |
| 2      | Reptiles   | Visual encounter survey (Direct Search) | Daniel J.C (2002)               |
| 3      | Amphibians | Visual encounter survey (Direct Search) |                                 |
| 4      | Mammals    | Tracks and Signs                        | Menon V (2014)                  |
| 5      | Avian      | Random walk, Opportunistic observations | Grimmett R (2011); Ali S (1941) |

**Fauna in Core Zone**

A total of 26 varieties of species observed in the Core zone of Ajjanahalli Village, among them numbers of Insects 9, Reptiles 2, Mammals 4 and Avian 7. A total of 17 species belonging to 16 families have been recorded from the core Zone. There is no schedule I and II species. A total of 12 species of bird were sighted in the study area. Details of fauna in core zone with the scientific name were mentioned in Table. 3.26.

**Fauna in Buffer Zone**

Taxonomically a total of 68 species belonging to 49 families have been recorded from the buffer zone area. Based on habitat classification the majority of species were followed by insects 11, reptiles 11, Aves 38, Mammals 5 and amphibians 3. A total of 38 species of bird were sighted in the buffer zone. There are no critically endangered, endangered, vulnerable and endemic species were observed. Details of fauna in buffer zone with the scientific name were mentioned in Table. 3.27. data collation in secondary data.

**Table 3.26 Fauna in Core Zone**

| S.no            | Common Name/English Name | Scientific Name            | Family name  | IUCN Red List data |
|-----------------|--------------------------|----------------------------|--------------|--------------------|
| <b>Insects</b>  |                          |                            |              |                    |
| 1               | Chocolate pansy          | <i>Junonia iphita</i>      | Nymphalidae  | NA                 |
| 2               | Common Mormon            | <i>Papilio polytes</i>     | Papilionidae | NA                 |
| 3               | Crimson dropwing         | <i>Trithemis aurora</i>    | Libellulidae | LC                 |
| 4               | Lime swallowtail         | <i>Papilio demoleus</i>    | Papilionidae | NA                 |
| 5               | Lemon pansy              | <i>Junonia lemonias</i>    | Nymphalidae  | NA                 |
| 6               | Tawny coster             | <i>Acraea terpsicore</i>   | Nymphalidae  | NA                 |
| 7               | Slender skimmer          | <i>Orthetrum sabina</i>    | Libellulidae | LC                 |
| 8               | Plains tiger butterfly   | <i>Danaus chrysippus</i>   | Nymphalidae  | LC                 |
| 9               | Mottled emigrant         | <i>Catopsilia pyranthe</i> | Pieridae     | LC                 |
| <b>Reptiles</b> |                          |                            |              |                    |
| 1               | Oriental garden lizard   | <i>Calotes versicolor</i>  | Agamidae     | LC                 |



|                |                            |                                  |              |    |
|----------------|----------------------------|----------------------------------|--------------|----|
| 2              | Common skink               | <i>Mabuya carinatus</i>          | Scincidae    | LC |
| <b>Aves</b>    |                            |                                  |              |    |
| 1              | Indian robin               | <i>Copsychus fulicatus</i>       | Muscicapidae | LC |
| 2              | White – browed Wagtail     | <i>Motacilla maderaspatensis</i> | Motacillidae | LC |
| 3              | Indian Roller              | <i>Coracias benghalensis</i>     | Coraciidae   | LC |
| 4              | Indian paradise flycatcher | <i>Terpsiphone paradisi</i>      | Monarchidae  | LC |
| 5              | Common myna                | <i>Acridotheres tristis</i>      | Sturnidae    | LC |
| 6              | European bee- eater        | <i>Merops apiaster</i>           | Meropidae    | LC |
| 7              | Black drongo               | <i>Dicrurus macrocercus</i>      | Dicruridae   | LC |
| <b>Mammals</b> |                            |                                  |              |    |
| 1              | House mouse                | <i>Mus musculus</i>              | Muridae      | LC |
| 2              | Indian hare                | <i>Lepus nigricollis</i>         | Leporidae    | LC |
| 3              | Cow                        | <i>Bos taurus</i>                | Bovidae      | NA |
| 4              | Goat                       | <i>Capra hircus</i>              | Bovidae      | NA |

\*NE- Not Evaluated; LC- Least Concern, NT –Near Threatened, T-Threatened

**Table 3.27 Fauna in Buffer Zone**

| S. No           | Common Name/English Name     | Scientific Name                 | Family name  | IUCN Red List data |
|-----------------|------------------------------|---------------------------------|--------------|--------------------|
| <b>Insects</b>  |                              |                                 |              |                    |
| 1.              | Bark blue tiger butterfly    | <i>Tirumala septentrionis</i>   | Nymphalidae  | NA                 |
| 2.              | Chocolate pansy              | <i>Junonia iphita</i>           | Nymphalidae  | NA                 |
| 3.              | Common Mormon                | <i>Papilio polytes</i>          | Papilionidae | NA                 |
| 4.              | Crimson dropwing             | <i>Trithemis aurora</i>         | Libellulidae | LC                 |
| 5.              | Danaid eggfly                | <i>Hypolimnas misippus</i>      | Nymphalidae  | LC                 |
| 6.              | Ditgh jewel                  | <i>Brachythemis contaminata</i> | Libellulidae | LC                 |
| 7.              | Lime swallowtail             | <i>Papilio demoleus</i>         | Papilionidae | NA                 |
| 8.              | Lemon pansy                  | <i>Junonia lemonias</i>         | Libellulidae | NA                 |
| 9.              | Tawny coster                 | <i>Acraea terpsicore</i>        | Nymphalidae  | NA                 |
| 10.             | Slender skimmer              | <i>Orthetrum sabina</i>         | Libellulidae | LC                 |
| 11.             | Plaina tiger butterfly       | <i>Danaus chrysippus</i>        | Nymphalidae  | LC                 |
| <b>Reptiles</b> |                              |                                 |              |                    |
| 1               | Oriental garden lizard       | <i>Calotes uersicolor</i>       | Agamidae     | NA                 |
| 2               | Fan-Throated Lizard          | <i>Sitanaponticeriana</i>       | Agamidae     | NA                 |
| 3               | Common skink                 | <i>Mabuya carinatus</i>         | Scincidae    | NA                 |
| 4               | Buff striped keelback        | <i>Amphiesma stolatum</i>       | Colubridae   | LC                 |
| 5               | Common bronzeback tree snake | <i>Dendrelaphis tristis</i>     | Colubridae   | LC                 |
| 6               | Common krait                 | <i>Bungarus caeruleus</i>       | Elapidae     | LC                 |
| 7               | Russells wolf snake          | <i>Lycodon fasilatus</i>        | Colubridae   | LC                 |
| 8               | Brahminy blindsnake          | <i>Indotyphlope braminus</i>    | Typhlopidae  | LC                 |
| 9               | Rock dragon                  | <i>Psammophilus dorsalis</i>    | Agamidae     | LC                 |
| 10              | Indian vine snake            | <i>Ahaetulla oxyrhynca</i>      | Colubridae   | NA                 |
| 11              | Blotched house gecko         | <i>Hemidactylus triedrus</i>    | Gekkonidae   | LC                 |
| <b>Aves</b>     |                              |                                 |              |                    |

|                |                             |                                  |                   |    |
|----------------|-----------------------------|----------------------------------|-------------------|----|
| 1              | Baya weaver                 | <i>Ploceus philippinus</i>       | Ploceidae         | LC |
| 2              | White – browed Wagtail      | <i>Motacilla maderaspatensis</i> | Motacillidae      | LC |
| 3              | Great cormorant             | <i>Phalacrocorax carbo</i>       | Phalacrocoracidae | LC |
| 4              | Indian robin                | <i>Copsychus fulicatus</i>       | Muscicapidae      | LC |
| 5              | Indian Roller               | <i>Coracias benghalensis</i>     | Coraciidae        | LC |
| 6              | Indian paradise flycatcher  | <i>Terpsiphone paradisi</i>      | Monarchidae       | LC |
| 7              | Red junglefowl              | <i>Gallus gallus</i>             | Phasianidae       | LC |
| 8              | Common myna                 | <i>Acridotheres tristis</i>      | Sturnidae         | LC |
| 9              | European bee- eater         | <i>Merops apiaster</i>           | Meropidae         | LC |
| 10             | Black drongo                | <i>Dicrurus macrocercus</i>      | Dicruridae        | LC |
| 11             | Black – winged stilt        | <i>Himantopus Himantopus</i>     | Recurvirostridae  | LC |
| 12             | Crested serpent eagle       | <i>Spilornis cheela</i>          | Accipitridae      | LC |
| 13             | Brahminy kite               | <i>Haliastur indus</i>           | Accipitridae      | LC |
| 14             | Spotted owlet               | <i>Athene brama</i>              | Strigidae         | LC |
| 15             | Black rumped flameback      | <i>Dinopium benghalense</i>      | Picidae           | LC |
| 16             | White -browed bulbul        | <i>Pycnonotus luteolus</i>       | Pycnonotidae      | LC |
| 17             | House sparrow               | <i>Passer domesticus</i>         | Passeridae        | LC |
| 18             | Grey heron                  | <i>Ardea cinerea</i>             | Ardeidae          | LC |
| 19             | Indian peafowl              | <i>Pavo cristatus</i>            | Phasianidae       | LC |
| 20             | Rose -ringed parakeet       | <i>Psittacula krameri</i>        | Psittaculidae     | LC |
| 21             | Scaly – breasted munia      | <i>Lonchura punctulata</i>       | Estrildidae       | LC |
| 22             | White -throated kingfisher  | <i>Halcyon smyrnensis</i>        | Alcedinidae       | LC |
| 23             | House crow                  | <i>Corvus splendens</i>          | Corvidae          | LC |
| 24             | Asian koel                  | <i>Eudynamys scolopaceus</i>     | Cuculidae         | LC |
| 25             | Asian green bee- Eater      | <i>Merops orientalis</i>         | Meropidae         | LC |
| 26             | Little cormorant            | <i>Microcarbo niger</i>          | Microcarbo        | LC |
| 27             | Painted stork               | <i>Mycteria leucocephala</i>     | Ciconiidae        | NT |
| 28             | Shikra                      | <i>Accipiter badius</i>          | Accipitridae      | LC |
| 29             | Indian robin                | <i>Copsychus fulicatus</i>       | Muscicapidae      | LC |
| 30             | Indian roller               | <i>Coracias benghalensis</i>     | Coraciidae        | LC |
| 31             | Indian paradise flycatcher  | <i>Terpsiphone paradisi</i>      | Monarchidae       | LC |
| 32             | Yellow – billed babbler     | <i>Argya affinis</i>             | Leiothrichidae    | LC |
| 33             | Ashy – crowned sparrow lark | <i>Eremopterix griseus</i>       | Alaudidae         | LC |
| 34             | Small pratincole            | <i>Glareola lactea</i>           | Glareolidae       | LC |
| 35             | Great egret                 | <i>Ardea alba</i>                | Ardeidae          | LC |
| 36             | Rock pigeon                 | <i>Columba livia</i>             | Columbidae        | LC |
| 37             | Eurasian collared – dove    | <i>Streptopelia decaocto</i>     | Columbidae        | LC |
| 38             | Eurasian coot               | <i>Fulica atra</i>               | Rallidae          | LC |
| <b>Mammals</b> |                             |                                  |                   |    |
| 1              | House mouse                 | <i>Mus musculus</i>              | Muridae           | LC |
| 2              | Indian hare                 | <i>Lepus nigricollis</i>         | Leporidae         | LC |
| 3              | Jungle cat                  | <i>Felis chaus</i>               | Felidae           | LC |
| 4              | Cow                         | <i>Bos taurus</i>                | Bovidae           | NA |
| 5              | Goat                        | <i>Capra hircus</i>              | Bovidae           | NA |

| <b>Amphibians</b> |                        |                                   |                |    |
|-------------------|------------------------|-----------------------------------|----------------|----|
| 1                 | Asian common toad      | <i>Duttaphrynus melanostictus</i> | Bufonidae      | LC |
| 2                 | Chunam tree frog       | <i>Polypedates maculatus</i>      | Rhacophoridae  | LC |
| 3                 | Common skittering frog | <i>Euphlycits cyanophlyctis</i>   | Dicroglossidae | LC |

\*NL- Not listed, LC- Least concern, NT- Near threatened.

### 3.6.3 Agriculture & Horticulture in Dharmapuri district

Dharmapuri district is one of the potential district for cultivation of horticultural crops. Total area under cultivation is 195740ha. In that, Horticultural crops have been cultivated in about 80000ha and the prominent crops under cultivation are Mango, Banana, Tomato, Bhendi, Brinjal, Radish, Gourds, Tapioca, Turmeric, Rose, Jasmine, Tuberose and Chrysanthemum. Mango is the major crop grown in this district. The average annual rainfall for the district is 853.1mm per annum.

Agriculture is the principal occupation in this district. Nearly 74 % of the workforce is dependent on agriculture, 43 % are cultivators and the rest 31 % agricultural labourers. The net sown area was 3.93lakh hectares in 2024 and the gross cropped area was 4.70 lakh hectares. The district is one among the most backward and drought prone area in the state.

#### **Major Agricultural Crops**

Major horticulture crops cultivated in this district are fruit crops like mango, banana, Sapota and guava, vegetables like tomato, brinjal, chillies, onion and turmeric. Details of major field crops and horticulture in 1km radius is given in Table. 3.28. Agricultural land in the study area.

**Table 3.28 Major Crops in 1km radius**

| S. No | Major crops | Scientific name              | Families    |
|-------|-------------|------------------------------|-------------|
| 1     | Sorghum     | <i>Sorghum bicolor</i>       | Poaceae     |
| 2     | Gingelly    | <i>Sesamum indicum</i>       | Pedaliaceae |
| 3     | Groundnut   | <i>Arachis hypogaea</i>      | Legumes     |
| 4     | Sugarcane   | <i>Saccharum officinarum</i> | Poaceae     |
| 5     | Millets     | <i>Panicum miliaceum L</i>   | Poaceae     |
| 6     | Sesame      | <i>Sesamum indicum</i>       | Pedaliaceae |

#### **Major Horticulture Crops**

Horticulture includes cultivation of fruits, vegetables, nuts, seeds, herbs, sprouts, mushrooms, algae, flowers, seaweeds and non-food crops such as grass and ornamental trees and plants. It also includes plant conservation, landscape restoration, landscape and garden design.

## Horticulture

Major horticulture crops cultivated in this district are fruit crops like mango, banana, Sapota and guava, vegetables like tomato, brinjal, Ladies finger, chillies, onion and tapioca, spices like turmeric. Details of major field crops and horticulture cultivation in 1km radius is given in Table 3.29.

**Table 3.29 Major Field Crops & Horticulture cultivation in 1km radius.**

| Sl.NO                            | Common Name   | Scientific Name               | Family         |
|----------------------------------|---------------|-------------------------------|----------------|
| <b>Major Horticultural Crops</b> |               |                               |                |
| 1                                | Banana        | <i>Musa</i>                   | Musaceae       |
| 2                                | Mango         | <i>Mangifera indica</i>       | Anacardiaceae  |
| 4                                | Guava         | <i>Psidium guajava</i>        | Myrtaceae      |
| 5                                | Sapota        | <i>Manilkara zapota</i>       | Sapotaceae     |
| 6                                | Lemon         | <i>Citrus × limon</i>         | Rutaceae       |
| 7                                | Papaya        | <i>Carica papaya</i>          | Caricaceae     |
| <b>Vegetables</b>                |               |                               |                |
| 8                                | Onion         | <i>Allium cepa</i>            | Amaryllidaceae |
| 9                                | Tapioca       | <i>Manihot esculenta</i>      | Spurges        |
| 10                               | Brinjal       | <i>Solanum melongena</i>      | Nightshade     |
| 11                               | Tomato        | <i>Solanum lycopersicum</i>   | Nightshade     |
| 12                               | Bottle Gourd  | <i>Lagenaria siceraria</i>    | Cucurbits      |
| 13                               | Veandai kai   | <i>Abelmoschus esculentus</i> | Mallows        |
| 14                               | Moringa       | <i>Moringa oleifera</i>       | Moringaceae    |
| 15                               | Mullangi      | <i>Raphanus sativus</i>       | Brassicaceae   |
| <b>Flowers</b>                   |               |                               |                |
| 18                               | Jasmine       | <i>Jasminum</i>               | Jasminaceae    |
| 20                               | Sambanthi poo | <i>Crysanthimum</i>           | Asteraceae     |
| 21                               | Rose & Jathi  | <i>Rosa</i>                   | Rosaceae       |
| 23                               | Tuberose      | <i>Polianthes tuberosa</i>    | Asparagus      |
| <b>Spices and Condiments</b>     |               |                               |                |
| 24                               | Chillies      | <i>Capsicum frutescens</i>    | Solanaceae     |
| 25                               | Turmeric      | <i>Curcuma longa</i>          | Zingiberaceae  |
| 26                               | Curry leaf    | <i>Murraya koenigii</i>       | Rutaceae       |

## Results

Biological assessment of the site was done to identify ecologically sensitive areas and whether there are any rare, endangered, endemic or threatened (REET) species of flora & fauna in the core area as well its buffer zone to be impacted. The study has also been designed to suggest suitable mitigation measures, if necessary, for protection of wildlife habitats and conservation of REET species if any. The study found that there is no endemic, endangered migratory fauna found in the area. This area is not also a migratory path of any faunal species.

Hence, this small mining operation over short period of time will not have any significant impact on the surrounding flora and fauna.

### **3.7 SOCIO ECONOMIC ENVIRONMENT**

The major developmental activities in the mining and industrial sector are crucial for economic development and the creation of direct and indirect employment opportunities. These activities also fulfil society's basic and modern needs of the society, ultimately improving the quality of life through advancements in social, economic, health, education, and nutritional status within the project region, state, and country. In this manner all developmental projects have direct as well as indirect relationships with socioeconomic aspects, which also include public acceptability for developmental projects. Thus, the study of socio-economic environment component incorporating various facets related to prevailing social and cultural conditions and economic status of the mining (rough stone quarry) project region is an important part of the EIA study. The study of these parameters helps in identification, prediction and evaluation of the likely impacts on the socio-economics and parameters of human interest due to the project.

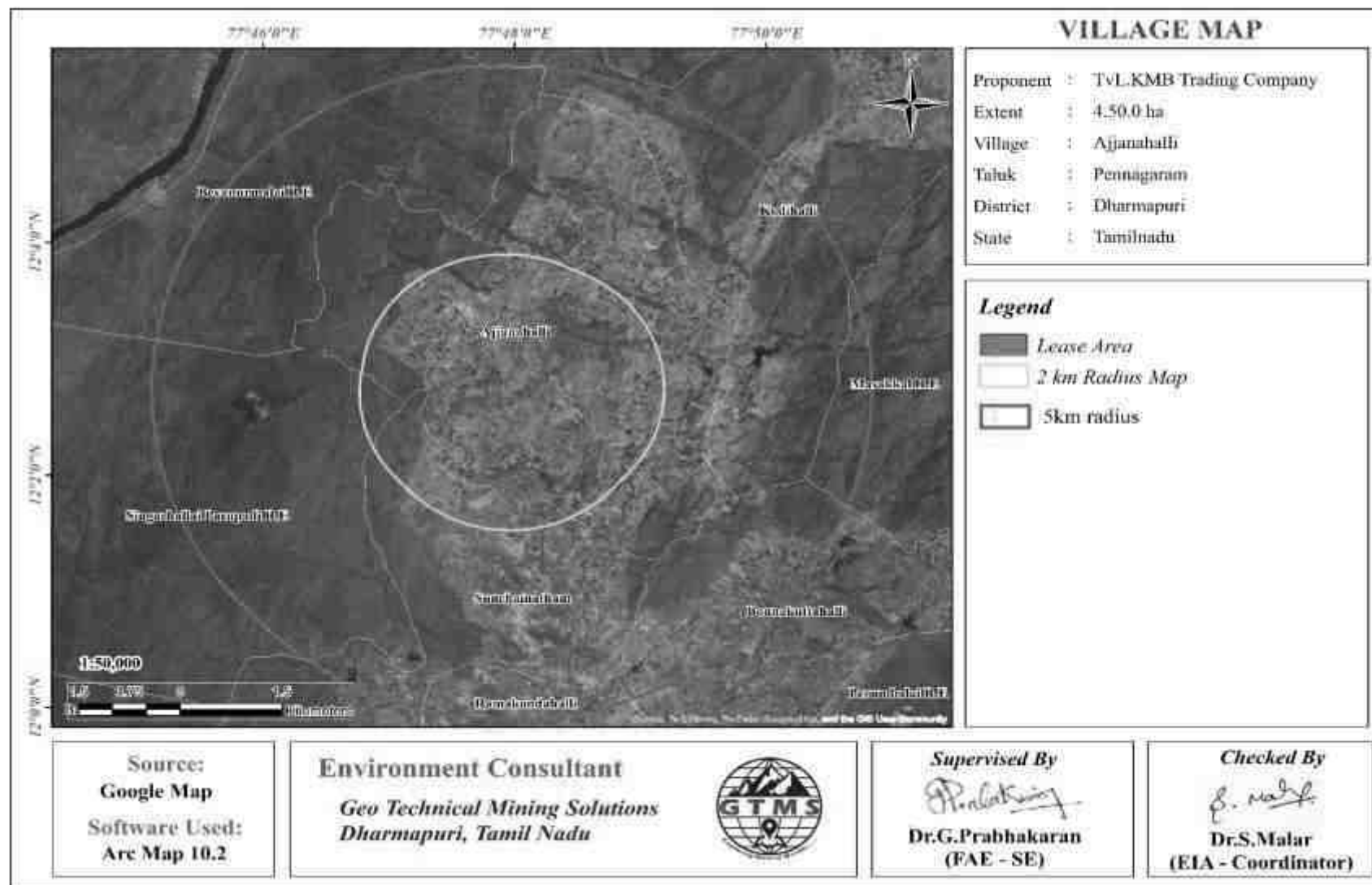
#### **3.7.1 Objectives of the Study**

*The objectives of the socio-economic impact assessment are as follows:*

- a) To study the socio-economic status of the people living in the study area of the project.
- b) To identify the basic needs of the nearby villages within the study area.
- c) To assess the impact on socio-economic environment due to the project.
- d) To provide the employment and improved living standards.
- e) To analysis of impact of socio economic and Environmental Infrastructure facilities and road accessibility.

#### **3.7.2 Methodology**

The study employed cluster sampling to outline two zones around the proposed project site: Zone 1 (Core Zone, 0-1 km radius) and Zone 2 (Low Impact Zone, 1–5 km radius). The primary data collection was conducted through structured interviews, field observation, and focus group discussions with the local people of Ajjanahalli village in Pennagaram Taluka, Dharmapuri district. The secondary data were collected from the Census report 2011 and official records, covering demographics and basic services including information on population, number of households, literacy rates, sex ratios, worker details and the availability of basic services. This study covers the positive and negative impacts of the project's establishment, and provides recommendations for analysing and mitigating adverse effects. The study area is illustrated in Figure 3.26.



### 3.7.3 Demographic Profile of Dharmapuri District

Dharmapuri district was established in 1965 when the erstwhile Salem district was bifurcated. The district is located in the northwestern corner of Tamil Nadu, and it shares borders with Thiruvanamalai, Villupuram Districts in the East, Karnataka State in the West, Krishnagiri District in the North and Salem District in the South. The district spans a total geographical area of 9,622 square kilometers. Geographically, it lies between 11°47' and 12°33' Northern latitude and 77°28' and 76°45' eastern longitude. Administratively, Dharmapuri district is organized into 3 revenue divisions and 10 taluks, with further subdivisions for revenue administration.

In 2011, Dharmapuri had population of 1,506,843 of which male and female were 774,303 and 732,540 respectively. In 2001 census, Dharmapuri had a population of 1,295,182 of which males were 670,520 and remaining 624,662 were females. There was change of 16.34 percent in the population compared to population as per 2001. Average literacy rate of Dharmapuri in 2011 were 68.54 compared to 68.54 of 2001. If things are looked out at gender wise, male and female literacy were 76.85 and 59.80 respectively. For 2001 census, same figures stood at 70.52 and 49.47 in Dharmapuri District. Total literate in Dharmapuri District was 917,709 of which male and female were 527,599 and 390,110 respectively. In 2001, Dharmapuri District had 677,674 in its district.

With regards to Sex Ratio in Dharmapuri, it stood at 946 per 1000 male compared to 2001 census figure of 932. The average national sex ratio in India is 940 as per latest reports of Census 2011 Directorate. In 2011 census, child sex ratio is 913 girls per 1000 boys compared to figure of 869 girls per 1000 boys of 2001 census data.

Source: <https://www.census2011.co.in/census/district/24-dharmapuri.html>

### 3.7.4 Profile of the Study area – Ajjanahalli Village, Pennagaram Taluk

The profile of Ajjanahalli village covers demographics, population statistics (such as the number of households), geographical area, basic facilities, and information on nearby villages. Ajjanahalli is a large village situated in the Eriyur Block of Pennagaram Taluk, Dharmapuri district, Tamil Nadu. It comprises a total of 2,609 families, with an average household size of about four members. As per the 2011 Census, the village has a population of 10,481, including 5,774 males and 4,707 females. Children aged 0–6 make up 1,336 of the population, accounting for 12.75% of the total, as presented in Table 3.30.

The average sex ratio of Ajjanahalli is 815, while the child sex ratio stands at 740, both significantly lower than the Tamil Nadu state averages of 996 and 943, respectively. The

literacy rate of the village is 62.20%, with male literacy at 71.37% and female literacy at 51.10%. Compared to the state's average literacy rate of 80.09%, Ajjanahalli shows a considerably lower literacy level.

**Table. 3.30 Demographic Details of Ajjanahalli Village**

| Particulars         | Total   | Male    | Female  |
|---------------------|---------|---------|---------|
| Total No. of Houses | 2,609   |         |         |
| Population          | 10,481  | 5,774   | 4,707   |
| Child (0-6)         | 1,336   | 768     | 568     |
| Schedule Caste      | 986     | 542     | 444     |
| Schedule Tribe      | 159     | 91      | 68      |
| Literacy            | 62.20 % | 71.37 % | 51.10 % |
| Total Workers       | 5,110   | 3,505   | 1,605   |
| Main Worker         | 4,729   | -       | -       |
| Marginal Worker     | 381     | 304     | 77      |

Source: <https://www.census2011.co.in/data/village/643649-ajjanahalli-tamil-nadu.html>

### 3.7.5 Workforce Participation of Ajjanahalli Village

Ajjanahalli village, out of the total population, 5,110 individuals were engaged in work activities. Among them, 92.54% were involved in main work (employment or livelihood lasting more than six months), while 7.46% were engaged in marginal work, providing livelihood for less than six months. Of the 5,110 main workers, 1,421 were cultivators (owners or co-owners of land), and 1,774 were agricultural labourers.

Table 3.31 presents the distribution of Ajjanahalli village's working population by occupational status and gender. A substantial share of the population 5,371 individuals, or 35.31% of the total falls into the non-working category. This group is predominantly female, with 49.75% of all females being non-workers, compared to 25.28% of males.

Among the main workers, agricultural labourers constitute the largest group, numbering 1,774 individuals (11.66% of the total population). This occupation shows a higher representation of women, with 13.44% of females employed as agricultural labourers, compared to 10.43% of males. The next major occupational group is cultivators, totalling 1,421 individuals (9.34%). In this category, males (9.81%) slightly outnumber females (8.68%).

The detailed information of the village a notable gender disparity in workforce participation and occupational distribution within Ajjanahalli village. The predominance of agricultural employment and limited female engagement in other sectors indicate a traditional agrarian economy with few alternative livelihood opportunities for women. Furthermore, the low share of workers in household industries reflects a relatively underdeveloped small-scale industrial base in the village.



**Table. 3.31 Details of Workforce Participation of Ajjanahalli Village**

| Occupational Details | Total     |       | Male      |       | Female    |       |
|----------------------|-----------|-------|-----------|-------|-----------|-------|
|                      | Frequency | %     | Frequency | %     | Frequency | %     |
| Main Workers         | 4,729     | 31.09 | 3,201     | 35.67 | 1,528     | 24.51 |
| Cultivators          | 1,421     | 9.34  | 880       | 9.81  | 541       | 8.68  |
| Agriculture Labourer | 1,774     | 11.66 | 936       | 10.43 | 838       | 13.44 |
| Household Industries | 15        | 0.10  | 7         | 0.08  | 8         | 0.13  |
| Other Workers        | 1,519     | 9.99  | 1,378     | 15.35 | 141       | 2.26  |
| Marginal Workers     | 381       | 2.50  | 304       | 3.39  | 77        | 1.23  |
| Non-Working          | 5,371     | 35.31 | 2,269     | 25.28 | 3,102     | 49.75 |
| Total                | 15,210    | 100   | 8,975     | 100   | 6,235     | 100   |

Source: <https://www.censusindia.co.in/villages/ajjanahalli-population-dharmapuri-tamil-nadu-643649>

#### ***Project Benefits:***

The local people have been provided with either direct and indirect employment opportunities such as business, contract works and development the infrastructure works. The number of villages and settlements within a radius of 5 km from the project site along with population details, number of households, total number of literate details, worker details and basic amenities of the villages etc. are given in the table 3.32, 3.33 and 3.34.

Table 3.35 provides a comparative overview of demographic and literacy characteristics across the selected villages in the study area, based on the 2011 Census data. The analysis highlights significant variations in population size, literacy levels, and workforce participation among the villages. Ajjanahalli is the most populous village, with 2,609 households and a total population of 10,481 (5,774 males and 4,707 females). It is followed by Sunchalnatham (9,548 people) and Donnakuttahalli (7,760 people). In contrast, Kodihalli and Ramakondahalli have smaller populations, with 3,404 and 6,635 residents respectively. The forest reserve areas Masakkal R.F., Bevanurmalai R.F., and Singarhallai Parapadi R.F. have no recorded resident population.

Across the villages, children aged 0–6 constitute a notable portion of the population, indicating a relatively young demographic. Ajjanahalli has the highest number of children (1,336), followed by Sunchalnatham (1,120).

The information revealed that Scheduled Castes and Scheduled Tribes form a visible component of the population structure. Donnakuttahalli has the highest SC population (1,463), followed closely by Ajjanahalli (986). Kodihalli and Sunchalnatham also show significant SC representation. Scheduled Tribes are relatively fewer across most villages, with Sunchalnatham (232) and Kodihalli (534) recording the highest ST numbers.

Literacy levels reveal a consistent gender disparity in all villages. Ajjanahalli has 3,573 literate males and 2,115 literate females, while Sunchalnatham shows 3,248 literate males and 2,135 females. This pattern suggests that male literacy rates remain higher than female literacy rates throughout the study area, reflecting gender-based educational inequalities common in rural Tamil Nadu.

Workforce participation details indicate a male-dominated labour force. Ajjanahalli and Donnakuttahalli have the highest numbers of total workers, with 5,110 and 4,172 individuals engaged in various economic activities, respectively. In every village, the number of working males exceeds that of females, suggesting limited female participation in income-generating activities possibly due to socio-cultural norms and lack of employment opportunities outside agriculture. The proposed project has provided employment opportunities both directly and indirectly, enabling the villagers to gain job opportunities.

The demographic and literacy data from Table 3.32 highlight an agrarian, male-dominated economy with clear gender gaps in literacy and employment across the study area. Larger villages such as Ajjanahalli, Sunchalnatham, and Donnakuttahalli show relatively higher literacy and work participation, but persistent inequalities in gender representation. The presence of SC and ST communities underscores the need for targeted socio-economic and educational interventions to promote inclusive rural development.



**Table 3.32 Demographic Structure and Literacy Rate of the villages (5 km radius)**

| Village Name               | No. of Houses | Total Population |        | Child (0-6) |        | Schedule Caste |        | Schedule Tribe |        | Literacy |        | Total Workers |        |
|----------------------------|---------------|------------------|--------|-------------|--------|----------------|--------|----------------|--------|----------|--------|---------------|--------|
|                            |               | Male             | Female | Male        | Female | Male           | Female | Male           | Female | Male     | Female | Male          | Female |
| Ajjanahalli                | 2609          | 5774             | 4707   | 768         | 568    | 542            | 444    | 91             | 68     | 3573     | 2115   | 3505          | 1605   |
| Kodihalli                  | 820           | 1803             | 1601   | 217         | 182    | 263            | 228    | 263            | 271    | 1102     | 761    | 1052          | 617    |
| Masakkal R.F.              | 0             | 0                | 0      | 0           | 0      | 0              | 0      | 0              | 0      | 0        | 0      | 0             | 0      |
| Ramakondahalli             | 1786          | 3548             | 3087   | 465         | 347    | 415            | 367    | 2              | 8      | 2192     | 1330   | 2088          | 985    |
| Bevanurmalai R.F.          | 0             | 0                | 0      | 0           | 0      | 0              | 0      | 0              | 0      | 0        | 0      | 0             | 0      |
| Singarhallai Parapadi R.F. | 0             | 0                | 0      | 0           | 0      | 0              | 0      | 0              | 0      | 0        | 0      | 0             | 0      |
| Sunchalnatham              | 2337          | 5088             | 4460   | 613         | 507    | 705            | 595    | 124            | 108    | 3248     | 2135   | 2968          | 1419   |
| Donnakuttahalli            | 1922          | 4138             | 3622   | 498         | 452    | 772            | 691    | 5              | 5      | 2325     | 1491   | 2457          | 1715   |

Source: <https://censusindia.gov.in/nada/index.php/catalog/45399>

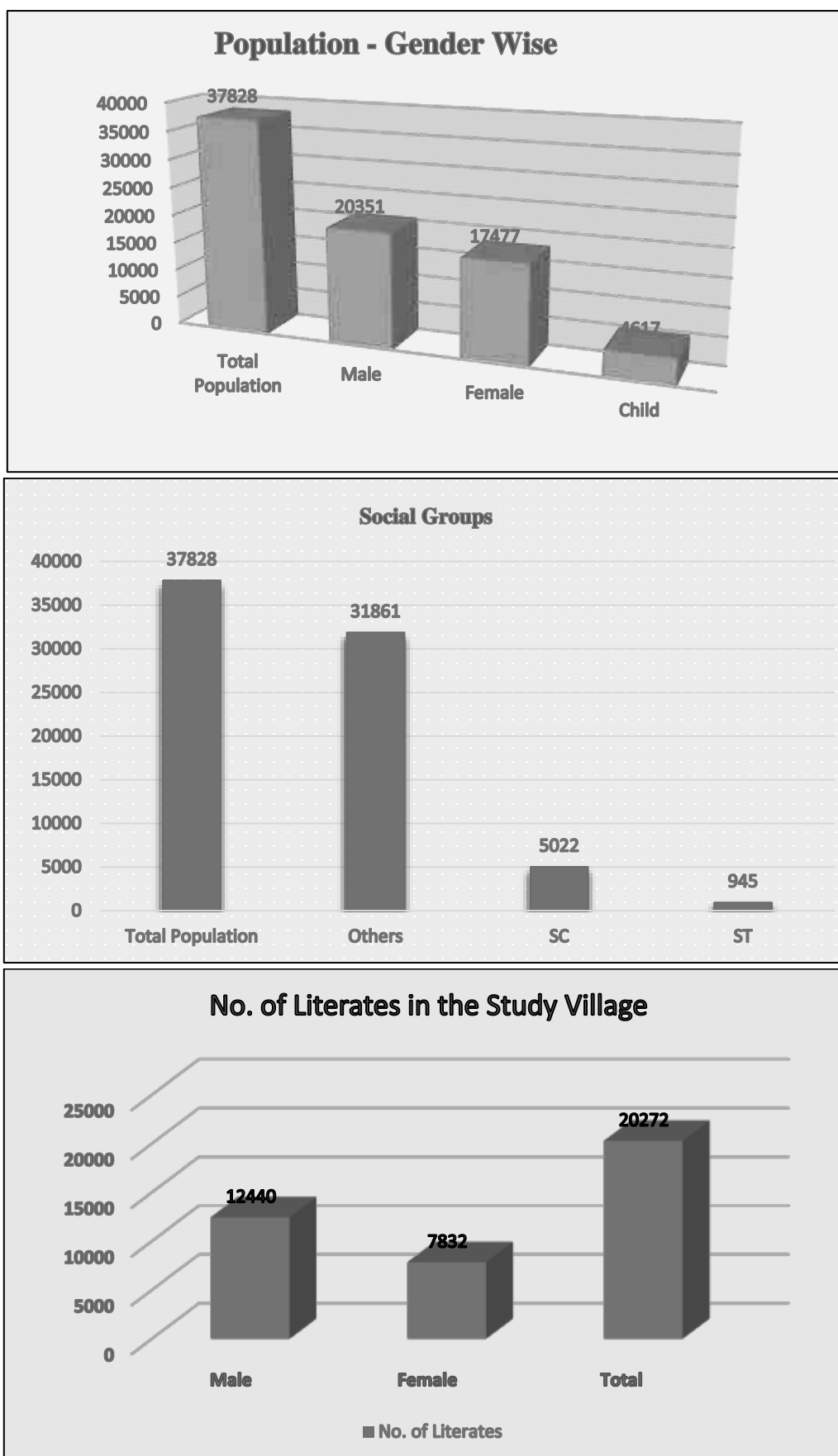


**Figure 3.27 Demographic Details – Population, Social Groups, and Literacy Rate in the Study Villages**

**Table 3.33 Details of Workforce Participation of the Study Area**

| <b>Village</b>             | <b>Total Worker<br/>Population<br/>Person</b> | <b>Total Worker<br/>Population<br/>Male</b> | <b>Total Worker<br/>Population<br/>Female</b> | <b>Main Working<br/>Population<br/>Person</b> | <b>Main<br/>Cultivator<br/>Population<br/>Person</b> | <b>Main<br/>Agricultural<br/>Labourers<br/>Population<br/>Person</b> | <b>Main Other<br/>Workers<br/>Population<br/>Person</b> | <b>Non-Working<br/>Population<br/>Person</b> |
|----------------------------|-----------------------------------------------|---------------------------------------------|-----------------------------------------------|-----------------------------------------------|------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------|
| Ajjanahalli                | 5110                                          | 3505                                        | 1605                                          | 4729                                          | 1421                                                 | 1774                                                                 | 636                                                     | 5371                                         |
| Kodihalli                  | 1669                                          | 1052                                        | 617                                           | 1595                                          | 676                                                  | 252                                                                  | 0                                                       | 1735                                         |
| Masakkal R.F.              | 0                                             | 0                                           | 0                                             | 0                                             | 0                                                    | 0                                                                    | 974                                                     | 0                                            |
| Ramakondahalli             | 3073                                          | 2088                                        | 985                                           | 2510                                          | 746                                                  | 774                                                                  | 0                                                       | 3562                                         |
| Bevanurmalai R.F.          | 0                                             | 0                                           | 0                                             | 0                                             | 0                                                    | 0                                                                    | 0                                                       | 0                                            |
| Singarhallai Parapadi R.F. | 0                                             | 0                                           | 0                                             | 0                                             | 0                                                    | 0                                                                    | 1581                                                    | 0                                            |
| Sunchalnatham              | 4387                                          | 2968                                        | 1419                                          | 3621                                          | 717                                                  | 1241                                                                 | 671                                                     | 5161                                         |
| Donnakuttahalli            | 4172                                          | 2457                                        | 1715                                          | 3819                                          | 1989                                                 | 1124                                                                 | 636                                                     | 3588                                         |

Source: <https://censusindia.gov.in/nada/index.php/catalog/45399>

### ***Workforce participation of the study areas***

Table 3.33 presents the workforce participation details of the study area, showing clear variations in employment structure and gender distribution across villages. Ajjanahalli records the highest total worker population (5,110 persons), followed by Sunchalnatham (4,387) and Donnakuttahalli (4,172), with male workers consistently outnumbering females in all villages. The majority of workers are engaged in main work activities, reflecting relatively stable employment, while agriculture remains the dominant occupation most villagers are either cultivators or agricultural labourers, underscoring the region's agrarian economy. Donnakuttahalli and Ajjanahalli have the highest number of cultivators, whereas Sunchalnatham and Ramakondahalli show larger concentrations of agricultural labourers. The presence of "other workers" is minimal, indicating limited diversification into non-agricultural sectors. A substantial non-working population, particularly in Ajjanahalli and Sunchalnatham, points to underemployment and dependency within rural households. Overall, the data highlight a predominantly agricultural workforce with marked gender disparities and limited alternative livelihood opportunities, emphasizing the need for employment diversification and targeted rural development initiatives.

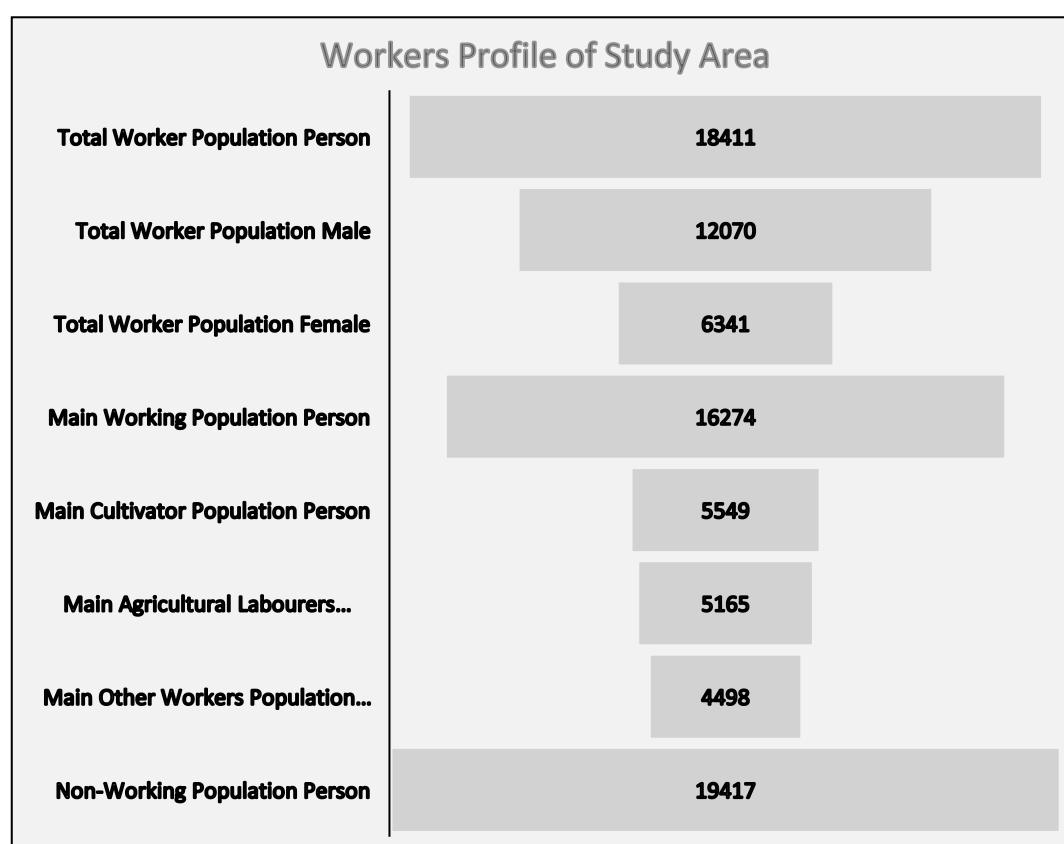


**Figure 3.28 Details of Workforce participation in the Study Villages**

### ***Basic Facilities***

Table 3.34 illustrates the availability of basic facilities across the study villages, revealing substantial disparities in infrastructure and service provision. Among the villages, Sunchalnatham and Ajjanahalli stand out as relatively well-developed settlements, offering a wide range of amenities including banks, ATMs, transportation facilities, public distribution systems (PDS), markets, post offices, and schools up to the higher secondary level. Donnakuttahalli and Ramakondahalli also have access to most essential services such as schools, PDS outlets, and postal facilities, though they lack advanced educational institutions and banking services. In contrast, the forest reserve villages such as Masakkal R.F., Singarhallai Parapadi R.F., and Bevanurmalai R.F. are severely underdeveloped, with minimal or no access to basic facilities apart from limited transportation connectivity.

Educational infrastructure is generally better in larger villages like Ajjanahalli, Sunchalnatham, and Donnakuttahalli, where schools up to the high or higher secondary level are available. However, vocational education centres are almost absent across all villages, indicating limited opportunities for skill development and non-agricultural employment. Healthcare and veterinary services are also sparse, with only a few villages, such as Ajjanahalli and Sunchalnatham, having veterinary clinics. Drainage and sanitation facilities show inconsistent availability, suggesting gaps in basic public health infrastructure.

The study finds a clear picture of rural development imbalance, where larger and more accessible villages benefit from better amenities, while remote and forested settlements remain underserved. Strengthening infrastructure in these underdeveloped areas particularly in education, healthcare, and financial services would be essential for promoting inclusive and sustainable rural development across the study area.

Additionally, the study finds that while certain villages are progressing with diverse employment and better gender inclusion, others remain heavily reliant on agriculture and have limited workforce engagement. Encouraging non-farm employment, particularly in rural areas, could bridge economic disparities. Skill development programs for women and youth, infrastructure enhancement, and local job creation in the study area.

**Table 3.34 Availability of Basic Facilities in the Study Villages**

| <b>Village Name</b>        | <b>Banks</b> | <b>ATM</b> | <b>Transportation Facilities</b> | <b>PDS</b> | <b>Markets</b> | <b>Post Office</b> | <b>Primary School</b> | <b>Middle School</b> | <b>High School</b> | <b>Higher Senior Secondary School</b> | <b>Vocational Educational Centre</b> | <b>Veterinary Hospital and Clinic</b> | <b>Drainage Facilities</b> | <b>Soil Testing Centre</b> | <b>Aanganwadi Centre</b> |
|----------------------------|--------------|------------|----------------------------------|------------|----------------|--------------------|-----------------------|----------------------|--------------------|---------------------------------------|--------------------------------------|---------------------------------------|----------------------------|----------------------------|--------------------------|
| Masakkal R.F.              | No           | No         | Yes                              | No         | No             | No                 | No                    | No                   | No                 | No                                    | No                                   | No                                    | No                         | No                         | No                       |
| Singarhallai Parapadi R.F. | No           | No         | Yes                              | No         | No             | No                 | No                    | No                   | No                 | No                                    | No                                   | No                                    | No                         | No                         | No                       |
| Bevanurmalai R.F.          | No           | No         | No                               | No         | No             | No                 | No                    | No                   | Yes                | No                                    | No                                   | Yes                                   | Yes                        | No                         | No                       |
| Ramakondahalli             | No           | No         | Yes                              | Yes        | No             | Yes                | Yes                   | Yes                  | Yes                | No                                    | No                                   | No                                    | No                         | No                         | Yes                      |
| Sunchalnatham              | Yes          | Yes        | Yes                              | Yes        | Yes            | Yes                | Yes                   | Yes                  | Yes                | Yes                                   | No                                   | Yes                                   | Yes                        | No                         | Yes                      |
| Donnakuttahalli            | No           | No         | Yes                              | Yes        | No             | Yes                | Yes                   | Yes                  | Yes                | No                                    | No                                   | No                                    | Yes                        | No                         | Yes                      |
| Ajjanahalli                | No           | Yes        | Yes                              | Yes        | Yes            | Yes                | Yes                   | Yes                  | Yes                | Yes                                   | No                                   | Yes                                   | Yes                        | No                         | Yes                      |
| Kodihalli                  | No           | No         | Yes                              | Yes        | No             | Yes                | Yes                   | Yes                  | No                 | No                                    | Yes                                  | No                                    | Yes                        | No                         | Yes                      |

Source: <https://censusindia.gov.in/nada/index.php/catalog/45399>



### ***CSR fund for School Development***

As per SEAC recommendation the project proponent should spend minimum of 5 lakhs to the nearby school from the proposed project site as part of CER cost. Also, the village panchayat will get direct benefit from the government through District mineral Resource fund (DMF) for infrastructure development activities.

- ❖ Awareness and Opinion of the People About the Project, to assess public awareness and opinions regarding the proposed project, the following key observations were recorded:
- ❖ During the survey, it was observed that only residents of nearby villages were aware of the proposed project, while those in more distant villages were largely unaware.

People in the region expressed expectations that the project would generate employment opportunities and lead to improvements in education, transportation, and sanitation facilities provided by the project authorities.

### **3.7.6 Recommendation and Suggestions**

The village development plans are made in consultation with the community through Gram Sabha; these appear to address the needs of the community. However, it may be noted that at the implementation stage these plans often are fraught with problem of inadequate funds, lack of proper planning, corruption, vested interests and political agendas. Hence while ascertaining the scope for convergence with the government activities, care must be taken to ascertain realistic possibilities for implementation.

- Women empowerment– Home based income generation activities, vocational training programs and common education centre for increasing the literacy rate.
- Education – Free uniform, construction of common rooms and library, computer education and physical education, additional schools for girls, furniture and equipment in schools, up-gradation of existing school infrastructure.
- Agriculture/livestock – Infrastructure such as agricultural practices, electricity connections, assistance with buying improved tools and equipment, capacity building, supply and/or knowledge of better variety of seeds, pasture land development and trainings on animal husbandry& facility of veterinary doctor.
- Health – Improvements in sanitary conditions of villages, assistance with construction of latrines, improvement in drainage system, health camps and awareness campaigns for diseases like common cold, malaria, typhoid, tuberculosis, yellow fever and pneumonia. Repairing of PHCs and Anganwadi centres.

- People with disability – Establishment of centre for special education, sensitization of the community towards disabled and awareness on Government schemes.
- While Developing an Action Plan, it is very important to identify the population who falls under the marginalized and vulnerable groups. So that special attention can be given to these groups with special provisions while making action plans.
- Connectivity –Transport connectivity to easiness accessibility to the region.

### 3.7.7 Conclusion

This study was carried out the baseline socio-economic conditions of the study area. It examined parameters including the population, number of households, literacy rate, sex ratio, workforce details, and the availability of essential amenities like transportation, drinking water, road connectivity, and educational facilities. The study revealed both positive and negative socio-economic implications associated with the proposed project and cluster quarries. While potential environmental and social impacts must be addressed, the project will be expected to provide significant economic benefits in terms of local employment and improved livelihood opportunities in directly and indirectly.

Therefore, with the implementation of effective mitigation and management measures, the project can contribute positively to the socio-economic development of the area while minimizing adverse impacts.

### 3.8 TRAFFIC DENSITY

The traffic survey conducted based on the transportation route of material, the Black Granite is proposed to be transported mainly through Village Rode and Dharmapuri to Hogenakkal road as shown in Table 3.35-3.38 and in Figure 3.30.and 500-meter radius residential map shown in Figure 3.29. Traffic density measurements were made continuously for 24 hours by visual observation and counting of vehicles under three categories, viz., Heavy motor vehicles, light motor vehicles and two/ three wheelers. As traffic densities on the roads are high, two skilled persons were deployed simultaneously at each station. During each shift one person on either direction for counting the traffic. At the end of each hour, fresh counting and recording was undertaken. Direction for counting the traffic. At the end of each hour, fresh counting and recording was undertaken.

**Table 3.35 Traffic Survey Locations**

| Station Code | Road Name    | Distance and Direction | Type of Road |
|--------------|--------------|------------------------|--------------|
| TS1          | Village Road | 0.62Km- S              | Village Road |

|     |                          |           |                          |
|-----|--------------------------|-----------|--------------------------|
| TS2 | Dharmapuri to Hogenakkal | 8.72km NE | Dharmapuri to Hogenakkal |
|-----|--------------------------|-----------|--------------------------|

Source: On-site monitoring by GTMS FAE & TM

**Table 3.36 Existing Traffic Volume**

| Station code | HMV |     | LMV |     | 2/3 Wheelers |     | Total PCU |
|--------------|-----|-----|-----|-----|--------------|-----|-----------|
|              | No  | PCU | No  | PCU | No           | PCU |           |
| TS1          | 14  | 48  | 28  | 28  | 45           | 23  | 99        |
| TS2          | 112 | 345 | 47  | 47  | 88           | 44  | 436       |

Source: On-site monitoring by GTMS FAE & TM

\* PCU conversion factor: HMV (Trucks and Bus) = 3, LMV (Car, Jeep and Auto) = 1 and 2/3 Wheelers = 0.5

**Table 3.37 Black Granite Transportation Requirement**

| Transportation of Black Granite per day |                      |               |
|-----------------------------------------|----------------------|---------------|
| Capacity of trucks                      | No. of Trips per day | Volume in PCU |
| 15 tonnes                               | 2                    | 6             |

Source: Approved Mining Plan

**Table 3.38 Summary of Traffic Volume**

| Route                    | Existing traffic volume in PCU | Incremental traffic due to the project | Total traffic volume | Hourly Capacity in PCU as per IRC – 1960 guidelines |
|--------------------------|--------------------------------|----------------------------------------|----------------------|-----------------------------------------------------|
| Village Road             | 64                             | 6                                      | 97                   | 1150                                                |
| Dharmapuri to Hogenakkal | 289                            | 6                                      | 278                  | 1400                                                |

Source: On-site monitoring analysis summary by GTMS FAE & TM

- Due to these projects the existing traffic volume will not exceed the traffic limit. As per the IRC 1960 this existing village road can handle 1,200 PCU in hour and Major district road can handle 1500 PCU in hour. Hence there will not be any conjunction due to this proposed transportation.

### 3.9 SITE SPECIFIC FEATURES

There are Cauvery South Wildlife Sanctuary- 8.83km-North, there is no national Park within the project area to 10km radius. Therefore, there will be no need of acquisition/ diversion of forest land. The details related to the environment sensitivity around the proposed mine lease area i.e., 10km radius and the nearby water bodies are given in the Table 3.39.

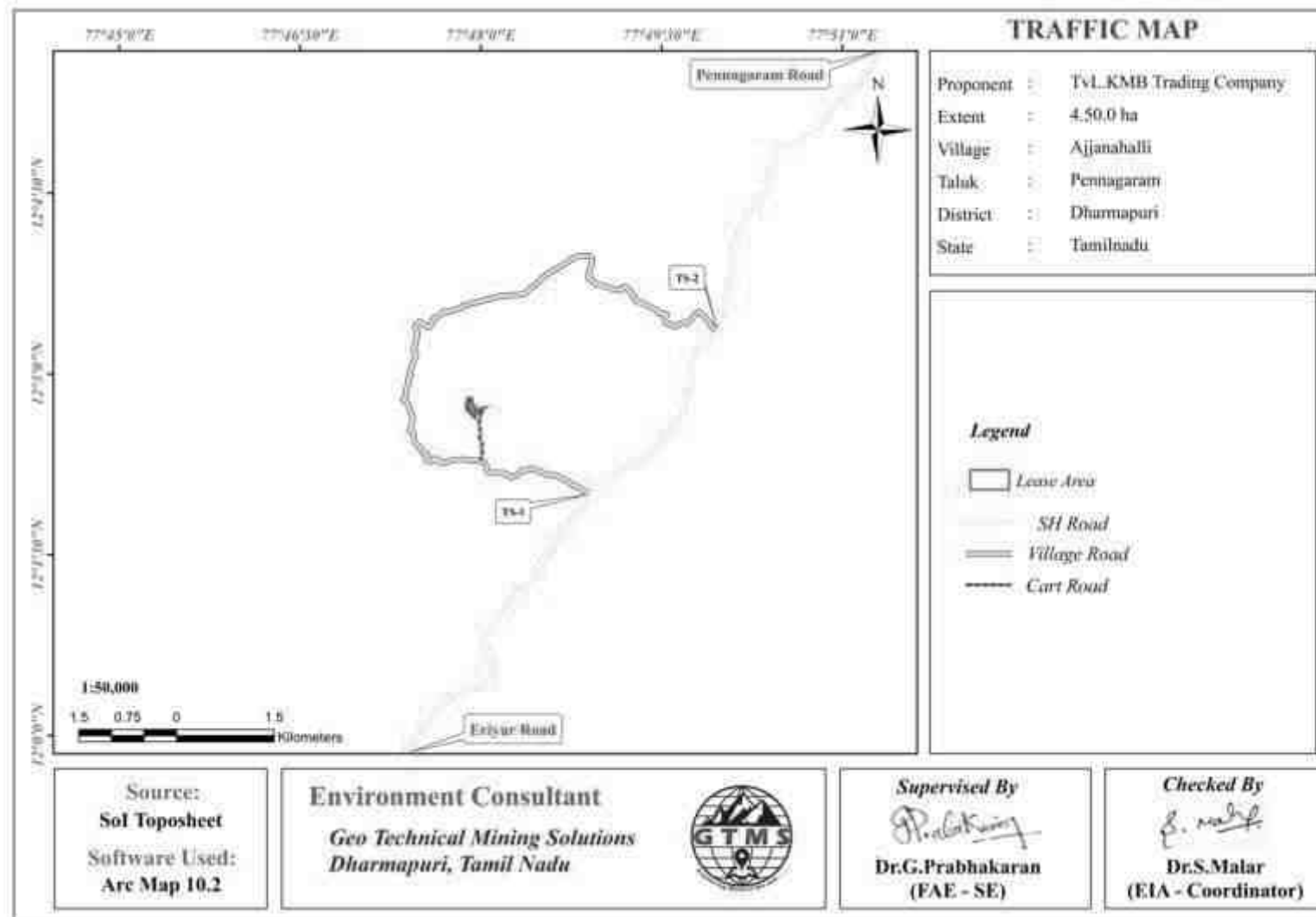


**Figure 3.29 Traffic Density Map**

**Table 3.39 Details of Environmentally Sensitive Ecological Features in the Study Area**

| S. No | Sensitive Ecological Features                     | Name                             | Areal Distance in km from cluster |
|-------|---------------------------------------------------|----------------------------------|-----------------------------------|
| 1.    | National Park / Wild life Sanctuaries             | Cauvery South Wildlife Sanctuary | 8.83km- N                         |
| 2.    | Reserve Forest                                    | Badanavadi R.F                   | 884.88m- W                        |
|       |                                                   | Bevanurmalai R.F                 | 1.66km- NW                        |
|       |                                                   | Bevanur Extn- II                 | 1.77km- NW                        |
|       |                                                   | Sunjalnatham R.F                 | 3.7km- S                          |
|       |                                                   | Masakkal R.F                     | 3.28km- N                         |
|       |                                                   | Bevanur ExtnI R.F                | 3.14km- NE                        |
|       |                                                   | Perumbalai R.F                   | 5.99km- SE                        |
|       |                                                   | Ramakondahalli IV R.F            | 6.76km- SE                        |
|       |                                                   | Kalappambadi R.F                 | 10.03km- E                        |
|       |                                                   | Kalappambadi Extn R.F            | 11.28km- NE                       |
|       |                                                   | North Bargur R.F                 | 16.69km-SW                        |
| 3.    | Lakes/Reservoirs/ Dams/Streams/Rivers             | Moongilmaduvu Dam                | 3.24km-SE                         |
|       |                                                   | Koorkampatty Dam                 | 5.59km- SE                        |
| 4.    | Water Bodies                                      | Moolabellurpallam Eri            | 1.19km-SW                         |
|       |                                                   | Godubaipallam Eri                | 1.52km-SE                         |
| 5.    | Tiger Reserve/Elephant Reserve/ Biosphere Reserve | None                             | Nil within 10km radius            |
| 6.    | Critically Polluted Areas                         | None                             | Nil within 10km radius            |
| 7.    | Mangroves                                         | None                             | Nil within 10km radius            |
| 8.    | Mountains/ Hills                                  | None                             | Nil within 5km radius             |
| 9.    | Notified Archaeological Sites                     | None                             | Nil within 10km radius            |
| 10.   | Industries/ Thermal Power Plants                  | None                             | Nil within 10km radius            |
| 11.   | Defense Installation                              | None                             | Nil within 10km radius            |

Source: Survey of India Toposheet

### 3.10 HABITATION STUDY

The details study was carried out 500m radius. The details of structures such as dwelling houses, places of worship, industries, factories, sheds, etc. within the radius of 500m from the proposed project area shown in Table 3.40 & Figure 3. 30.

**Table 3.40 Detail of 500m Radius Structure**

| Distance   | Number & Type of Structures | Direction   |
|------------|-----------------------------|-------------|
| 0m- 100m   | -                           | -           |
| 100m- 200m | Shed- 1                     | South       |
| 200m- 300m | Farm House- 1               | South       |
| 300m- 400m | Farm House- 2<br>Shed- 3    | E, W        |
| 400m- 500m | House- 6<br>Shed- 3         | North, E, W |

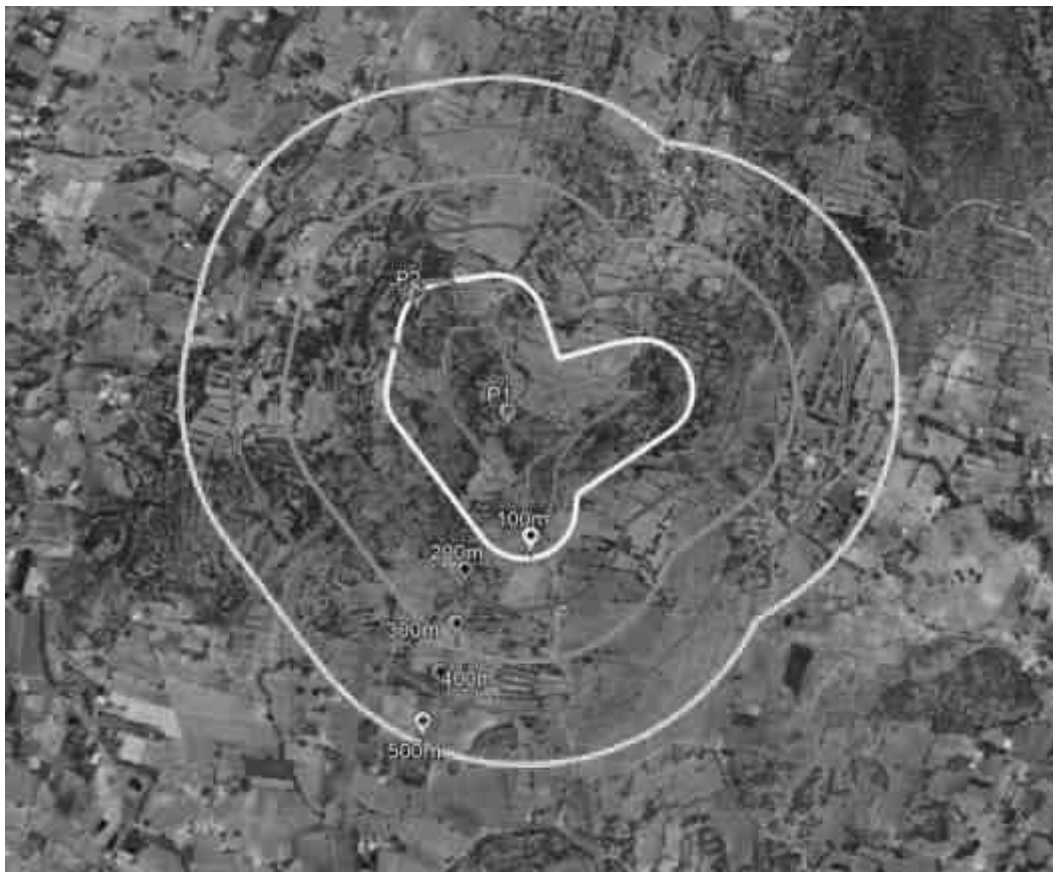


**Figure 3. 30 KML imagery on 100m, 200m, 300m, 400m & 500m Radius Map**





Figure 3.31 Baseline monitoring Photos



## **CHAPTER IV**

### **ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

#### **4.0 GENERAL**

In order to maintain the environmental commensuration with the mining operation, it is essential to undertake studies on the existing environmental scenario and assess the impact on different environmental components. This would help in formulating suitable management plans sustainable resource extraction. This chapter discusses the anticipated impacts on soil, land, water, air, noise, biological, and socioeconomic environments.

#### **4.1 LAND ENVIRONMENT**

##### **4.1.1 Anticipated Impact**

- ✚ Permanent change on land use and land cover.
- ✚ Change in topography of the mine lease area.
- ✚ Problems to agricultural land and human habitations due to dust, and noise caused by movement of heavy vehicles.
- ✚ Degradation of the aesthetic environment of the core zone due to quarrying
- ✚ Soil erosion and sediment deposition in the nearby agricultural fields during the rainy season
- ✚ Siltation of water course due to wash off from the exposed working area.

##### **4.1.2 Mitigation measures for the proposed Project**

- ✚ The mining activity will be gradual confined in blocks and excavation will be undertaken progressively along with other mitigate measures like phase wise development of greenbelt etc.
- ✚ Construction of garland drains all around the quarry pits and construction of check dam at strategic location in lower elevations to prevent erosion due to surface runoff during rainfall and also to collect the storm water for various uses within the proposed area.
- ✚ Green belt development along the boundary within safety zone. The small quantity of water stored in the mined-out pit will be used for greenbelt.
- ✚ Thick plantation will be carried out on unutilized area, top benches of mined out pits, on safety barrier, etc.,
- ✚ At conceptual stage, the land use pattern of the quarry will be changed into Greenbelt area and temporary reservoir.
- ✚ In terms of aesthetics, natural vegetation surrounding the quarry will be retained (such as in

a buffer area i.e., 7.5 m, 10m and 50m safety barrier and other safety provided) so as to help minimize dust emissions.

- ✚ Proper fencing will be carried out at the conceptual stage, Security will be posted round the clock, to prevent inherent entry of the public and cattle.

## **4.2 SOIL ENVIRONMENT**

### **4.2.1 Anticipated Impact on Soil Environment**

Following impacts are anticipated due to mining operations:

- ✚ Removal of protective vegetation cover.
- ✚ Exposure of subsurface materials which are unsuitable for vegetation establishment.

### **4.2.2 Common Mitigation Measures from proposed project**

- ✚ Run-off diversion – Garland drains will be constructed around the project boundary to prevent surface flows from entering the quarry works areas and will be discharged into vegetated natural drainage lines, or as distributed flow across an area stabilised against erosion.
- ✚ Sedimentation ponds - Run-off from working areas will be routed towards sedimentation ponds. These trap sediment and reduce suspended sediment loads before runoff is discharged from the quarry site. Sedimentation ponds should be designed based on runoff, retention times, and soil characteristics. There may be a need to provide a series of sedimentation ponds to achieve the desired outcome.
- ✚ Retain vegetation- Retain existing or re-plant the vegetation at the site wherever possible.
- ✚ Monitoring and maintenance- Weekly monitoring and daily maintenance of erosion control systems so that they perform as specified specially during rainy season.

## **4.3 WATER ENVIRONMENT**

### **4.3.1 Anticipated Impact**

- ✚ Surface and ground water resources may be contaminated due to pit water discharge, domestic sewage, discharge of oil and grease bearing waste water from washing of vehicles and machineries, and washouts from surface exposure or working areas
- ✚ As the proposed project acquires 4.0KLD of water from water vendors, it will not extract water by developing abstraction structures in the lease area. Therefore, the project will not have impact on depletion of aquifer beneath the lease area.

### **4.3.2 Common Mitigation Measures for the Proposed Project**

- ✚ Rain water from mine pit will be treated in settling tanks before being used for dust suppression and tree plantation purposes
- ✚ Domestic sewage from site office will be discharged in septic tank and then directed to soak pits

- ✚ Water from the tipper wash-down facility and machinery maintenance yard will be passed through interceptor traps/oil separators prior to its reuse
- ✚ The garland drainage will be connected to settling tank and sediments will be trapped in the settling tanks and only clear water will be discharged to the natural drainage
- ✚ Periodic (every 6 month once) analysis of ground water quality of quarry pit water and ground water of nearby villages will be conducted
- ✚ Artificial recharge structures will be established in suitable locations as part of the rainwater harvesting management program.

## 4.4 AIR ENVIRONMENT

### 4.4.1 Anticipated Impact from proposed project

- ✚ During mining at various stages of activities such as excavation, drilling and transportation of materials, particular matter (PM), gases such as sulphur dioxide, oxides of nitrogen from vehicular exhaust are the main air pollutants.
- ✚ Emissions of noxious gases due to incomplete detonation of explosive may sometimes pollute the air.
- ✚ The fugitive dust released from the mining operations may cause effect on the mine workers who are directly exposed to the fugitive dust.
- ✚ Simultaneously, the air-borne dust may travel to longer distances and settle in the villages located near the mine lease area.

#### 4.4.1.1 Emission Estimation

Emission resulting from different mining activities is estimated using relevant empirical formulae developed by Chaulya et al.,2001. The equations used for SPM emission estimation have been given in Table 4.1.

**Table 4.1 Empirical Formula for Emission Rate from Overall Mine**

| Source       | Pollutant | Source Type | Empirical Equation                                     | Parameters                                                                                                                                                    |
|--------------|-----------|-------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Overall Mine | SPM       | Area        | $E = [u^{0.4} a^{0.2} \{9.7 + 0.01p + b/(4 + 0.3b)\}]$ | u = Wind speed(m/s); p = Mineral production (Mt/yr); b = Overburden handling (Mm <sup>3</sup> /yr); a = Lease area(km <sup>2</sup> ); E = Emission rate(g/s). |

The emission rate thus calculated using the empirical formula is used as one of the inputs in the AERMOD modelling. As the SPM emission calculation for overall mine is not considering pollution control measures, one-third of the SPM value is taken for derivation of PM<sub>10</sub> keeping in mind that proper control measures are followed. It is important to note that PM<sub>10</sub>

emission rate is derived from the SPM estimation in the background that PM<sub>10</sub> constitutes 52% of SPM emission. The PM<sub>10</sub>, and PM<sub>2.5</sub> emission results have been given in Table 4.2.

**Table 4.2 Estimated Emission Rate**

| Activity     | Pollutant         | Calculated Value (g/s) | Lease Area in m <sup>2</sup> | Calculated Value (g/s/m <sup>2</sup> ) |
|--------------|-------------------|------------------------|------------------------------|----------------------------------------|
| Overall Mine | PM <sub>2.5</sub> | 0.472639081            | 45000                        | 1.05031E-05                            |
| Overall Mine | PM <sub>10</sub>  | 0.945278162            | 45000                        | 2.10062E-05                            |

#### 4.4.1.2 Modelling of Incremental Concentration

Anticipated incremental concentration and net increase in emissions due to quarrying activities within 500 m around the project area is predicted by open pit source modelling using AERMOD Software and the incremental values of the air pollutants were added to the base line data monitored at the proposed site to predict total GLC of the pollutants, as shown in Tables 4.3-4.4.

#### 4.4.1.3 Model Results

The post project Resultant Concentrations of PM<sub>10</sub>, PM<sub>2.5</sub>, is given in the table shown below:

#### Mitigation Measures

- ✚ To control dust at source, wet drilling will be practiced. Where there is a scarcity of water, suitably designed dust extractor will be provided for dry drilling along with dust hood at the mouth of the drill-hole collar
- ✚ Dust mask will be provided to the workers and their use will be strictly monitored
- ✚ Water will be sprinkled on haul roads twice a day to avoid dust generation during transportation
- ✚ Transportation of material will be carried out during day time and material will be covered with tarpaulin
- ✚ The speed of tippers plying on the haul road will be limited to < 20 km/hr to avoid generation of dust
- ✚ The un-metalled haul roads will be compacted weekly before being put into use
- ✚ It will be ensured that all transportation vehicles carry a valid PUC certificate
- ✚ Haul roads and service roads will be graded to clear accumulation of loose materials
- ✚ Planting of trees all along main mine haul roads and around the project site will be practiced to prevent the generation of dust
- ✚ Dust mask will be provided to the workers and their use will be strictly monitored

**Table 4.3 Incremental & Resultant GLC of PM<sub>2.5</sub>**

| Station ID | Distance to core area (km) | Direction | PM <sub>2.5</sub> concentrations(µg/m <sup>3</sup> ) |           |       | Comparison Against air quality standard (60 µg/m <sup>3</sup> ) | Magnitude of change (%) | Significance    |
|------------|----------------------------|-----------|------------------------------------------------------|-----------|-------|-----------------------------------------------------------------|-------------------------|-----------------|
|            |                            |           | Baseline                                             | Predicted | Total |                                                                 |                         |                 |
| AAQ1       | 0.21                       | S         | 19.2                                                 | 0.5       | 19.7  | Below standard                                                  | 2.60                    | Not significant |
| AAQ2       | 1.17                       | SW        | 18                                                   | 0.1       | 18.1  |                                                                 | 0.56                    |                 |
| AAQ3       | 1.11                       | N         | 17.3                                                 | 0.1       | 17.4  |                                                                 | 0.58                    |                 |
| AAQ4       | 1.53                       | SE        | 17.4                                                 | 0.1       | 17.5  |                                                                 | 0.57                    |                 |

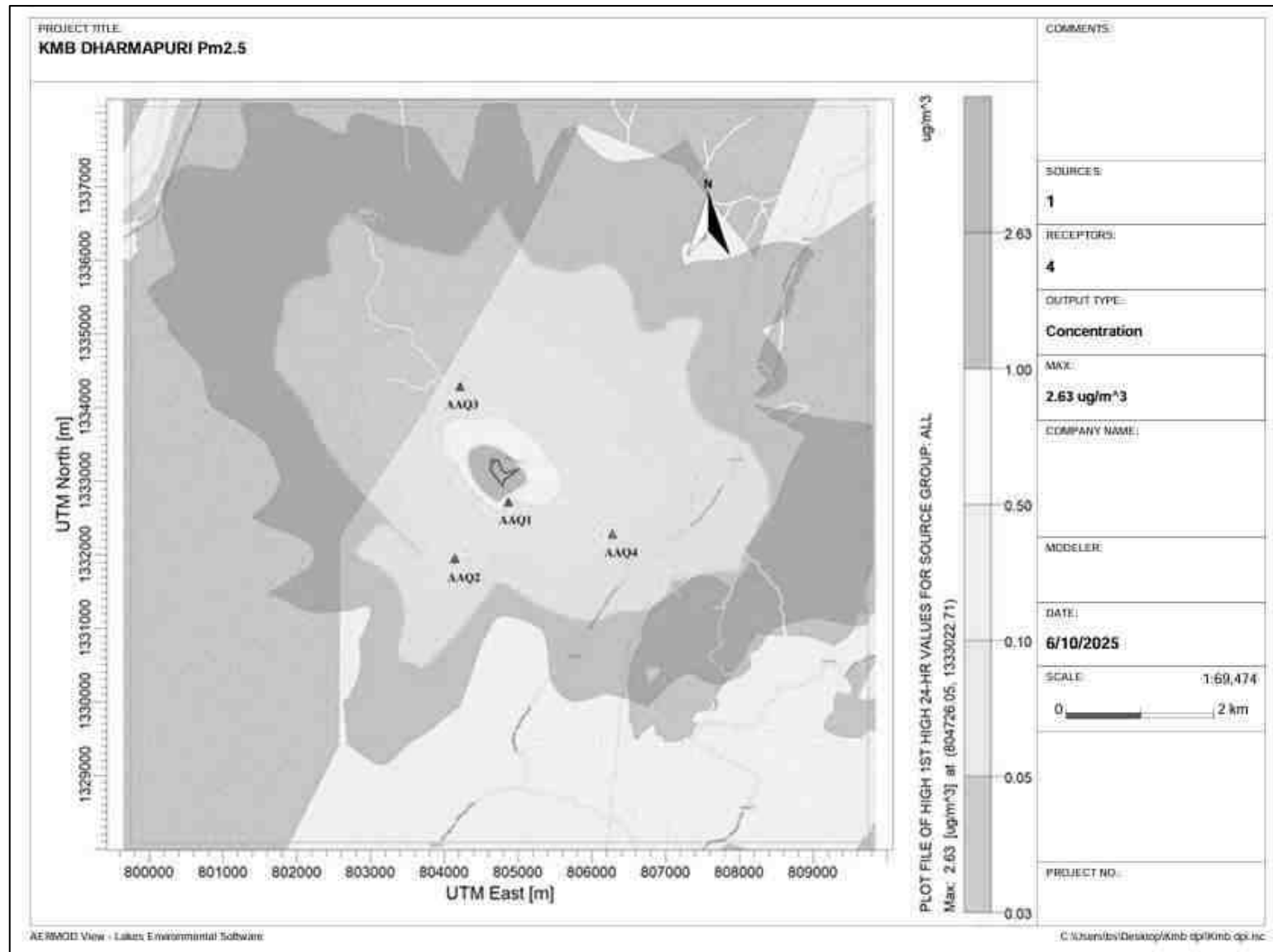


**Figure 4. 1 Predicted Incremental Concentration of PM<sub>2.5</sub>**

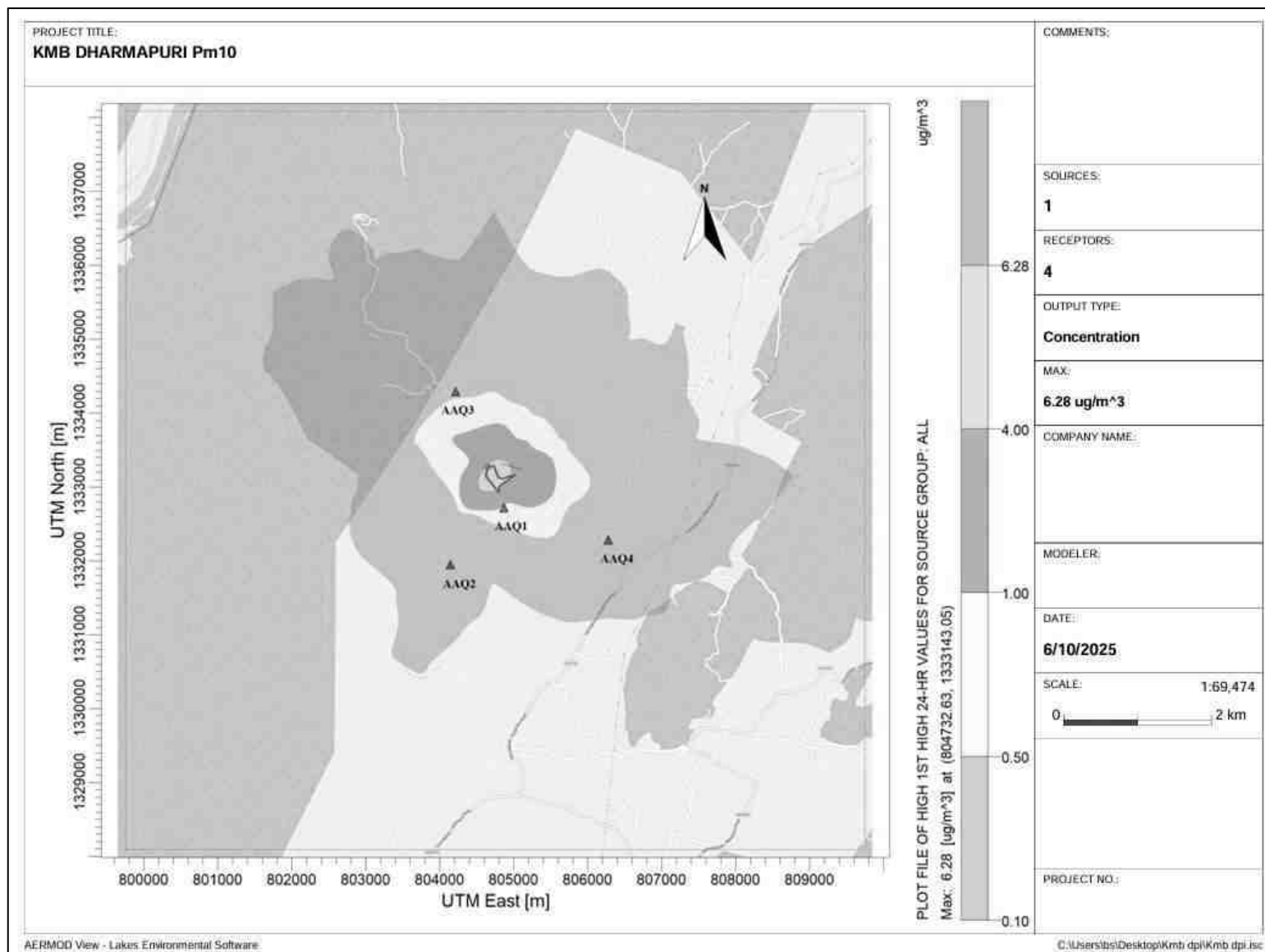


**Figure 4.2 Predicted Incremental Concentration of PM<sub>10</sub>**

**Table 4.4 Incremental & Resultant GLC of PM<sub>10</sub>**

| Station ID | Distance to core area (km) | Direction | PM <sub>10</sub> concentrations(µg/m <sup>3</sup> ) |           |       | Comparison against air quality standard (100 µg/m <sup>3</sup> ) | Magnitude of change (%) | Significance    |
|------------|----------------------------|-----------|-----------------------------------------------------|-----------|-------|------------------------------------------------------------------|-------------------------|-----------------|
|            |                            |           | Baseline                                            | Predicted | Total |                                                                  |                         |                 |
| AAQ1       | 0.21                       | S         | 49.5                                                | 1         | 50.5  | Below standard                                                   | 2.02                    | Not significant |
| AAQ2       | 1.17                       | SW        | 46.4                                                | 0.1       | 46.5  |                                                                  | 0.22                    |                 |
| AAQ3       | 1.11                       | N         | 44.6                                                | 0.1       | 44.7  |                                                                  | 0.22                    |                 |
| AAQ4       | 1.53                       | SE        | 44.9                                                | 0.1       | 45    |                                                                  | 0.22                    |                 |

The values of cumulative concentration i.e., background + incremental concentration of pollutant in all the receptor locations are still within the prescribed NAAQ limits without effective mitigation measures. By adopting suitable mitigation measures, the pollutant levels in the atmosphere can be controlled further.

#### 4.5 NOISE ENVIRONMENT

Noise modelling has been carried out to assess the impact on surrounding ambient noise levels. Basic phenomenon of the model is the geometric attenuation of sound. Noise at a point generates spherical waves which are propagated outwards from the source through the air at a speed of 1, 100 ft/sec with the first wave making an ever-increasing sphere with time. As the wave spreads the intensity of noise diminishes as the fixed amount of energy is spread over an increasing surface area of the sphere. The assumption of the model is based on point source relationship i.e., for every doubling of the distance the noise levels are decreased by 6 dB (A). For hemispherical sound wave propagation through homogeneous loss free medium, one can estimate noise levels at various locations at different sources using a mathematical model based on first principle.

$$L_{p2} = L_{p1} - 20 \log (r_2/r_1) - A_{e1, 2}$$

Where, L<sub>p1</sub> & L<sub>p2</sub> are sound levels at points located at distances r<sub>1</sub> and r<sub>2</sub> from the source; A<sub>e1,2</sub> is the excess attenuation due to environmental conditions. Combined effect of all sources can be determined at various locations by logarithmic addition.

$$L_{p \text{ total}} = 10 \log \{10^{(L_{p1}/10)} + 10^{(L_{p2}/10)} + 10^{(L_{p3}/10)} + \dots\}$$

##### 4.5.1 Anticipated Impact

The attenuation due to several factors including ground reflection, atmosphere, wind speed, temperature, trees, and buildings as 35.5 dB (A), the barrier effect. Attenuation due to Green Belt has been taken to be 4.9 dB (A). The inputs required for the model are: source data,



receptor data, and attenuation factor. Source data has been computed taking into account of all the machinery and activities used in the mining process. Same has been listed in Table 4.5

**Table 4.5 Activity and Noise Level Produced by Machinery**

| S.No.                       | Machinery / Activity | Impact on Environment | Noise Produced in dB(A) at 50 ft from source* |
|-----------------------------|----------------------|-----------------------|-----------------------------------------------|
| 1                           | Jack Hammer          | Yes                   | 88                                            |
| 2                           | Compressor           | No                    | 81                                            |
| 3                           | Tipper               | No                    | 84                                            |
| <b>Total Noise Produced</b> |                      |                       | <b>90.0</b>                                   |

\*50 feet from source = 15.24 meters

The total noise to be produced by mining activity is calculated to be 90.0 dB (A). Therefore, we have considered equipment and operation noise levels (max) to be approx. 90.0 dB (A) for noise prediction modelling. The results of noise prediction modelling are shown in Table 4.6.

**Table 4.6 Predicted Noise Incremental Values**

| Noise Monitoring Location | Distance From Project Site(m)                                                                                      | Baseline Noise Level (dBA)m During Day Time | Predicted Noise Level (dBA) | Total(dBA) |
|---------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-----------------------------|------------|
| Nearby Core               | 100                                                                                                                | 45.1                                        | 44.0                        | 47.6       |
| Sunchalnaththam           | 1200                                                                                                               | 44                                          | 22.4                        | 44.0       |
| Sigaralahalli             | 1210                                                                                                               | 43.2                                        | 22.3                        | 43.2       |
| Ajjanahalli               | 1790                                                                                                               | 40.3                                        | 18.9                        | 40.3       |
| NAAQ Standards            | Industrial Day Time - 75 dB (A) & Night Time- 70 dB (A)<br>Residential Day Time -55 dB (A) & Night Time- 45 dB (A) |                                             |                             |            |

From the above table, it can be seen that the ambient noise levels at all the locations near habitations are within permissible limits of Residential Area (buffer zone) as per THE NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000. Therefore, no impact is anticipated on the noise environment due to the project

#### 4.5.2 Common Mitigation Measures

The following noise mitigation measures are proposed for control of noise:

- 🔊 Usage of sharp drill bits while drilling which will help in reducing noise
- 🔊 Proper maintenance, oiling and greasing of machines will be done every week to reduce generation of noise
- 🔊 Provision of sound insulated chambers for the workers working on machines (HEMM) producing higher levels of noise

- ✚ Silencers / mufflers will be installed in all machineries
- ✚ Greenbelt/Plantation will be developed around the project area and along the haul roads. The plantation minimizes propagation of noise
- ✚ Personal Protective Equipment (PPE) like ear muffs/ear plugs will be provided to the operators of HEMM and persons working near HEMM and their use will be ensured through training and awareness
- ✚ Regular medical check-up and proper training to personnel to create awareness about adverse noise level effects

### 4.5.3 Ground Vibrations

Major source of ground vibrations due to mining activities is blasting. In this mining project, no explosives are proposed to break the rocks. Instead, cracking powder has been proposed for cracking the solid rock along line of drilling. Therefore, it is not necessary to calculate peak particle velocity.

## 4.6 ECOLOGY AND BIODIVERSITY

### 4.6.1 Impact on Ecology and Biodiversity

- ✚ There shall be negligible air emissions or effluents from the project site. During loading the truck, dust generation will be likely. This shall be a temporary effect and not anticipated to affect the surrounding vegetation significantly
- ✚ Most of the land in the buffer area is undulating terrain with crop lands, grass patches and small shrubs. Hence, there will be no effect on flora of the region.
- ✚ A total of 14 species belonging to 9 families have been recorded from the mining lease area. 2 trees, 4 shrubs and 8 herbs were identified. The survival rate of uprooted trees is 30% Quarry so instead of one tree 10 saplings are bought and planted in 7.5 conservation zone.
- ✚ Carbon released from quarrying machineries and tippers during quarrying would be 34kg per day, 9065kg per year and 45326kg over five years, as provided in Table 4.7.

**Table 4.7 Carbon Released During Five Years of Multicolour Granite Production**

|                                   | Per day | Per year | Per five years |
|-----------------------------------|---------|----------|----------------|
| Fuel consumption of excavator     | 34      | 9065     | 45326          |
| Fuel consumption of tipper        | 718     | 194005   | 970026         |
| Total fuel consumption in litters | 752     | 203070   | 1015352        |
| CO <sub>2</sub> emission in kg    | 2014    | 544228   | 2721143        |

#### 4.6.2 Mitigation Measures on Flora

- During conceptual stage, the top bench will be re-vegetated by planting local /native species and lower benches will be converted into rainwater harvesting structure following completion of mining activities, which will replace habitat resources for fauna species in this locality over a longer time.
- Existing roads will be used; new roads will not be constructed to reduce impact on flora.

#### *Carbon Sequestration*

- To mitigate carbon emission due to mining activities, we recommend planting trees around the quarry to offset the carbon emission during quarrying. A tree can sequester 134448kg of carbon per year. Therefore, we recommend planting large number of trees around the quarry and near school campuses, government wasteland, roadsides etc.
- As per the greenbelt development plan as recommended by SEAC (Table 4.19), about 2250 trees will be planted within three months from the beginning of mining. These trees, when grown up would sequester carbon of about 20412kg of the total carbon, as provided in Table 4.8.

**Table 4.8 CO<sub>2</sub> Sequestration**

|                                                          |       |        |         |
|----------------------------------------------------------|-------|--------|---------|
| CO <sub>2</sub> sequestration in kg                      | 200   | 53946  | 269730  |
| Remaining CO <sub>2</sub> not sequestered in kg          | 1814  | 490282 | 2451413 |
| Trees required for environmental compensation            | 20412 |        |         |
| Area required for environmental compensation in hectares | 41    |        |         |

#### *Greenbelt Development*

The main objective of the green belt is to provide a barrier between the source of pollution and the surrounding areas. In order to compensate the loss of vegetation cover, it is suggested to carry out afforestation program mainly inside and outside of the lease area in different phases. This habitat improvement program would ensure the faunal species to re-colonize and improve the abundance status in the core zone. Greenbelt development plan and budget required for green belt development plan are given in Tables 4.9- 4.11. For greenbelt development, species are recommended, as shown in Table 4.9 on the basis of:

- Natural growth of existing species and survival rate of various species.
- Suitability of a particular plant species for a particular type of area.
- Creating of biodiversity.
- Fast growing, thick canopy copy, perennial and evergreen large leaf area.
- Efficient in absorbing pollutants without major effects of natural growth.

**Table 4.9 Recommended Species for Greenbelt Development Plan**

| S. No. | Botanical Name of the Plant  | Family Name | Common Name     | Category | Dust Capturing Efficiency Features                                                                                                                                                               |
|--------|------------------------------|-------------|-----------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1      | <i>Azadirachta indica</i>    | Meliaceae   | Neem, Vembu     | Tree     | Well distinct thick at both the layer<br>Well distinct in Palisade & Spongy parenchyma.<br>Spongy parenchyma is present at lower epidermis Many vascular bundles arranged almost parallel series |
| 2      | <i>Tectona grandis</i>       | Lamiaceae   | Teak            | Tree     |                                                                                                                                                                                                  |
| 3      | <i>Polyalthia longifolia</i> | Annonaceae  | Nettilingam     | Tree     |                                                                                                                                                                                                  |
| 4      | <i>Albizia lebbeck</i>       | Fabaceae    | Vagai           | Tree     |                                                                                                                                                                                                  |
| 5      | <i>Delonix regia</i>         | Fabaceae    | Cemmayir-konrai | Tree     |                                                                                                                                                                                                  |
| 6      | <i>Bauhinia racemosa</i>     | Fabaceae    | Aathi           | Tree     |                                                                                                                                                                                                  |
| 7      | <i>Cassia fistula</i>        | Fabaceae    | Sarakondrai     | Tree     |                                                                                                                                                                                                  |
| 8      | <i>Aegle marmelos</i>        | Rutaceae    | Vilvam          | Tree     |                                                                                                                                                                                                  |
| 9      | <i>Pongamia pinnata</i>      | Fabaceae    | Pungam          | Tree     |                                                                                                                                                                                                  |
| 10     | <i>Thespesia populnea</i>    | Malvaceae   | Puvarasu        | Tree     |                                                                                                                                                                                                  |

**Table 4.10 Greenbelt Development Plan**

|                                                 | No. of trees proposed for plantation         | No. of trees expected to survive @ 80% | Area to be covered(m <sup>2</sup> ) |
|-------------------------------------------------|----------------------------------------------|----------------------------------------|-------------------------------------|
| Plantation in the construction phase (3 months) | Number of plants inside the mine lease area  |                                        |                                     |
|                                                 | 500                                          | 200                                    | 1500                                |
|                                                 | Number of plants outside the mine lease area |                                        |                                     |
|                                                 | 400                                          | 150                                    | 750                                 |
| <b>Total</b>                                    | <b>900</b>                                   | <b>350</b>                             | <b>2250</b>                         |

**Table 4.11 Budget for Greenbelt Development Plan**

| Activity                         | Plantation in the construction phase (3 Months) | Cost                                                                                                | Capital Cost (Rs.) | Recurring Cost-per annum |
|----------------------------------|-------------------------------------------------|-----------------------------------------------------------------------------------------------------|--------------------|--------------------------|
| Plantation inside the mine lease | 1500                                            | Site clearance, preparation of land, digging of pits /trenches, soil amendments, transplantation of | 3,00,000           | 45,000                   |

|                             |     |                                                                                                                              |                 |               |
|-----------------------------|-----|------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------|
| area (in safety margins)    |     | saplings @ 200 per plant (capital) for plantation inside the lease area and @ 30 per plant maintenance (recurring))"         |                 |               |
| Plantation outside the area | 750 | Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring) | 2,25,000        | 22,500        |
| <b>Total</b>                |     |                                                                                                                              | <b>5,25,000</b> | <b>67,500</b> |

Source: EMP budget

#### 4.6.3. Anticipated Impact on Fauna

- ✚ Direct impact is anticipated on fauna of core zone
- ✚ Insignificant impact is anticipated on fauna in the buffer area due to air emissions, noise, vibration, transportation, waste water discharges, and changes in land use.

#### Mitigation Measures on Fauna

- ✚ Fencing will be constructed around the proposed mine lease area to restrict the entry of stray animals.
- ✚ The workers shall be trained not to harm any wildlife near the project site.

#### 4.6.4. Impact on Aquatic Biodiversity

- ✚ Problems to agricultural and horticulture land due to dust caused by movement of heavy vehicles.
- ✚ Soil erosion and sediment deposition in the nearby water bodies due to earthworks during the rainy season.
- ✚ The fugitive dust released from the mining operations may cause effect on the agricultural and horticulture land who are directly exposed to the fugitive dust.
- ✚ Dust from the quarries is likely to affect reproductive systems in nearby agricultural and horticulture lands.
- ✚ Dust from quarries can affect plant growth and reduce vegetable yields.

#### 4.6.5 Mitigation Measures on agriculture and horticulture crops.

- ✚ The main objective of the green belt is to provide a barrier between the source of pollution and the surrounding areas. In order to compensate the loss of vegetation cover, it is suggested to carry out afforestation program mainly inside and outside of the lease area in different phases.

- ✚ It is a granite quarry, no explosives are used, there is no possibility of vibration and dust, thus there is no possibility of damage to the adjacent agricultural land.
- ✚ Quarry approach roads are sprayed with water 3 times a day to control dust. Thus, the damage to the nearby farmlands is controlled.
- ✚ A green belt will be created in 7.5m and 10m safety zone around the quarry to contain the dust from the quarry and prevent the dust from spreading to the adjacent agricultural land.
- ✚ Transportation of material will be carried out during day time and material will be covered with tarpaulin
- ✚ The speed of tippers plying on the haul road will be limited to < 20 km/hr to avoid generation of dust.

## **4.7 SOCIO ECONOMIC ENVIRONMENT**

The socio-economic impacts of mining are many. Impacts of a mine project may be positive or Negative. The adverse impacts attribute to physical displacement due to land acquisition, which is followed by loss of livelihood, mental agony, changes in social structure, and risk to food security etc., People are also directly affected due to pollution. Social Impact Assessment (SIA) is a process of analysis, monitoring and managing the social consequences of a project. Study on Socio-economic status has already been carried out using primary socio-economic survey for generating the baseline data of Socio-economic status.

### **4.7.1 Anticipated Impact**

From the primary Socio-economic survey & through secondary data available from established literature and census data 2011, it is found that there would be positive impact on Socio-economic condition of the nearby area. There is no habitation within 300m of the proposed mining lease area. Therefore, no major impact is anticipated on the nearby habitation during the entire life of the mine.

### **4.7.2 Mitigation Measures**

- ✚ Good maintenance practices will be adopted for plant machinery and equipment, which will help to avert potential noise problems
- ✚ Green belt will be developed in and around the project site as per Central Pollution Control Board (CPCB) guidelines
- ✚ Air pollution control measure will be taken to minimize the environmental impact within the core zone

- ✚ For the safety of workers, personal protective appliances like hand gloves, helmets, safety shoes, goggles, aprons, nose masks and ear protecting devices will be provided as per mines act and rules
- ✚ Benefit to the State and the Central governments through financial revenues by way of royalty, tax, duties, etc., from this project directly and indirectly
- ✚ From above details, the quarry operations will have highly beneficial positive impact in the area.

## **4.8 OCCUPATIONAL HEALTH AND SAFETY**

Occupational health and safety hazards will occur during the operational phase of mining and primarily include the following:

- ❖ Respiratory hazards
- ❖ Noise
- ❖ Physical hazards
- ❖ Occupational Health Survey

### **4.8.1 Respiratory Hazards**

Long-term exposure to silica dust may cause silicosis. The following measures are proposed:

- ❖ Cabins of excavators and tippers will be enclosed with AC and sound proof
- ❖ Use of personal dust masks will be made compulsory

### **4.8.2 Noise**

Workers are likely to get exposed to excessive noise levels during mining activities. The following measures are proposed for implementation

- ❖ The use of hearing protection will be enforced actively when the equivalent sound level over 8 hours reaches 85 dB(A), the peak sound levels reach 140 dB(C), or the average maximum sound level reaches 110 dB(A)
- ❖ No employee will be exposed to a noise level greater than 85 dB(A) for a duration of more than 8 hours per day without hearing protection
- ❖ Ear muffs provided will be capable of reducing sound levels at the ear to at least 85 dB(A)
- ❖ Periodic medical hearing checks will be performed on workers exposed to high noise levels

### **4.8.3 Physical Hazards**

The following measures are proposed for control of physical hazards

- ❖ Specific personnel training on work-site safety management will be taken up;

- ❖ Natural barriers, temporary railing, or specific danger signals will be provided along rock benches or other pit areas where work is performed at heights more than 2m from ground level.
- ❖ Maintenance of yards, roads and footpaths, providing sufficient water drainage and preventing slippery surfaces with an all-weather surface, such as coarse gravel will be taken up.

#### **4.8.4 Occupational Health Survey**

All the persons will undergo pre-employment and periodic medical examination. Employees will be monitored for occupational diseases by conducting general physical tests, audiometric tests, full chest, X-ray, lung function tests, spiro metric tests, periodic medical examination – yearly, Lung function/ Silicosis test – yearly, those who are exposed to dust and eye test. Essential medicines will be provided at the site. The medicines and other test facilities will be provided at free of cost. The first aid box will be made available at the mine for immediate treatment. First aid training will be imparted to the selected employees regularly. The lists of first aid trained members shall be displayed at strategic places.

#### **4.9 Mine Waste Management**

No waste is anticipated from any of the proposed quarries.

#### **4.10 MINE CLOSURE**

Mine closure plan is the most important environmental requirement in mineral mining projects. The mine closure plan should cover technical, environmental, social, legal and financial aspects dealing with progressive and post closure activities. The closure operation is a continuous series of activities starting from the decommissioning of the project.

Objective of Mine closure

- ❖ To create a productive and sustainable after-use for the site, acceptable to mine owners, regulatory agencies, and the public
- ❖ To protect public health and safety of the surrounding habitation
- ❖ To minimize environmental damage
- ❖ To conserve valuable attributes and aesthetics
- ❖ To overcome adverse socio-economic impacts.

##### **4.10.1 Mine Closure criteria**

The criteria involved in mine closure are discussed below:

##### **4.10.1.1 Physical Stability**

All anthropogenic structures, which include mine workings, buildings, rest shelters etc., remaining after mine decommissioning should be physically stable. They should present no



hazard to public health and safety as a result of failure or physical deterioration and they should continue to perform the functions for which they were designed. The design periods and factors of safety proposed should take full account of extreme events such as floods, hurricane, winds or earthquakes, etc. and other natural perpetual forces like erosion, etc.

#### **4.10.1.2 Chemical Stability**

The solid wastes on the mine site should be chemically stable. This means that the consequences of chemical changes or conditions leading to leaching of metals, salts or organic compounds should not endanger public health and safety nor result in the deterioration of environmental attributes. If the pollutant discharges likely to cause adverse impacts is predicted in advance, appropriate mitigation measures like settling of suspended solids or passive treatment to improve water quality as well as quantity, etc. could be planned. Monitoring should demonstrate that there is no adverse effect of pollutant concentrations exceeding the statutory limits for the water, soil and air qualities in the area around the closed mine.

#### **4.10.1.3 Biological Stability**

The stability of the surrounding environment is primarily dependent upon the physical and chemical characteristics of the site, whereas the biological stability of the mine site itself is closely related to rehabilitation and final land use. Nevertheless, biological stability can significantly influence physical or chemical stability by stabilizing soil cover, prevention of erosion/wash off, leaching, etc.,

A vegetation cover over the disturbed site is usually one of the main objectives of the rehabilitation programme, as vegetation cover is the best long-term method of stabilizing the site. When the major earthwork components of the rehabilitation programme have been completed, the process of establishing a stable vegetation community begins. For re-vegetation, management of soil nutrient levels is an important consideration. Additions of nutrients are useful under three situations.

- ❖ Where the nutrient level of spread topsoil is lower than material in-situ e.g., for development of social forestry.
- ❖ Where it is intended to grow plants with a higher nutrient requirement than those occurring naturally, e.g., planning for agriculture.
- ❖ Where it is desirable to get a quick growth response from the native flora during those times when moisture is not a limiting factor e.g., development of green barriers.

The Mine closure plan should be as per the approved mining plan. The mine closure is a part of approved mining plan and activities of closure shall be carried out as per the process described in mine closure plan (Annexure III).

## **CHAPTER V**

### **ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)**

#### **5.0 INTRODUCTION**

Consideration of alternatives to a proposed project is a requirement of EIA process. During the scoping process, alternatives to a proposed project can be considered or refined, either directly or by reference to the key issues identified. A comparison of alternatives helps to determine the best method of achieving the project objectives with minimum environmental impacts or indicates the most environmentally friendly and cost-effective options.

#### **5.1 FACTORS BEHIND THE SELECTION OF PROJECT SITE**

The proposed project is site specific and has the following advantages:

- The mineral deposit occurs in a non-forest area.
- There is no habitation within the project area; hence no R & R issues exist.
- There is no river, stream, nallah and water bodies in the applied mine lease area.
- Availability of skilled, semi-skilled and unskilled workers in this region.
- All the basic amenities such as medical, firefighting, education, transportation, communication and infrastructural facilities are well connected and accessible.
- The mining operations will not intersect the ground water level. Hence, no impact on ground water environment.
- As the proposed project area falls in seismic zone II, there is no major history of landslides, earthquake, subsidence etc., recorded in the past history.

#### **5.2 ANALYSIS OF ALTERNATIVE SITE**

No alternatives are suggested as the mine site is mineral specific.

#### **5.3 FACTORS BEHIND SELECTION OF PROPOSED TECHNOLOGY**

The proposed mining lease areas have following advantages:

- ❖ As the mineral deposition is homogeneous and batholith formation, opencast method of working is preferred over underground method.
- ❖ The material will be loaded with the help of excavators into tractors/tippers and transported to the need by customers.
- ❖ Semi-skilled labours fit for quarrying operations are easily available around the nearby villages.

#### **5.4 ANALYSIS OF ALTERNATIVE TECHNOLOGY**

Open cast mechanized method has been selected for this project. This technology is having least gestation period, economically viable, safest and less labour intensive. The method has inbuilt flexibility for increasing or decreasing the production as per market condition.

## **CHAPTER VI**

### **ENVIRONMENTAL MONITORING PROGRAMME**

#### **6.0 GENERAL**

The monitoring and evaluation of environmental parameters indicates potential changes occurring in the environment, which paves way for implementation of rectifying measures wherever required to maintain the status of the natural environment. Evaluation is also a very effective tool to judge the effectiveness or deficiency of the measures adopted and provides insight for future corrections. The main objective of environmental monitoring is to ensure that the obtained results in respect of environmental attributes and prevailing conditions during operation stage are in conformity with the prediction during the planning stage. In case of substantial deviation from the earlier prediction of results, this forms as base data to identify the cause and suggest remedial measures. Environmental monitoring is mandatory to meet compliance of statutory provisions under the Environment (Protection) Act, 1986, relevant conditions regarding monitoring covered under EC orders issued by the SEIAA-TN as well as the conditions set forth under the order issued by Tamil Nadu Pollution Control Board while granting CTE/CTO.

#### **6.1 METHODOLOGY OF MONITORING MECHANISM**

Implementation of EMP and periodic monitoring will be carried out by respective project proponents. A comprehensive monitoring mechanism has been devised for monitoring of impacts due to proposed project; Environmental protection measures like dust suppression, control of noise and blast vibrations, maintenance of machinery and vehicles, housekeeping in the mine premises, plantation, implementation of Environmental Management Plan and environmental clearance conditions will be monitored by the respective mine management. On the other hand, implementation of area level protection measures like green belt development, environmental quality monitoring etc., are taken up by a senior executive who reports to their Mine Management.

An Environment monitoring cell (EMC) will be constituted to monitor the implementation of EMP and other environmental protection measures in the proposed quarry. The responsibilities of this cell will be:

- ❖ Implementation of pollution control measures
- ❖ Monitoring programme implementation
- ❖ Post-plantation care
- ❖ To check the efficiency of pollution control measures taken
- ❖ Any other activity as may be related to environment

- ❖ Seeking expert's advice when needed.

The environmental monitoring cell will co-ordinate all monitoring programs at site and data thus generated will be regularly furnished to the State regulatory agencies as compliance status reports.

The sampling and analysis report of the monitored environmental attributes will be submitted to the Tamil Nadu Pollution Control Board (TNPCB) at a frequency of half-yearly and yearly by the proposed project proponent. The half-yearly reports are submitted to Ministry of Environment and Forest, Regional Office and SEIAA-TN as well.

The sampling and analysis of the environmental attributes will be as per the guidelines of Central Pollution Control Board (CPCB)/Ministry of Environment, Forest and Climate Change (MoEF & CC). The Environmental Monitoring Cell will be formed for the proposed project. The structure of the cell will be as shown in Figure 6.1.

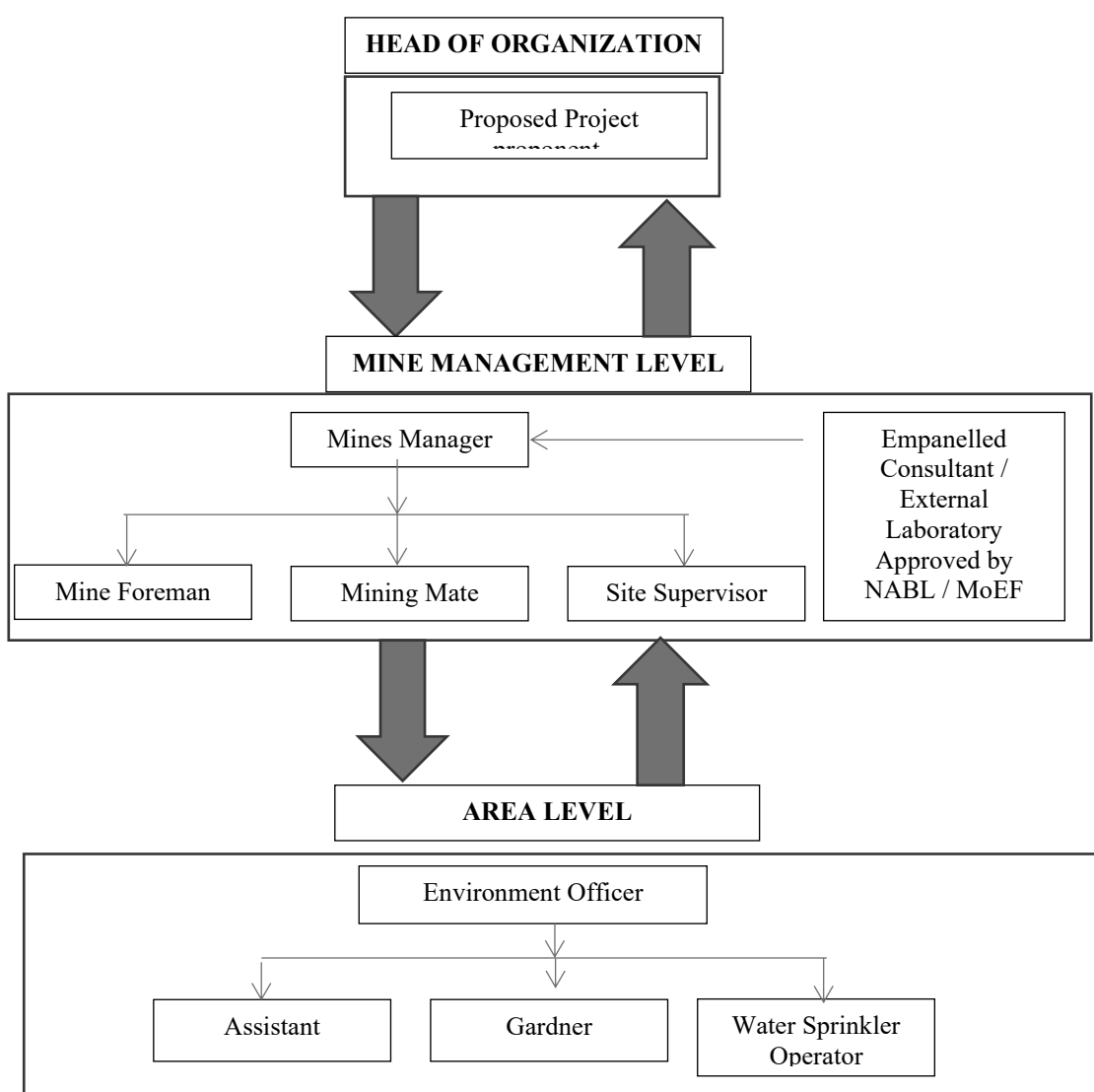


**Figure 6.1 Proposed environmental monitoring chart**

## 6.2 IMPLEMENTATION SCHEDULE OF MITIGATION MEASURES

The mitigation measures proposed in chapter IV will be implemented so as to reduce the impact on the environment due to the operations of the proposed project. Implementation schedule of mitigation measures is given in Table 6.1.

**Table 6.1 Implementation Schedule for Proposed Project**

| S. No. | Recommendations                   | Time Period                                                         | Schedule                                      |
|--------|-----------------------------------|---------------------------------------------------------------------|-----------------------------------------------|
| 1      | Land Environment Control Measures | Before commissioning of the project                                 | Immediately after the commencement of project |
| 2      | Soil Quality Control Measures     | Before commissioning of the project                                 | Immediately after the commencement of project |
| 3      | Water Pollution Control Measures  | Before commissioning of the project and along with mining operation | Immediately and as project progress           |
| 4      | Air Pollution Control Measures    | Before commissioning of the project and along with mining operation | Immediately and as project progress           |
| 5      | Noise Pollution Control measures  | Before commissioning of the project and along with mining operation | Immediately and as project progress           |
| 6      | Ecological Environment            | Phase wise implementation every year along with mine operations     | Immediately and as project progress           |

## 6.3 MONITORING SCHEDULE AND FREQUENCY

Monitoring shall confirm that commitments are being met. This may take the form of direct measurement and recording of quantitative information, such as amounts and concentrations of discharges, emissions and wastes, for measurement against statutory standards. Monitoring may include socio-economic interaction, through local liaison activities or even assessment of complaints.

The environmental monitoring will be conducted in the mine operations as follows:

- ❖ Air quality
- ❖ Water and wastewater quality
- ❖ Noise levels

- ❖ Soil quality and
- ❖ Greenbelt development

The details of proposed monitoring schedule have been provided in Table 6.2.

**Table 6.2 Proposed Monitoring Schedule Post EC for the Proposed Quarry**

| S. No. | Environment Attributes   | Location                                                                 | Monitoring     |                              | Parameters                                                                                  |
|--------|--------------------------|--------------------------------------------------------------------------|----------------|------------------------------|---------------------------------------------------------------------------------------------|
|        |                          |                                                                          | Duration       | Frequency                    |                                                                                             |
| 1      | Air Quality              | 2 Locations (1 Core & 1 Buffer)                                          | 24 hours       | Once in 6 months             | Fugitive Dust, PM <sub>2.5</sub> , PM <sub>10</sub> , SO <sub>2</sub> and NO <sub>x</sub> . |
| 2      | Meteorology              | At mine site before start of Air Quality Monitoring & IMD Secondary Data | Hourly / Daily | Continuous online monitoring | Wind speed, Wind direction, Temperature, Relative humidity and Rainfall                     |
| 3      | Water Quality Monitoring | 2 Locations (1SW & 1 GW)                                                 | -              | Once in 6 months             | Parameters specified under IS:10500, 1993 & CPCB Norms                                      |
| 4      | Hydrology                | Water level in open wells in buffer zone around 1 km at specific wells   | -              | Once in 6 months             | Depth in m BGL                                                                              |
| 5      | Noise                    | 2 Locations (1 Core & 1 Buffer)                                          | Hourly – 1 Day | Once in 6 months             | Leq, Lmax, Lmin, Leq Day & Leq Night                                                        |
| 6      | Vibration                | At the nearest habitation (in case of reporting)                         | –              | During blasting operation    | Peak particle velocity                                                                      |
| 7      | Soil                     | 2 Locations (1 Core & 1 Buffer)                                          | –              | Once in six months           | Physical and chemical characteristics                                                       |
| 8      | Greenbelt                | Within the project area                                                  | Daily          | Monthly                      | Maintenance                                                                                 |

*Source: EIA Guidance of manual for mining of minerals, February 2010*

#### 6.4 BUDGETARY PROVISION FOR ENVIRONMENT MONITORING PROGRAM

The cost in respect of monitoring of environmental attributes, parameter to be monitored, sampling/monitoring locations with frequency and cost provision against each proposal is shown in Table 6.3. Monitoring work will be outsourced to external laboratory approved by NABL / MoEF. The proposed recurring cost for Environmental Monitoring Programme is Rs 2,95,000 /- per annum for the proposed project site.

**Table 6.3 Environment Monitoring Budget**

| S. No.       | Parameter              | Capital Cost | Recurring Cost per annum |
|--------------|------------------------|--------------|--------------------------|
| 1            | Air Quality            | -            | Rs 60,000/-              |
| 2            | Meteorology            | -            | Rs 15,000/-              |
| 3            | Water Quality          | -            | Rs 20,000/-              |
| 4            | Water Level Monitoring |              | Rs 10,000/-              |
| 5            | Soil Quality           | -            | Rs 20,000/-              |
| 6            | Noise Quality          | -            | Rs 10,000/-              |
| 7            | Greenbelt              | -            | Rs 1,50,000/-            |
| <b>Total</b> |                        | -            | <b>Rs 1,45,000 /-</b>    |

Source: Field Data

#### 6.5 REPORTING SCHEDULES OF MONITORED DATA

The monitored data on air quality, water quality, noise levels and other environmental attributes will be periodically examined by the Cluster Mine Management Coordinator and Respective Head of Organization for taking necessary corrective measures. The monitoring data will be submitted to Tamil Nadu State Pollution Control Board in the Compliance to CTO Conditions & environmental audit statements every year to MoEF & CC and Half-Yearly Compliance Monitoring Reports to MoEF & CC Regional Office and SEIAA.

Periodical reports to be submitted to:

- ❖ MoEF & CC – Half yearly status report
- ❖ TNPCB - Half yearly status report
- ❖ Department of Geology and Mining: quarterly, half yearly annual reports

Besides the Mines Manager/Agent of respective project will submit the periodical reports to:

- ❖ Director of mines safety
- ❖ Labour enforcement officer
- ❖ Controller of explosives as per the norms stipulated by the department.

## **CHAPTER VII**

### **ADDITIONAL STUDIES**

#### **7.0 GENERAL**

Additional studies deal with:

- ❖ Public Consultation for Proposed Project
- ❖ Risk Assessment
- ❖ Disaster Management Plan
- ❖ Cumulative Impact Study
- ❖ Plastic Waste Management

#### **7.1 PUBLIC CONSULTATION FOR PROPOSED PROJECT**

Application to the Member Secretary of the Tamil Nadu Pollution Control Board (TNPCB) to conduct Public Hearing in a systematic, time bound and transparent manner ensuring widest possible public participation at the project site or in its close proximity in the district was made and the public opinions on the proposed project will be updated in the final EIA/ EMP report.

#### **7.2 RISK ASSESSMENT FOR PROPOSED PROJECT**

Risk Assessment is all about prevention of accidents and to take necessary steps to prevent it from happening. The methodology for the risk assessment is based on the specific risk assessment guidance issued by the Directorate General of Mine Safety (DGMS), Dhanbad, vide circular No.13 of 2002, dated 31<sup>st</sup> December, 2002. The DGMS risk assessment process is intended to identify existing and probable hazards in the work environment and all operations and assess the risk levels of those hazards in order to prioritize those that need immediate attention. Further, mechanisms responsible for these hazards are identified and their control measures, set to timetable are recorded along with pinpointed responsibilities. The whole quarry operation will be carried out under the direction of a Qualified Competent Mine Manager holding certificate of competency to manage a metalliferous mine granted by the DGMS, Dhanbad for proposed project.

Factors of risks involved due to human induced activities in connection with these proposed mining & allied activities with detailed analysis of causes and control measures for the mine is given in Table 7.1.



**Table 7.1 Risk Assessment & Control Measures for Proposed Project**

| S. No. | Risk factors                                              | Causes of risk                                                                   | Control measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------|-----------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1      | Accidents due to explosives and heavy mining machineries. | Improper handling and unsafe working practice                                    | <ul style="list-style-type: none"> <li>✓ All safety precautions and provisions of Mine Act, 1952, Metalliferous Mines Regulation, 1961 and Mines Rules, 1955 will be strictly followed during all mining operations.</li> <li>✓ Workers will be sent to the Training in the nearby Group Vocational Training Centre Entry of unauthorized persons will be prohibited.</li> <li>✓ Fire-fighting and first-aid provisions in the mine office complex and mining area.</li> <li>✓ Provisions of all the safety appliances such as safety boot, helmets, goggles etc. will be made available to the employees and regular check for their use.</li> <li>✓ Working of quarry, as per approved plans and regularly updating the mine plans.</li> <li>✓ Cleaning of mine faces on daily basis shall be daily done in order to avoid any overhang or undercut.</li> <li>✓ Handling of explosives, charging and firing shall be carried out by competent persons only under the supervision of a Mine Manager.</li> <li>✓ Maintenance and testing of all mining equipment as per manufacturer's guidelines.</li> </ul> |
| 2      | Drilling                                                  | Improper and unsafe practices; Due to high pressure of compressed air, hoses may | <ul style="list-style-type: none"> <li>✓ Safe operating procedure established for drilling (SOP) will be strictly followed.</li> <li>✓ Only trained operators will be deployed.</li> <li>✓ No drilling shall be commenced in an area where shots have been fired until the blaster/blasting foreman has made a thorough Examination of all places,</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

|   |                    |                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |                    | burst; Drill Rod may break;                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>✓ Drilling shall not be carried on simultaneously on the benches at places directly one above the other.</li> <li>✓ Periodical preventive maintenance and replacement of worn-out accessories in the compressor and drill equipment as per operator manual.</li> <li>✓ All drills unit shall be provided with wet drilling shall be maintained in efficient working in condition.</li> <li>✓ Operator shall regularly use all the personal protective equipment.</li> </ul>                                                                                                                                                                                                                                                                                             |
| 3 | Transportation     | <p>Potential hazards and unsafe workings contributing to accident and injuries</p> <p>Overloading of material</p> <p>While reversal &amp; overtaking of vehicle</p> <p>Operator of truck leaving his cabin when it is loaded.</p> | <ul style="list-style-type: none"> <li>✓ Before commencing work, drivers personally check the truck/tipper for oil(s), fuel and water levels, tyre inflation, general cleanliness and inspect the brakes, steering system, warning devices including automatically operated audio-visual reversing alarm, rear view mirrors, side indicator lights etc., are in good condition.</li> <li>✓ Not allow any unauthorized person to ride on the vehicle nor allow any unauthorized person to operate the vehicle.</li> <li>✓ Concave mirrors should be kept at all corners</li> <li>✓ All vehicles should be fitted with reverse horn with one spotter at every tipping point</li> <li>✓ Loading according to the vehicle capacity</li> <li>✓ Periodical maintenance of vehicles as per operator manual</li> </ul> |
| 4 | Natural calamities | Unexpected happenings                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>✓ Escape Routes will be provided to prevent inundation of storm water</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

|   |                                       |                                      |                                                                                        |
|---|---------------------------------------|--------------------------------------|----------------------------------------------------------------------------------------|
|   |                                       |                                      | ✓ Fire Extinguishers & Sand buckets                                                    |
| 5 | Failure of Mine Benches and Pit Slope | Slope geometry, Geological structure | ✓ Ultimate or over all pit slope shall be below 60° and each bench height shall be 5m. |

*Source: Analysed and proposed by FAE & EC*

### 7.3 DISASTER MANAGEMENT PLAN FOR PROPOSED PROJECT

Natural disasters like Earthquake, Landslides have not been recorded in the past history as the terrain is categorized under seismic zone II. The area is far away from the sea. Hence, the disaster due to heavy floods and tsunamis are not anticipated. The Disaster Management Plan is aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this same order of priorities. The objective of the Disaster Management Plan is to make use of the combined resources of the mine and the outside services to achieve the following:

- ❖ Rescue and medical treatment of casualties;
- ❖ Safeguard other people;
- ❖ Minimize damage to property and the environment;
- ❖ Initially contain and ultimately bring the incident under control;
- ❖ Secure the safe rehabilitation of affected area; and
- ❖ Preserve relevant records and equipment for the subsequent inquiry into the cause and circumstances of the emergency.

In case a disaster takes place, despite preventive actions, disaster management will have to be done in line with the descriptions below. There is an organization proposed for dealing with the emergency situations. Structure of the team has been shown in Figure 7.1.

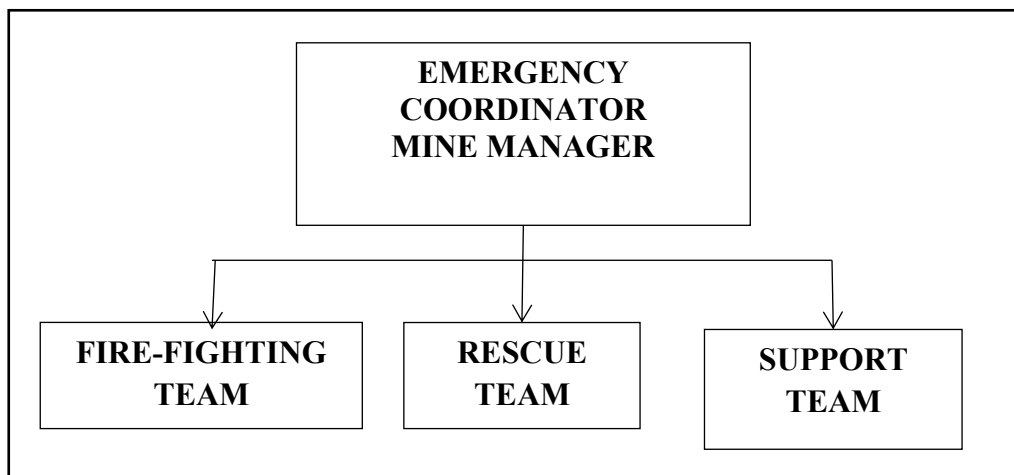


**Figure 7.1 Disaster management team layout for proposed project**

### 7.3.1 Emergency Control Procedure

The onset of emergency, will in all probability, commence with a major fire or explosion or collapse of wall along excavation and shall be detected by various safety devices and also by members of operational staff on duty. If located by a staff member on duty, he (as per site emergency procedure of which he is adequately briefed) will go to nearest alarm call point, break glass and trigger off the alarms. He will also try his best to inform about location and nature of accident to the emergency control room. In accordance with work emergency procedure the following key activities will immediately take place to interpret and take control of emergency.

- ❖ On site fire crew led by a fireman will arrive at the site of incident with fire foam tenders and necessary equipment.
- ❖ Emergency security controller will commence his role from main gate office
- ❖ Incident controller shall rush to the site of emergency and with the help of rescue team and will start handling the emergency.
- ❖ Site main controller will arrive at MECR with members of his advisory and communication team and will assume absolute control of the site.
- ❖ He will receive information continuously from incident controller and give decisions and directions to:
  - ❖ Incident controller
  - ❖ Mine control rooms
  - ❖ Emergency security controller

### 7.4 CUMULATIVE IMPACT STUDY

The cumulative impact on air & noise environment is mainly anticipated due to drilling, excavation, movement of HEMM and transportation activities in all the quarries (proposed and existing) within the cluster. For this cumulative study, 2 proposed projects, known as P1, P2 are taken into consideration. The details of P1 have been given in Table 1. 3 and the detail of P2 are given in the Table 7.2.

**Table 7.2 Salient Features of the Proposed Project P2**

|                    |                                |
|--------------------|--------------------------------|
| Name of the Quarry | Thiru. M. Vikneshkumar         |
| Type of Land       | Govt Poramboke Land            |
| Extent             | 2.48.0 Ha                      |
| S.F. No            | 810/2 (P)                      |
| Toposheet No       | 58-H/15                        |
| Maximum Elevation  | 421m MSL                       |
| Latitude           | 12°25'47.11"N to 12°25'51.65"N |

|                                  |                                                                                                                                                     |                                       |                 |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------|
| Longitude                        | 77°49'39.55"E to 77°49'45.36"E                                                                                                                      |                                       |                 |
| Ultimate Pit Dimensions          | 30m                                                                                                                                                 |                                       |                 |
| Geological Resources             | Black Granite<br>20% Recovery<br>(MT)                                                                                                               | Granite Waste<br>80% Recovery<br>(MT) | Topsoil<br>(MT) |
|                                  | 72145                                                                                                                                               | 392645                                | 84862           |
| Mineable Reserves                | 59451                                                                                                                                               | 145891                                | 71546           |
| Proposed reserves for five years | 12458                                                                                                                                               | 55238                                 | 19805           |
| Method of Mining                 | Open-Cast mining                                                                                                                                    |                                       |                 |
| Topography                       | Undulated Terrain                                                                                                                                   |                                       |                 |
| Machinery proposed               | Jack Hammer                                                                                                                                         |                                       | 6               |
|                                  | Compressor                                                                                                                                          |                                       | 2               |
|                                  | Tipper                                                                                                                                              |                                       | 1               |
|                                  | Excavator                                                                                                                                           |                                       | 2               |
| Blasting Method                  | Quarrying operation is carried out by splitting of rock mass of considerable volume from the parent rock mass by jackhammer, drilling and blasting. |                                       |                 |
| Proposed Manpower Deployment     | 17 Persons                                                                                                                                          |                                       |                 |
| Project Cost                     | Rs.2,25,45,000/-                                                                                                                                    |                                       |                 |
| Proposed Water Requirement       | 4.0 KLD                                                                                                                                             |                                       |                 |

#### 7.4.1 Air Environment

Calculation of the cumulative production load of granite from the Cluster project within the cluster have been given in the Table.7.3.

**Table 7.3 Cumulative Production Load of Granite**

| Quarry       | Black Granite @20% Recovery in MT |                |               |                    | Granite Waste @ 80% in MT |                |               |                    | Weathered Rock in MT |                |               |                    |
|--------------|-----------------------------------|----------------|---------------|--------------------|---------------------------|----------------|---------------|--------------------|----------------------|----------------|---------------|--------------------|
|              | 5 years in MT                     | Per Year in MT | Per Day in MT | Lorry Load Per day | 5 years in MT             | Per Year in MT | Per Day in MT | Lorry Load Per day | 5 years in MT        | Per Year in MT | Per Day in MT | Lorry Load Per day |
| <b>P1</b>    | 20918                             | 4183           | 14            | 1                  | 83666                     | 16733          | 57            | 3                  | 43344                | 8668           | 29            | 2                  |
| <b>P2</b>    | 12458                             | 2492           | 9             | 1                  | 55238                     | 11048          | 40            | 2                  | 29542                | 5908           | 22            | 1                  |
| <b>Total</b> | <b>33376</b>                      | <b>6675</b>    | <b>23</b>     | <b>2</b>           | <b>138904</b>             | <b>27781</b>   | <b>97</b>     | <b>5</b>           | <b>72886</b>         | <b>14576</b>   | <b>51</b>     | <b>3</b>           |

The overall production of Cluster is of about granite recovery is 23MT s per day with a capacity of 2 trips per day, about granite waste is 97MT per day with a capacity of 5 trips and weathered rock is of 51MT per day with a capacity of 3 trips per day.

#### 7.4.1.1 Cumulative Impact of Air Pollutants

The results on the cumulative impact from the three proposed projects on air environment of the cluster have been provided in Table 7.4. The cumulative values resulting from the Three projects for each pollutant do not exceed the permissible limits set by CPCB.

**Table 7.4 Incremental and Resultant Ground Level Concentration from the three Quarry**

| Pollutants        | Baseline Data ( $\mu\text{g}/\text{m}^3$ ) | Incremental Values ( $\mu\text{g}/\text{m}^3$ ) |      |     | Cumulative Value ( $\mu\text{g}/\text{m}^3$ ) |
|-------------------|--------------------------------------------|-------------------------------------------------|------|-----|-----------------------------------------------|
|                   |                                            | P1                                              | P2   | P3  |                                               |
| PM <sub>2.5</sub> | 17.7                                       | 4.3                                             | 3.3  | 1.4 | 22.0                                          |
| PM <sub>10</sub>  | 57.3                                       | 11.1                                            | 11.4 | 6.4 | 48.0                                          |

#### 7.4.2 Noise Environment

Noise pollution is mainly due to operation like drilling plying of trucks & HEMM. Cumulative Noise modelling has been carried out considering compressor operation (drilling) and transportation activities. Predictions have been carried out to compute the noise level at various distances around the different quarries within the 500m radius.

**Table.7.5 Predicted Noise Incremental Values from Cluster**

| Location ID               | Distance (m) | Direction | Background Value (Day) dB(A) | Incremental Value dB(A) | Total Predicted dB(A) | Residential Area Standards dB(A) |
|---------------------------|--------------|-----------|------------------------------|-------------------------|-----------------------|----------------------------------|
| Habitation Near P1        | 1200         | SW        | 45.1                         | 40.6                    | 45.1                  | 55                               |
| Habitation Near P2        | 1210         | NW        | 44.0                         | 40.7                    | 44.0                  |                                  |
| Habitation Near P3        | 1790         | SE        | 43.2                         | 39.4                    | 43.2                  |                                  |
| Cumulative Noise (dB (A)) |              |           |                              |                         | 43.2                  |                                  |

Source: Lab Monitoring Data

The cumulative analysis of noise due to three proposed project shows that habitation near P1 will receive about 45.1dB (A), as shown in Table 7.6. The cumulative results for the habitation in consideration do not exceed the limit set by CPCB for residential areas for day time.

#### 7.4.3 Socio Economic Environment

Socio Economic benefits of the three proposed project were calculated and the results have been shown in Table 7.6 the Cluster projects together will contribute Rs. 20,00,000/- towards CER fund.

**Table 7.6 Socio Economic Benefits from Cluster Quarries**

| Location ID | Project Cost     | CER Cost      |
|-------------|------------------|---------------|
| P1          | Rs.5,97,20,000/- | Rs. 10,00,000 |
| P2          | Rs.2,25,45,000/- | Rs. 10,00,000 |

|                    |                         |                      |
|--------------------|-------------------------|----------------------|
| <b>Grand Total</b> | <b>Rs.8,22,65,000/-</b> | <b>Rs. 20,00,000</b> |
|--------------------|-------------------------|----------------------|

**Table 7.7 Employment Benefits from 3 Quarries**

| <b>Location ID</b> | <b>Employment</b> |
|--------------------|-------------------|
| P1                 | 25                |
| P2                 | 17                |
| <b>Grand Total</b> | <b>42</b>         |

A total of 42 people will get direct employment due to proposed mines in cluster

#### 7.4.4 Ecological Environment

**Table 7.8 Greenbelt Development Benefits from Cluster Quarries**

| <b>ID</b>    | <b>No of Trees proposed to be planted</b> | <b>Area to be covered (m<sup>2</sup>)</b> | <b>Name of the Species</b>        | <b>No. of Trees expected to be grown @ 80% survival rate</b> |
|--------------|-------------------------------------------|-------------------------------------------|-----------------------------------|--------------------------------------------------------------|
| P1           | 2250                                      | 20250                                     | Neem,<br>Pongamia, Teak,<br>etc., | 1800                                                         |
| P2           | 1240                                      | 11160                                     |                                   | 992                                                          |
| <b>Total</b> | <b>3490</b>                               | <b>31410</b>                              |                                   | <b>2792</b>                                                  |

Cumulative studies show that the three proposed projects will plant about 3155 native tree species like Neem, Teak, etc both inside and outside the lease area. It is expected that 80 % of trees, i.e., 2524 trees will survive in this green belt development program.

#### 7.5 PLASTIC WASTE MANAGEMENT PLAN FOR PROPOSED PROJECT

All the Project Proponent shall comply with Tamil Nadu Government Order (Ms) No. 84 Environment and Forest (EC.2) Department Dated: 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986.

##### 7.5.1 Objective

- ❖ To investigate the actual supply chain network of plastic waste.
- ❖ To identify and propose a sustainable plastic waste management by installing bins for collection of recyclables with all the plastic waste
- ❖ Preparation of a system design layout, and necessary modalities for implementation and monitoring.

A detailed action plan to manage plastic waste has been provided in Table 7.9.

**Table 7.9 Action Plan to Manage Plastic Waste**

| <b>S. No.</b> | <b>Activity</b>                                                                                                            | <b>Responsibility</b> |
|---------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------|
| 1             | Framing of Layout Design by incorporating provision of the Rules, user fee to be charged from waste generators for plastic | Mines Manager         |

|   |                                                                                                                         |               |
|---|-------------------------------------------------------------------------------------------------------------------------|---------------|
|   | waste management, penalties/fines for littering, burning plastic waste or committing any other acts of public nuisance. |               |
| 2 | Enforcing waste generators to practice segregation of bio-degradable, recyclable and domestic hazardous waste.          | Mines Manager |
| 3 | Collection of plastic waste.                                                                                            | Mines Foreman |
| 4 | Setting up of Material Recovery Facilities.                                                                             | Mines Manager |
| 5 | Segregation of Recyclable and Non-Recyclable plastic waste at Material Recovery Facilities.                             | Mines Foreman |
| 6 | Channelization of Recyclable Plastic Waste to registered recyclers.                                                     | Mines Foreman |
| 7 | Channelization of Non-Recyclable Plastic Waste for use either in Cement kilns, in Road Construction.                    | Mines Foreman |
| 8 | Creating awareness among all the stakeholders about their responsibility.                                               | Mines Manager |
| 9 | Surprise checking's of littering, open burning of plastic waste or committing any other acts of public nuisance.        | Mine Owner    |

*Source: Proposed by FAEs and EC*



## **CHAPTER VIII**

### **PROJECT BENEFITS**

#### **8.0 GENERAL**

The proposed project at Ajjanahalli Village aims to produce **20918MT** of Black granite over a period of 5 years. This will enhance the socio-economic activities in the adjoining areas and will result in the following benefits:

- ❖ Increase in Employment Potential
- ❖ Improvement in Socio-Economic Welfare
- ❖ Improvement in Physical Infrastructure
- ❖ Improvement in Social infrastructure

#### **8.1 EMPLOYMENT POTENTIAL**

It is proposed to provide employment to about 22 persons for carrying out mining operations and give preference to the local people in providing employment in this cluster. In addition, there will be an opportunity for indirect employment to about 17 persons in the form of contractual jobs, business opportunities, and service facilities etc. Because of this, the economic status of the local people will improve.

#### **8.2 SOCIO- ECONOMIC WELFARE MEASURES PROPOSED**

The impact of mining activity in the area will be more positive on the socio-economic environment in the immediate project impact area. The employment opportunities both direct and indirect will contribute to enhanced money incomes to job seekers with minimal skill sets especially among the local communities.

#### **8.3 IMPROVEMENT IN PHYSICAL INFRASTRUCTURE**

The proposed quarry project is located in Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District and Tamil Nadu. The area has already well- established communications roads and other facilities. The following physical infrastructure facilities will further improve due to proposed project.

- ❖ Road transport facilities
- ❖ Communications
- ❖ Medical, Educational and social benefits will be made available to the nearby civilian population in addition to the workmen employed in the mine.

#### **8.4 IMPROVEMENT IN SOCIAL INFRASTRUCTURE**

Employment is expected during civil construction period, in trade, garbage lifting, sanitation and other ancillary services, Employment in these sectors will be primarily

temporary or contractual and involvement of unskilled labour will be more. A major part of the labour force will be mainly from local villagers who are expected to engage themselves both in agriculture and mining activities. This will enhance their income and lead to overall economic growth of the area.

### **8.5 OTHER TANGIBLE BENEFITS**

The proposed mine is likely to have other tangible benefits as given below.

- ❖ Indirect employment opportunities to local people in contractual works like construction of infrastructural facilities, transportation, sanitation for supply of goods and services to the mine and other community services
- ❖ Additional housing demand for rental accommodation will increase
- ❖ Cultural, recreation and aesthetic facilities will also improve
- ❖ Improvement in communication, transport, education, community development and medical facilities and overall change in employment and income opportunity
- ❖ The State Government will also benefit directly from the proposed mine, through increased revenue from royalties, cess, DMF, GST etc.,

### **8.6 CORPORATE SOCIAL RESPONSIBILITY**

Individual Project Proponents will take responsibility to develop awareness among all levels of their staff about CSR activities and the integration of social processes with business processes. Those involved with the undertaking of CSR activities will be provided with adequate training and re-orientation.

Under this programme, the project proponents will take-up following programmes for social and economic development of villages within 10km of the project site. For this purpose, separate budget will be provided every year. For finalization of these schemes, proponent will interact with LSG. The schemes will be selected from the following broad areas –

- ❖ Health Services
- ❖ Social Development
- ❖ Infrastructure Development
- ❖ Education & Sports
- ❖ Self-Employment
- ❖ CSR Cost Estimation
- ❖ CSR activities mainly contributing to education, health, training of women self-help groups and infrastructure etc., will be taken up in the Ajjanahalli Village. CSR budget is allocated as 5% of the profit.

## 8.7 CORPORATE ENVIRONMENT RESPONSIBILITY

Allocation for Corporate Environment Responsibility (CER) shall be made as per Government of India, MoEF & CC Office Memorandum F.No.22-65/2017-IA.III dated 01.05.2018. As per para 6 (II) of the office memorandum, being a green field project & capital investment is  $\leq 100$  crores, the proposed project shall contribute 5% of capital investment towards CER as per directions of EAC/SEAC. However, the SEAC has suggested to allocate CER fund on the basis of the extent of the project. Therefore, **Rs. 10,00,000** is allocated for CER. The proposed utilization of the budget of CER activities is given in Table 8.1.

**Table 8.1 CER Action Plan**

| S. No. | Activity                                                                                                                                                                                                                                        | Budget (Rs.in Lakh)  |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| 1      | The applicant Indents to involve in corporate environment responsibilities (CER) activities such as renovation of existing toilet, plantation within the school premises, donating environment related books to the nearby school library, etc. | Rs.10,00,000         |
|        | <b>Total</b>                                                                                                                                                                                                                                    | <b>Rs. 10,00,000</b> |

Source: Field survey conducted by FAE in consultation with project proponent

## 8.8 SUMMARY OF PROJECT BENEFITS

The project would pay about **Rs. 5,97,20,000** to the state government through various ways, as provided in Table 8.2.

**Table 8.2 Project Benefits to the State Government**

| Particulars                                                                                           | Budget (Rs.)              |                         |
|-------------------------------------------------------------------------------------------------------|---------------------------|-------------------------|
|                                                                                                       | @ 20%<br>Granite Recovery | @80%<br>Granite Wastage |
| CER                                                                                                   | 10,00,000                 |                         |
| Seigniorage @ Rs. 3133/m <sup>3</sup> of Granite recovery<br>Rs.265/m <sup>3</sup> of Granite wastage | 6,55,36,094               | 2,21,71,490             |
| District Mineral Foundation Tax @ 10% of Seigniorage                                                  | 65,36,000                 | 22,17,490               |
| Green Tax @ 10% of Seigniorage                                                                        | 65,36,000                 | 22,17,490               |
| <b>Total</b>                                                                                          | <b>7,86,08,094</b>        | <b>2,66,06,470</b>      |

**CHAPTER IX**  
**ENVIRONMENTAL COST BENEFIT ANALYSIS**

Not Applicable, Since Environmental Cost Benefit Analysis not recommended at the Scoping stage.

## **CHAPTER X**

### **ENVIRONMENTAL MANAGEMENT PLAN**

#### **10.0 GENERAL**

Environment Management Plan (EMP) aims at the preservation of ecological system by considering in-built pollution abatement facilities at the proposed site. Good practices of environmental management plan will ensure to keep all the environmental parameters of the project in respect of ambient air quality, water quality, socio economic improvement standards. Mitigation measures at the source level and an overall environment management plan at the study area are elicited so as to improve the supportive capacity of the receiving bodies. The EMP presented in this chapter discusses the administrative aspects ensuring that mitigative measures are implemented and their effectiveness monitored after approval of the EIA.

#### **10.1 ENVIRONMENTAL POLICY**

The project proponent is committed to conduct all its operations and activities in an environmentally responsible manner and to continually improve environmental performance.

The Proponent, **M/s. KMB Trading Company** will:

- ❖ Meet the requirements of all laws, acts, regulations, and standards relevant to its operations and activities.
- ❖ Implement a program to train employees in general environmental issues and individual workplace environmental responsibilities.
- ❖ Allocate necessary resources to ensure the implementation of the environmental policy.
- ❖ Ensure that an effective closure strategy is in place at all stages of project development and that progressive reclamation is undertaken as early as possible to reduce potential long-term environmental and community impacts.
- ❖ Implement monitoring programs to provide early warning of any deficiency or unanticipated performance in environmental safeguards.
- ❖ Conduct periodic reviews to verify environmental performance and to continuously strive towards improvement.

##### **10.1.1 Description of the Administration and Technical Setup**

The environment monitoring cell discussed under chapter VI will ensure effective implementation of environment management plan and to ensure compliance of environmental

statutory guidelines through mine management level of each proposed quarry. The said team will be responsible for:

- ❖ Monitoring of the water/ waste water quality, air quality and solid waste generated.
- ❖ Analysis of the water and air samples collected through external laboratory.
- ❖ Implementation and monitoring of the pollution control and protective measures/ devices which shall include financial estimation, ordering, installation of air pollution control equipment, waste water treatment plant, etc.
- ❖ Co-ordination of the environment related activities within the project as well as with outside agencies.
- ❖ Collection of health statistics of the workers and population of the surrounding villages.
- ❖ Green belt development.
- ❖ Monitoring the progress of implementation of the environmental monitoring program.
- ❖ Compliance to statutory provisions, norms of State Pollution Control Board, Ministry of Environment and Forests and the conditions of the environmental clearance as well as the consents to establish and consents to operate.

## 10.2 Budgetary Provision for Environmental Management

Adequate budgetary provision has been made by the company for execution of Environmental Management Plan. The Table 10.1 gives overall investment on the environmental safeguards and recurring expenditure for successful monitoring and implementation of control measures.

**Table 10.1 EMP Budget for Proposed Project**

| Attribute              | Mitigation measures                              | Provision for Implementation                                                                                                   | Capital Cost (Rs.) | Recurring Cost/annum (Rs.) |
|------------------------|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------|
| <b>Air Environment</b> | Compaction, gradation and drainage on both sides | Rental Dozer & drainage construction on haul road @ Rs. 10,000/- per hectare and yearly maintenance @ Rs. 10,000/- per hectare | 41000              | 41000                      |

|  |                                                                                               |                                                                                                                            |        |       |
|--|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|--------|-------|
|  | Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers                   | Fixed sprinkler installation and new water tanker cost for capital; and water sprinkling (thrice a day) cost for recurring | 800000 | 50000 |
|  | Air quality will be regularly monitored as per norms within ML area & ambient area            | Yearly compliance as per CPCB norms                                                                                        | 0      | 50000 |
|  | Muffle blasting – To control fly rocks during blasting                                        | Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts                                | 0      | 5000  |
|  | Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit  | Dust extractor @ Rs. 25,000/- per unit deployed as capital & @ Rs. 2500 per unit recurring cost for maintenance            | 150000 | 15000 |
|  | No overloading of trucks/tippers/tractors                                                     | Manual Monitoring through Security guard                                                                                   | 0      | 5000  |
|  | Stone carrying trucks will be covered by tarpaulin to avoid escape of fines to the atmosphere | Monitoring if trucks will be covered by tarpaulin                                                                          | 0      | 10000 |
|  | Enforcing speed limits of 20 km/hr within ML area                                             | Installation of speed Governors @ Rs. 5000/- per tipper/dumper deployed                                                    | 15000  | 0     |
|  | Regular monitoring of exhaust fumes as per RTO norms                                          | Monitoring of exhaust fumes                                                                                                | 0      | 3750  |
|  | Regular sweeping and maintenance of roads                                                     | Provision for 2 labours @                                                                                                  | 0      | 82000 |

|                              |                                                                                                                            |                                                             |                |               |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|----------------|---------------|
|                              | for at least about 200 m from quarry entrance                                                                              | Rs.10,000/labour (Contractual)                              |                |               |
|                              | Installing wheel wash system near exit gate of quarry                                                                      | Installation + Maintenance + Supervision                    | 50000          | 20000         |
| <b>Total Air Environment</b> |                                                                                                                            |                                                             | <b>1056000</b> | <b>281750</b> |
| <b>Noise Environment</b>     | Source of noise will be transportation vehicles, and HEMM. For this, proper maintenance will be done at regular intervals. | Provision made in Operating Cost                            | 0              | 0             |
|                              | Oiling & greasing of Transport vehicles and HEMM at regular interval will be done.                                         | Provision made in Operating Cost                            | 0              | 0             |
|                              | Adequate silencers will be provided in all the diesel engines of vehicles.                                                 | Provision made in Operating Cost                            | 0              | 0             |
|                              | It will be ensured that all transportation vehicles carry a fitness certificate.                                           | Provision made in Operating Cost                            | 0              | 0             |
|                              | Safety tools and implementations that are required will be kept adequately near blasting site at the time of charging.     | Provision made in OHS part                                  | 0              | 0             |
|                              | Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.        | Provision made in Operating Cost                            | 0              | 0             |
|                              | Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.           | Blowing Whistle by Mining Mate / Blaster / Competent Person | 0              | 0             |



|                                                               |                                                                                                    |                                                                                                                                         |              |              |
|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|
|                                                               | Provision for portable blaster shed                                                                | Installation of portable blasting shelter                                                                                               | 50000        | 2000         |
|                                                               | NONEL Blasting will be practiced to control Ground vibration and fly rocks                         | Rs. 30/- per 6 tons of blasted material                                                                                                 | 0            | 70280        |
| <b>Total Noise Environment</b>                                |                                                                                                    |                                                                                                                                         | <b>50000</b> | <b>72280</b> |
| <b>Water Environment</b>                                      | Water Management                                                                                   | Provision for garland drain @ Rs. 10,000/- per hectare with maintenance of Rs. 5,000/- per annum                                        | 41000        | 20500        |
| <b>Total Water Environment</b>                                |                                                                                                    |                                                                                                                                         | <b>41000</b> | <b>20500</b> |
| <b>Waste Management</b>                                       | Waste management (Spent Oil, Grease etc.,)                                                         | Provision for domestic waste collection and disposal through authorized agency (capital cost, recurring cost for collection /disposal). | 25000        | 20000        |
|                                                               |                                                                                                    | Installation of dust bins                                                                                                               | 5000         | 2000         |
|                                                               | Bio toilets will be made available outside mine lease on the land of owner itself                  | Provision made in Operating Cost                                                                                                        | 0            | 0            |
| <b>Total Waste Management</b>                                 |                                                                                                    |                                                                                                                                         | <b>30000</b> | <b>22000</b> |
| <b>Implementation of EC, Mining Plan &amp; DGMS Condition</b> | Size 6' X 5' with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN | Fixed display board at the quarry entrance as permanent structure                                                                       | 10000        | 1000         |
| <b>Total Implementation of EC &amp; Mining</b>                |                                                                                                    |                                                                                                                                         | <b>10000</b> | <b>1000</b>  |

|                                       |                                                                                                                                                                                          |                                                                                                                                        |        |        |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------|--------|
| <b>Occupational Health and Safety</b> | Workers will be provided with Personal Protective Equipment                                                                                                                              | Provision of PPE @ Rs. 4000/- per employee with recurring based on wear and tear (say, @ Rs. 1000/- per employee)                      | 92000  | 23000  |
|                                       | Health checkup for workers will be provisioned                                                                                                                                           | IME & PME Health checkup @ Rs. 1000/- per employee                                                                                     | 0      | 23000  |
|                                       | First aid facility will be provided                                                                                                                                                      | Provision of 2 Kits per Hectare @ Rs. 2000/-                                                                                           | 0      | 16400  |
|                                       | Mine will have safety precaution signages, boards.                                                                                                                                       | Provision for signages and boards made                                                                                                 | 10000  | 2000   |
|                                       | Barbed Wire Fencing to quarry area will be provisioned.                                                                                                                                  | Per Hectare fencing Cost @ Rs. 2,00,000/- with Maintenance of Rs 10,000/- per annum                                                    | 820000 | 41000  |
|                                       | No parking will be provided on the transport routes. Separate provision on the south side of the hill will be made for vehicles /HEMMs. Flaggers will be deployed for traffic management | Parking area with shelter and flags @ Rs. 50,000/- per hectare project and Rs. 10,000/- as maintenance cost                            | 205000 | 41000  |
|                                       | Installation of CCTV cameras in the mines and mine entrance                                                                                                                              | Camera 4 Nos, DVR, Monitor with internet facility                                                                                      | 30000  | 5000   |
|                                       | Implementation as per Mining Plan and ensure safe quarry working                                                                                                                         | Mines Manager (1 <sup>st</sup> Class / 2 <sup>nd</sup> Class / Mine Foreman) under regulation 34 / 34 (6) of MMR, 1961 and Mining Mate | 0      | 780000 |

|                                      |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                  |         |        |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------|
|                                      |                                                                                                                                                                                                                                                  | under regulation<br>116 of<br>MMR,1961 @<br>40,000/- for<br>Manager & @<br>25,000/- for<br>Foreman / Mate                                                                                                                                                        |         |        |
| Total Occupational Health and Safety |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                  | 1157000 | 931400 |
| Development<br>of<br>Green Belt      | Green belt<br>development - 500<br>trees per hectare (200<br>Inside Lease Area &<br>300 Outside Lease<br>Area)                                                                                                                                   | Site clearance,<br>preparation of<br>land, digging of<br>pits /<br>trenches, soil<br>amendments,<br>transplantation of<br>saplings @ 200<br>per plant (capital)<br>for plantation<br>inside the lease<br>area and @ 30 per<br>plant maintenance<br>(recurring))" | 164000  | 24600  |
|                                      |                                                                                                                                                                                                                                                  | Avenue plantation<br>@ 300 per plant<br>(capital) for<br>plantation outside<br>the lease area and<br>@ 30 per plant<br>maintenance<br>(recurring)                                                                                                                | 369000  | 36900  |
| Total Development of Green Belt      |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                  | 533000  | 61500  |
| Mine Closure<br>Activity             | Closure includes 10% of the amount allotted<br>for Greenbelt development, wire fencing, and<br>garland drainage (Rule 27 in MCDR 2017<br>for Cat B mines will pay<br>2 lakhs per hectare or minimum amount of<br>financial assurance of 5 lakhs) |                                                                                                                                                                                                                                                                  | 139400  | 0      |
| Green fund                           | G.O.(Ms). No.23,<br>Dated: 28.09.2021                                                                                                                                                                                                            | Section IVA of<br>TNMMCR 1959<br>(@10% of<br>Seigniorage Fee)<br>(Seigniorage Fee<br>for granite waste<br>= Rs.3133 and                                                                                                                                          | 225900  | 0      |

|                         |  |                                |                |                |
|-------------------------|--|--------------------------------|----------------|----------------|
|                         |  | for granite recovery = Rs.265) |                |                |
| <b>Total EMP Budget</b> |  |                                | <b>3242300</b> | <b>1390430</b> |

**Table 10.2 Estimation of Overall EMP Budget after Adjusting 5% Annual Inflation**

| <b>I<sup>st</sup><br/>Year</b> | <b>II<sup>nd</sup><br/>Year</b> | <b>III<sup>rd</sup><br/>Year</b> | <b>IV<sup>th</sup><br/>Year</b> | <b>V<sup>th</sup><br/>Year</b> | <b>Total<br/>Recurring<br/>Cost</b> | <b>Total<br/>EMP<br/>Cost</b> |
|--------------------------------|---------------------------------|----------------------------------|---------------------------------|--------------------------------|-------------------------------------|-------------------------------|
| 1390430                        | 1459952                         | 1532949                          | 1609597                         | 1690076                        | <b>7683003</b>                      | <b>10925303</b>               |

In order to implement the environmental protection measures, an amount of **Rs.3242300** as capital cost and **Rs.1390430** as recurring cost/annum is proposed considering present market price considering present market scenario for the proposed project. After the adjustment of 5% inflation per year, the total recurring cost over 5 years is **Rs.7683003** and the overall EMP cost for 5 years will be **Rs.10925303**, as shown in Table 10.2.

### **10.3 CONCLUSION**

Various aspects of mining activities were considered and related impacts were evaluated. Considering all the possible ways to mitigate the environmental concerns Environmental Management Plan was prepared and fund has been allocated for the same. The EMP is dynamic, flexible and subjected to periodic review. For project where the major environmental impacts are associated, EMP will be under regular review. Senior Management responsible for the project will conduct a review of EMP and its implementation to ensure that the EMP remains effective and appropriate. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP and the project will bring the positive impact in the study area.

## CHAPTER XI

### SUMMARY AND CONCLUSION

#### 11.1 INTRODUCTION

As the proposed Black Granite mining project (P1) falls within the quarry cluster of 500 m radius with the total extent of 6.98.0ha, it requires submission of EIA report for grant of Environmental Clearance (EC) after conducting public hearing. The proposed project falling in S.F.No's. 823 (Part) and 824/3 over the extent of 4.50.0 ha is situated in the cluster falling in Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District, Tamil Nadu. The quarries involved in the calculation of cluster extent are three proposed quarries and five existing Quarries.

#### 11.2 PROJECT DESCRIPTION

The proposed project area is located between Latitudes from 12°02'36.9302"N to 12°02'48.7413"N Longitudes from 77°47'52.0568"E to 77°48'05.2343"E in Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District, Tamil Nadu. According to the approved mining plan, Black granite 20% recovery of about 20918MT and Granite waste 80% of 83666MT will be mined up to the depth of 45m (24m AGL + 21m BGL) in the five years. The quarrying operation is proposed to be carried out by open cast manual mining method involving drilling and formation of benches of the prescribed dimensions.

#### 11.3 DESCRIPTION OF THE ENVIRONMENT

Baseline data were collected to evaluate the existing environmental condition in the core and buffer areas during **March- May 2025** as per CPCB guidelines. The data were collected by both the FAEs and NABL accredited and MoEF notified **Interstellar Testing Centre Pvt. Ltd** for the environmental attributes including soil, water, noise, air and by FAEs for ecology and biodiversity, traffic, and socio-economy.

##### 11.3.1 Land Environment

Land use pattern of the area of 5km radius was studied using Sentinel- II imagery. LULC types and their extent are given in Table 11.1

**Table.11.1 LULC Statistics of the Study Area**

| S. No. | Classification             | Extent (ha) | Area (%) |
|--------|----------------------------|-------------|----------|
| 1      | Barren Rocky/stony waste   | 219.32      | 2.87     |
| 2      | Crop Land                  | 3357.04     | 43.99    |
| 3      | Dense Forest               | 238.65      | 3.13     |
| 4      | Land with or without scrub | 1308.64     | 17.15    |
| 5      | Mining / Industrial lands  | 12.83       | 0.17     |

|       |             |                |              |
|-------|-------------|----------------|--------------|
| 6     | Plantations | 2482.33        | 32.53        |
| 7     | Settlements | 11.87          | 0.16         |
| Total |             | <b>7630.67</b> | <b>100.0</b> |

### 11.3.2 Soil Environment

#### *Physical Characteristics*

The soil samples in the study area show loamy textures varying between silty clay loam. pH of the soil varies from 7.54 to 8.62 indicating slightly acidic to slightly alkaline nature. Electrical conductivity of the soil varies from 0.159 to 0.891mS/m. Nitrogen ranges between 0.023%- 0.068%, Phosphate ranges between 0.0012%- 0.0067%, Potassium ranges between 0.0014% - 0.0032%, Chloride ranges between 0.0029%- 0.0169%. Organic matter content ranges between 0.12 and 0.29%.

#### *Soil erosion*

Soil erosion map shows that:

- ❖ Soil erosion is moderate in the proposed lease area
- ❖ Low to moderate soil erosion is in Southeast side of the lease area. Showing in Figure 3.5 Soil erosion map

### 11.3.3 Water Environment

Groundwater in the study area occurs in the Peninsular Gneiss and Charnockite Gneiss. The movement of the groundwater is controlled by the intensity of weathering and fracturing of crystalline rocks. Dug wells and bore wells are the most common ground water abstraction structures in the area. However, in dry season, people in the study area heavily rely on bore wells for their domestic and agriculture purpose.

Four groundwater samples, known as OW1, OW2, OW3, BW1 & SW1 were collected from open well and bore well and analyzed for physico-chemical conditions, heavy metals. Data regarding depth to groundwater levels are essential to infer the direction of groundwater movement within the study area. Knowledge of groundwater flow direction is must in choosing location for background groundwater quality monitoring well and in locating recharge and discharge areas. Therefore, data regarding groundwater elevations were collected from 3 open wells and 1 bore wells and 1 Surface Water at various locations within 3km radius around the proposed project sites for the period from March through May, 2025 (Pre-Monsoon Season) and from October through December, 2024 (Post Monsoon Season).

The open well water level data thus collected onsite are provided in Tables 3.7 and 3.8. According to the data, average depths to the static water table in open wells range from 8.9 to 12.9 m BGL in pre monsoon and 8.2 to 11.4m BGL in post monsoon. The bore well data thus

collected onsite are provided in Tables 3.9 and 3.10. The average depths to static potentiometric surface in bore wells for the period of October through December 2024 (Post- Monsoon Season) vary from 59.4 to 63.5 m and from 64.1 to 66.9 m for the period of March through May, 2025 (Pre-Monsoon Season). Data on the depths to static water table and potentiometric surface were used to draw contour lines connecting groundwater elevation (also known as equipotential hydraulic head) to determine the groundwater flow direction perpendicular to the contour lines.

From the maps of open well groundwater flow direction shown in Figures 3.8 -3.9, it is understood that most of the open well groundwater for the post- and pre-monsoon seasons flows towards the open well number 2 & 9 located in SE direction of the proposed project site. The groundwater flow maps in Figure 3.10-3.11 show that most of the bore well groundwater for the post- and pre-monsoon seasons flow towards the bore well number 5. It is located in Southwest direction of the proposed project site. On the basis of the groundwater flow information, both open wells and bore wells mentioned above can be chosen for water quality monitoring purpose as the wells may get easily affected by the contaminants resulting from the mining activities of the sites in future.

#### **11.3.4 Air Environment**

As per the monitoring data, PM<sub>2.5</sub> ranges from 16.9 µg/m<sup>3</sup> to 20.1 µg/m<sup>3</sup>; PM<sub>10</sub> from 43.8 µg/m<sup>3</sup> to 52.2µg/m<sup>3</sup>; SO<sub>2</sub> from 5.1 µg/m<sup>3</sup> to 6.1 µg/m<sup>3</sup>; NO<sub>X</sub> from 12.1 µg/m<sup>3</sup> to 14.6 g/m<sup>3</sup>. The concentration levels of the pollutants fall within the acceptable limits of NAAQS prescribed by CPCB.

#### **11.3.5 Noise Environment**

Noise level in core zone was 45.1dB (A) Leq during day time and 40.6dB (A) Leq during night time. Noise levels recorded in buffer zone during day time varied from 37.6 to 41.1 dB (A) Leq and during night time from 37.6 to 40.7 dB (A) Leq. Thus, the noise level for industrial and residential area meets the requirements of CPCB.

#### **11.3.6 Biological Environment**

The study found that there is no endemic, endangered migratory fauna found in the area. This area is not also a migratory path of any faunal species. Hence, this small mining operation over short period of time will not have any significant impact on the surrounding flora and fauna.

### ***Flora in core zone***

The mine lease area contains total of 14 species belonging to 9 families have been recorded from the mine lease area. 2 trees, 4 shrubs, 8 herbs were identified. It is a grassy land. There are no endangered species in mine lease area. Details of vegetation with scientific name indicated in Table 3.19.

### ***Flora in 300 m radius zone***

The mine lease area is containing a total of 38 species belonging to 23 families have been recorded from the buffer zone. 10 Trees, 11 Shrubs and 11 Herbs, Climbers & Grass 6 were identified. Details of flora with the scientific name details and of diversity species Richness index were mentioned in Table 3.20 and Figure 3.25. There is no threat to the Flora species in 300m radius.

### ***Flora within 10km radius buffer zone***

Similar type of environment also in buffer area but with more flora diversity compare than core zone area. It contains a total of species belonging to 41 families have been recorded from the buffer zone. The floral (71) varieties among them 22 Trees, 11 Shrubs, Herbs and Climbers, Creeper, Grass & Cactus, 38 were identified. Details of flora with the scientific name details of diversity species rich ness index were mentioned in Table 3.23.

### ***Fauna in Core Zone***

A total of 26 varieties of species observed in the Core zone of Ajjanahalli Village, among them numbers of Insects 9, Reptiles 2, Mammals 4 and Avian 7. A total of 17 species belonging to 16 families have been recorded from the core Zone. There is no schedule I and II species. A total of 12 species of bird were sighted in the study area. Details of fauna in core zone with the scientific name were mentioned in Table. 3.26.

### ***Fauna in Buffer Zone***

Taxonomically a total of 68 species belonging to 49 families have been recorded from the buffer zone area. Based on habitat classification the majority of species were followed by insects 11, reptiles 11, Aves 38, Mammals 5 and amphibians 3. A total of 38 species of bird were sighted in the buffer zone. There are no critically endangered, endangered, vulnerable and endemic species were observed. Details of fauna in buffer zone with the scientific name were mentioned in Table. 3.27. data collation in secondary data.

## **11.3.7 Socio Economic Environment**

The proposed project will provide direct and indirect employment and improve the infrastructural facilities in that area, thus leading to the improvement of people's standard of living.



## **11.4 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

### **11.4.1 Land Environment**

#### **Anticipated Impact**

- Change in land use and land cover and topography of the mine lease area.
- Problems to human habitations due to dust and noise caused by movement of heavy vehicles.
- Soil erosion and sediment deposition in the nearby water bodies during the rainy season.
- Siltation of water course due to wash off from the exposed working area.
- Deterioration of soil quality in the surrounding area due to runoff from the project area.
- Decrease in the agricultural productivity of the surrounding land due to soil quality degradation.

#### **Mitigation Measures**

Construction of garland drains, settling pits, and check dams to prevent runoff and siltation

- Runoff water will be discharged into the settling tanks to reduce suspended sediment loads before runoff is discharged from the quarry site.
- The vegetation will be retained at the site wherever possible.
- Weekly monitoring and daily maintenance of erosion control systems so that they perform as specified specially during rainy season.

### **11.4.2 Water Environment**

#### **Anticipated Impact**

- Surface and ground water resources may be contaminated due to pit water discharge, domestic sewage, discharge of oil and grease bearing waste water from washing of vehicles and machineries, and washouts from surface exposure or working areas.
- As the proposed project acquires 4.0KLD of water from water vendors, it will not extract water by developing abstraction structures in the lease area. Therefore, the project will not have impact on depletion of aquifer beneath the lease area.

#### **Mitigation Measures**

- Rain water from mine pit will be treated in settling tanks before being used for dust suppression and tree plantation purposes.
- Domestic sewage from site office will be discharged in septic tank and then directed to soak pits.
- Water from the tipper wash-down facility and machinery maintenance yard will be passed through interceptor traps/oil separators prior to its reuse.

- The garland drainage will be connected to settling tank and sediments will be trapped in the settling tanks and only clear water will be discharged to the natural drainage.
- Periodic (every 6 month once) analysis of ground water quality of quarry pit water and ground water of nearby villages will be conducted.
- Artificial recharge structures will be established in suitable locations as part of the rainwater harvesting management program.

### **11.4.3 AIR ENVIRONMENT**

#### **Anticipated Impact**

Anticipated increase of the air pollutants due to quarrying activities have been predicted using AERMOD software. The values of cumulative concentration i.e., background + incremental concentration of pollutant in all the receptor locations are still within the prescribed NAAQ limits without effective mitigation measures. By adopting suitable mitigation measures, the pollutant levels in the atmosphere can be controlled further

#### **Mitigation Measures**

- To control dust at source, wet drilling will be practiced. Where there is a scarcity of water, suitably designed dust extractor will be provided for dry drilling along with dust hood at the mouth of the drill-hole collar.
- Dust mask will be provided to the workers and their use will be strictly monitored.
- Water will be sprinkled on haul roads twice a day to avoid dust generation during transportation.
- Transportation of material will be carried out during day time and material will be covered with tarpaulin.
- The speed of tippers plying on the haul road will be limited to < 20km/hr to avoid generation of dust.
- The un-metalled haul roads will be compacted weekly before being put into use.
- It will be ensured that all transportation vehicles carry a valid PUC certificate.
- Haul roads and service roads will be graded to clear accumulation of loose materials.
- Planting of trees all along main mine haul roads and around the project site will be practiced to prevent the generation of dust.
- Dust mask will be provided to the workers and their use will be strictly monitored.

#### **11.4.4 Noise Environment**

##### ***Anticipated Impact***

Total noise level in all the sampling areas is well below the CPCB standards for industrial and residential areas.

##### ***Mitigation Measures***

- ❖ Usage of sharp drill bits while drilling which will help in reducing noise;
- ❖ Proper maintenance, oiling and greasing of machines will be done every week to reduce generation of noise.
- ❖ Provision of sound insulated chambers for the workers working on machines (HEMM) producing higher levels of noise.
- ❖ Silencers / mufflers will be installed in all machineries.
- ❖ Green Belt will be developed around the project areas and along the haul roads. The plantation minimizes propagation of noise.
- ❖ Personal Protective Equipment (PPE) like ear muffs/ear plugs will be provided to the operators of HEMM and persons working near HEMM and their use will be ensured through training and awareness.
- ❖ Regular medical check-up and proper training to personnel to create awareness about adverse noise level effects.

#### **11.4.5 Biological Environment**

##### ***Anticipated Impact***

- During loading the truck, dust generation will be likely. This shall be a temporary effect and not anticipated to affect the surrounding vegetation significantly.
- The Number of plants in the mining lease area is given in Chapter- 3 which vegetation in the lease area may be removed during mining.
- Carbon released from quarrying machineries and tippers during quarrying would be 34kg per day, 9065kg per year and 45326kg over five years, as provided in Table 4.7.

##### ***Mitigation Measures***

- During conceptual stage, the top bench will be re-vegetated by planting local /native species and lower benches will be converted into rainwater harvesting structure following completion of mining activities, which will replace habitat resources for fauna species in this locality over a longer time
- Existing roads will be used; new roads will not be constructed to reduce impact on flora

- To mitigate carbon emission due to mining activities, we recommend planting trees around the quarry to offset the carbon emission during quarrying. A tree can sequester 134448kg of carbon per year. Therefore, we recommend planting large number of trees around the quarry and near school campuses, government wasteland, roadsides etc.
- As per the greenbelt development plan as recommended by SEAC (Table 4.19), about 2250 trees will be planted within three months from the beginning of mining. These trees, when grown up would sequester carbon of about 20412kg of the total carbon, as provided in Table 4.8.

#### **11.4.6 Socio Economic Environment**

##### ***Anticipated Impact***

- Dust generation from mining activity can have negative impact on the health of the workers and people in the nearby area
- Approach roads can be damaged by the movement of tippers
- Increase in Employment opportunities both direct and indirect thereby increasing economic status of people of the region

##### ***Mitigation Measures***

- Good maintenance practices will be adopted for all machinery and equipment, which will help to avert potential noise problems
- Green belt will be developed in and around the project site as per Central Pollution Control Board (CPCB) guidelines
- Air pollution control measure will be taken to minimize the environmental impact within the core zone
- For the safety of workers, personal protective appliances like hand gloves, helmets, safety shoes, goggles, aprons, nose masks and ear protecting devices will be provided as per mines act and rules
- Benefit to the State and the Central governments through financial revenues by way of royalty, tax, duties, etc., from this project directly and indirectly

#### **11.4.7 Occupational Health**

- All the persons will undergo pre-employment and periodic medical examination
- Employees will be monitored for occupational diseases by conducting medical tests: General physical tests, Audiometric tests, Full chest, X-ray, Lung function tests, Spirometric tests, Periodic medical examination – yearly, Lung function test – yearly, those who are exposed to dust and Eye test.

- Essential medicines will be provided at the site. The medicines and other test facilities will be provided at free of cost.
- The first aid box will be made available at the mine for immediate treatment. First aid training will be imparted to the selected employees regularly. The lists of first aid trained members shall be displayed at strategic places.

## 11.5 Environment Monitoring Program

**Table 11.1 Environment Monitoring Program**

| S. No. | Environment Attributes   | Location                                                                 | Monitoring     |                              | Parameters                                                                                  |
|--------|--------------------------|--------------------------------------------------------------------------|----------------|------------------------------|---------------------------------------------------------------------------------------------|
|        |                          |                                                                          | Duration       | Frequency                    |                                                                                             |
| 1      | Air Quality              | 2 Locations (1 Core & 1 Buffer)                                          | 24 hours       | Once in 6 months             | Fugitive Dust, PM <sub>2.5</sub> , PM <sub>10</sub> , SO <sub>2</sub> and NO <sub>x</sub> . |
| 2      | Meteorology              | At mine site before start of Air Quality Monitoring & IMD Secondary Data | Hourly / Daily | Continuous online monitoring | Wind speed, Wind direction, Temperature, Relative humidity and Rainfall                     |
| 3      | Water Quality Monitoring | 2 Locations (1SW & 1 GW)                                                 | -              | Once in 6 months             | Parameters specified under IS:10500, 1993 & CPCB Norms                                      |
| 4      | Hydrology                | Water level in open wells in buffer zone around 1 km at specific wells   | -              | Once in 6 months             | Depth in m BGL                                                                              |
| 5      | Noise                    | 2 Locations (1 Core & 1 Buffer)                                          | Hourly – 1 Day | Once in 6 months             | Leq, Lmax, Lmin, Leq Day & Leq Night                                                        |
| 6      | Vibration                | At the nearest habitation (in case of reporting)                         | –              | During operation             | Peak particle velocity                                                                      |
| 7      | Soil                     | 2 Locations (1 Core & 1 Buffer)                                          | –              | Once in six months           | Physical and chemical characteristics                                                       |
| 8      | Greenbelt                | Within the project area                                                  | Daily          | Monthly                      | Maintenance                                                                                 |

*Source: Guidance of manual for mining of minerals, February 2010*

## **11.6 ADDITIONAL STUDIES**

### **11.6.1 Risk Assessment**

The DGMS risk assessment process is intended to identify existing and probable hazards in the work environment and all operations and assess the risk levels of those hazards in order to prioritize those that need immediate attention. The whole quarry operation will be carried out under the direction of a Qualified Competent Mine Manager holding certificate of competency to manage a metalliferous mine granted by the DGMS, Dhanbad for proposed project.

### **11.6.2 Disaster Management Plan**

The objective of the disaster management plan is to make use of the combined resources of the mine and the outside services to:

- Rescue and treat casualties;
- Safeguard other people;
- Minimize damage to property and the environment;
- Initially contain and ultimately bring the incident under control;
- Secure the safe rehabilitation of affected area; and
- Preserve relevant records and equipment for the subsequent inquiry into the cause and circumstances of the emergency.

### **11.6.3 Cumulative Impact Study**

The results on the cumulative impact of the four proposed projects on air environment of the cluster do not exceed the permissible limits set by CPCB for air pollutants.

- The cumulative results of noise for the habitation in consideration do not exceed the limit set by CPCB for residential areas for day time
- PPV resulting from three proposed project is well below the permissible limit of Peak Particle Velocity of 5 mm/s
- The proposed three projects will allocate Rs. 10,00,000/- towards CER as recommended by SEAC
- The proposed three projects will directly provide jobs to 100 local people, in addition to indirect jobs
- The proposed three projects will plant 2250 about trees in and around the lease area
- The proposed three projects will add 23 PCU per day to the nearby roads.

### 11.7 Project Benefits

Various benefits are envisaged due to the three proposed mine and benefits anticipated from the proposed project to the locality, neighbourhood, region and nation as a whole are:

- Direct employment to 22 local people
- Creation of community assets (infrastructure) like school buildings, village roads/ linked roads, dispensary & health Centre, community Centre, market place etc.,
- Strengthening of existing community facilities through the Community Development Program
- Skill development & capacity building like vocational training.
- Rs. 10,00,000 will be allocated for CER

### 11.8 ENVIRONMENT MANAGEMENT PLAN

In order to implement the environmental protection measures, an amount of **Rs. 3242300** as capital cost and **Rs.1390430** as recurring cost/annum is proposed considering present market price considering present market scenario for the proposed project. After the adjustment of 5% inflation per year, the total recurring cost over 5 years is **Rs. 7683003** and the overall EMP cost for 5 years will be **Rs. 10925303**, as shown in Table 10.2.

## CHAPTER XII

### DISCLOSURES OF CONSULTANT

The Project Proponent, **M/s. KMB Trading Company** has engaged **Geo Technical Mining Solutions**, a NABET accredited consultancy for carrying out the EIA study as per the ToR issued.

**Address of the consultancy:**

No: 1/213B Natesan Complex,  
Oddapatti, Dharmapuri – 636705,  
Tamil Nadu, India.  
Email: [info.gtmsdpi@gmail.com](mailto:info.gtmsdpi@gmail.com)  
Web: [www.gtmsind.com](http://www.gtmsind.com)  
Phone: 04342 232777.

The accredited experts and associated members who were engaged in this EIA study are given below:

| S. No                                            | Name of the expert     | In house/ Empanelled             | Sector              | Functional Area | Category |
|--------------------------------------------------|------------------------|----------------------------------|---------------------|-----------------|----------|
| <b>Approved Functional Area Experts &amp; EC</b> |                        |                                  |                     |                 |          |
| 1                                                | Dr. S. Malar           | EIA Coordinator (EC)<br>In-house | 1(a)(i)             | WP              | B        |
| 2                                                | K. Udayakumar          | In-house, FAE                    | 1(a)(i)             | SE              | B        |
| 3                                                | Dr. R. Arunbalaji      | In-house, FAE                    | 1(a)(i)             | AQ              | B        |
| 4                                                | J.N. Manikandan        | Empanelled FAE                   | 1(a)(i)             | RH, SHW         | B        |
| 5                                                | G. Umamaheswaran       | In-house, FAE                    | 1(a)(i)             | HG, LU, GEO     | B        |
| 6                                                | C. Kumaresan           | In-house, FAE                    | 1(a)(i)             | NV              | B        |
| 7                                                | P. Venkatesh           | In-house, FAE                    | 1(a)(i)             | AP              | B        |
| 8                                                | Dr. D.Kalaimurugan     | In-house, FAE                    | 1(a)(i)             | SC, EB          | B        |
| <b>Approved Functional Area Associates</b>       |                        |                                  |                     |                 |          |
| 9                                                | K. Prithiviraj         | FAA                              | 1(a)(i)             | HG, GEO         | B        |
| 10                                               | R. Srikrishna          | FAA                              | 1(a)(i)             | LU, LC          | B        |
| 11                                               | V. Malavika            | FAA                              | 1(a)(i)             | NV, SHW         | B        |
| 12                                               | P. Dhatchayini         | FAA                              | 1(a)(i)             | AQ              | B        |
| 13                                               | C. Raghul              | FAA                              | 1(a)(i)             | Geo             | B        |
| <b>Abbreviations</b>                             |                        |                                  |                     |                 |          |
| EC                                               | EIA Coordinator        | NV                               | Noise and Vibration |                 |          |
| FAE                                              | Functional Area Expert | SE                               | Socio Economics     |                 |          |



|     |                                                    |     |                                                |
|-----|----------------------------------------------------|-----|------------------------------------------------|
| FAA | Functional Area Associates                         | HG  | Hydrology, ground water and water conservation |
| TM  | Team Member                                        | SC  | Soil conservation                              |
| GEO | Geology                                            | RH  | Risk assessment and hazard management          |
| WP  | Water pollution monitoring, prevention and control | SHW | Solid and hazardous wastes                     |
| AP  | Air pollution monitoring, prevention and control   | MSW | Municipal Solid Wastes                         |
| LU  | Land Use                                           | ISW | Industrial Solid Wastes                        |
| AQ  | Meteorology, air quality modelling, and prediction | HW  | Hazardous Wastes                               |
| EB  | Ecology and bio-diversity                          | GIS | Geographical Information System                |

#### **DECLARATION BY EXPERTS CONTRIBUTING TO THE EIA & EMP**

I, hereby, certify that I was a part of the EIA team in the following capacity that developed the EIA & EMP report.

Signature : 

Date :

Name : **Dr. S. Malar**

Designation : EIA Coordinator

Name of the EIA Consultant Organization : Geo Technical Mining Solutions

Period of Involvement : Till date

We, the FAEs and FAAs hereby declare that information furnished in this EIA/EMP report for **M/s. KMB Trading Company** Black Granite quarry project with the extent of 4.50.00ha situated in the cluster with the extent of 6.98.0ha in Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District of Tamil Nadu is true and correct to the best of our knowledge.

#### **List of Functional Area Experts Engaged in this Project**

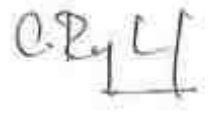
| S. No. | Functional Area | Involvement                                                                                                                                                                                                                          | Name of the Experts | Signature                                                                             |
|--------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------|
| 1      | AP              | <ul style="list-style-type: none"> <li>○ Identification of different sources of air pollution due to the proposed mine activity</li> <li>○ Prediction of air pollution and propose mitigation measures / control measures</li> </ul> | P.Venkatesh         |  |

|   |     |                                                                                                                                                                                                                                                                                                                      |                     |                                                                                       |
|---|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------------------|
| 2 | WP  | <ul style="list-style-type: none"> <li>○ Suggesting water treatment systems, drainage facilities</li> <li>○ Evaluating probable impacts of effluent/waste water discharges into the receiving environment/water bodies and suggesting control measures.</li> </ul>                                                   | Dr.S. Malar         |    |
| 3 | HG  | <ul style="list-style-type: none"> <li>○ Interpretation of ground water table and predict impact and propose mitigation measures.</li> <li>○ Analysis and description of aquifer Characteristics</li> </ul>                                                                                                          | G. Uma Maheswaran   |    |
| 4 | GEO | <ul style="list-style-type: none"> <li>○ Field Survey for assessing the regional and local geology of the area.</li> <li>○ Preparation of mineral and geological maps.</li> <li>○ Geology and Geo morphological analysis/description and Stratigraphy/Lithology.</li> </ul>                                          | G. Uma Maheswaran   |    |
| 5 | SE  | <ul style="list-style-type: none"> <li>○ Revision in secondary data as per Census of India, 2011.</li> <li>○ Impact Assessment &amp; Preventive Management Plan</li> <li>○ Corporate Environment Responsibility.</li> </ul>                                                                                          | Dr. G. Prabhakaran  |  |
| 6 | EB  | <ul style="list-style-type: none"> <li>○ Collection of Baseline data of Flora and Fauna.</li> <li>○ Identification of species labelled as Rare, Endangered and threatened as per IUCN list.</li> <li>○ Impact of the project on flora and fauna.</li> <li>○ Suggesting species for greenbelt development.</li> </ul> | Dr. D. Kalaimurugan |  |
| 7 | RH  | <ul style="list-style-type: none"> <li>○ Identification of hazards and hazardous substances</li> <li>○ Risks and consequences analysis</li> <li>○ Vulnerability assessment</li> </ul>                                                                                                                                | J.N. Manikandan     |  |

|    |     |                                                                                                                                                                                                                                                  |                    |                                                                                       |
|----|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------|
|    |     | <ul style="list-style-type: none"> <li>○ Preparation of Emergency Preparedness Plan</li> <li>○ Management plan for safety.</li> </ul>                                                                                                            |                    |                                                                                       |
| 8  | LU  | <ul style="list-style-type: none"> <li>○ Construction of Land use Map</li> <li>○ Impact of project on surrounding land use</li> <li>○ Suggesting post closure sustainable land use and mitigative measures.</li> </ul>                           | G. Uma Maheswaran  |    |
| 9  | NV  | <ul style="list-style-type: none"> <li>○ Identify impacts due to noise and vibrations</li> <li>○ Suggesting appropriate mitigation measures for EMP.</li> </ul>                                                                                  | C. Kumaresan       |    |
| 10 | AQ  | <ul style="list-style-type: none"> <li>○ Identifying different source of emissions and propose predictions of incremental GLC using AERMOD.</li> <li>○ Recommending mitigations measures for EMP</li> </ul>                                      | Dr.R. Arun Balaji  |    |
| 11 | SC  | <ul style="list-style-type: none"> <li>○ Assessing the impact on soil environment and proposed mitigation measures for soil conservation</li> </ul>                                                                                              | Dr. D.Kalaimurugan |  |
| 12 | SHW | <ul style="list-style-type: none"> <li>○ Identify source of generation of non-hazardous solid waste and hazardous waste.</li> <li>○ Suggesting measures for minimization of generation of waste and how it can be reused or recycled.</li> </ul> | J.N. Manikandan    |  |

**List of Functional Area Associate Engaged in this Project**

| S.No. | Name          | Functional Area | Involvement                                                                                                                  | Signature                                                                             |
|-------|---------------|-----------------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 1     | R. Srikrishna | LU              | <ul style="list-style-type: none"> <li>○ Site visit with FAE</li> <li>○ Provide inputs &amp; Assisting FAE for LU</li> </ul> |  |

|   |                |     |                                                                                                                                                            |                                                                                     |
|---|----------------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 2 | C. Raghul      | GEO | <ul style="list-style-type: none"> <li>○ Field visits along with FAE</li> <li>○ Assistance to FAE in both primary and secondary data collection</li> </ul> |  |
| 3 | K. Prithivi    | HG  | <ul style="list-style-type: none"> <li>○ Site visit with FAE</li> <li>○ Provide inputs &amp; Assisting FAE for HG</li> </ul>                               |  |
| 4 | P. Dhatchayini | AQ  | <ul style="list-style-type: none"> <li>○ Site visit with FAE</li> <li>○ Assistance to FAE in collection of both primary and secondary data</li> </ul>      |  |

**ECLARATION BY THE HEAD OF THE ACCREDITED CONSULTANT ORGANIZATION**

I, **Dr. S. KARUPPANNAN**, Managing Partner, **Geo Technical Mining Solutions**, hereby, confirm that the above-mentioned functional area experts and team members prepared the EIA/EMP report for **M/s. KMB Trading Company** Black Granite quarry project with the extent of 4.50.00ha situated in the cluster with the extent of 6.98.0ha in Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District of Tamil Nadu is true and correct to the best of my knowledge.

Signature : 

Date : 03.11.2025

Name : **Dr. S. Karuppannan**

Designation : EIA Coordinator

Name of the EIA Consultant Organization : Geo Technical Mining Solutions

NABET Certificate No & Issue Date : **NABET/EIA/23-26/RA 0319**

Validity : **Till 31.12.2026.**



File No: 11777

Government of India

Ministry of Environment, Forest and Climate Change

(Issued by the State Environment Impact Assessment Authority(SEIAA),  
TAMIL NADU)

\*\*\*



Dated 08/04/2025



To,

Tvl. KMB Trading company  
No.3/50, Bangalore Main Road, Five Roads, Salem District - 636 004., Salem, SALEM, TAMIL NADU,  
636004  
kmbtradingcompany399@gmail.com

**Subject:** Grant of Terms of Reference under the provision of the EIA Notification 2006 - as amended regarding.

Sir/Madam,

**Sub:** SEIAA, Tamil Nadu – Terms of Reference along with Public Hearing (ToR) for the Proposed Black Granite Quarry lease over an extent 4.50.0 Ha at S.F.Nos. 823 (P) & 824/3 of Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District, Tamil Nadu by Tvl. KMB Trading company - under project category – “B1” and Schedule S.No.1(a) – ToR issued along with Public Hearing- preparation of EIA report – Regarding.

**Ref:** 1. Online proposal No. SIA/TN/MIN/520786/2025, Dated: 28/01/2025.

2. Your application submitted for Terms of Reference dated: 30.01.2025.

3. Minutes of the 538th Meeting of SEAC held on 01.03.2025.

4. Minutes of the 804th Meeting of Authority held on 01.04.2025.

2. The particulars of the proposal are as below :

|                                             |                                          |
|---------------------------------------------|------------------------------------------|
| (i) TOR Identification No.                  | TO25B0108TN5878289N                      |
| (ii) File No.                               | 11777                                    |
| (iii) Clearance Type                        | TOR                                      |
| (iv) Category                               | B1                                       |
| (v) Project/Activity Included Schedule No.  | 1(a) Mining of minerals                  |
| (vii) Name of Project                       | Ajjanahalli Village Black Granite Quarry |
| (viii) Name of Company/Organization         | K M B TRADING COMPANY                    |
| (ix) Location of Project (District, State)  | DHARMAPURI, TAMIL NADU                   |
| (x) Issuing Authority                       | SEIAA                                    |
| (xii) Applicability of General Conditions   | no                                       |
| (xiii) Applicability of Specific Conditions | no                                       |

1. In view of the particulars given in the Para 1 above, the project proposal inter alia including Form-1 (Part A and B) were submitted to the SEIAA for an appraisal by the SEAC under the provision of EIA notification 2006 and its subsequent amendments.
2. The above-mentioned proposal has been considered by SEIAA in the meeting held on 01.04.2025. The minutes of the meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B,)] are available on PARIVESH portal which can be accessed by scanning the QR Code above.
3. The State Expert Appraisal Committee (SEAC), based on the information & clarifications provided by the project proponent and after detailed deliberations on all technical aspects recommended the proposal for grant of Terms of Reference with public hearing under the provision of EIA Notification, 2006 and as amended thereof subject to the stipulation of specific and general conditions as detailed in Annexure (2).
4. The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the SEAC hereby decided to issue the following Terms of Reference with public hearing for instant proposal of **Tvl. KMB Trading company** under the provisions of EIA Notification, 2006 and as amended thereof.
5. The Ministry/SEIAA-TN reserves the right to stipulate additional conditions, if found necessary.
6. The Terms of Reference with public hearing 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.
7. This issues with the approval of the Competent Authority.
8. The TORs with public hearing prescribed shall be valid for a period of three years from the date of issue, for submission of the EIA/EMP report as per OM No. J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

#### **Copy To**

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Principal Secretary to Government, Environment and Forests Department, Tamil Nadu.
3. The Additional Chief Secretary to Government, Natural Resources Department, Tamil Nadu.
4. The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 34, HEPC Building, 1st & 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai – 34.
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
6. The Chair Person, TNPC Board, 76, Mount Salai, Guindy, Chennai-32
7. The District Collector, Dharmapuri District
8. The Commissioner of Geology and Mines, Guindy, Chennai-32
9. Assistant Director, Department of Geology & Mining, Dharmapuri District.
10. EI Division, Ministry of Environment & Forests, Parvavaran Bhawan, New Delhi.
11. File Copy.

#### **Annexure 1**

#### **Specific Terms of Reference for (Mining Of Minerals)**

##### **1. Seac Conditions - Site Specific**

| S. No | Terms of Reference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.1   | 1. A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal: |

| S. No | Terms of Reference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | <p>(i) Copy of the agreement forming CMC.</p> <p>(ii) The Organisation chart of the Committee with defining the role of the members</p> <p>(iii) The 'Standard Operating Procedures' (SoP) executing the planned activities.</p> <p>2. The boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report.</p> <p>3. <b>Since the Cauvery Wildlife Sanctuary is located at 8.74km from the proposed site as on date, the PP shall furnish the prior NBWL Clearance along with the EIA report.</b></p> <p>4. The PP should indicate the proposed mining area at the bottom and top levels with respect to the ground level (mean Reduced Level) and make appropriate corrections in the Approved Mine Plan and the same shall be submitted along with the EIA report.</p> <p>5. The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report.</p> <p>6. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m &amp; upto 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations.</p> <p>7. The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank &amp; green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries &amp; water bodies nearby provided as per the approved mining plan.</p> <p>8. The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report.</p> <p>9. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.</p> <p>10. The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing &amp; proposed quarries which included drilling &amp; blasting, loading &amp; hauling on the surrounding village and structures.</p> <p>11. The PP shall install the CCTV camera for the continuous surveillance of mining activity &amp; furnish the photographic/videographic evidence along with the EIA report.</p> |

## 2. Seac Standard Conditions

| S. No | Terms of Reference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.1   | <p>1. In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following:</p> <p>(i) Original pit dimension</p> <p>(ii) Quantity achieved Vs EC Approved Quantity</p> <p>(iii) Balance Quantity as per Mineable Reserve calculated.</p> <p>(iv) Mined out Depth as on date Vs EC Permitted depth</p> <p>(v) Details of illegal/illicit mining</p> <p>(vi) Violation in the quarry during the past working.</p> <p>(vii) Quantity of material mined out outside the mine lease area</p> <p>(viii) Condition of Safety zone/benches</p> <p>(ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.</p> <p>2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.</p> <p>3. The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with</p> |

| S. No | Terms of Reference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       | <p>details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.</p> <p>4. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry.</p> <p>5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.</p> <p>6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.</p> <p>7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining &amp; Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.</p> <p>8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.</p> <p>9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.</p> <p>10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.</p> <p>11. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.</p> <p>12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,</p> <p>13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?</p> <p>14. Quantity of minerals mined out.<br/> Highest production achieved in any one year<br/> Detail of approved depth of mining.<br/> Actual depth of the mining achieved earlier.<br/> Name of the person already mined in that leases area.<br/> If EC and CTO already obtained, the copy of the same shall be submitted.<br/> Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.</p> <p>15. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).</p> <p>16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,</p> <p>17. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees &amp; safety distance between the adjacent quarries &amp; water bodies nearby provided as per the approved mining plan.</p> <p>18. The Project Proponent shall provide the details of mineral reserves and mineable reserves,</p> |



| S. No | Terms of Reference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|       | <p>planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.</p> <p>19. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.</p> <p>20. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping &amp; open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.</p> <p>21. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality &amp; flora/fauna including traffic/vehicular movement study.</p> <p>22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control &amp; health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.</p> <p>23. Rain water harvesting management with recharging details along with water balance (both monsoon &amp; non-monsoon) be submitted.</p> <p>24. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.</p> <p>25. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&amp;R issues, if any, should be provided.</p> <p>26. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.</p> <p>27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.</p> <p>28. Impact on local transport infrastructure due to the Project should be indicated.</p> <p>29. A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area &amp; 300m buffer zone and its management during mining activity.</p> <p>30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.</p> <p>31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.</p> <p>32. 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-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native</p> |

| S. No | Terms of Reference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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|       | <p>origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.</p> <p>33. Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly bags should be planted as per the advice of local forest 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>34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.</p> <p>35. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.</p> <p>36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.</p> <p>37. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.</p> <p>38. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.</p> <p>39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.</p> <p>40. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.</p> <p>41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&amp;CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.</p> <p>42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.</p> <p>43. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.</p> |

### 3. Seiaa Specific Conditions:

| S. No | Terms of Reference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| 3.1   | <p>The authority noted that the subject was placed in the 538th SEAC meeting held on 01.03.2025. SEAC has furnished its recommendations for granting Terms of Reference subject to the conditions stated therein.</p> <p>After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant Terms of Reference (ToR) along with Public Hearing for the RoM quantity of 39,465m<sup>3</sup> of Black granite and 7,893m<sup>3</sup> of Recovery @20% upto the depth of 45m BGL as per the approved mining plan, under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC &amp; normal conditions &amp; the conditions mentioned in this minutes &amp; in addition to the following ToR:</p> <p>1.The details of enumeration of structures within 500m including schools, colleges, primary health</p> |

| S. No | Terms of Reference                                     |
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|       | centres should be submitted along with the EIA report. |

#### 4. Seiaa Standard Conditions:

| S. No | Terms of Reference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| 4.1   | <p>Cluster Management Committee:</p> <ol style="list-style-type: none"> <li>1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry.</li> <li>2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,</li> <li>3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.</li> <li>4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.</li> <li>5. The committee shall deliberate on risk &amp; emergency management plan, fire safety &amp; evacuation plan and sustainable development goals pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.</li> <li>6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the Environmental policy devised shall be given in detail in the EIA Report.</li> <li>7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.</li> <li>8. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity.</li> </ol> <p>Agriculture &amp; Agro-Biodiversity</p> <ol style="list-style-type: none"> <li>9. Impact on surrounding agricultural fields around the proposed mining Area.</li> <li>10. Impact on soil flora &amp; vegetation around the project site.</li> <li>11. Details of type of vegetation including no. of trees &amp; shrubs within the proposed mining area and. If so, transplantation of such vegetation all along the boundary of the proposed mining area shall committed mentioned in EMP.</li> <li>12. The Environmental Impact Assessment should study the agro-biodiversity, agro- forestry, horticultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.</li> <li>13. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.</li> <li>14. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.</li> </ol> <p>Forests</p> <ol style="list-style-type: none"> <li>15. The project proponent shall detailed study on impact of mining on Reserve forests and free ranging wildlife.</li> <li>16. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.</li> <li>17. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.</li> <li>18. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.</li> </ol> <p>Water Environment</p> |

| S. No | Terms of Reference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|       | <p>19. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping &amp; open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.</p> <p>20. Erosion Control measures.</p> <p>21. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, &amp; any ecological fragile areas.</p> <p>22. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.</p> <p>23. The project proponent shall study and furnish the details on potential fragmentation impact on natural Environment, by the activities.</p> <p>24. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.</p> <p>25. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.</p> <p>26. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.</p> <p>27. The EIA shall include the impact of mining activity on the following:</p> <ol style="list-style-type: none"> <li>Hydrothermal/Geothermal effect due to destruction in the Environment.</li> <li>Bio-geochemical processes and its foot prints including Environmental stress.</li> <li>Sediment geochemistry in the surface streams.</li> </ol> <p>Energy</p> <p>28. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.</p> <p>Climate Change</p> <p>29. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.</p> <p>30. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil &amp; below soil carbon stock, soil health and physical, chemical &amp; biological soil features.</p> <p>31. Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood.</p> <p>Mine Closure Plan</p> <p>32. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.</p> <p>EMP</p> <p>33. Detailed Environment Management Plan along with adaptation, mitigation &amp; remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs.</p> <p>34. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.</p> <p>Risk Assessment</p> <p>35. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.</p> <p>Disaster Management Plan</p> <p>36. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards &amp; to cope with disaster/untoward accidents in &amp; around the proposed mine lease area due to the proposed method of mining activity &amp; its related activities</p> |

| S. No | Terms of Reference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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|       | <p>covering the entire mine lease period as per precise area communication order issued.</p> <p>Others</p> <p>37. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.</p> <p>38. 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 address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.</p> <p>39. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the Environment. The ecological risks and impacts of plastic &amp; microplastics on aquatic Environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.</p> |

**Standard Terms of Reference for (Mining of minerals)**

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| S. No      | Terms of Reference                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| <b>1.1</b> | Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994                                                                                                                                       |
| <b>1.2</b> | A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given                                                                                                                                                                                                                                                                                                                                                         |
| <b>1.3</b> | All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee                                                                                                                                                                                                            |
| <b>1.4</b> | All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the areashould be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone)                                                                                                                                               |
| <b>1.5</b> | Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics                                                                                                                                                                                         |
| <b>1.6</b> | Details about the land proposed for mining activities should be givenwith information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority                                                                                                                                                                                                                |
| <b>1.7</b> | It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for |

| S. No | Terms of Reference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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|       | ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report                                                                                                                                                                                                                                                                                                                                                             |
| 1.8   | Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided                                                                                                                                                                                                                                                                                                                                                                                     |
| 1.9   | The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1.10  | Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given                                                                                                                                                                                                |
| 1.11  | Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 1.12  | A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the State Expert Appraisal Committees |
| 1.13  | Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished                                                                                                                                                                                                                                                                                                                                                                   |
| 1.14  | Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1.15  | The vegetation in the RF / PF areas in the study area, with necessary details, should be given                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 1.16  | A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted                                                                                                                                                                                                                                                                                                   |
| 1.17  | Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished                                                                                                 |
| 1.18  | A detailed biological study of the study area [core zone and buffer zone (10 km radius of the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| S. No | Terms of Reference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|       | periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost                                                                                                                                                                                                                            |
| 1.19  | Proximity to Areas declared as Critically Polluted or the Project areas likely to come under the Aravali Range, (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1.20  | Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1.21  | R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report                                                                            |
| 1.22  | One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given |
| 1.23  | Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map                                                                                                                                                                                                                                                                                            |
| 1.24  | The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1.25  | Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| S. No | Terms of Reference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.26  | Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1.27  | Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1.28  | Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from State Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished                                                                                                                                                         |
| 1.29  | Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 1.30  | Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1.31  | A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution |
| 1.32  | Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines                                                                                                                                                                         |
| 1.33  | Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1.34  | Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1.35  | Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed                                                                                                                                                                                                                                                                                                                                                                |
| 1.36  | Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |



| S. No | Terms of Reference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.37  | Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1.38  | Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1.39  | Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1.40  | Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1.41  | The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1.42  | A Disaster management Plan shall be prepared and included in the EIA/EMP Report                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1.43  | Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1.44  | Besides the above, the below mentioned general points are also to be followed:- a) All documents to be properly referenced with index and continuous page numbering. b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated. c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project. d) Where the documents provided are in a language other than English, an English translation should be provided. e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted. f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed. g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation. h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable. i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area |

## **A. STANDARD TERMS OF REFERENCE**

- 1) Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
- 2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
- 3) All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
- 4) All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ topo sheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
- 5) Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
- 6) Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
- 7) It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.
- 8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The

proposed safeguard measures in each case should also be provided.

- 9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.
- 10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
- 11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.
- 12) Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
- 13) Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
- 14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
- 15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
- 16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
- 17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from

the Standing Committee of National Board of Wildlife and copy furnished.

- 18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.
- 19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.
- 20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- 21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
- 22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The

location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.

- 23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
- 24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
- 25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
- 26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
- 27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
- 28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
- 29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
- 30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.

- 31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.
- 32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.
- 33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
- 34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
- 35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
- 36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
- 37) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
- 38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the

proposed Project.

- 39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
- 40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- 41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- 42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
- 43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
- 44) Besides the above, the below mentioned general points are also to be followed:-
  - a) Executive Summary of the EIA/EMP Report
  - b) All documents to be properly referenced with index and continuous page numbering.
  - c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
  - d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
  - e) Where the documents provided are in a language other than English, an English translation should be provided.
  - f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
  - g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
  - h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

- i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.
- j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

**In addition to the above, the following shall be furnished:-**

**The Executive summary of the EIA/EMP report in about 8-10 pages should be prepared incorporating the information on following points:**

1. Project name and location (Village, District, State, Industrial Estate (if applicable)).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.
7. Details of village map, "A" register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be submitted along with EIA report.
9. Obtain a letter /certificate from the Assistant Director of Geology and Mining standing that there is no other Minerals/resources like sand in the quarrying area within the approved depth of mining and below depth of mining and the same shall be furnished in the EIA report.
10. EIA report should strictly follow the Environmental Impact Assessment Guidance Manual for Mining of Minerals published February 2010.
11. Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
12. The EIA study report shall include the surrounding mining activity, if any.
13. Modeling study for Air, Water and noise shall be carried out in this field and incremental



increase in the above study shall be substantiated with mitigation measures.

14. A study on the geological resources available shall be carried out and reported.
15. A specific study on agriculture & livelihood shall be carried out and reported.
16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of its acquisition, nearby (in 2-3 km.) water body, population, within 10km other industries, forest, eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies
22. Issues raised during public hearing (if applicable) and response given
23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan
26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.
31. A detailed plan on plastic waste management shall be furnished. Further, the proponent should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986. In this connection, the project proponent has to furnish the action plan.

**Besides the above, the below mentioned general points should also be followed:-**

- a. A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.
- b. All documents may be properly referenced with index, page numbers and continuous page numbering.
- c. Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.
- d. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF& CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry should also be followed.
- e. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India (QCI)/National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other organization/Laboratories including their status of approvals etc. In this regard circular no F. No.J -11013/77/2004-IA-II(I) dated 2<sup>nd</sup> December, 2009, 18<sup>th</sup> March 2010, 28<sup>th</sup> May 2010, 28<sup>th</sup> June 2010, 31<sup>st</sup> December 2010 & 30<sup>th</sup> September 2011 posted on the Ministry's website <http://www.moef.nic.in/> may be referred.
  - After preparing the EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006) covering the above mentioned points, the proponent will take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.
  - The final EIA report shall be submitted to the SEIAA, Tamil Nadu for obtaining Environmental Clearance.
  - The TORs with public hearing prescribed shall be **valid for a period of three years** from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29<sup>th</sup> August, 2017.

**From**

Dr.G.Panneerselvam,  
Assistant Director,  
Dept. of Geology and Mining,  
Dharmapuri.

**To**

Tvl.KMB Trading Company,  
No.3/50H,  
Bangalore Main Road,  
Five Roads, Salem- 636 004.

**Roc.No.176/2020 (Mines) dated. 10.05.2023.**

**Sir,**

**Sub:** Mines and Quarries - Minor Mineral- Black Granite-  
Dharmapuri District - Pennagaram Taluk -  
Ajjanahalli Village S.F.Nos.824/3 (2.11.5 Hects.) & 823  
(Part) (2.38.5 Hects) - over an extent of 4.50.0 Hects.  
of Government Poramboke lands - Quarry lease  
application preferred by Tvl.KMB Trading Company,  
Salem- Precise area communicated by the Government -  
Mining plan approved by the Commissioner of Geology  
and Mining - obtaining prior clearance from State Level  
Environment Impact Assessment Authority, Chennai for  
grant of quarry lease - existing/proposed/abandoned  
quarries situated within 500 mts. radial distance -  
requested by the applicant - details furnished - reg.

- Ref:**
1. Quarry Lease Application of the Highest Auctioneer  
Tvl.KMB Trading, Company, Salem dated  
28.09.2020.
  2. The Principal Secretary to Government, Industries  
(MME2) Department, Secretariat, Chennai - 600  
009 Letters No.274/MME.2/2021-1, dated  
23.02.2021 and 26.02.2021.
  3. The Commissioner of Geology and Mining, Chennai-  
32 letter Rc.No.6164/MM4/2020 dated 02.05.2023.
  4. Tvl.KMB Trading Company, Salem Letter dated  
09.05.2023

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The Government in the reference 2<sup>nd</sup> cited has communicated the  
precise area to Tvl.KMB Trading Company with a direction to submit the  
Approved Mining Plan in respect of the area applied for grant of Black  
Granite quarry lease over an extent of 4.50.0 Hectares of Government  
Poramboke land in S.F.Nos.824/3 (2.11.5 Hects.) & 823 (Part)(2.38.5  
Hects) of Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District for  
a period of 20 years as per Rule 8-A (a) (ii) of Tamil Nadu Minor Mineral  
Concession Rules, 1959 by incorporating certain conditions stipulated in  
the Government letter.

2) Accordingly, the Mining plan approved by the Commissioner of Geology and Mining, Chennai-32 vide letter in the reference 3<sup>rd</sup> cited.

3) In the reference 4<sup>th</sup> cited, the applicant company Tvl.KMB Trading Company have requested to furnish the details of abandoned, existing and proposed mines/quarries located within 500 mts. radius from the lease area for obtaining Environmental Clearance from State Level Environmental Impact Assessment Authority (SEIAA), Chennai.

4) As requested, the following are furnished.

**Abandoned Quarry**

| Sl. No.       | Name and Address of the lessee | Village & Taluk | S.F. No. | Extent (in Hects.) | Classification of land | Lease period |
|---------------|--------------------------------|-----------------|----------|--------------------|------------------------|--------------|
| .....Nil..... |                                |                 |          |                    |                        |              |

**Existing Quarry**

| Sl. No.       | Name and Address of the lessee | Village & Taluk | S.F. No. | Extent (in Hects.) | Classification of land | Lease period |
|---------------|--------------------------------|-----------------|----------|--------------------|------------------------|--------------|
| .....Nil..... |                                |                 |          |                    |                        |              |

**Proposed Quarry**

| Sl. No. | Name and Address of the lessee                                                    | Village & Taluk                        | S.F.No.      | Extent (in Hects.) | Classification of land |
|---------|-----------------------------------------------------------------------------------|----------------------------------------|--------------|--------------------|------------------------|
| 1.      | Thiru.M.Vikneshkumar,<br>S/o Muthukumarasamy,<br>Karuppur Village, Salem District | Ajjanahalli Village & Pennagaram Taluk | 810/2 (Part) | 2.48.0             | Govt. Poramboke land   |
| Total   |                                                                                   |                                        |              | 2.48.0             |                        |

*[Signature]*  
Assistant Director,  
Geology and Mining,  
Dharmapuri.

*[Signature]* 10.05.2023  
10/05/2023

**COMMISSIONERATE OF GEOLOGY AND MINING**

From

ThiruJ.Jayakanthan, I.A.S.,  
Commissioner  
Department of Geology and Mining,  
Guindy, Chennai - 600 032.

To

✓ M/s. KMB Trading Company Pvt  
Ltd,  
No.3/50, Bangalore Main Road,  
Five Roads,  
Salem District-636 004.

Rc.No. 6164/MM4/2020      Dated      .04.2023

Sir,

Sub: Mines and Quarries - Minor Mineral- Black Granite-  
Dharmapuri district - Pennagaram taluk-Ajjanahalli village  
S.F.Nos.824/3 (2.11.5 ha)& 823 (Part) (2.38.5 ha) - over an  
extent of 4.50.0 ha in Government Poramboke lands -  
Quarry lease application preferred by Tvl.KMB Trading  
Firm, Salem - Precise area communicated by the  
Government-Mining Plan submitted by the applicant firm -  
forwarded and requested for delay condonation by the  
Deputy Director (G&M), Dharmapuri-Approval accorded.

- Ref:
1. Dharmapuri District Gazette Extraordinary issue in English and Tamil No.05 dated 03.09.2020
  2. Quarry Lease Application of the Highest BidderTvl.KMB Trading, Firm, Salem dated 28.09.2020.
  3. The District Collector, Dharmapuri in Rc.No. 176/2020/Mines dated 23.10.2020.
  4. The Commissioner of Geology and Mining File in Rc.No. 6164/MM4/2020 dated 31.12.2020 and 06.02.2021.
  5. The Principal Secretary to Government, Industries (MME2) Department, Secretariat, Chennai - 600 009 Letters No.274/MME.2/2021-1, dated 23.02.2021 and 26.02.2021.
  6. The District Collector, Dharmapuri in letter Rc.No.176/2020 (Mines), dated 07.05.2021 to the Government through Commissioner of Geology and Mining.
  7. Tvl.KMB Trading Firm, Salem Letter dated 17.06.2021.

8. The Deputy Director (G&M), Dharmapuri letter Rc.No.176/2020 (Mines) dated 28.06.2021.

-----  
Kind attention is invited to the above references cited.

2) The applicant firm Tvl.KMB Trading Firm, Salem vide reference 7<sup>th</sup> cited had submitted the draft mining plan to district office on 17.06.2021 for quarrying Black granite situated over an extent of 4.50.0 ha of Government lands in S.F.Nos.824/3 (2.11.5 ha) & 823 (Part) (2.38.5 ha) of Ajjanahalli village, Pennagaram taluk, Dharmapuri district.

3) The Deputy Director (G&M), Dharmapuri has forwarded the mining plan submitted by the applicant firm Tvl.KMB Trading Firm, Salem and reported as follows.,

- i. The applicant firm has submitted 6 copies of draft mining plan duly prepared by the recognized qualified person for approval on 17.06.2021 at office of the Deputy Director of Geology and Mining, Dharmapuri.
- ii. In the mining plan the geological reserves, mineable reserves, year wise production and development program, Environmental and land use plan, Environment management plan, Progressive mine closure plan and conceptual plan have been incorporated.
- iii. In the mining plan, it is stated that the proposed area lies in the latitude of 12°02'36.9302"N to 12°02'48.7631"N and longitude of 77°47'01.3070"E to 77°47'59.0373"E and is marked in the Topo Sheet No. 57 - H/16. The area is situated almost on an Undulated terrain having a gentle slope towards North western side. The dolerite dyke intruded into the country rock discordantly with a trend of N20°W-S62°E with vertical dipping 90°. The black granite boulders observed with a height of 8.0 m to 10.0 m on the center portion of the applied area. The black granite rock is medium coarse grained, medium dark in Black colour. It shows sub-ophitic texture. The Black of the rock changes depending on the texture of the rock. The dykes is fine grained at the contact of country rock. The Dolerite is composed of laths of



plagioclase embedded in the plates of Augite (Ophitic texture), Apatite, Magnetite and pyrite forms the secondary mineral. The special team has estimated the inferred recoverable reserves of black granite as 14,000 CBM with a recovery of 10%.

- iv. With regards to the Granite Mineral Resources in the applied area, the RQP has stated that, **the total Geological Reserves is 2,36,050 Cbm and the total Mineable Reserves (ROM) is 1,77,165 Cbm and total recoverable reserves is about 35,433Cbm @ the rate of 20% recovery to the assumed depth of 45m below ground level. The proposed granite production for the first five years of the mining plan is 7,893 Cbm.**
- v. Further, with regard to the Environmental impact assessment, the RQP has stated that the mining plan is proposed for production of Black Granite dimensional stone without involving deep hole drilling. Mild blasting is done to minimize the shattering effect. Such limited mining activity will not cause any impact adversely on Environment as far as pollution of air, water and noise is concerned. Further, the quarry operation is confined to 45m which is well above the water table which is 60m in summer and 52 during rainy season. This water table is observed in nearby wells. The water level would not be affected by the quarry operation. There is no lake, river or reservoir within 50m radius of the quarry lease applied area. Safety distance of 7.5 m and 10m should be provided to the adjacent patta and Government poramboke lands respectively.
- vi. Further, in respect of Environment Management Plan it is stated that the excavated waste to be generated in the quarry during production work will be proposed to dump on the Western and South Eastern side of the lease area. It is further stated that the essential safety distance provided along the lease boundary has been identified for dumping the top soil wastes to maintain afforestation. Appropriate species of Neem &

Pungan trees will be planted in the subject specified area in a phased manner. Finally, the RQP has concluded that the applicant shall comply with the provisions of the mines act, Rules and Regulations and orders made there under, so that the safety of the mine, machinery and persons will be well protected. Further, the permission / exemptions / relaxations or approvals whenever required for safe and scientific quarrying of the deposit will be obtained from the Department of Mines Safety, Chennai and any violations pointed out by the inspecting authorities shall be rectified by the applicant as per guidelines of the department.

- vii. All the details mentioned in the mining plan have been verified and found correct. The Mining Plan has been prepared for a period of 20 years. The incorporated details may be taken for consideration and the Mining Plan is recommended for approval.
- viii. The applicant firm in their letter dated 17.06.2021, has informed that as per the directions of the Government in letter No. 274/MME.2/2021-1 dated 23.02.2021 and 26.02.2021, they have remitted the balance lease amount of 3,85,00,000/- and to submit approved mining plan to the Government within three months from the date of communication of precise area. But due to COVID-19 Pandemic 2<sup>nd</sup> wave, they were not able to submit draft mining plan and get approval of the same within the time limit prescribed by the Government. Therefore, requested the Director of Geology and Mining, Chennai to approve the mining plan condoning the delay arising due to Covid-19 Pandemic crises.
- ix. As per sub rule 8(a)(ii) of Rule 8-A of TNMMCR, 1959 the applicant firm have to submit one copy of approved mining plan to the Government within three months from the date of receipt of precise area communication. Parallely as per the directions of the Government, the applicant firm have to submit another copy of approved mining plan to the State Environment Impact Assessment Authority for getting Environment Clearance.



- x. The sub rule (8) (a) (iv) of rule 8-A of TNMMCR, 1959 read as follows:  
*"Where the applicants referred to in sub clauses (ii) fail to remit the balance amount within the stipulated period, the amount already remitted shall be forfeited and the communication of the letter of commitment issued, as the case may be, shall be deemed to be cancelled. When the said applicants have remitted the amount within the stipulated period but are not able to submit the approved mining plan within the stipulated period for reasons beyond their control, they may apply for extension of time for submission of the approved mining plan. The State Government, on receipt of such request and after satisfying that the balance amount has been paid within the prescribed period, may grant extension of time for a further period not exceeding three months, if satisfied with the reasons furnished by the applicant. On receipt of the approved mining plan, the State Government shall issue the order granting the lease. In case the applicant fails to submit the approved mining plan, even in the extended period, the amounts remitted by the applicant shall be forfeited and the letter of communication shall be deemed to be cancelled".*
- xi. In this case the applicant firm have not submitted the draft mining plan to the Director of Geology and Mining through the District Officer and get approval of Director of Geology and Mining within the prescribed time limit and fulfilled the Government's direction due to Covid-19 2<sup>nd</sup> wave.

Finally, the Deputy Director (G&M), Dharmapuri has forwarded the draft mining plan submitted by the applicant firm to the Director of Geology and Mining with a request to address the Government for condoning the delay in submission of Mining Plan due to Covid-19 Pandemic crises as per Sub rule (8) (a) (iv) of rule 8-A of TNMMCR, 1959 for taking further necessary action on the mining plan by the Director of Geology and Mining since the Director of Geology and Mining is the Competent Authority for approval of mining plan in respect of

Granite as contemplated under Rule 12 of Granite Conservation and Development Rules-1999.

4) The mining plan is in accordance with the precise area communicated for grant of lease. Based on the report of the Deputy Director (G&M), Dharmapuri district, the Mining plan submitted by Tvl.KMB Trading Firm, Salem is hereby approved subject to the following conditions in addition to the conditions stipulated in the precise area communication issued by the Government:

- i. The applicant firm should obey the final orders if any to be passed by the Hon'ble High Court of Madras in connection with the pending Writ Petitions filed against Tender Cum Auction conducted for the grant of quarry lease in Government land in respect of Granite.
- ii. The applicant firm should obtain prior environmental clearance from the competent authority.
- iii. This mining plan is approved without prejudice to any other Law applicable to the quarry lease from time to time whether such Laws are made by the Central Government, State Government or any other authority.
- iv. The approval of the mining plan does not in any way imply the approval of the Government in terms of any other provisions of the Mines and Minerals (Development and Regulation) Act 1957, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980 Indian Explosives Act, 1884 (Central Act IV of 1884) and the rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.
- v. This mining plan including Progressive mine closure plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.

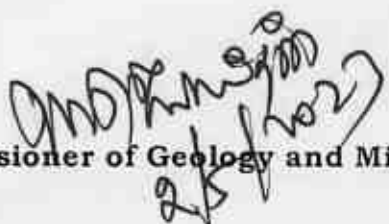
- vi. Provisions of the Mines Act, 1952 and the Rules and Regulations made there under including submission of notice of opening, appointment of manager and other statutory officials as required under Mines Act, 1952 shall be complied with.
- vii. Provisions made under Mines and Minerals (Development & Regulation) Act, 1957, MMDR Amendment Act, 2015 and Granite conservation and Development Rules, 1999 made there under shall be complied with.
- viii. The applicant firm should provide 7.5 m safety distance to the adjacent patta lands and 10 m safety distance to the adjacent poramboke lands in all the sides.
- ix. Granite waste materials should be dumped within the quarry lease area and should not be dumped outside the boundary of the lease area.
- x. No hindrance should be caused to the adjacent pattadars and public while quarrying and transportation of minerals from the subject area.
- xi. Environmental Clearance should be obtained from the authority in respect of the subject area as per rule 42 of the Tamil Nadu Minor Mineral Concession Rules, 1959 and as per the notification of the Ministry of Environment and Forest and any other clearances if any.
- xii. The four boundaries of the applied area are fixed and the quarrying activity should be restricted within the area granted on lease.
- xiii. The applicant firm should fence the lease granted area with barbed wire before the execution of lease deed as follows: -
  - The pillar post shall be firmly grounded with concrete foundation of height not less than 2mts with a distance between two pillars shall not be more than 3mts.
  - The applicant firm shall incorporate the DGPS readings for the entire boundary pillars of the area and the same should be clearly shown in the mining plan.

- A soft copy of the digitized map with DGPS readings should be submitted in the CD to the Assistant Director (G&M), Dharmapuri.
- xiv. Barbed wire fencing or Compound wall should be erected all along the boundary of the lease granted area.
- xv. The applicant firm should use mild explosives during quarrying.
- xvi. Child labour should not be engaged in the quarry works.
- xvii. The applicant firm should ensure that while starting the quarry work, all the quarry workers working under their control are registered in the Labour Welfare Board and also enrolled in the ongoing insurance scheme.
- xviii. The conditions mentioned in G.O. (Ms) No.79, Industries (MMC-I) Department, dated 06.04.2015 should be complied with.
- xix. The applicant firm should comply with the conditions stipulated in the Government of India, Ministry of Mines order No.11/02/2020, dated 14.01.2020 issued as per the orders of the Hon'ble Supreme Court of India dated 08.01.2020 that, "the mining leaseholders shall after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to this mining activities and restore the land to a condition which is fit for growth of fodders, flora and fauna etc."
- xx. The applicant firm shall submit scheme of mining, mine closure plan and other statutory requirements within the time stipulated for submission of the above, as per rules.
- xxi. If any violation is found during quarrying operation, the penal provisions of the Tamil Nadu Minor Mineral Concession Rules, 1959 and other rules and act in force will attract.
- xxii. As per rule 12 (v) of the Mineral (other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016, the applicant firm shall at

his own expense, erect, maintain and keep in repair all boundary pillars.

- xxiii. A Green belt should be constructed to prevent sound and air pollution due to the proposed quarrying activity by planting at least 500 seedlings of Neem and Pungan all around the area.

Encl: two copies of Approved Mining Plan

  
Commissioner of Geology and Mining

Copy Submitted to:

The Additional Chief Secretary  
to Government,  
Industries, Investment Promotion  
and Commerce Department,  
Secretariat, Chennai-600009.

Copy to:

1. The District Collector,  
Dharmapuri District.

3978

# MINING PLAN FOR AJJANAHALLI BLACK GRANITE



(Under Rule 8-A of TNMMCR 1959 & Rule 12 of GCDR, 1999)

EXTENT : 4.50.0 HA  
S.F.Nos. : 823(PART) & 824/3  
VILLAGE : AJJANAHALLI  
TALUK : PENNAGARAM  
DISTRICT : DHARMAPURI  
STATE : TAMIL NADU

## APPLICANT

TVL. KMB TRADING COMPANY,  
No. 3/50, Bangalore Main Road,  
Five Roads,  
Salem District- 636 004.

## Prepared by

**R. RAJASEKAR, M.Sc.,(Geol),**

RQP/CNN/264/2015/A,

NO.4A, CHOZHA NAGAR,

THITTAKUDI TALUK,

CUDDALORE – 606 105.

E-mail: [krkmemorialminingservices@gmail.com](mailto:krkmemorialminingservices@gmail.com)

CELL: 98946 28970 & 73733-74702.



## **K.M.B. Trading Company**

### **CONSENT LETTER FROM APPLICANT**

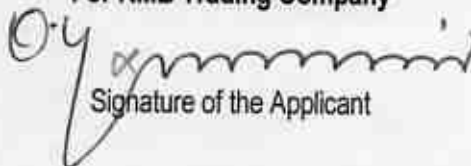
The Mining Plan in respect of Black Granite over an Extent of 4.50.0 ha of Government Poramboke Land in S.F.Nos.823 (Part) & 824/3 in Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District, Tamilnadu State has been prepared by Mr. R. Rajasekar.M.Sc., Recognised Qualified Person.

I request the Director, Department of Geology and Mining, Chennai to make further correspondence regarding the modification/clarification in respect of the Mining Plan with the said Recognised Qualified Person at the following address.

R. Rajasekar.M.Sc.,(Geol),  
RQP/CNN/264/2015/A  
No.4A, Chozha Nagar,  
Pennadam P.O,  
Thittakudi Taluk,  
Cuddalore - 606 105.  
Mobile No: +91 98946 28970  
Mail:krkmemorialminingservices@gmail.com

I hereby undertake that all the modifications, if any made in the mining plan by the Recognised Qualified Person may be deemed to have been made with my knowledge and consent and shall be acceptable to me and binding on me in all respects.

**For KMB Trading Company**

  
Signature of the Applicant

Place: Salem.  
Date:



3/50-H, Bangalore Main Road, 5 Roads Salem-4. Tamilnadu India.

Off : 2333718, 2333720, Fax :00-91-0427-2331102

TIN No. 33562842223 CST No. 780055/SLM/20-09-2000





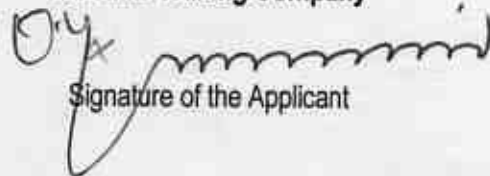
**K.M.B. Trading Company**

**DECLARATION OF MINE OWNER**

The Mining Plan in respect of Black Granite over an Extent of 4.50.0 ha. of Government Poramboke land in S.F.Nos.823 (Part) & 824/3 in Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District, Tamilnadu State has been prepared in full consultation with me by Mr. R. Rajasekar, Recognised Qualified Person (Reg.No.RQP/CNN/264/2015/A).

I have understood its contents and agree to implement the same in accordance with Laws applicable to Mines.

**For KMB Trading Company**

  
Signature of the Applicant

Place: Salem.  
Date:



3/50-H, Bangalore Main Road, 5 Roads Salem-4, Tamilnadu India.

Off : 2333718, 2333720, Fax :00-91-0427-2331102

TIN No. 33562842223 CST No. 780055/SLM/20-09-2000





R. Rajasekar.M.Sc.,(Geol),  
RQP/CNN/264/2015/A  
No.4A, Chozha Nagar,  
Pennadam P.O,  
Thittakudi Taluk,  
Cuddalore – 606 105.  
Mobile No: +91 98946 28970

**CERTIFICATE FROM THE RECOGNISED QUALIFIED PERSON**

This is to certify that the Provisions of Granite Conservation and Development Rules, 1999 and Tamil Nadu Minor Mineral Concession Rules, 1959 have been observed in the preparation of Mining Plan for Black Granite over an Extent of 4.50.0 ha. Government Poramboke Land in S.F.Nos.823 (Part) & 824/3 in Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District, Tamilnadu State. The Mining Plan has been prepared for Tvl. KMB Trading Company, No. 3/50, Bangalore Main Road, Five Roads, Salem District - 636 004.

Whenever specific permissions/exemptions/ relaxations and approvals are required, the applicant will approach the concerned authorities of Directorate of Geology and Mining, Government of Tamilnadu, Guindy, Chennai- 600 032 for such permissions/ exemptions /relaxations and approvals.

It is also certified that information furnished in the above Mining Plan are true and correct to the best of my knowledge.

Certified

Signature of Recognised Qualified Person.

R. Rajasekar, M.Sc.  
Recognised Qualified Person  
Reg. No. RQP / CNN / 264 / 2015/A

Place: Cuddalore.  
Date:



R. Rajasekar.M.Sc.,(Geol),  
RQP/CNN/264/2015/A  
No.4A, Chozha Nagar,  
Pennadam P.O,  
Thittakudi Taluk,  
Cuddalore – 606 105.  
Mobile No: +91 98946 28970

**CERTIFICATE FROM THE RECOGNISED QUALIFIED PERSON**

Certified that the Provisions of Mines Act, Rules and Regulations made there under have been observed in the preparation of Mining Plan for Black Granite over an Extent of 4.50.0 Ha. Government Poramboke land in S.F.Nos.823 (Part) & 824/3 in Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District, Tamilnadu. This Mining Plan has been prepared for Tvl. KMB Trading Company, No. 3/50, Bangalore Main Road, Five Roads, Salem District - 636 004.

Wherever specific permissions/exemptions/ relaxations and approvals are required, the applicant will approach the concerned authorities of the Director General of Mines Safety (DGMS), No. 5, II<sup>nd</sup> Street, Block – AA, Anna Nagar, Chennai, Tamil Nadu for such permissions/ exemptions /relaxations and approvals.

It is also certified that information furnished in the mining plan are true and correct to the best of my knowledge.

Certified

Signature of Recognised Qualified Person.

R. Rajasekar, M.Sc.,  
Recognised Qualified Person  
Reg. No. RQP / CNN / 264 / 2015/A

Place: Cuddalore.

Date:



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| 15   | Conceptual Sections                           | VIII-A    | 1:1000       |
| 16   | Progressive Mine Closure Plan                 | IX        | 1:1000       |



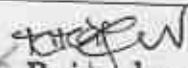
## MINING PLAN FOR AJJANAHALLI BLACK GRANITE

(Under Rule 8- A of TNMMCR 1959 & Rule 12 of Granite Conservation and Development Rules, 1999)

### I. INTRODUCTION:

The present mining plan and Environmental Management Plan has been prepared in favour of **Tvl. KMB Trading Company, No.3/50, Bangalore Main Road, Five Roads, Salem District - 636 004** who has been granted precise area to quarry **Black Granite** over an Extent of **4.50.0Ha.** in S.F. Nos. **823 (Part) & 824/3** in **Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District** for a period of twenty years vide the precise area communication **letter No.274/MME.2/2021-1, dated 23.02.2021** With the following conditions.

1. A safety distance of 7.5 meters and 10 meters should be provided to the adjacent patta and Government Poramboke lands, respectively.
2. All conditions stipulated in the District Gazette No.05 Extra ordinary notification dated 03.09.2020 should be adhered by the lessee.
3. Environment Clearance should be obtained from the state Level Environment Impact Assessment Authority before grant of quarry lease as per rule 42 of the Tamil Nadu Minor Mineral Concession Rules, 1959.
4. The applicant firm should fence the lease granted area with barbed wire before the execution of lease deed as follows:-
  - The pillar post shall be firmly grounded with concrete foundation of height not less than 2 meters with a distance between two pillars shall not be more than 3 meters.
  - The applicant firm shall incorporate the DGPS readings for the entire boundary pillars of the area and the same should be clearly shown in the mining plan.
  - A soft copy of the digitized map with DGPS readings should be submitted in the CD form to Deputy Director (G&M), Dharmapuri.
5. The District Administration and Geology And Mining Department should ensure the conditions imposed in G.O.(Ms). No.79, Industries Department, dated 06.04.2015.
6. As per rule 12 (v) of Mineral (other than Atomic and Hydro-Carbons Energy Minerals) Concession Rules, 2016, the applicant shall at his own expense, erect, maintain and keep in repair all boundary pillars.
7. The applicant firm should use mild explosives during quarrying.
8. Child Labourers should not be engaged in quarry works.
9. If any Violation is found during quarrying operation, the penal provisions of the Tamil Nadu Minor Mineral Concession Rules, 1959 and other rules and act in force will attract.

  
**R. Rajasekar, M.Sc.,** 1  
 Recognised Qualified Person  
 Reg. No. RQP / CNN / 264 / 2015/A





10. The applicant firm should ensure that while starting the quarry work, all the quarry workers working under their control are registered in the Labour Welfare Board and also enrolled in the ongoing insurance scheme.
11. The District Collector, Dharmapuri shall obtain a sworn-in-affidavit from the applicant firm containing the above conditions before execution of lease deed and also ensure that the instructions issued in Government letter No.12789/MMB2/2002-7, Industries Department, Dated 09.01.2003 are complied with.

This mining plan has been prepared incorporating the above conditions, complying the Rules and Regulations stipulated by the Government of Tamilnadu before and during the course of quarry operation.

The area under consideration was in quarrying operation earlier.

Originally Lease for black granite was granted to M/s. Emmessen Exports, in the S.F.No.824/3(P) extent 1.83.0 ha. vide G.O.Ms.No.750, Industries (MMB.1) Department, dated 24.07.1990 and the lease period is 19.08.1990 to 18.08.2000.

At present the area applied for lease is not a virgin land. The quarry lease applied area over an extent of 4.50.0Hectares Government Poramboke Land in S.F.Nos.823 (Part) & 824/3 in Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District, Tamil Nadu State. This mining plan is prepared as per the Rule 8-A of TNMMCR 1959 & Rule 12 of Granite Conservation and Development Rules, 1999.

The quarry lease applied area is an Undulated terrain with gentle slope towards Northwestern side and an altitude of the area is 422m RL. Black Granite deposit is observed below the topsoil and weathered rock having an average thickness of 2.0 to 3.0mts as observed in the old quarried pit of the previous lease.

The following Open cast method will be adopted to win the Black granite dimensional stones occurring in this area.

The Top soil is removed by using excavator. The soil type of the area is red in nature and it is having a thickness upto 2.0m & weathered rock is observed for a depth of 3.0m and below which massive formation of black granite may be encountered.

Usage of explosives is very minimal. Mild blasting with explosives in holes drilled by jack hammer of 32mm dia. will be adopted. No deep hole blasting is proposed.

Diamond wire saw cutting method: By this method the dimensional granite stones were splitted from the parent rock.

Using feather and wedges the defective portions are removed. Experienced Chisel men are used for dressing the blocks into required rectangular shaped dimensional stones without much wastage.

These rectangular dimensional granite stones are marketed to different needy customers by adopting strict quality control measures by experienced markers.

**2.0 GENERAL****2.1 NAME OF THE APPLICANT WITH ADDRESS:**

Name : Tvl. KMB Trading Company,  
Address : No.3/50, Bangalore Main Road,  
Five Roads,  
Salem District- 636 004.

District : Salem.

Pin code : 636 004

Mobile No : +91 98651 62580

**2.2 STATUS OF THE APPLICANT**

The applicant Tvl. KMB Trading Company, is a Partnership Firm.

**2.3 MINERAL WHICH THE APPLICANT INTENDS TO MINE**

The applicant intends to quarry Black Granite (Dolerite Dyke) Dimensional Stone.

**2.4 NAME AND ADDRESS OF THE RECOGNISED QUALIFIED PERSON WHO PREPARED THE MINING PLAN**

Name : R. RAJASEKAR,  
RQP/CNN/264/2015/A

Address : No.4A, Chozha Nagar,  
Pennadam P.O,  
Thittakudi Taluk,  
Cuddalore - 606 105.  
Mobile No: +91 98946 28970  
Mail:krkmemorialminingservices@gmail.com

**2.5 NAME AND ADDRESS OF THE PROSPECTING AGENCY**

Long time back in the year 1992-93 the State Geology and Mining Dept., Govt. of Tamil Nadu, has also carried out the prospecting and exploration in these areas.

A detailed mapping of the commercial granite deposits of Tamilnadu has also been carried out by the Geological Survey of India. Apart from the survey conducted by the GSI, the Recognised Qualified Person along with his experienced team members made a detailed geological investigation of the area and demarcated the deposit clearly with a mine surveyor. A dolerite dyke intruded into the country rock discordantly with a trend of N20°W-S20°E. The dolerite dyke shows the average length of 280 meters and average width of 25 meters after leaving the safety distance. Topsoil is observed for a depth of 2.0m & Weathered rock is observed for a depth of 3.0m.



Address of the prospecting Agency:

## (i) STATE GEOLOGICAL DEPARTMENT

O/O The Commissioner of Geology and Mining  
Thiru Vi Ka industrial Estate,  
Guindy, Chennai – 32.

## (ii) GEOLOGICAL SURVEY OF INDIA,

Elliot Beach Road,  
Rajaji Bhavan,  
C.G.O. Complex,  
Besant Nagar,  
Chennai -600 090.

## 2.6 DETAILS OF THE AREA

- a. The area is marked in the Geological Survey of India, Topo Sheet No. 57-H/16.
- b. The details of the land covered by the area is given below.

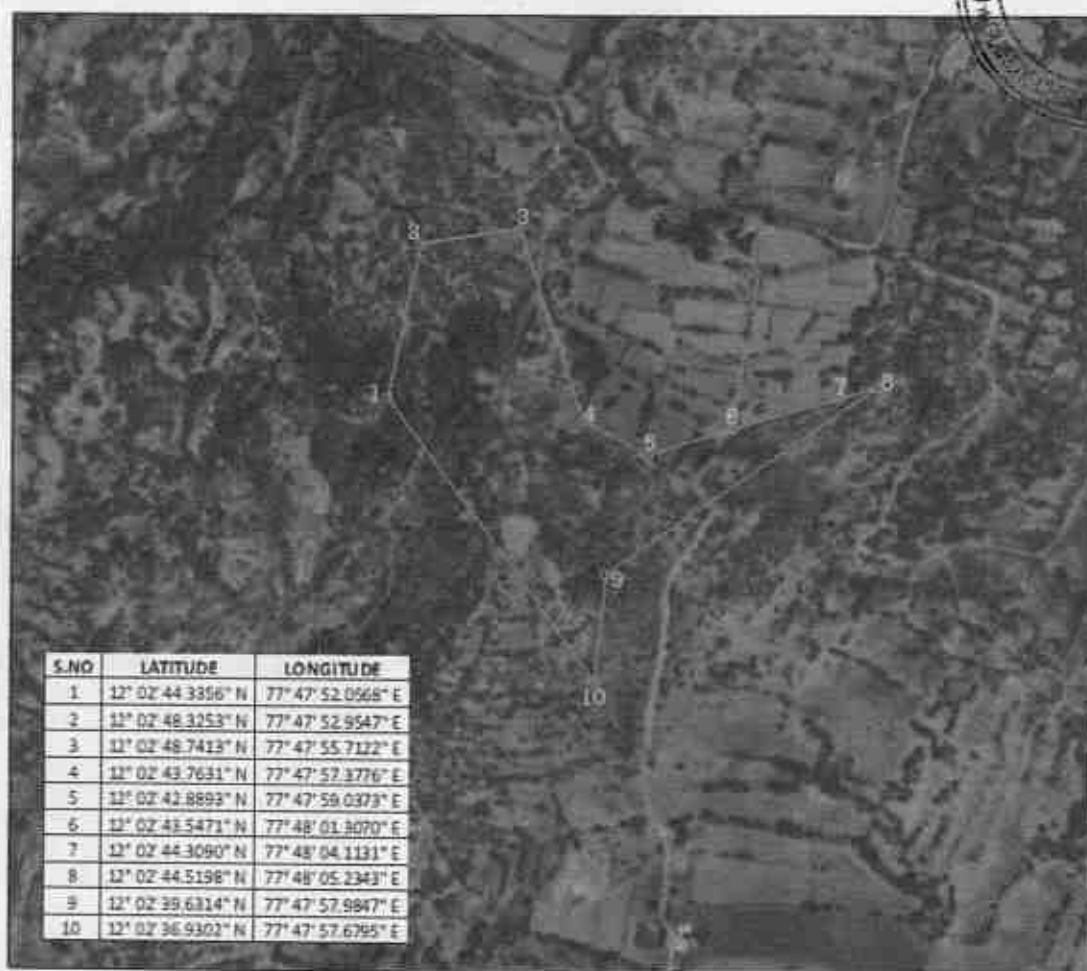
Table -1

| District & State       | Taluk      | Village     | S.F. Nos   | Area in Hect. | Ownership occupancy               |
|------------------------|------------|-------------|------------|---------------|-----------------------------------|
| Dharmapuri & TamilNadu | Pennagaram | Ajjanahalli | 823 (Part) | 2.38.5        | It is a Government Poramboke Land |
|                        |            |             | 824/3      | 2.11.5        |                                   |
|                        |            |             | Total      |               |                                   |

The area lies the North Latitude  $12^{\circ} 02' 48.7413''\text{N}$  to  $12^{\circ} 02' 36.9302''\text{N}$  and East Longitude of  $77^{\circ} 47' 52.0568''\text{E}$  to  $77^{\circ} 47' 57.6795''\text{E}$  on WGS datum-1984. (Plate No. I & II).



Satellite Map Showing on the Lease Applied Area Boundary Pillars GPS-Coordinates



## 2.7 WHETHER THE AREA RECORDED TO BE IN FOREST DEPARTMENT:

The area does not falls under forest land of any category. It is a Government Poramboke Land.

## 2.8 PERIOD FOR WHICH THE MINING AREA IS REQUIRED:

The quarry lease for **Black Granite** is applied for a period of Twenty years.

## 2.9 INFRASTRUCTURE:

The quarry lease applied area is situated at a distance of about 3.0kms from Moongilmaduvu Village. Moongilmaduvu is at a distance of 13.0 kms from Pennagaram. Pennagaram is at a distance of 29.0Kms from Dharmapuri. Please refer Route Map - Plate No.I A.

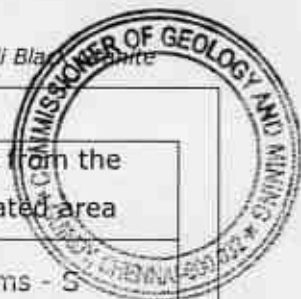


TABLE - 2

| Particulars             | : | Location             | Distance from the Investigated area |
|-------------------------|---|----------------------|-------------------------------------|
| Nearest Post Office     | : | Eriyur-Sunchalnatham | 3.8 kms - S                         |
| Nearest Town            | : | Pennagaram           | 14.0kms - NE                        |
| Nearest Police Station  | : | Pennagaram           | 14.0kms - NE                        |
| Nearest Hospital        | : | Pennagaram           | 14.0kms - NE                        |
| Nearest School          | : | Pudusampalli         | 5.0 kms - SE                        |
| Nearest D.S.P.Office    | : | Dharmapuri           | 37.0kms - NE                        |
| Nearest Railway Station | : | Dharmapuri           | 37.0kms - NE                        |
| Nearest Seaport         | : | Chennai              | 310.0kms - NE                       |
| Nearest Airport         | : | Bangalore            | 120.0kms- N                         |

**WATER:**

Good drinking water is available from the nearby community wells and approved water vender situated in Moongilmaduvu Village also supplies drinking water. Besides, the ground water is potable without any adverse health effects.

**RIVERHEAD:**

There is no Rivers/Stream, Lakes, Reservoir or any water bodies within the 50m radius to the lease applied area.

**3.0 GEOLOGY AND RESERVES****3.1 PHYSIOGRAPHY**

The area is situated almost on an Undulated terrain having a gentle slope towards Northwestern side. A Dolerite dyke intruded into the country rock discordantly with a trend of almost  $N20^{\circ}W-S20^{\circ}E$  with vertical dipping. The dyke shows pinching and swelling structure.

The soil type of the area is red in nature and it is having a thickness upto to 2.0m and weathered rock is observed for a depth of 3.0m.

Below the top soil and the weathered rock massive formation of Black granite deposit may be encountered.



There are few Villages located within the 5km radius of quarry site and approximate distance with direction & population are given below.

Table -3

| S.No | Name of the Village | Direction | Approximate Distance | Approximate population |
|------|---------------------|-----------|----------------------|------------------------|
| 1.   | Sigaralahalli       | North     | 3.0kms               | 300                    |
| 2.   | Moongilmaduvu       | East      | 3.0kms               | 350                    |
| 3.   | Sunchainatham       | South     | 1.3kms               | 250                    |
| 4.   | Madhukottai         | West      | 1.0kms               | 200                    |

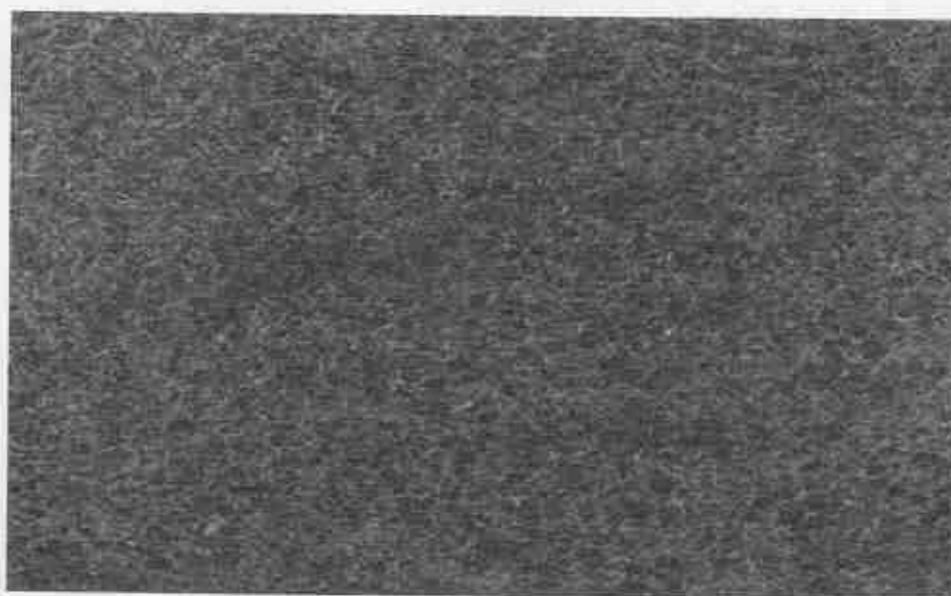
The area receives rainfall of about 800 - 900 mm/per annum and the rainy period is mainly from Oct - Jan during North East monsoon. The summer is hot with maximum temperature upto 40°C and winter records a minimum temperature of 20°C. The regional crops are maize, groundnut and cotton. Cultivation is done by lift irrigation for seasonal crops. The water table is about 65m below ground level during summer and 55m during rainy season. Electric power lines are available nearby and electrification of quarry operations is possible.

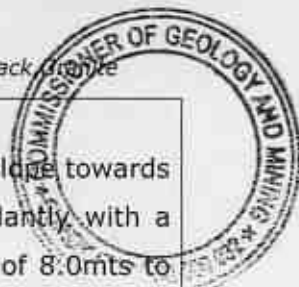
#### Topographical View of the Black Granite Quarry Lease Applied Area





Photo View of the Black Granite (Dolerite Dyke)  
Black Granite and Texture of Minerals





### 3.2 GEOLOGY OF THE AREA

The area is situated almost on an Undulated terrain having a gentle slope towards Northwestern side. A dolerite dyke intruded into the country rock discordantly with a trend of  $N20^{\circ}W-S62^{\circ}E$ . The black granite boulders observed with a height of 8.0mts to 10.0mts on the center portion of the applied lease area. Top soil is observed for a depth of 2.0 m & Weathered rock for a depth of 3.0m, below which massive formation of black granite deposit may be encountered.

The soil type of the area is red in nature and it is having a thickness of 2.0 mts.

The black granite (Dolerite dyke) rock is medium coarse grained, medium dark in colour. It shows sub-ophitic texture. The color of the rock changes depending on the texture of the rock. The Dykes is fine grained at the contact of country rock. The Dolerite is composed of laths of plagioclase embedded in the plates of Augite (Ophitic texture), Apatite, magnetite and pyrite forms the secondary mineral. Strike and dip joints are observed at the surface level which is likely to decrease in deep seated condition.

The Physical attitude of the Black Granite deposit in this area is given below:-

Strike Direction =  $N20^{\circ}W-S62^{\circ}E$

Dip direction and amount = Vertical Dipping  $90^{\circ}$

The northwestern part of Tamilnadu is characterized by the occurrences of a number of Dolerite dykes. The dolerite dykes in general trending is in NNE- SSW direction and rarely in NNW- SSE directions.

### 3.3 DETAILS OF EXPLORATION

#### 3.3.1 ALREADY CARRIED OUT

As far as Black Granite deposits are concerned, the only practical method is the systematic geological mapping, delineation of commercial Black Granite bodies within the field and careful evaluation of body luster, physical properties, commercial aspects etc.

Explorations were conducted by the Central and State Governments.

1. In the year 1966 the Government of India conducted exploration study of the availability of Granite blocks in this area through Geological Survey of India.
2. Between the year 1992 to 1993 the State government represented by the Department of Geology and Mining conducted the exploration study for granite in this area.

Based on the valuable geological information available by the exploration conducted by the Central and the State Government, the geological reserves are estimated. Considering the waste expected, mineable reserves are arrived.





### 3.3.2 PROPOSED STUDY TO BE CARRIED OUT:

The petrogenetic Character of the Black granite stone may be beyond 45.0m depth but the economically viable depth persistence of the Black Granite Stone has been taken to calculate all the categories of proved, probable and possible reserves as 45.0m only (2.0m Topsoil + 3.0m Weathered rock + 40.0m Black Granite). The recovery of saleable Black Granite stones (Gang saw size) has been taken as 20%.

The proposed depth of the quarry for the first 5 years is given upto 45.0m. The quarrying activities during the first 5 years with deep cut as envisaged in the mining plan may render additional data as may be required for future planning.

### 3.4 METHOD OF ESTIMATION OF RESERVES

The geological plan has been prepared in 1:1000 scale (Plate No.IV). Totally Four sections have been drawn in which one section (X-Y) is drawn along the strike direction and the another three sections (A-B), (C-D) & (E-F) are drawn perpendicularly to the strike direction. These Sections are suitably chosen to cover maximum area.

The proved depth persistence of 45.0m depth (2.0m Topsoil + 3.0m Weathered rock + 40.0m Black granite) has been worked out for each cross sectional area. The cross sectional area multiplied by its length of influence on the longer axis gives the volume. The total volume of the insitu reserves available within the individual cross sectional area gives the Geological Resources of the quarry lease applied area.

The quantity of saleable granite stones and quantity of granite waste generation are computed by applying recovery factor of about 20% from the total geological resources. The salable Black Granite stone are in terms of cubic meters (Volume) only. This differs from the other Major minerals which are quantified in Tonnage. In Granite the geological resources, mineable reserves and quantum of waste generated etc, are given only in terms of cubic meters. (Volume).

The details of estimation of Geological Resources and Mineable Reserves with reference to the Geological Plan & Cross section and Conceptual Plan & Section as shown in (Plate no. IV and VIII) have been furnished in Table - 4 & Table - 5 respectively.

## 3.5.0 GEOLOGICAL RESOURCES:

Table -4

| GRANITE GEOLOGICAL RESERVES |              |       |       |       |              |                          |                                  |                         |                |                      |                   |                   |
|-----------------------------|--------------|-------|-------|-------|--------------|--------------------------|----------------------------------|-------------------------|----------------|----------------------|-------------------|-------------------|
| Section                     | Bench        | L (m) | W (m) | D (m) | Volume in m3 | Total Reserves ROM in m3 | Black Granite 20% Recovery in m3 | Granite Waste 80% in m3 | Top soil in m3 | Weathered Rock in m3 | Side Burden in m3 | Total Waste in m3 |
| XY-AB                       | I            | 98    | 120   | 2     | 23520        |                          |                                  |                         | 23520          |                      |                   | 23520             |
|                             | II           | 98    | 120   | 3     | 35280        |                          |                                  |                         |                | 35280                |                   | 35280             |
|                             | IV           | 77    | 43    | 5     | 16555        |                          |                                  |                         |                |                      | 16555             | 16555             |
|                             | V            | 98    | 95    | 5     | 46550        |                          |                                  |                         |                |                      | 46550             | 46550             |
|                             | VI           | 98    | 95    | 5     | 46550        |                          |                                  |                         |                |                      | 46550             | 46550             |
|                             | VII          | 98    | 95    | 5     | 46550        |                          |                                  |                         |                |                      | 46550             | 46550             |
|                             | VIII         | 98    | 95    | 5     | 46550        |                          |                                  |                         |                |                      | 46550             | 46550             |
|                             | IX           | 98    | 95    | 5     | 46550        |                          |                                  |                         |                |                      | 46550             | 46550             |
|                             | X            | 98    | 95    | 5     | 46550        |                          |                                  |                         |                |                      | 46550             | 46550             |
|                             | III          | 25    | 25    | 5     | 3125         | 3125                     | 625                              | 2500                    |                |                      |                   | 2500              |
|                             | IV           | 77    | 25    | 5     | 9625         | 9625                     | 1925                             | 7700                    |                |                      |                   | 7700              |
|                             | V            | 98    | 25    | 5     | 12250        | 12250                    | 2450                             | 9800                    |                |                      |                   | 9800              |
|                             | VI           | 98    | 25    | 5     | 12250        | 12250                    | 2450                             | 9800                    |                |                      |                   | 9800              |
|                             | VII          | 98    | 25    | 5     | 12250        | 12250                    | 2450                             | 9800                    |                |                      |                   | 9800              |
|                             | VIII         | 98    | 25    | 5     | 12250        | 12250                    | 2450                             | 9800                    |                |                      |                   | 9800              |
|                             | IX           | 98    | 25    | 5     | 12250        | 12250                    | 2450                             | 9800                    |                |                      |                   | 9800              |
|                             | X            | 98    | 25    | 5     | 12250        | 12250                    | 2450                             | 9800                    |                |                      |                   | 9800              |
|                             | <b>TOTAL</b> |       |       |       |              | <b>86250</b>             | <b>17250</b>                     | <b>69000</b>            | <b>23520</b>   | <b>35280</b>         | <b>295855</b>     | <b>423655</b>     |
| XY-CD                       | I            | 84    | 131   | 2     | 22008        |                          |                                  |                         | 22008          |                      |                   | 22008             |
|                             | II           | 84    | 131   | 3     | 33012        |                          |                                  |                         |                | 33012                |                   | 33012             |
|                             | V            | 84    | 106   | 3     | 26712        |                          |                                  |                         |                |                      | 26712             | 26712             |
|                             | VI           | 84    | 106   | 5     | 44520        |                          |                                  |                         |                |                      | 44520             | 44520             |
|                             | VII          | 84    | 106   | 5     | 44520        |                          |                                  |                         |                |                      | 44520             | 44520             |
|                             | VIII         | 84    | 106   | 5     | 44520        |                          |                                  |                         |                |                      | 44520             | 44520             |
|                             | IX           | 84    | 106   | 5     | 44520        |                          |                                  |                         |                |                      | 44520             | 44520             |
|                             | X            | 84    | 106   | 5     | 44520        |                          |                                  |                         |                |                      | 44520             | 44520             |
|                             | V            | 84    | 25    | 3     | 6300         | 6300                     | 1260                             | 5040                    |                |                      |                   | 5040              |
|                             | VI           | 84    | 25    | 5     | 10500        | 10500                    | 2100                             | 8400                    |                |                      |                   | 8400              |
|                             | VII          | 84    | 25    | 5     | 10500        | 10500                    | 2100                             | 8400                    |                |                      |                   | 8400              |
|                             | VIII         | 84    | 25    | 5     | 10500        | 10500                    | 2100                             | 8400                    |                |                      |                   | 8400              |
|                             | IX           | 84    | 25    | 5     | 10500        | 10500                    | 2100                             | 8400                    |                |                      |                   | 8400              |
|                             | X            | 84    | 25    | 5     | 10500        | 10500                    | 2100                             | 8400                    |                |                      |                   | 8400              |
|                             | <b>TOTAL</b> |       |       |       |              | <b>58800</b>             | <b>11760</b>                     | <b>47040</b>            | <b>22008</b>   | <b>33012</b>         | <b>249312</b>     | <b>351372</b>     |





| Section            | Bench | L (m) | W (m) | D (m) | Volume in m3 | Total Reserves ROM in m3 | Black Granite 20% Recovery in m3 | Granite Waste 80% in m3 | Top soil in m3 | Weathered Rock in m3 | Side Burden in m3 | Total Waste in m3 |
|--------------------|-------|-------|-------|-------|--------------|--------------------------|----------------------------------|-------------------------|----------------|----------------------|-------------------|-------------------|
| XY-EF              | I     | 124   | 143   | 2     | 35464        |                          |                                  |                         | 35464          |                      |                   | 35464             |
|                    | II    | 124   | 143   | 3     | 53196        |                          |                                  |                         |                | 53196                |                   | 53196             |
|                    | V     | 108   | 118   | 5     | 63720        |                          |                                  |                         |                |                      | 63720             | 63720             |
|                    | VI    | 124   | 118   | 5     | 73160        |                          |                                  |                         |                |                      | 73160             | 73160             |
|                    | VII   | 124   | 118   | 5     | 73160        |                          |                                  |                         |                |                      | 73160             | 73160             |
|                    | VIII  | 124   | 118   | 5     | 73160        |                          |                                  |                         |                |                      | 73160             | 73160             |
|                    | IX    | 124   | 118   | 5     | 73160        |                          |                                  |                         |                |                      | 73160             | 73160             |
|                    | X     | 124   | 118   | 5     | 73160        |                          |                                  |                         |                |                      | 73160             | 73160             |
|                    | V     | 108   | 25    | 5     | 13500        | 13500                    | 2700                             | 10800                   |                |                      |                   | 10800             |
|                    | VI    | 124   | 25    | 5     | 15500        | 15500                    | 3100                             | 12400                   |                |                      |                   | 12400             |
|                    | VII   | 124   | 25    | 5     | 15500        | 15500                    | 3100                             | 12400                   |                |                      |                   | 12400             |
|                    | VIII  | 124   | 25    | 5     | 15500        | 15500                    | 3100                             | 12400                   |                |                      |                   | 12400             |
|                    | IX    | 124   | 25    | 5     | 15500        | 15500                    | 3100                             | 12400                   |                |                      |                   | 12400             |
|                    | X     | 124   | 25    | 5     | 15500        | 15500                    | 3100                             | 12400                   |                |                      |                   | 12400             |
| <b>TOTAL</b>       |       |       |       |       |              | <b>91000</b>             | <b>18200</b>                     | <b>72800</b>            | <b>35464</b>   | <b>53196</b>         | <b>429520</b>     | <b>590980</b>     |
| <b>GRAND TOTAL</b> |       |       |       |       |              | <b>236050</b>            | <b>47210</b>                     | <b>188840</b>           | <b>80992</b>   | <b>121488</b>        | <b>974687</b>     | <b>1366007</b>    |

|                              |   |                       |
|------------------------------|---|-----------------------|
| Topsoil                      | = | 80992m <sup>3</sup>   |
| Weathered rock               | = | 121488m <sup>3</sup>  |
| Sideburden                   | = | 974687m <sup>3</sup>  |
| Total Reserves ROM           | = | 236050m <sup>3</sup>  |
| Black Granite Reserves @ 20% | = | 47210m <sup>3</sup>   |
| Granite Waste @ 80%          | = | 188840m <sup>3</sup>  |
| Total Waste                  | = | 1366007m <sup>3</sup> |
| Granite waste ratio:         | = | 1:28.93               |



**MINEABLE RESERVES:**

Table -5

| GRANITE MINEABLE RESERVES |              |       |       |       |              |                          |                                  |                         |                |                      |                   |                   |
|---------------------------|--------------|-------|-------|-------|--------------|--------------------------|----------------------------------|-------------------------|----------------|----------------------|-------------------|-------------------|
| Section                   | Bench        | L (m) | W (m) | D (m) | Volume in m3 | Total Reserves ROM in m3 | Black Granite 20% Recovery in m3 | Granite Waste 80% in m3 | Top soil in m3 | Weathered Rock in m3 | Side Burden in m3 | Total Waste in m3 |
| XY-AB                     | I            | 88    | 90    | 2     | 15840        |                          |                                  |                         | 15840          |                      |                   | 15840             |
|                           | II           | 86    | 86    | 3     | 22188        |                          |                                  |                         |                | 22188                |                   | 22188             |
|                           | IV           | 57    | 30    | 5     | 8550         |                          |                                  |                         |                |                      | 8550              | 8550              |
|                           | V            | 73    | 50    | 5     | 18250        |                          |                                  |                         |                |                      | 18250             | 18250             |
|                           | VI           | 68    | 40    | 5     | 13600        |                          |                                  |                         |                |                      | 13600             | 13600             |
|                           | VII          | 63    | 30    | 5     | 9450         |                          |                                  |                         |                |                      | 9450              | 9450              |
|                           | VIII         | 58    | 20    | 5     | 5800         |                          |                                  |                         |                |                      | 5800              | 5800              |
|                           | IX           | 53    | 10    | 5     | 2650         |                          |                                  |                         |                |                      | 2650              | 2650              |
|                           | III          | 18    | 1     | 5     | 90           | 90                       | 18                               | 72                      |                |                      |                   | 72                |
|                           | IV           | 57    | 25    | 5     | 7125         | 7125                     | 1425                             | 5700                    |                |                      |                   | 5700              |
|                           | V            | 73    | 25    | 5     | 9125         | 9125                     | 1825                             | 7300                    |                |                      |                   | 7300              |
|                           | VI           | 68    | 25    | 5     | 8500         | 8500                     | 1700                             | 6800                    |                |                      |                   | 6800              |
|                           | VII          | 63    | 25    | 5     | 7875         | 7875                     | 1575                             | 6300                    |                |                      |                   | 6300              |
|                           | VIII         | 58    | 25    | 5     | 7250         | 7250                     | 1450                             | 5800                    |                |                      |                   | 5800              |
|                           | IX           | 53    | 25    | 5     | 6625         | 6625                     | 1325                             | 5300                    |                |                      |                   | 5300              |
|                           | X            | 48    | 25    | 5     | 6000         | 6000                     | 1200                             | 4800                    |                |                      |                   | 4800              |
|                           | <b>TOTAL</b> |       |       |       |              | <b>52590</b>             | <b>10518</b>                     | <b>42072</b>            | <b>15840</b>   | <b>22188</b>         | <b>58300</b>      | <b>138400</b>     |
| XY-CD                     | I            | 84    | 80    | 2     | 13440        |                          |                                  |                         | 13440          |                      |                   | 13440             |
|                           | II           | 84    | 76    | 3     | 19152        |                          |                                  |                         |                | 19152                |                   | 19152             |
|                           | V            | 84    | 45    | 3     | 11340        |                          |                                  |                         |                |                      | 11340             | 11340             |
|                           | VI           | 84    | 35    | 5     | 14700        |                          |                                  |                         |                |                      | 14700             | 14700             |
|                           | VII          | 84    | 25    | 5     | 10500        |                          |                                  |                         |                |                      | 10500             | 10500             |
|                           | VIII         | 84    | 15    | 5     | 6300         |                          |                                  |                         |                |                      | 6300              | 6300              |
|                           | IX           | 84    | 5     | 5     | 2100         |                          |                                  |                         |                |                      | 2100              | 2100              |
|                           | V            | 84    | 25    | 3     | 6300         | 6300                     | 1260                             | 5040                    |                |                      |                   | 5040              |
|                           | VI           | 84    | 25    | 5     | 10500        | 10500                    | 2100                             | 8400                    |                |                      |                   | 8400              |
|                           | VII          | 84    | 25    | 5     | 10500        | 10500                    | 2100                             | 8400                    |                |                      |                   | 8400              |
|                           | VIII         | 84    | 25    | 5     | 10500        | 10500                    | 2100                             | 8400                    |                |                      |                   | 8400              |
|                           | IX           | 84    | 25    | 5     | 10500        | 10500                    | 2100                             | 8400                    |                |                      |                   | 8400              |
|                           | X            | 84    | 20    | 5     | 8400         | 8400                     | 1680                             | 6720                    |                |                      |                   | 6720              |
|                           | <b>TOTAL</b> |       |       |       |              | <b>56700</b>             | <b>11340</b>                     | <b>45360</b>            | <b>13440</b>   | <b>19152</b>         | <b>44940</b>      | <b>122892</b>     |



| Section            | Bench | L (m) | W (m) | D (m) | Volume in m <sup>3</sup> | Total Reserves ROM in m <sup>3</sup> | Black Granite 20% Recovery in m <sup>3</sup> | Granite Waste 80% in m <sup>3</sup> | Top soil in m <sup>3</sup> | Weathered Rock in m <sup>3</sup> | Side Burden in m <sup>3</sup> | Total Waste in m <sup>3</sup> |
|--------------------|-------|-------|-------|-------|--------------------------|--------------------------------------|----------------------------------------------|-------------------------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|
| XY-EF              | I     | 108   | 85    | 2     | 18360                    |                                      |                                              |                                     | 18360                      |                                  |                               | 18360                         |
|                    | II    | 106   | 81    | 3     | 25758                    |                                      |                                              |                                     |                            | 25758                            |                               | 25758                         |
|                    | V     | 103   | 50    | 5     | 25750                    |                                      |                                              |                                     |                            |                                  | 25750                         | 25750                         |
|                    | VI    | 98    | 40    | 5     | 19600                    |                                      |                                              |                                     |                            |                                  | 19600                         | 19600                         |
|                    | VII   | 93    | 30    | 5     | 13950                    |                                      |                                              |                                     |                            |                                  | 13950                         | 13950                         |
|                    | VIII  | 88    | 20    | 5     | 8800                     |                                      |                                              |                                     |                            |                                  | 8800                          | 8800                          |
|                    | IX    | 83    | 10    | 5     | 4150                     |                                      |                                              |                                     |                            |                                  | 4150                          | 4150                          |
|                    | V     | 103   | 25    | 5     | 12875                    | 12875                                | 2575                                         | 10300                               |                            |                                  |                               | 10300                         |
|                    | VI    | 98    | 25    | 5     | 12250                    | 12250                                | 2450                                         | 9800                                |                            |                                  |                               | 9800                          |
|                    | VII   | 93    | 25    | 5     | 11625                    | 11625                                | 2325                                         | 9300                                |                            |                                  |                               | 9300                          |
|                    | VIII  | 88    | 25    | 5     | 11000                    | 11000                                | 2200                                         | 8800                                |                            |                                  |                               | 8800                          |
|                    | IX    | 83    | 25    | 5     | 10375                    | 10375                                | 2075                                         | 8300                                |                            |                                  |                               | 8300                          |
|                    | X     | 78    | 25    | 5     | 9750                     | 9750                                 | 1950                                         | 7800                                |                            |                                  |                               | 7800                          |
| <b>TOTAL</b>       |       |       |       |       |                          | <b>67875</b>                         | <b>13575</b>                                 | <b>54300</b>                        | <b>18360</b>               | <b>25758</b>                     | <b>72250</b>                  | <b>170668</b>                 |
| <b>GRAND TOTAL</b> |       |       |       |       |                          | <b>177165</b>                        | <b>35433</b>                                 | <b>141732</b>                       | <b>47640</b>               | <b>67098</b>                     | <b>175490</b>                 | <b>431960</b>                 |

|                              |   |                      |
|------------------------------|---|----------------------|
| Topsoil                      | = | 47640m <sup>3</sup>  |
| Weathered rock               | = | 67098m <sup>3</sup>  |
| Sideburden                   | = | 175490m <sup>3</sup> |
| Total Reserves ROM           | = | 177165m <sup>3</sup> |
| Black Granite Reserves @ 20% | = | 35433m <sup>3</sup>  |
| Granite Waste @ 80%          | = | 141732m <sup>3</sup> |
| Total Waste                  | = | 431960m <sup>3</sup> |
| Granite Waste ratio          | = | 1:12.19              |





The geological resources computed based on the geological cross sections up to the economically workable depth of 45.0m from the top surface of the area wise (2.0m Topsoil + 3.0m Weathered rock + 40.0m Black Granite) works out to 47210m<sup>3</sup> (20% recovery) cubic meters (Table-4) and mineable reserves have been computed as 35433m<sup>3</sup> (Table-5) at the rate of 20% recovery upto a depth of 45.0m depth (2.0m Topsoil + 3.0m Weathered rock + 40.0m Black Granite).

The mineable reserve is found out by deducting the locked up area in safety distance all along the perimeter of the lease boundaries. Proved & possible reserves are categorized up to 45.0m (2.0m Topsoil + 3.0m Weathered rock + 40.0m Black Granite).

The Black Granite body occurring in this area exhibits more or less uniform color and texture and sold in par with commercial granite deposit. If any variations occur locally during mining such as cracks flaws and patches, the defective area is removed during dressing & marketed. The deposit is uniform and no gradational change is noticed except some shear, cracks, xenoliths and slender pegmatite veins.

#### 4.0 MINING

Under the regulation 106(2)(b) of the Metallurgical Mines Regulation 1961, in all open cast mining, the bench height should not exceed 5.0m and bench width should not be less than bench height. The slope of the bench should not exceed 60° from horizontal.

Due to the prevailing difficulties in mining granite dimensional stone, it is proposed to obtain relaxation to the provisions of the above regulation from the Director of Mines Safety Chennai for which necessary provision is available with the Regulation 106 (2)(b) of the Metallurgical Mines Regulation 1961.

The production of Black Granite dimensional stone is contrary to the method of mining of other major minerals.

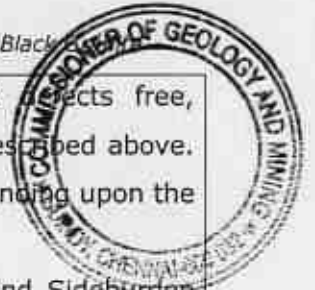
The following methods are familiar with the production of Black Granite dimensional stone:

**PRIMARY CUTTING:** By adopting the method of Diamond wire cutting considerable volume of the Black granite dimensional stone is carefully removed by splitting from the parent rock. Special care is being taken to avoid any visibly seen defects such as cracks.

This liberation of huge volume of granite body from the parent rock is called "primary cutting". This huge portion is further split into several blocks of desirable dimension.

Hydraulic cranes are used to lift the blocks splitted and shifted to the dressing yard for further processing.

Skilled laborers will be engaged for removing the defective portions and dressing them in to dimensional blocks by manual methods using feather and wedges and chiseling respectively.



Under the continuous supervision of experienced personals the defects free, dimensional stone of different sizes are thus produced by the method as described above. The marketable grade of Black granite dimensional stone is segregated depending upon the need of customers.

The waste materials like granite waste, weathered rock, Topsoil and Sideburden generated during quarrying activity will be taken in tippers and proposed to dumped in the western and Southeastern side of the lease applied area. (Plate No. V and VI) for the first 5 years.

The excavated top soil will be utilized for afforestation and construction of bunds and haul roads.

## 4.1 YEAR WISE DEVELOPMENT AND PRODUCTION FOR THE FIRST FIVE YEARS

Table -6

| YEARWISE DEVELOPMENT AND PRODUCTION |         |       |       |       |       |              |                          |                                  |                         |                |                      |                   |                   |
|-------------------------------------|---------|-------|-------|-------|-------|--------------|--------------------------|----------------------------------|-------------------------|----------------|----------------------|-------------------|-------------------|
| Year                                | Section | Bench | L (m) | W (m) | D (m) | Volume in m3 | Total Reserves ROM in m3 | Black Granite 20% Recovery in m3 | Granite Waste 80% in m3 | Top soil in m3 | Weathered Rock in m3 | Side Burden in m3 | Total Waste in m3 |
| I - YEAR                            | XY-AB   | I     | 88    | 90    | 2     | 15840        |                          |                                  |                         | 15840          |                      |                   | 15840             |
|                                     |         | II    | 84    | 86    | 3     | 21672        |                          |                                  |                         |                | 21672                |                   | 21672             |
|                                     |         | IV    | 57    | 30    | 5     | 8550         |                          |                                  |                         |                |                      | 8550              | 8550              |
|                                     |         | III   | 18    | 1     | 5     | 90           | 90                       | 18                               | 72                      |                |                      |                   | 72                |
|                                     |         | IV    | 57    | 25    | 5     | 7125         | 7125                     | 1425                             | 5700                    |                |                      |                   | 5700              |
|                                     |         | TOTAL |       |       |       |              | 7215                     | 1443                             | 5772                    | 15840          | 21672                | 8550              | 51834             |
| II - YEAR                           | XY-AB   | V     | 68    | 50    | 5     | 17000        |                          |                                  |                         |                |                      | 17000             | 17000             |
|                                     |         | V     | 68    | 25    | 5     | 8500         | 8500                     | 1700                             | 6800                    |                |                      |                   | 6800              |
|                                     |         | TOTAL |       |       |       |              | 8500                     | 1700                             | 6800                    |                |                      | 17000             | 23800             |
| III - YEAR                          | XY-AB   | VI    | 58    | 40    | 5     | 11600        |                          |                                  |                         |                |                      | 11600             | 11600             |
|                                     |         | VI    | 58    | 25    | 5     | 7250         | 7250                     | 1450                             | 5800                    |                |                      |                   | 5800              |
|                                     |         | TOTAL |       |       |       |              | 7250                     | 1450                             | 5800                    |                |                      | 11600             | 17400             |
| IV - YEAR                           | XY-AB   | VII   | 48    | 30    | 5     | 7200         |                          |                                  |                         |                |                      | 7200              | 7200              |
|                                     |         | VII   | 48    | 25    | 5     | 6000         | 6000                     | 1200                             | 4800                    |                |                      |                   | 4800              |
|                                     |         | TOTAL |       |       |       |              | 6000                     | 1200                             | 4800                    |                |                      | 7200              | 12000             |
| V- YEAR                             | XY-AB   | VIII  | 38    | 20    | 5     | 3800         |                          |                                  |                         |                |                      | 3800              | 3800              |
|                                     |         | IX    | 28    | 10    | 5     | 1400         |                          |                                  |                         |                |                      | 1400              | 1400              |
|                                     |         | VIII  | 38    | 25    | 5     | 4750         | 4750                     | 950                              | 3800                    |                |                      |                   | 3800              |
|                                     |         | IX    | 28    | 25    | 5     | 3500         | 3500                     | 700                              | 2800                    |                |                      |                   | 2800              |
|                                     |         | X     | 18    | 25    | 5     | 2250         | 2250                     | 450                              | 1800                    |                |                      |                   | 1800              |
|                                     |         | TOTAL |       |       |       |              | 10500                    | 2100                             | 8400                    |                |                      | 5200              | 13600             |
| GRAND TOTAL                         |         |       |       |       |       | 39465        | 7893                     | 31572                            | 15840                   | 21672          | 49550                | 118634            |                   |







|                                             |                        |
|---------------------------------------------|------------------------|
| Topsoil                                     | = 15840m <sup>3</sup>  |
| Weathered rock                              | = 21672m <sup>3</sup>  |
| Sideburden                                  | = 49550m <sup>3</sup>  |
| Total Reserves ROM first five years         | = 39465m <sup>3</sup>  |
| Black Granite 20% Recovery first five years | = 7893m <sup>3</sup>   |
| Granite waste @ 80%                         | = 31572m <sup>3</sup>  |
| Total Waste                                 | = 118634m <sup>3</sup> |
| Granite Waste ratio                         | = 1:15.03              |

#### Estimated Life of the quarry

|                              |                           |
|------------------------------|---------------------------|
| Mineable ROM                 | = 177165m <sup>3</sup>    |
| Mineable Reserves @ 20%      | = 35433m <sup>3</sup>     |
| Average production per year  | = 1579m <sup>3</sup>      |
| Estimated Life of the Quarry | = 35433/1579 = 22.0 years |

#### Life = 22 years

The year wise quantum of work proposed and the details of estimation of production quantity and generation of waste are furnished in Table-6 with reference to Year wise Development and Production plan (Plate No.V).

The quarrying block is shown in such a way to meet the average annual production. The average annual production for the first five years is 1579m<sup>3</sup> at the rate of 20% recovery. (Refer Table No.6).

For achieving this rate of production a total quarrying block with dimension of 92.0m(L)x 90.0m(W)x45.0m(D) of 1<sup>st</sup> to 5<sup>th</sup> year is selected from the quarry Northwestern side of the lease applied area. More details of the five year wise production parameter are explained with bench length, width and height in Plate No.V & Table No.6.

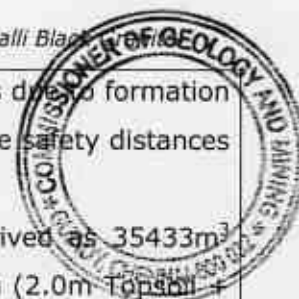
#### 4.2 PROPOSED RATE OF PRODUCTION WHEN THE QUARRY IS FULLY DEVELOPED

The proposed rate of production when the quarry is fully developed is 1579m<sup>3</sup> per annum and 7893m<sup>3</sup> for the first five years @ 20% recovery. (Table-6)

#### 4.3 MINEABLE RESERVES AND ANTICIPATED LIFE OF QUARRY

The Black granite is deep seated in nature. The depth persistence of the Black granite will be beyond the economically workable depth. The method of extraction of rock mass from Black granite rock is highly expensive affair at greater depths.

An optimum depth of 45.0m (2.0m Topsoil + 3.0m Weathered rock + 40.0m Black Granite) for entire lease period has been established as economically viable depth. Eventually this depth is the optimum depth for safe and scientific quarrying.



The mineable reserves are calculated by excluding the mining loss due to formation of benches, ultimate depth of mine, the mineral reserve held up within the safety distances all along the boundary of quarry lease applied area.

The mineable reserves for this Black Granite quarry is thus arrived as 35433m<sup>3</sup> (Table-5) and ROM 177165 m<sup>3</sup> (Table-5) for an assumed depth of 45.0m (2.0m Topsoil + 3.0m Weathered rock + 40.0m Black Granite). The details of estimation of five years development plan (plate no. V) is furnished in Table-6.

The average rate of production of Black Granite from this quarry is 1579m<sup>3</sup> per year and mineable reserves 35433m<sup>3</sup>.

Based on the above, and taking into consideration of the available Mineable Reserves, the life of quarry will be about 22 years, if the quarry is being worked continuously with prevailing market conditions and according to this mining plan.

#### 4.3.1 CONCEPTUAL MINING PLAN

Conceptual mining plan is prepared with an object of long term systematic development of benches; lay outs, selection of permanent ultimate pit limit, depth of quarrying and ultimate pit, selection of sites for construction of infrastructure etc.

The ultimate pit size is designed based on certain practical parameters such as economical depth of quarrying, safety zones, permissible area etc. The ultimate pit dimensions of the quarry are given below. (Please refer Plate No.VIII).

| ULTIMATE PIT DIMENSION |            |       |
|------------------------|------------|-------|
| Length                 | Width(Avg) | Depth |
| 280m                   | 85m        | 45m   |

However, during extraction of blocks each bench will be of 5 mts height and width with vertical slope for proper dimensional cutting. The quantum of excavation is estimated to be 177165m<sup>3</sup> for depth of 45.0m (2.0m Topsoil + 3.0m Weathered rock + 40.0m Black granite) (refer Table-5).

The waste is estimated as 141732m<sup>3</sup>, (Table-5) and marketable granite blocks as 35433m<sup>3</sup>. (Plate No-VIII-A). An earth bund of 1m height will be formed around the quarry lease applied boundary over the topsoil.

Waste dump - the excavated granite waste and weathered rock will be backfilled at the end of quarry.





#### 4.4.0 METHOD OF MINING

##### 4.4.1 OPEN CAST WORKING

In accordance with the Regulation 106 (2) (b) of the Metalliferous Mines Regulations 1961, in all open cast working where the ore body forms hard rock, the working faces and sides should be adequately benched and sloped; a bench height not exceeding 5m and a bench width not less than the bench height has to be maintained. The slope angle of such benches and sides should not exceed 60° from horizontal.

However, observance of these statutory provisions in granite dimensional stone mining is seldom possible due to the field difficulties and technical reasons as below:

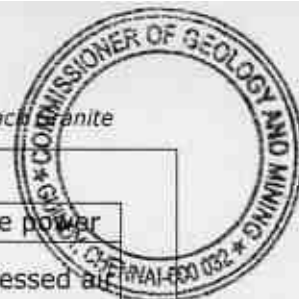
1. Complying the statutory parameters, series blasting may not be possible due to formation of benches and sides. Special care to be taken for the production of undamaged rectangular dimensional blocks. Due to the generation of blasting cracks the marketable granite stone may get spoiled.
2. The 60° slope formation poses practical difficulty in forming benches within the granite deposit. The granite portion confined within the 60° while extracted as blocks will generate mineral waste while shaping into rectangular blocks.
3. The size of the granite blocks extracted plays a major role in the industry. Huge blocks with measurements up to 3 m x 2 m x 2 m is not at all possible with a moving bench of 5m height. Production of such huge blocks in turn increases the recovery and reduces the mineral waste during dressing. Smaller size of blocks of certain varieties of granite are not marketable now-a-days (or) has a less commercial value.
4. The problem of mineral locked up prevails during the formation of too many benches with more height and the width equal to the height.

To facilitate economical mining operations, it is proposed to obtain relaxation to the provisions of Regulation 106 (2) (b) Metalliferous Mines Regulations 1961 up to a bench parameter of 5.0m height & 5.0m width with vertical faces.

Since the entire terrain is made up of hard rock, compact sheet and possess high stability on slope even at higher vertical angles the proposed bench parameters may not be detrimental to the DGMS.

##### 4.4.2 EXTENT OF MECHANIZATION

The following machineries are utilized on rental basis for the development and production work at this quarry.



## I. DRILLING &amp; CUTTING MACHINE

| S.No | Type                      | Nos | Dia Hole mm | Size Capacity         | Make        | Motive power     |
|------|---------------------------|-----|-------------|-----------------------|-------------|------------------|
| 1    | Jack hammer & Accessories | 6   | 32          | 1.2m to 6m            | Atlas Copco | Compressed air   |
| 2    | Compressor                | 2   |             | 400 psi               | Atlas Copco | Diesel Drive     |
| 3    | Diamond wire saw          | 1   | -           | 30m <sup>3</sup> /Day | Optima      | Diesel Generator |
| 4    | Gen set                   | 1   | -           | Powerica              | -           | CP 125 D5P (H.P) |

## II. LOADING EQUIPMENT

| S.No. | Type      | Nos | Capacity | Make         | Motive Power |
|-------|-----------|-----|----------|--------------|--------------|
| 1     | Excavator | 1   | 300      | Tata Hitachi | Diesel Drive |

## III. HAULAGE WITHIN THE QUARRY &amp; TRANSPORT EQUIPMENT

| S.No. | Type    | Nos | Capacity  | Make | Motive Power |
|-------|---------|-----|-----------|------|--------------|
| 1     | Tippers | 3   | 10 tonnes | Tata | Diesel Drive |

## IV. TRANSPORT FROM THE QUARRY HEAD TO DESTINATION

The Raw blocks from Quarry head is transported to the Dressing Site, then to desired destination by trucks or by trailers.

## V. MISCELLANEOUS:

Apart from the above the following tools and tackles are required for quarry operation.

## A. For operation

The operation of granite quarry requires the following loose tools material and have to be kept sufficiently in stock for non - interruption of the quarry work.

1. Drill rods - 0.3m ,0.4m , 0.5 m ,0.6m , 0.75m ,1.65m, 2.25m, 3m & 3.6m.
2. Steel Alloy chains of sufficient length of 12mm, 16mm and 18mm, sizes.
3. 'D' shackets to link the chain lengths.
4. Rubber hose of required length.
5. Hose clamps to link the compressor delivery hoses.
6. Feather and wedges of 6" and 12" dia sizes utilize for splitting the block from the parent rock. This is an important tool in the operation of a quarry.
7. Crow bars.
8. Spades.
9. Sludge Hammer
10. Iron Pans



11. Pitcher Hammer
12. Chisels.
13. Consumables, such as diesel, Hydraulic oil, grease, abrasive wheels, welding Machines etc.
14. Stock of essential spare parts of machinery.

In addition to the above diamond wire saw equipment with accessories are required to remove rock from parent body rapidly with minimum damage.

The above machineries are adequate to meet out the simultaneous development and production schedule drawn out in this mining plan.

## 5. BLASTING

During future development of quarrying, removal of Top soil will be done by excavator and mild blasting with explosives in holes drilled by jack hammer of 32mm dia especially. No deep hole blasting is proposed. Portable magazine has been proposed to install in the ear marked places. Authorized explosive dealers supply the explosive at site as per the requirement.

## 6.0 MINE DRAINAGE

Quarry operation is confined to 45m which is well above the water table which is 65m in summer and 55 during rainy season. This water table is observed in nearby wells. Even during rainy season if there is any water seepage the same may be drained out using diesel pumps and will be utilized for afforestation area.

## 7.0 STACKING OF MINERAL WASTE AND DISPOSAL OF WASTE

### a) Topsoil:

The topsoil of the lease area is  $15840\text{m}^3$ . The Top Soil will be temporally dumped in Southeastern side of the lease applied area and it will be utilized for construction of bunds, road and afforestation purpose.

### b) Weathered Rock:

The Weathered Rock of the lease area is  $21672\text{m}^3$  will be temporally dumped in the western side of the lease area.

### c) Side burden:

The Side burden of the lease area is  $49550\text{m}^3$ . The Side burden will be temporally dumped in Southeastern side of the lease applied area.

### c) Granite waste:

First five years Black Granite waste forms nearly 80% of ROM and the quantity of waste during the first five years will be around  $31572\text{m}^3$ . These waste materials will be proposed to dump in the Western side of the lease applied area.



d) Land chosen for disposal of waste:

The Proposed granite waste(80%), Top soil, Side burden and weathered rock will be dumped in the Western & Southeastern side of the lease applied area which will also accommodate the waste generated during the first five years. (Plate No. V and VI).

e) Manner of disposal of waste:

As and when there is accumulation of waste, the same is loaded into the tipper by loading machines and dumped in the respective places ear-marked for the purpose.

The waste management plan with reference to the quantum of waste generated (Table No-6) is shown in Mine layout and Afforestation plan (Plate No.VI).

## 8.0 USE OF THE GRANITE STONE

The quarried Black Granite blocks are either exported as raw blocks or processed as value added products such as slabs, tiles, fancy items, Monuments, precision surface plates for engineering application.

The export market for granite is china, European Country, North America, Middle East, Far East, Japan, Taiwan & Canada besides catering local markets.

## 9.0 QUALITY CONTROL

The Black Granite deposit occurring in this quarry shows uniform quality throughout and hence quarried and marketed as a single variety.

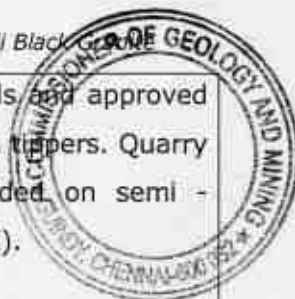
The excavated blocks are carefully inspected for any natural defects such as joints, cracks, xenoliths growth etc and such defects are removed manually using feather and wedges and the blocks are then shaped into perfect rectangular dimensional stone blocks by chiseling. Different price for each quality material have been fixed and the entire production quantity is marketed accordingly.

## 10. SURFACE TRANSPORT

The mode of transport of the granite blocks produced and marketed is by road to various customer destinations and granite processing units located at different parts of the country. The Black Granite blocks approved for export market are shipped from Chennai Harbour to various countries and if required the blocks may be shifted to Tuticorin Harbour which depend upon the exporters' destination.

## 11. SITE SERVICES

The simple methods adopted and the limited scale of activities involved in granite dimensional stone quarrying does not require high tension electric power supply or huge workshop facilities. The quarry operation is restricted to one general shift during day time only. Machinery repair works are attended at Pennagaram (14kms-NE) town. Minor repairs carried out by applicant staff at the quarry site itself.

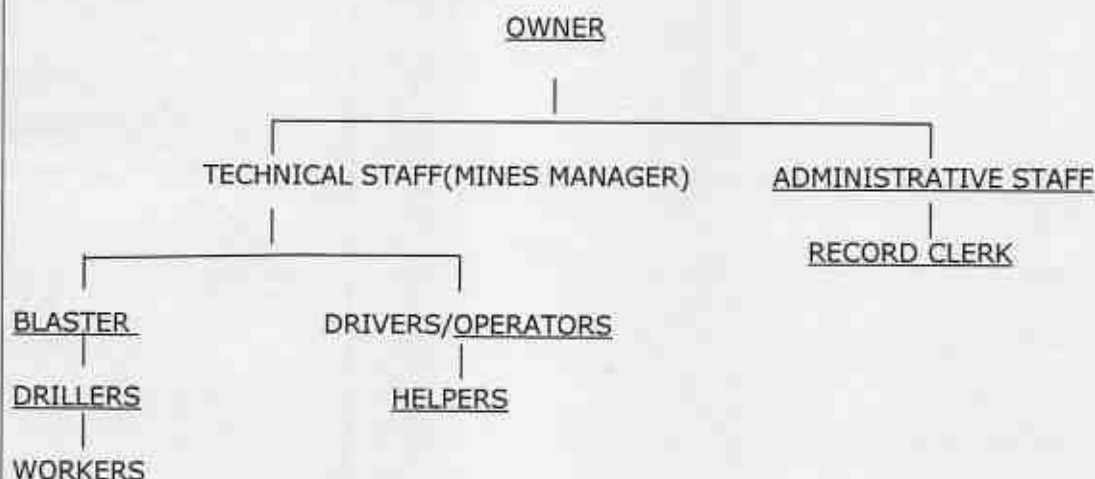


Potable drinking water is supplied from the nearby community wells and approved water vender can be transported to the work site through tanker placed on tippers. Quarry office, first-aid room, store room, rest shed, toilet etc, will be provided on semi-permanent structures within the quarry lease applied area (Plate No - V - IX).

## 12. EMPLOYMENT POTENTIAL

The man power is proposed for the Black Granite Quarry to look after and carryout the day-to-day quarrying activities, and achieves targeted production duly comply with the statutory provisions of the Quarry is as summarized below:

### ORGANISATION CHART



The strength of man power requirement is proportionate to the proposed production for the Black Granite Quarry in the referred area as detailed below:

|                                                             |   |               |
|-------------------------------------------------------------|---|---------------|
| 1. Mines Manager                                            | : | 1             |
| 2. Record Clerk                                             | : | 1             |
| Total                                                       | : | <b>2 Nos.</b> |
| <u>Highly skilled, Skilled, Semi-skilled and Unskilled:</u> |   |               |
| Supervisor Cum Blaster                                      | : | 1             |
| <u>Skilled:</u>                                             |   |               |
| Compressor and Wagon Drill operators                        | : | 2             |
| Drillers / Workers                                          | : | 8             |
| Excavator / Rock Breaker Operators                          | : | 4             |
| Vehicle Drivers                                             | : | 2             |
| Total                                                       | : | <b>17Nos</b>  |
| <u>Semi-skilled:</u>                                        |   |               |
| Watchman                                                    | : | 2             |
| Total                                                       | : | <b>2 Nos</b>  |
| <u>Unskilled - Cleaner</u>                                  |   |               |
|                                                             | : | 4             |
| Total                                                       | : | <b>4 Nos</b>  |
| <b>Grand Total</b>                                          | : | <b>25 Nos</b> |





The man power strength is subject to the extent of mechanizations. The above mentioned technical staff and administrative staff are to be considered to meet out the production schedule and to comply with the statutory provisions of the Mines Safety Regulations.

### **13.0 ENVIRONMENTAL MANAGEMENT PLAN**

#### **13.1 BASELINE INFORMATION**

The following observations are made for environmental management plan.

##### **I. EXISTING LAND USE PATTERNS:**

The quarry lease applied area is an undulated terrain with gentle slope towards Northwestern side and an altitude of the area is 422m RL. A Dolerite dyke intruded into the country rock discordantly with a trend of almost N20°W-S20°E with vertical dipping. The soil type of the area is red in nature and it is having a thickness of about 2.0m, weathered Rock is about 3.0m and below which massive formation may be encountered. The area receives 800 - 900 mm rainfall/annum and the ground water occurs at a depth of 65m in summer and 55m at rainy season. Villagers use water for drinking and other domestic purposes without any adverse health effect. Agricultural activities are carried out by utilizing well water (lift irrigation). The area experiences moderate climate and there is scanty growth of vegetation in and around the quarry lease applied area.

##### **II. WATER REGIME:**

Quarry operation is confined to 45m which is well above the water table which is 65m in summer and 55 during rainy season. This water table is observed in nearby wells. The water level would not be affected by the quarry operation. There is no lake, river or reservoir within 50m radius of the quarry lease applied area.

##### **III. FLORA AND FAUNA:**

The main crops are Neem, Mango, Palm, Julia flora, aspera, etc. In some places lift irrigation is carried out. There is no wild life, bird sanctuary, reserve or social forest within 500m radius of the quarry lease applied area.

##### **IV. CLIMATIC CONDITIONS:**

The prevailing climatic condition experienced in the quarry lease applied area is semi arid with maximum temperature up to 40°C in summer is very dry and falls down to 25° C during winter seasons. The area receives 800 - 900mm rainfall per annum during both south west and north east monsoons.



#### V. HUMAN SETTLEMENT:

There are few villages located within the radius of 5km from the quarry lease applied area. It is rural area with small hamlets scattered all around the area.

The approximate distance and population are given below.

Table -7.

| S.No | Name of the Village | Direction | Approximate Distance | Approximate population |
|------|---------------------|-----------|----------------------|------------------------|
| 1.   | Sigaralahalli       | North     | 3.0kms               | 300                    |
| 2.   | Moongilmaduvu       | East      | 3.0kms               | 350                    |
| 3.   | Sunchainatham       | South     | 1.3kms               | 250                    |
| 4.   | Madhukottai         | West      | 1.0kms               | 200                    |

Basic human welfare amenities such as health center, schools, communication facilities, commercial centers etc are available in Pennagaram town which is at a distance of about 14kms from towards North Eastern side of the lease applied area.

#### VI. PUBLIC BUILDINGS, MONUMENTS AND PLACES OF WORSHIPS:

There are no permanent structures like National Monuments, Places of Worship, Residential Areas and Places of Archaeological Interest within 300m radius from the area applied for quarrying lease.

#### 13.2 ENVIRONMENT IMPACT ASSESSMENT STATEMENT

The mining plan is proposed for production of Black Granite dimensional stone without involving deep hole drilling. Mild blasting is done to minimize the shattering effect. Such limited mining activity will not cause any impact adversely on environment as far as pollution of air, water and noise is concerned.

##### (a) Four Boundaries of the Lease applied area:

| Applied area in S.F. No. | Direction | S.F. Nos. | Classification            |
|--------------------------|-----------|-----------|---------------------------|
| 823(Part)                | North     | 810/1     | Government Poramboke Land |
|                          | East      | 824/4     | Patta land                |
|                          |           | 824/2     | Government Poramboke Land |
|                          | South     | 823(Part) | Patta land                |
|                          | West      | 811       | Government Poramboke Land |
| 824/3                    | North     | 824/9     | Patta land                |
|                          | East      | 824/6     | Patta land                |
|                          |           | 824/7     | Patta land                |
|                          |           | 824/8     | Government Poramboke Land |
|                          | South     | 825/2     | Government Poramboke Land |
|                          |           | 822       | Government Poramboke Land |
|                          | West      | 823(Part) | Patta land                |

**(b) Approach road facility:**

Approach road facility is available.

**(c) Environmental Aspects:**

The area applied for quarry lease is located in an Undulated terrain with gentle slope towards Northwestern side. The soil cover of the area is having thickness of 2.0mts. Hence, there is no chance for slope destabilization of the area. There is no fauna and flora of botanical importance is noticed there will be no chance for the degradation of environment and geology of the area due to the proposed quarrying activity.

**(d) Whether HACA Clearance has been obtained:**

The lease applied area Ajjanahalli Village of Pennagaram Taluk is not classified under hill area as per G.O.M.S.No.49 Housing & Urban Development (UD 22) Department dated 24.03.2003 and hence obtaining clearance from Hill area conservation authority does not arise.

**(e) PROPOSED ENVIRONMENT MANAGEMENT(EMP) FOR FIXED ASSET COST AND OPERATIONAL COST:****A.FIXED ASSET COST:**

| SL.No        | Description                                            | Amount (Rs)        |
|--------------|--------------------------------------------------------|--------------------|
| 1            | Land cost(Tender amount for Government Poramboke Land) | 4,10,00,000        |
| 2            | Labour shed                                            | 3,00,000           |
| 3            | Sanitary facility                                      | 1,10,000           |
| 4            | Fencing cost                                           | 90,000             |
| <b>Total</b> |                                                        | <b>4,15,00,000</b> |

**B.OPERATIONAL COST:**

| SL.No        | Description                 | Approximate Amount (Rs) |
|--------------|-----------------------------|-------------------------|
| 1            | Excavator                   | 70,00,000               |
| 2            | Tippers                     | 80,00,000               |
| 3            | Wire saw                    | 8,00,000                |
| 4            | Compressor with loose tools | 20,00,000               |
| <b>Total</b> |                             | <b>1,78,00,000</b>      |



**C. EMP COST:**

| SL.No        | Description             | Approximate amount<br>(Rs.) |
|--------------|-------------------------|-----------------------------|
| 1            | Drinking water facility | 20,000                      |
| 2            | Safety kits             | 80,000                      |
| 3            | Water sprinkling        | 70,000                      |
| 4            | Afforestation           | 30,000                      |
| 5            | Water quality test      | 40,000                      |
| 6            | Air quality test        | 40,000                      |
| 7            | Noise / Vibration test  | 40,000                      |
| <b>Total</b> |                         | <b>4,20,000</b>             |

**Total Project Cost (A+B+C) = Rs. 5,97,20,000/-**

### 13.3.0 ENVIRONMENT MANAGEMENT PLAN

#### 13.3.1 PROPOSAL FOR WASTE MANAGEMENT

The Top soil, weathered rock and the waste material generated during quarrying activity includes rock fragments of different sizes and waste chips (Rubble) during dressing of the blocks forms the total waste.

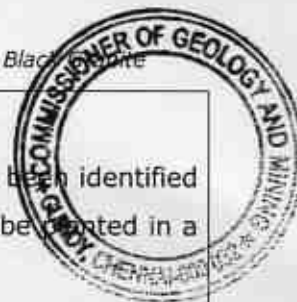
During the mining plan period (first five years) of quarry the total waste to be produced will be 118634m<sup>3</sup>. (Refer Table - 6).

The waste management plan with reference to the quantum of waste generated (Table - 6) is shown in Mine layout plan (Plate No. VI). The wastes will be dumped in the western and Southeastern side of the lease area.

The generated top soil during the quarrying period will be utilized for construction of bunds, road and afforestation purpose. The granite waste generated during the quarrying will be dumped in the demarcated western side of the lease area. Suitable specific trees to be grown over in such soil dumps will be identified with the help of agriculture experts to evolve proper afforestation plan.

#### 13.3.2 PROPOSAL FOR RECLAMATION OF LAND AFFECTED BY MINING ACTIVITIES DURING & AT THE END OF QUARRYING

The depth persistence of the granite body in this quarry is beyond the workable limits. In the proposed mining plan 45.0m depth (2.0m topsoil + 3.0m Weathered rock + 40.0m Black Granite) has been envisaged as workable depth for safe, systematic & economic mining. Hence after quarry reaches ultimate pit limit, proposed waste will also be used for Back-filling at the end of quarry lease. The quarried out pits will be protected by providing fencing with barbed wire.



### 13.3.3 PHASED PROGRAMME OF PLANTING TREES

The essential safety distance provided along the lease boundary has been identified to maintain afforestation. Appropriate species of Neem & Pungan trees will be planted in a phased manner as described below.

Table -8

| Year | No. of trees proposed to be planted | Name of the species | Survival rate expected in % | No. of trees expected to be grown |
|------|-------------------------------------|---------------------|-----------------------------|-----------------------------------|
| I    | 80                                  | Neem & Pungan       | 70                          | 56                                |
| II   | 80                                  | Neem & Pungan       | 70                          | 56                                |
| III  | 80                                  | Neem & Pungan       | 70                          | 56                                |
| IV   | 80                                  | Neem & Pungan       | 70                          | 56                                |
| V    | 80                                  | Neem & Pungan       | 70                          | 56                                |

Nearly 1500 Sq.m area is proposed for afforestation by planting 80 Nos. of Neem & Pungan trees during every year and expected growth is around 56 no. of Neem & Pungan trees at a survival rate of 70%. The afforestation plan is shown in Plate No.VI.

### 13.3.4 MEASURES FOR DUST SUPPRESSION:

Diamond wire saw cutting will minimize the shattering effect. As the granite rocks are quarried without involving deep hole drilling and mild blasting, generation of lumps, fines and dust are negligible. This quantum of quarrying activity will not generate the dust which is detrimental to the health of the persons employed. The approach roads and waste dumps will be sprinkled with water for the suppression of air borne dust from quarry on regular intervals using water tankers. Drilling of blast holes of 32 mm dia will be always under wet conditions to prevent flying of dusts. In the unloading points, water will be sprinkled through tippers to suppress dust. The drillers are provided with respirators in accordance with the Mines Regulations.

### 13.3.5 MEASURES TO MINIMIZE GROUND VIBRATION DUE TO BLASTING AND CHECK NOISE POLLUTION

Special care will be taken to minimize ground vibration due to blasting and check noise pollution. Shallow holes of 32 mm diameter will be drilled and conventional low explosives such as gun powder, ordinary safety fuse will be used for removal of side burden. Hence ground vibration and noise pollution will be minimal and restricted with the quarry workings. The blasting will be taken up at appointed timing and with sufficient caution to the public. The noise produced by diamond wire saw cutting will be negligible.



### 13.3.5.1 STABILIZATION AND VEGETATION OF DUMPS

There is a stable temporary dump even at higher slopes will be formed by the waste generation in the quarry which includes hard rock fragments of considerable size and irregular shape with varying angularity. To increasing the stability of the sides of the waste dumps suitable soil will be brought from outside and also used for planting trees over safety zone in a phased manner as discussed in chapter 13.3.3.

## 14.0 PROGRESSIVE MINE CLOSURE PLAN

In the Black Granite quarry operations the maximum depth proposed is 45.0m depth (2.0m topsoil + 3.0m Weathered rock + 40.0m Black Granite) for the entire life of quarrying operations.

The waste generated during the quarrying operation is proposed to be dumped in the western and southeastern side of the lease area.

After completion of quarry operation the quarried out land will be fenced and maintained with barbed wire to prevent inherent entry of the public and cattle's. Garland drains will be constructed around the quarry to prevent the surface run off of the rain water.

Afforestation and Green belt development will be maintained in all the boundaries, till the trees attain the stabilize level.

### Land use pattern

Table-9

| Description       | Present Area<br>(Ha.) | Area to be required<br>at the present Mining<br>Plan period (Ha) | End of life of<br>Quarrying Period<br>(Ha.) |
|-------------------|-----------------------|------------------------------------------------------------------|---------------------------------------------|
| Area under Quarry | 0.07.0                | 0.71.0                                                           | 2.21.0                                      |
| Dumps             | Nil                   | 0.71.0                                                           | 1.09.0                                      |
| Infrastructure    | Nil                   | 0.01.0                                                           | 0.01.0                                      |
| Roads             | Nil                   | 0.02.0                                                           | 0.02.0                                      |
| Green Belt        | Nil                   | 0.20.0                                                           | 0.96.0                                      |
| Unutilized Area   | 4.43.0                | 2.85.0                                                           | 0.21.0                                      |
| Grand Total       | 4.50.0                | 4.50.0                                                           | 4.50.0                                      |



### 15.0 MINERAL CONSERVATION AND DEVELOPMENT

The aspects of Granite Conservation and development is fully covered in this mining plan. The proposed working of the quarry to the maximum possible workable depth is focused towards the future plan. Recovery of the maximum saleable quality and quantity of Black Granite dimensional stones is ensured by proper supervision of experienced skilled technical personals. This quality control measures propagate full utilization of the consumer requirements.

By adopting systematic and scientific quarrying special care is taken to safeguard the material quarried in an efficient and economical manner.

### 16.0 STATUTORY PROVISIONS

The provisions of the Mines Act, Rules and Regulations and orders made there under shall be complied with, so that the safety of the mine, machinery and person will be well protected. Permission, relaxation or exemption wherever required for the safe and scientific quarrying of the deposit will be obtained from the Department of Mines Safety, Chennai. Any violation pointed out by the inspecting authorities shall be rectified as per the guidelines of the department.

Certified that this Mining Plan has been Prepared in Accordance with the Mines Act, Rules and Regulations and orders made there under and also in Conformity with the Rule 8- A of TNMMCR 1959 & Rule 12 of Granite Conservation and Development Rules, 1999.

*[Signature]*  
 R. Rajasekar, M.Sc.,  
 Recognised Qualified Person  
 Reg. No. RQP / CNN / 264 / 2015/A

*[Signature]*  
 COMMISSIONER  
 GEOLOGY AND MINING,  
 GUINDY, CHENNAI-600 032.

This Mining Plan is Approved  
 Subject to the Conditions/ Stipulation  
 Indicated in the Mining Plan Approval  
 Letter No./ 6164 / H 44 / 2020 Dated 05.05.23



ANNEXURE-1



Industries (MME-2) Department,  
Secretariat, Chennai - 600 009

**Letter No.274/MME.2/2021 - 1, Dated 23.02.2021**

From

Thiru N. Muruganandam, I.A.S.,  
Principal Secretary to Government.

To

Tvl. KMB Trading Company,  
3/50, Bangalore Main Road,  
Five Roads,  
Salem District - 636004.

Sir,

Sub: Mines and Minerals - Minor Mineral - Black Granite -  
Ajjanahalli Village - Pennagaram Taluk - Dharmapuri  
District - S.F.Nos.824/3 (2.11.5 hectares) and 823  
(Part) (2.38.5 hectares) - Over an extent of 4.50.0  
hectares of Government Poramboke land - Highest Bid  
amount offered by Tvl. KMB Trading Company, Salem  
District - Precise Area Communicated - Balance Lease  
Amount - Approved Mining Plan and Environmental  
Clearance - Called for.

- Ref: 1. Dharmapuri District Gazette Extraordinary Issue in  
English and Tamil No. 05 dated:03.09.2020.
2. Application of Highest Bidder of Tvl. KMB Trading  
Company, Salem on 29.09.2020.
3. From the District Collector, Dharmapuri Letter Roc  
No.176/2020 (Mines), dated 23.10.2020.
4. From the Director of Geology and Mining, File  
No.6164/MM4/2020, dated: 31.12.2020 and  
06.02.2021.

I am directed to state that in the references third and fourth cited,  
the District Collector, Dharmapuri and the Director of Geology and Mining  
have recommended to declare you as Successful bidder and to  
grant quarry lease for quarrying of Black Granite over an extent of  
4.50.0 hectares of Government Poramboke land in S.F.No.824/3  
(2.11.5 hectares) and 823 (Part) (2.38.5 hectares) in Ajjanahalli Village of  
Pennagaram Taluk, Dharmapuri District for a period of 20 years under  
rule 8-A of the Tamil Nadu Minor Mineral Concession Rules, 1959.

//P.T.O//





2. I am directed to declare you as successful bidder to grant quarry lease for quarrying of Black Granite over an extent of 4.50.0 hectares) of Government Poramboke land in S.F.No.824/3 (2.11.5 hectares and 823 (Part) (2.38.5 hectares) in Ajjanahalli Village of Pennagaram Taluk, Dharmapuri District for a period of 20 years under rule 8-A of the Tamil Nadu Minor Mineral Concession Rules, 1959 subject to the outcome of W.P.No.13811 of 2020 and W.M.P.No.17315 of 2020 and W.P.No.14092/2020.

3. In this connection, I am directed to request you to remit the balance lease amount of Rs.3,85,00,000/- in the District Treasury concerned and to submit the original challan to Government within a period of one month from the date of this communication and to submit the Approved Mining Plan as per Rule 12 of the Granite Conservation and Development Rules, 1999 through the Commissioner of Geology and Mining to Government within the period of 3 months from the date of receipt of this communication as per Rule 8-A(8)(a)(ii) of the Tamil Nadu Minor Mineral Concession Rules, 1959 and also to produce Environmental Clearance obtained from the Competent Authority for the above said area in the conditions stipulated in the prescribed Act and Rules in addition to the following conditions:-

- 1) A safety distance of 7.5 meters and 10 meters should be provided to the adjacent patta and Government Poramboke lands, respectively.
- 2) All conditions stipulated in the District Gazette No.05 Extraordinary notification dated 03.09.2020 should be adhered by the lessee.
- 3) Environmental clearance should be obtained from the State Level Environmental Impact Assessment Authority before grant of quarry lease as per rule 42 of the Tamil Nadu Minor Mineral Concession Rules, 1959.
- 4) The applicant firm should fence the lease granted area with barbed wire before the execution of lease deed as follows: -
  - The pillar post shall be firmly grounded with concrete foundation of height not less than 2 meters with a distance between two pillars shall not be more than 3 meters.
  - The applicant firm shall incorporate the DGPS readings for the entire boundary Pillars of the area and the same should be clearly shown in the mining plan.
  - A soft copy of the digitized map with DGPS readings should be submitted in the CD form to the Deputy Director, Dharmapuri.



- 5) The District Administration and Geology and Mining Department should ensure the conditions imposed in G.O.(Ms).No.79, Industries Department, dated 06.04.2015.
- 6) As per Rule 12(V) of Minerals (other than Atomic & Hydro- carbons Energy Minerals) Concession Rules, 2016, the applicant firm shall at his own expenses erect, maintain and keep in repair all the boundary pillars.
- 7) The applicant firm should use mild explosives during quarrying.
- 8) Child Labourers should not be engaged in quarry works.
- 9) If any violation is found during quarrying operation, the penal provisions of the Tamil Nadu Minor Mineral Concession Rules, 1959 and other rules and act in force will attract.
- 10) The applicant firm should ensure that while starting the quarry work, all the quarry workers working under their control are registered in the Labour Welfare Board and also enrolled in the ongoing insurance scheme.
- 11) The District Collector, Dharmapuri shall obtain a sworn-in-affidavit from the applicant firm containing the above conditions before execution of lease deed and also ensure that the instructions issued in Government Letter No.12789/MMB2/2002-7, Industries Department, Dated: 9.1.2003 are complied with.

Yours faithfully,

*[Signature]*  
23.2.2021

for Principal Secretary to Government

*[Signature]*  
23/2/2021

Copy to:-

The Commissioner of Geology and Mining,  
Guindy, Chennai - 600 032.

The District Collector,  
Dharmapuri District.

*[Signature]*

R. Rajasekar, M.Sc.,  
Recognised Qualified Person  
Reg. No. RQP / CNN / 264 / 2015/A



**DHARMAPURI  
DISTRICT GAZETTE  
EXTRAORDINARY  
PUBLISHED BY AUTHORITY**

No. 5 ]

DHARMAPURI, SEPTEMBER 3, 2020  
[ Sarvari, Aavai 18 — Thiruvalluvar Aandu 2051 ]

**NOTIFICATION BY THE COLLECTOR**

[Roc.No.410/2016/(Mines), Dated: 02.09.2020]

[Notice Inviting Tender Applications for the Grant of Quarry Lease for Black Granite situated in Government lands in Dharmapuri District under Tender-Cum-Auction system as per Rule 8-A of the TamilNadu Minor Mineral Concession Rules, 1959].

Last date and time for submission of tender application - 28.09.2020 @ 03.00 P.M  
Date and time on which open auction will be conducted and opening of tender applications - 29.09.2020 @ 11.00 A.M

1. For and on behalf of the Government of Tamil Nadu sealed Tender applications in Triplicate are invited by the District Collector Dharmapuri at Collectorate, Dharmapuri up to 03.00 P.M. on 28.09.2020 (as per the office clock of the Deputy Director of Geology and Mining, Dharmapuri, 2<sup>nd</sup> Floor, DRDA Building, Collectorate, Dharmapuri) from the individuals or companies or partnership firms for the purpose for obtaining quarry lease to quarry black granite from the areas situated in Government lands in Dharmapuri District specified in the schedule for a period twenty years in accordance with the Tamil Nadu Minor Mineral Concession Rules, 1959 more specifically as per rule 8-A of the above said rules notified in G.O.Ms.No.103/Industries/MMC1/Department Dt:13.07.1996 and published in Tamil Nadu Government Gazette, Extraordinary No.337, part-III, section 1(a) Dt:13.07.1996 and subsequently amended.
2. The tender applications submitted as per the notification shall be in the form prescribed as per appendix VI-A of Tamil Nadu Minor Mineral Concession Rules, 1959. Model application form is enclosed with this gazette notification. The applications not submitted as prescribed in appendix VI-A and the applications without statutory enclosures shall not be entertained.
3. The tenderers / Bidders shall make their own arrangements to visit the notified proposed quarry sites, assess the quantity and the quality of granite before making their offers. They should also make their own arrangements for providing necessary infrastructure including approach roads, etc., for quarrying granite, if the area is allotted to them on lease eventually.
4. (a). All applications made in response to this notification shall be in the form prescribed in Appendix VI-A to these rules and they shall be sent directly to the District Collector, Dharmapuri District and submitted to the O/o The Deputy Director, Geology and Mining, 2<sup>nd</sup> Floor, DRDA Building, Collectorate, Dharmapuri on or before 03.00 P.M. of 28.09.2020 in person or by RPAD in a sealed cover super scribed as: 'TENDER APPLICATION FOR GRANT OF QUARRYING LEASE-ITEM Sl.No.....IN THE NOTICE/ ADVERTISEMENT, DATED.....'. The name and address of the applicant shall also be legibly written on the sealed cover. For each item of area specified in the District Gazette Notification or in the news paper advertisement separate tender application shall be made.





(b) Every tender application made for grant of quarrying lease shall be accompanied by:-

- (i) Original challan for payment of Rs.5000/- (Rupees Five Thousand only) towards non-refundable application fee in a Government Treasury in the District concerned. The amount can also be remitted through demand draft drawn in favour of the District Collector, Dharmapuri obtained from any Nationalized Bank or Co-Operative Bank and the original Demand Draft should be enclosed.
  - (ii) A demand draft for (Rs.25,00,000/-) (Rupees Twenty Five Lakhs only) towards Earnest Money Deposit in favour of the District Collector, Dharmapuri drawn in any Nationalized Bank or Co-Operative Bank and the original Demand Draft should be enclosed.
  - (iii) An affidavit showing the particulars of the areas mineral wise in each District of the State, which the applicant or any person jointly with him :-
    - (i). already holds under a quarrying lease
    - (ii). already applied for but not yet granted
    - (iii). is being applied for simultaneously;
    - (iv). A valid mining dues clearance certificate obtained from the Collector of the District where the quarrying or mining lease area is situated in the form prescribed in Appendix-VIII to these rules for having paid the mining dues, such as royalty, seigniorage fee, lease amount, dead rent, surface rent, area assessment, penalty amount or any other dues payable under the Act or these rules or under the lease deed or agreement already executed or entered into by the applicant if the applicant is not having any Mining/ Quarrying lease in the State of Tamil Nadu an Affidavit towards no mining dues also to be enclosed.
    - (v). An affidavit stating that the applicant has:-
      - i. Filed upto date Income tax return.
      - ii. Paid the income tax assessed on him.
      - iii. Paid the income tax on the basis of the self assessment as provided in the Income Tax Act, 1961 (Central Act 43 of 1961) or any other later instructions of the Central Government.
  - (c). The application thus made shall contain the particulars about the maximum amount the applicant is willing to offer for getting the area applied for lease for quarrying purpose.
  - (d). All applications shall reach the addressee specified in the notice or advertisement within the specified time and date.
5. (a) Where the application is delivered personally, its receipt shall be acknowledged in the form in Appendix-IX to the rules of TNMMCR, 1959. Where an application is sent by post it shall be sent by registered post and its receipt shall also be acknowledged to the applicant by RPAD within three days from the date of receipt of application. The District Collector shall have no responsibility for any delay in receipt or loss in postal transit of any application or communication.
- (b). If any application is made for an area when there is no invitation of the application, it shall summarily be rejected as premature application. If any application is received after, the due time and date fixed for receipt of application, it shall be rejected by the District Collector as time barred application. Failure to satisfy the conditions and to comply with the requirements specified above will result in summarily rejection of an application for participation in auction or tender proceedings and the person who made such application is not entitled to participate in the auction or tender as the case may be. The rejection order passed on such application with the demand draft if any shall be sent through registered post to the applicant within seven days from the date of receipt of the application retaining the application and the cover.

#### TENDER-CUM-AUCTION PROCEDURE

6. (a) (i) Before opening tender applications received for each area for which applications are invited through notification and advertisement, an auction shall be conducted in which all tender applicants and also others who consider themselves as eligible and pay an Earnest Money Deposit of (Rs.25,00,000/-) by a bank draft can participate. The auction bids of the non-tender applicants will be accepted subject to verification of their eligibility and subject to their submitting the application form with statutory enclosures and payment of application fee before commencement of the tender-cum-auction proceedings. For people who have already paid Earnest Money Deposit in tender, no separate fee need be levied for participating in auction.



- (ii) In the absence of the applicant one nominee of the applicant may be permitted to participate in the auction and allowed to be present when the tender applications are opened provided the nominee produces a letter from the applicant authorising the nominee to do so and signed before a Notary Public who shall attest the signature of the applicant and his nominee.
  - (b) (i) Before opening tender applications received for each area, auction shall be conducted by the District Collector or the officer authorized by the District Collector allowing all eligible applicants to bid at the auction for making their offer of lease amount to obtain the area on lease. Immediately after conclusion of the auction, all the valid tender applications for the area shall be opened and examined by the District Collector or the authorized officer.
  - (ii) The sealed tender applications shall be opened in the presence of the tender applicants or their nominees who may choose to be present. Failure on the part of any tender applicant or his nominee to be present on the date and time of auction or at the time of opening of the sealed tender applications shall not prevent the authorities concerned from conducting the auction and opening of the sealed tender applications with the participation of the other tender applicants or their nominees or others.
  - (iii) Where the receipt of total no. of Tender cum Auction applications are less than three, auction process shall be annulled and recommended for a retender for one time within one month.
  - (iv) The authorized officer shall declare the total number of valid applications received for an area, names of the applicants and the tender amount offered for the area by each of the applicants. He shall also declare the highest bid amount offered at the auction and the highest tender amount quoted in the tender applications and the names of the highest offerers of the bid amount and the tender amount before concluding the proceedings.
  - (v) In a case where the highest auction amount is found to be less than the highest tender amount and where the said highest tender amount has been quoted by two or more applicants, the District Collector or the officer authorized by the District Collector shall call such applicants alone to make their further offers.
  - (vi) After declaring the name of the highest bidder/tender applicant for an area, the EMD received from the applicant bidders other than the highest bidder/tender applicant shall be returned forthwith to the applicants/bidders present on obtaining acknowledgement for receipt of the same or sent by registered post in due course, if they are not present. The Earnest Money Deposit made by the highest bid amount or tender amount offeror, as the case may be, shall be adjusted towards payment of lease amount in case he is selected for grant of the area on lease to him for quarrying purpose.
7. The District Collector after the conclusion of the Auction Cum Tender procedures, shall forward all the applications received to the State Government through the Director of Geology and Mining. On receipt of the proposal from the District Collector, the Director of Geology and Mining shall forward the same to the State Government with his recommendations.
- 8 (a) (i). On receipt of the recommendation of the Director of Geology and Mining for grant of lease for an area the State Government shall communicate its decision to grant the lease to the applicant who is declared as the successful offer or of the bid amount or Tender amount whichever is greater.
- (ii). The State Government shall communicate its decision to grant the lease for the precise area directing to remit the balance amount indicated in the order of the State Government in the District Treasury concerned and to submit the original challan to the State Government within one month from the date of receipt of such communication and to submit the approved mining plan as per Rule 12 of the Granite Conservation and Development Rules, 1999 to the State Government within a period of three months from the date of receipt of the communication from the State Government.
- (iii). Where the applicants fail to remit the balance amount within the stipulated period, the amount already remitted shall be forfeited and the communication issued, shall be deemed to be cancelled. When the said applicants have remitted the amount within the stipulated period but are not able to submit the approved mining plan as per Rule 12 of the Granite Conservation and Development Rules, 1999 to the State Government within the stipulated period for reasons beyond their control, they may apply for extension of time for submission of the approved mining plan. The State Government on receipt of such request and after satisfying that the balance amount has been paid within the prescribed period, may grant extension of time for a further period not exceeding three months, if satisfied with the reasons furnished by the applicant. In case the applicant fails to submit the approved mining plan as per Rule 12 of the Granite Conservation and Development Rules, 1999 even in the extended period, the amounts remitted by the applicant shall be forfeited and the communication letter shall be deemed to be cancelled.



- 4
- (iv). The applicant shall also submit the Environmental Clearance from the competent authority as per Rule 42 of Tamil Nadu Minor Mineral Concession Rules 1959 within the time limit as prescribed by the State Government.
  - (v). On receipt of the approved mining plan as per Rule 12 of the Granite Conservation and Development Rules, 1999 and the Environmental Clearance from the competent authority as per Rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 the State Government shall issue the order granting the lease.
  - (b) Where the State Government is satisfied that the highest amount offered by the applicant is not reasonable in the circumstances of the case and that it will not be in the interest of mineral development to grant the lease to the said applicant, an order refusing to grant the lease to the applicant shall be passed by the State Government, communicating the reasons there for to the applicant.
  - (c) The lease deed shall be executed by the applicant with the District Collector concerned within one month from the date of receipt of the order of the State Government or within such further period not exceeding a period of thirty days as the District Collector may allow in this behalf. The lease deed shall be executed by the applicant on the appointed day and time with a map of the demarcated leased out area signed by the District Collector and the lessee, appended to it.
  - (d) Where the State Government has granted a quarrying lease, to an applicant, if the applicant fails to produce the signed copy of the demarcated map of the area or fails to produce the required stamp papers for preparing the lease deed or fails to execute the lease deed within the stipulated time, the State Government may cancel the order granting the lease to the defaulter and forfeit all amounts paid by him to the State Government. In the case of an area for which there are two or more applicants, after cancellation of the order granting the quarrying lease to the defaulter the State Government may grant the quarrying lease in favour of the next below highest bidder or tender applicant, Subject to the provision of clauses (a) and (b) If the next highest bidder or tender applicant is not communicating his acceptance of such an offer of the State Government within fifteen days from the date of receipt of the State Government's offer, the State Government shall call for fresh tender applications for the area concerned.

#### CONDITIONS FOR CARRYING OUT QUARRYING OPERATIONS.

9. (a) The date of commencement of the period for which the quarry lease is granted under this Rule shall be the date on which the lease deed is executed.
- (b) Before execution of the lease deed the successful bidder/tender applicant shall deposit as security @ twenty percent (20%) of the bid/tender amount for which the lease has been granted by the State Government.
- (c) All the lessees, besides the one time payment of the bid amount / tender amount which is the lease amount, shall also pay seigniorage fee or dead rent whichever is more in respect of the actual quantity of the mineral removed or consumed at the rates prescribed from time to time in Appendix-II to these rules. Besides the onetime payment of lease amount and seigniorage fee or dead rent whichever is greater the lessee shall pay such other levies as may be prescribed by the State Government from time to time.

In the event of failure to pay the seigniorage fee or dead rent whichever is greater the lease shall be cancelled.

Provided that the lessee shall pay the dead rent for the first year of the lease before the execution of the lease deed and for the subsequent years thirty days before the date of commencement of each year of the lease period.

Provided further that the lessee is entitled to obtain transport permit and despatch slips for removal of the mineral from the leasehold area without paying seigniorage fee until the amount of dead rent already paid is got adjusted towards seigniorage fee payment.

- (d) No lessee is entitled to raise any dispute with reference to the survey and demarcation of the area leased out to him after execution of the lease deed.
- (e) The lease shall expire on the date specified in the lease deed and in no case extension of the period of the lease shall be made.
- (f) No lessee shall commence any quarrying operation in any area without executing the lease deed. No lessee shall continue quarrying in the area after the expiry of the stipulated lease period. If any quarrying or transportation of the mineral is done without complying with or in violation of the above conditions, it shall be treated as illicit quarrying and illicit transportation and the lessee is liable to be punished for the offence without prejudice to any other actions that can be taken on the person as provided in these Rules or the Act.





- (g) The lessee shall remove and transport the mineral from the leasehold area after obtaining transport permit from the District Collector concerned or any Officer authorized by him in this behalf and complying with the other conditions stipulated in these Rules.
  - (h) The lessee shall not quarry any other mineral other than the purpose for which the lease is granted. If, any other mineral / valuable metal is found to be noticed, the quarrying operation shall be stopped at once and intimated to the District Collector / Government.
  - (i) The lessee shall not without the previous consent in writing of the State Government assign, sublet, mortgage or in any other manner transfer the quarrying lease as specified in Rule-36F of Tamil Nadu Minor Mineral Concession Rule 1959.
  - (j) The lessee shall keep correct accounts showing the quantity and other particulars of all minerals quarried and transported from the quarry site. The lessee shall also allow any officer authorized by the State Government or the Director of Geology and Mining or the District Collector in this behalf to inspect the quarry and verify the records and accounts and to furnish such information and returns as may be required by him.
10. (a) The lessee shall carryout the quarrying operations in a skilful, scientific and systematic manner keeping in view the proper safety of the labour, conservation of minerals and preservation of the environment and ecology of the area.
- (b) The lessee shall allow any officer authorized by State Government, or the Director of Geology and Mining, or the District Collector concerned to enter upon the leasehold area and inspect for the purpose mentioned in clause (a) and for any other purpose which may be required for compliance of the provisions of the Act and these rules or any other Act or Rules framed by the Central Government or the State Government.
11. The lease granted under this rule may be renewed for a period not exceeding twenty years, provided that renewal of lease shall be subject to the satisfactory performance of the lessee during the quarry work in the past in fulfilling the conditions of lease and as per the Tamil Nadu Minor Mineral Concession Rules, 1959.

#### 12. ADDITIONAL CONDITIONS

- a) The period for which the area granted on lease for quarrying under this rules is only for twenty years.
- b) The quarrying lease will be granted only in the name of the successful Tenderer/bidder declared by the state Government.
- c) No quarrying activities commenced there to shall be done before the execution of the agreement.
- d) The Executed lease deed shall be registered at the cost of the lessee.
- e) While quarrying no hindrance shall be caused to the adjoining pattadars and public.
- f) The lessee should restrict his mining operations strictly within the permitted area as defined in the sketch without any encroachments.
- g) The lessee should maintain, at his cost proper signboards indicating the survey numbers, years of lease, name of the lease holder and lease period to the satisfaction of the District Collector and Commissioner/ Director of Geology and Mining and maintain it all time at the quarry site.
- h) The lessee should make his/her own arrangement to form the approach road from the public road to the place of the quarry.
- i) The lessee shall abide to all the provisions of Mines and Minerals (Development and Regulation) Act, 1957, The Metalliferous Mines Regulations 1961 or any other connected Laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Indian Explosives Act 1884, (Central Act IV of 1884) and the Rules made there under and the Tamil Nadu Minor Minerals Concession Rules, 1959.
- j) Quarry lease area should be demarcated state on ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar with DGPS reading shall be erected before commencement of quarrying and it should be maintained throughout the period of lease.
- k) No quarrying shall be made within the safety distance of 7.5 mts to the adjacent patta lands and 10 mts to the adjacent Government Poramboke lands.
- l) Pit Mouth register should be maintained in the quarry site.



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- m) A minimum distance of 50 mts. from any Civil structure/ habitation, Electric / Telephone lines, Railway line, Reservoir, Canal, National highways and other public works shall be kept from the periphery of any excavation area and 10mts safety distance to the village roads shall be kept and maintained during the entire lease period.
- n) Quarry operations shall be carried only after appointing Mines Manager/Mines Mate and it should be carried out on the supervision of Mines Manager/Mines Mate.
- o) Notice of opening of the quarry should be sent to the Director of Mines Safety, Bangalore.
- p) In any accident occur in the quarry area the lessees should give intimation to the Director of Mines Safety Bangalore and District Collector, Dharmapuri at once and lessee is solely responsible for any violation.
- q) The lessee should get the consent for establishment and for operation from the Tamil Nadu Pollution Control Board before the commencement of quarrying operation.
- r) The conditions imposed by the TNPCB in the consent order should be adhered without any omission.
- s) The Environmental Clearance and the consent of the TNPCB should be renewed periodically without any lapse.
- t) If any quarrying is found in the area granted on lease before the date of execution of lease deed, the lease is liable to be cancelled and criminal action will be initiated.
- u) No lease granted under this rule shall be extended.
- v) The lessee shall provide safety distance in the area as per the rules in force or any rule which may be imposed by Government. He must also take up all safety measures as directed by the Government at his own cost.

### 13. SPECIAL CONDITIONS

- i. The Government reserves the right to accept or reject any or all tender / bid applications either in part or in full without any liability to the Government or any of the officers of the Government.
- ii. The authority for acceptance of tender / bid shall rest with the Government. The Government do not bind themselves to accept the highest or any other tender / bid applications.
- iii. The applicants participating in the tender / bid either should have (or) shall obtain a valid Permanent Account Number issued by the Income Tax department of Government of India.
- iv. The successful bidder shall pay 2% on the total tender / bid amount into the TAN number CHEA11977A as TDS to IT Department and produce the remittance challan to the Deputy Director of Geology and Mining, Dharmapuri.
- v. After execution of the lease deed the lessees shall have to pay as 2% on the seigniorage fee as TDS to Income Tax Department on the total Seigniorage fee paid for the total volume of transportation at the time of obtaining transport permit.
- vi. The lessee shall pay 10% of the total amount of the seigniorage fee paid for obtaining transport permit towards the contribution of Dharmapuri District Mineral Foundation Trust Fund and the said amount should be remitted to current account number 6636419266 @ the Indian Bank, Dharmapuri Branch then and there without fail.
- vii. Transportation of Black Granite blocks should not be carried out from 6.00 P.M to 6.00 A.M.
- viii. The lessee shall strictly adhere to the statutory and safety requirements.
- ix. The waste materials generated during quarrying operation shall be dumped only within the area granted under lease.
- x. Quarrying shall be done as per the approved Mining Plan and as such laws made by the Central Government/State Government and any other notifications issued then and there.
- xi. The lessee/grantee shall submit scheme of mining, mine closure plan and other statutory requirements within the time stipulated for submission of the above as per rules.
- xii. The lessee shall submit half yearly returns in Form 'F' and Annual returns in Form 'G' as per GCDR 1999 within the prescribed time limit.
- xiii. The lessee should strictly adhere all the conditions imposed by the state Government, in the lease granting order, conditions imposed in the Environmental Clearance Certificate, conditions imposed by the Director of Geology and Mining and the District Collector, Dharmapuri and any other directions / instructions issued from time to time.
- xiv. Any other conditions stipulated by other Statutory/Government authorities shall be complied with.

Note:

As per announcement of the Hon'ble Chief Minister of Tamil Nadu News Letter No. 182, dated 30.08.2020, there shall be no restriction on intra-State movement of persons and goods. No separate permission/ approval/e-permit will be required for such movements. But the other state persons, who are enter into the Tamil Nadu, they should obtain e-pass. Hence, other state persons, who are interested in Granite Tender cum Auction, they are instructed to apply with valid documents viz., Aadhar Card, Travelling Ticket and Telephone/ Mobile No. for getting e- pass through Auto generated method by computer. After obtaining e-pass should attend the Tender Cum Auction accordingly.



## 14. SCHEDULE

Areas notified for lease under Tender-Cum-Auction as per Rule 8-A of Tamil Nadu Minor Mineral Concession Rules, 1959.

| Sl. No | Taluk      | Village         | S.F. No.             | Extent Proposed for lease | Classification of land   | Mineral       |
|--------|------------|-----------------|----------------------|---------------------------|--------------------------|---------------|
| (1)    | (2)        | (3)             | (4)                  | (5)<br>(in hecst.)        | (6)                      | (7)           |
| 1      | Dharmapuri | Adagapadi ✓     | 495 (part)           | 248.5                     | U.A.W. Karadu            | Black Granite |
| 2      | Pennagaram | Sidumanahalli   | 938 Part Bit-1       | 620.0                     | Anathinam                | Black Granite |
| 3      | Pennagaram | Sidumanahalli ✓ | 938 Part Bit-2       | 563.0                     | Anathinam                | Black Granite |
| 4      | Pennagaram | Ajjanahalli ✓   | 98 & 686/4 (part)    | 131.5<br>144.0<br>275.5   | U.A.W                    | Black Granite |
| 5      | Pennagaram | Ajjanahalli     | 856 (Part)           | 491.5                     | U.A.W                    | Black Granite |
| 6      | Pennagaram | Ajjanahalli     | 682/2 (Part)         | 291.0                     | U.A.W                    | Black Granite |
| 7      | Pennagaram | Ajjanahalli     | 223/B Part (Bit-1)   | 258.0                     | Anathinam                | Black Granite |
| 8      | Pennagaram | Ajjanahalli     | 223/B Part (Bit-2)   | 265.0                     | Anathinam                | Black Granite |
| 9      | Pennagaram | Ajjanahalli     | 830 (P) East & 834/1 | 371.0<br>129.0<br>500.0   | U.A.W Karadu & Anathinam | Black Granite |
| 10     | Pennagaram | Ajjanahalli     | 830 (P) West & 835/3 | 232.5<br>081.5<br>314.0   | U.A.W Karadu & Anathinam | Black Granite |
| 11     | Pennagaram | Ajjanahalli     | 824/3 & 823 Part     | 211.5<br>238.5<br>450.0   | Anathinam                | Black Granite |
| 12     | Pennagaram | Ajjanahalli     | 810/2 (part)         | 248.0                     | Anathinam                | Black Granite |
| 13     | Pennagaram | Ajjanahalli ✓   | 608/2B               | 400.0                     | Anathinam                | Black Granite |
| 14     | Pennagaram | Ajjanahalli     | 775/1                | 108.5                     | Anathinam                | Black Granite |



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| (1) | (2)             | (3)                  | (4)                 | (5)<br>(in hec.)           | (6)                         |               |
|-----|-----------------|----------------------|---------------------|----------------------------|-----------------------------|---------------|
| 15  | Pennagaram      | Mangurichi           | 22 (part)           | 5.00.0                     | U.A.W. Karadu               | Black Granite |
| 16  | Pennagaram      | Sunjalanatham        | 587 (Part)          | 4.52.0                     | U.A.W. Karadu               | Black Granite |
| 17  | Pennagaram      | Manchi-naickanahalli | 134/1 (part)        | 1.40.0                     | U.A.W. Kalankuthu           | Black Granite |
| 18  | Pennagaram      | Ramakondahalli       | 802(part)           | 1.94.0                     | U.A.W. Kundru               | Black Granite |
| 19  | Karimangalam    | Jakkupatty           | 151 Part Bit-1      | 3.70.0                     | U.A.W.                      | Black Granite |
| 20  | Karimangalam    | Jakkupatty           | 151 Part Bit-2      | 3.70.0                     | U.A.W.                      | Black Granite |
| 21  | Harur           | Gobinatham-patty     | 281(part)           | 4.54.0                     | U.A.W. Karadu               | Black Granite |
| 22  | Harur           | Polayamballi         | 383/1 Part Bit-1    | 2.60.0                     | U.A.W. Karadu               | Black Granite |
| 23  | Harur           | Polayamballi         | 383/1 Part Bit-2    | 2.00.0                     | U.A.W. Karadu               | Black Granite |
| 24  | Harur           | Polayamballi         | 383/1 Part Bit-3    | 1.52.0                     | U.A.W. Karadu               | Black Granite |
| 25  | Harur           | Reddipatti           | 9 (Part) Bit-1      | 3.20.0                     | U.A.W. Kundru               | Black Granite |
| 26  | Harur           | Reddipatti           | 9/Part Bit-2 & 13/2 | 1.40.0<br>1.03.5<br>2.43.5 | U.A.W. Kundru & Kallankuthu | Black Granite |
| 27  | Pappireddipatty | Alapuram             | 386 (Part)          | 4.88.5                     | U.A.W. Kallankuthu          | Black Granite |
| 28  | Pappireddipatty | Nallagudalahalli     | 94/ Part Bit-2      | 2.20.0                     | U.A.W. Parai                | Black Granite |
| 29  | Pappireddipatty | Sinthalpadi          | 44 (Part)           | 1.10.0                     | U.A.W.                      | Black Granite |
| 30  | Pappireddipatty | Sinthalpadi          | 74 (Part) & 75      | 0.40.0<br>1.05.0<br>1.45.0 | U.A.W. Parai                | Black Granite |

Dharmapuri,  
02-09-2020.

S. MALARVIZHI  
DISTRICT COLLECTOR,  
DHARMAPURI DISTRICT.

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AND PUBLISHED BY THE COLLECTOR OF THE DISTRICT.

13 Quarry  
Total Amount Tender } 58,88,000/-

Balance Quarry : 17 Quarry

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**APPENDIX VI-A**  
(See Rule 8-A)

**TENDER APPLICATION FOR GRANT OF QUARRYING LEASE FOR GRANITE**  
(To be submitted in triplicate)



Dated                      Day of                      2020

From

To

The District Collector,  
Dharmapuri.

Madam,

I. I/We submit the application under Rule 8-A of the Tamil Nadu Minor Mineral Concession Rules, 1959, in respect of item No. .... in District Gazette Notification No. ...., Dt. .... or in newspaper advertisement, dated. .... I/ We request that quarrying lease under Rule 8-A of the Tamil Nadu Minor Mineral Concession Rules, 1959 may granted to me /us as per the procedure laid down in the above Rule.

II. A sum of Rs.5000/- (Rupees Five Thousand only) being the non-refundable application fee has been remitted through challan under the following head of account.

"0853 Non-ferrous Mining and Metallurgical Industries-102, Mineral Concession Fees Rent and Royalties-AA Quarries and Minerals 2705- Non -Taxation Fee-Application D.P.Code.No.0853-00-102-AA-2752" Vide Challan number.....Dated .....@ State Bank of India, Dharmapuri.

(or)

Demand draft Rs.5000/- (Rupees Five thousand only) from a Nationalized Bank (or) Co-operative Bank drawn in favour of the District Collector, Dharmapuri, DD No. .... dated .....of ..... Bank ..... Branch is enclosed.

III. The required particulars are given below:

1. Name of the applicant in which the quarry lease is required to be granted with full address.
2. (a) Is the applicant an Individual or Private Company, Firm or Association?  
  
(b) If the applicapt is an Individual, specify his name, nationality and address:  
  
(c) If the applicant is private company, firm or association, specify name of directors, partners, members and their Nationality (Documentary evidence should be produced)





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3. (a) Particulars of remittance of application fee  
(enclose original chalan or Demand draft from  
Nationalised bank / Co-operative bank)
- (b) Particulars of remittance of Earnest Money Deposit  
(enclose original chalan or Demand draft from  
Nationalised bank / Co-operative bank)
4. Has the applicant filed an affidavit stating that the  
applicant-
  - (a) has filed up-to date income-tax returns:
  - (b) has paid the Income tax on him and
  - (c) has paid the income tax on the basis of  
self-assessment as prescribed in the Income  
Tax Act, 1961.
5. (a) Whether Mining Dues Clearance Certificate  
towards payment of quarrying dues,  
if any, enclosed?
- (b) If on the date of application the applicant does not  
hold any quarrying lease / mining lease whether an  
affidavit to this effect is furnished?
6. Is the applicant having an existing industry or  
Industrial programme for proposed industry? Specify  
and enclose the industrial programme and furnish the  
following.
  - (a) Category of the existing / proposed Industry:  
(e.g. 100% E.O.U./ D.G.T.D./ S.S.I)
  - (b) License Number and Date:
  - (c) Installed capacity / Production capacity per annum  
in Sq.Mts
  - (d) Total investment in the industry:
  - (e) Date of commencement of the Industry:
  - (f) Nature of products manufactured [Specify quantities  
of individual items (e.g. building slabs/monuments/  
tiles etc.)] per annum in Sq. Mts.:
  - (g) Annual requirement of raw materials per annum in  
cubic metres:
  - (h) Expansion details, if any (furnish documentary  
evidence) (Furnish above details for proposed  
industry also excepting Sl.No.6(b) if license is  
not yet obtained,6(e) and 6(h):
7. Minor Mineral which the applicant intends to quarry  
with descriptions:
8. Period for which quarrying lease is required:
9. Total extent of the area applied for:
10. Details of the area for which the tender application is made.

Not Applicable



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| Sl. No in the<br>Gazette<br>notification | District | Taluk | Village | Survey<br>Number | Area in<br>Hectare |
|------------------------------------------|----------|-------|---------|------------------|--------------------|
| (1)                                      | (2)      | (3)   | (4)     | (5)              | (6)                |

- 11 Maximum tender amount the applicant is willing to offer for getting the area in lease for quarrying: (Specify both in figures and words)
- 12 Particulars of areas already held under quarrying lease in TamilNadu. (Enclose an affidavit showing the particulars of areas mineral wise in each District of the State which the applicant and any other person jointly with him already holds under a quarry lease; already applied for but not yet granted; and being applied for simultaneously).
- 13 Any other particulars which the applicant wishes to furnish;

I /We do hereby declare that the particulars furnished above are correct and am /are ready to furnish any other details and security deposit as may required by the Government or District Collector or District Forest Officer. I hereby swear and state that I/We know very well about the provisions contained in the Tamil Nadu Minor Mineral Concession Rules, 1959 in respect of granting of quarry lease applied for and other conditions stipulated in connection with the quarrying and other operations.

Place :

Yours faithfully

Date :

Signature of the applicant

*R. Rajasekar*  
**R. Rajasekar, M.Sc.,**  
**Recognised Qualified Person**  
**Reg. No. RQP / CNN / 264 / 2015/A**

**C. EMP COST:**

| SL.No        | Description             | Approximate amount<br>(Rs.) |
|--------------|-------------------------|-----------------------------|
| 1            | Drinking water facility | 20,000                      |
| 2            | Safety kits             | 80,000                      |
| 3            | Water sprinkling        | 70,000                      |
| 4            | Afforestation           | 30,000                      |
| 5            | Water quality test      | 40,000                      |
| 6            | Air quality test        | 40,000                      |
| 7            | Noise / Vibration test  | 40,000                      |
| <b>Total</b> |                         | <b>4,20,000</b>             |

**Total Project Cost (A+B+C) = Rs. 5,97,20,000/-**

**13.3.0 ENVIRONMENT MANAGEMENT PLAN****13.3.1 PROPOSAL FOR WASTE MANAGEMENT**

The Top soil, weathered rock and the waste material generated during quarrying activity includes rock fragments of different sizes and waste chips (Rubble) during dressing of the blocks forms the total waste.

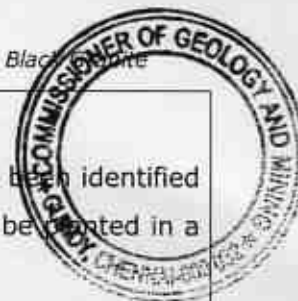
During the mining plan period (first five years) of quarry the total waste to be produced will be 118634m<sup>3</sup>. (Refer Table - 6).

The waste management plan with reference to the quantum of waste generated (Table - 6) is shown in Mine layout plan (Plate No. VI). The wastes will be dumped in the western and Southeastern side of the lease area.

The generated top soil during the quarrying period will be utilized for construction of bunds, road and afforestation purpose. The granite waste generated during the quarrying will be dumped in the demarcated western side of the lease area. Suitable specific trees to be grown over in such soil dumps will be identified with the help of agriculture experts to evolve proper afforestation plan.

**13.3.2 PROPOSAL FOR RECLAMATION OF LAND AFFECTED BY MINING ACTIVITIES DURING & AT THE END OF QUARRYING**

The depth persistence of the granite body in this quarry is beyond the workable limits. In the proposed mining plan 45.0m depth (2.0m topsoil + 3.0m Weathered rock + 40.0m Black Granite) has been envisaged as workable depth for safe, systematic & economic mining. Hence after quarry reaches ultimate pit limit, proposed waste will also be used for Back-filling at the end of quarry lease. The quarried out pits will be protected by providing fencing with barbed wire.



### 13.3.3 PHASED PROGRAMME OF PLANTING TREES

The essential safety distance provided along the lease boundary has been identified to maintain afforestation. Appropriate species of Neem & Pungan trees will be planted in a phased manner as described below.

Table -8

| Year | No. of trees proposed to be planted | Name of the species | Survival rate expected in % | No. of trees expected to be grown |
|------|-------------------------------------|---------------------|-----------------------------|-----------------------------------|
| I    | 80                                  | Neem & Pungan       | 70                          | 56                                |
| II   | 80                                  | Neem & Pungan       | 70                          | 56                                |
| III  | 80                                  | Neem & Pungan       | 70                          | 56                                |
| IV   | 80                                  | Neem & Pungan       | 70                          | 56                                |
| V    | 80                                  | Neem & Pungan       | 70                          | 56                                |

Nearly 1500 Sq.m area is proposed for afforestation by planting 80 Nos. of Neem & Pungan trees during every year and expected growth is around 56 no. of Neem & Pungan trees at a survival rate of 70%. The afforestation plan is shown in Plate No.VI.

### 13.3.4 MEASURES FOR DUST SUPPRESSION:

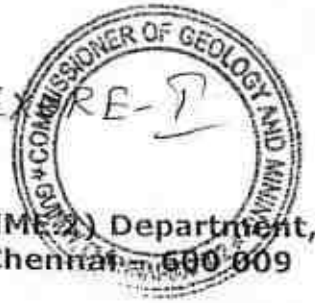
Diamond wire saw cutting will minimize the shattering effect. As the granite rocks are quarried without involving deep hole drilling and mild blasting, generation of lumps, fines and dust are negligible. This quantum of quarrying activity will not generate the dust which is detrimental to the health of the persons employed. The approach roads and waste dumps will be sprinkled with water for the suppression of air borne dust from quarry on regular intervals using water tankers. Drilling of blast holes of 32 mm dia will be always under wet conditions to prevent flying of dusts. In the unloading points, water will be sprinkled through tippers to suppress dust. The drillers are provided with respirators in accordance with the Mines Regulations.

### 13.3.5 MEASURES TO MINIMIZE GROUND VIBRATION DUE TO BLASTING AND CHECK NOISE POLLUTION

Special care will be taken to minimize ground vibration due to blasting and check noise pollution. Shallow holes of 32 mm diameter will be drilled and conventional low explosives such as gun powder, ordinary safety fuse will be used for removal of side burden. Hence ground vibration and noise pollution will be minimal and restricted with the quarry workings. The blasting will be taken up at appointed timing and with sufficient caution to the public. The noise produced by diamond wire saw cutting will be negligible.



ANNEX



Industries (MME-2) Department,  
Secretariat, Chennai - 600 009

**Letter No.274/MME.2/2021 - 1, Dated 23.02.2021**

From

Thiru N. Muruganandam, I.A.S.,  
Principal Secretary to Government.

To

Tvl. KMB Trading Company,  
3/50, Bangalore Main Road,  
Five Roads,  
Salem District - 636004.

Sir,

Sub: Mines and Minerals - Minor Mineral - Black Granite -  
Ajjanahalli Village - Pennagaram Taluk - Dharmapuri  
District - S.F.Nos.824/3 (2.11.5 hectares) and 823  
(Part) (2.38.5 hectares) - Over an extent of 4.50.0  
hectares of Government Poramboke land - Highest Bid  
amount offered by Tvl. KMB Trading Company, Salem  
District - Precise Area Communicated - Balance Lease  
Amount - Approved Mining Plan and Environmental  
Clearance - Called for.

- Ref: 1. Dharmapuri District Gazette Extraordinary Issue in  
English and Tamil No. 05 dated:03.09.2020.
2. Application of Highest Bidder of Tvl. KMB Trading  
Company, Salem on 29.09.2020.
3. From the District Collector, Dharmapuri Letter Roc  
No.176/2020 (Mines), dated 23.10.2020.
4. From the Director of Geology and Mining, File  
No.6164/MM4/2020, dated: 31.12.2020 and  
06.02.2021.

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I am directed to state that in the references third and fourth cited,  
the District Collector, Dharmapuri and the Director of Geology and Mining  
have recommended to declare you as Successful bidder and to  
grant quarry lease for quarrying of Black Granite over an extent of  
4.50.0 hectares of Government Poramboke land in S.F.No.824/3  
(2.11.5 hectares) and 823 (Part) (2.38.5 hectares) in Ajjanahalli Village of  
Pennagaram Taluk, Dharmapuri District for a period of 20 years under  
rule 8-A of the Tamil Nadu Minor Mineral Concession Rules, 1959.

//P.T.O//





2. I am directed to declare you as successful bidder to grant quarry lease for quarrying of Black Granite over an extent of 4.50.0 hectares) of Government Poramboke land in S.F.No.824/3 (2.11.5 hectares and 823 (Part) (2.38.5 hectares) in Ajjanahalli Village of Pennagaram Taluk, Dharmapuri District for a period of 20 years under rule 8-A of the Tamil Nadu Minor Mineral Concession Rules, 1959 subject to the outcome of W.P.No.13811 of 2020 and W.M.P.No.17315 of 2020 and W.P.No.14092/2020.

3. In this connection, I am directed to request you to remit the balance lease amount of Rs.3,85,00,000/- in the District Treasury concerned and to submit the original challan to Government within a period of one month from the date of this communication and to submit the Approved Mining Plan as per Rule 12 of the Granite Conservation and Development Rules, 1999 through the Commissioner of Geology and Mining to Government within the period of 3 months from the date of receipt of this communication as per Rule 8-A(8)(a)(ii) of the Tamil Nadu Minor Mineral Concession Rules, 1959 and also to produce Environmental Clearance obtained from the Competent Authority for the above said area in the conditions stipulated in the prescribed Act and Rules in addition to the following conditions:-

- 1) A safety distance of 7.5 meters and 10 meters should be provided to the adjacent patta and Government Poramboke lands, respectively.
- 2) All conditions stipulated in the District Gazette No.05 Extra ordinary notification dated 03.09.2020 should be adhered by the lessee.
- 3) Environmental clearance should be obtained from the State Level Environmental Impact Assessment Authority before grant of quarry lease as per rule 42 of the Tamil Nadu Minor Mineral Concession Rules, 1959.
- 4) The applicant firm should fence the lease granted area with barbed wire before the execution of lease deed as follows: -
  - The pillar post shall be firmly grounded with concrete foundation of height not less than 2 meters with a distance between two pillars shall not be more than 3 meters.
  - The applicant firm shall incorporate the DGPS readings for the entire boundary Pillars of the area and the same should be clearly shown in the mining plan.
  - A soft copy of the digitized map with DGPS readings should be submitted in the CD form to the Deputy Director, Dharmapuri.



- 5) The District Administration and Geology and Mining Department should ensure the conditions imposed in G.O.(Ms).No.79, Industries Department, dated 06.04.2015.
- 6) As per Rule 12(V) of Minerals (other than Atomic & Hydro- carbons Energy Minerals) Concession Rules, 2016, the applicant firm shall at his own expenses erect, maintain and keep in repair all the boundary pillars.
- 7) The applicant firm should use mild explosives during quarrying.
- 8) Child Labourers should not be engaged in quarry works.
- 9) If any violation is found during quarrying operation, the penal provisions of the Tamil Nadu Minor Mineral Concession Rules, 1959 and other rules and act in force will attract.
- 10) The applicant firm should ensure that while starting the quarry work, all the quarry workers working under their control are registered in the Labour Welfare Board and also enrolled in the ongoing insurance scheme.
- 11) The District Collector, Dharmapuri shall obtain a sworn-in-affidavit from the applicant firm containing the above conditions before execution of lease deed and also ensure that the instructions issued in Government Letter No.12789/MMB2/2002-7, Industries Department, Dated: 9.1.2003 are complied with.

Yours faithfully,

*[Signature]*  
23.2.2021

for Principal Secretary to Government

*[Signature]*  
23/2/2021

Copy to:-

The Commissioner of Geology and Mining,  
Guindy, Chennai - 600 032.

The District Collector,  
Dharmapuri District.

*[Signature]*

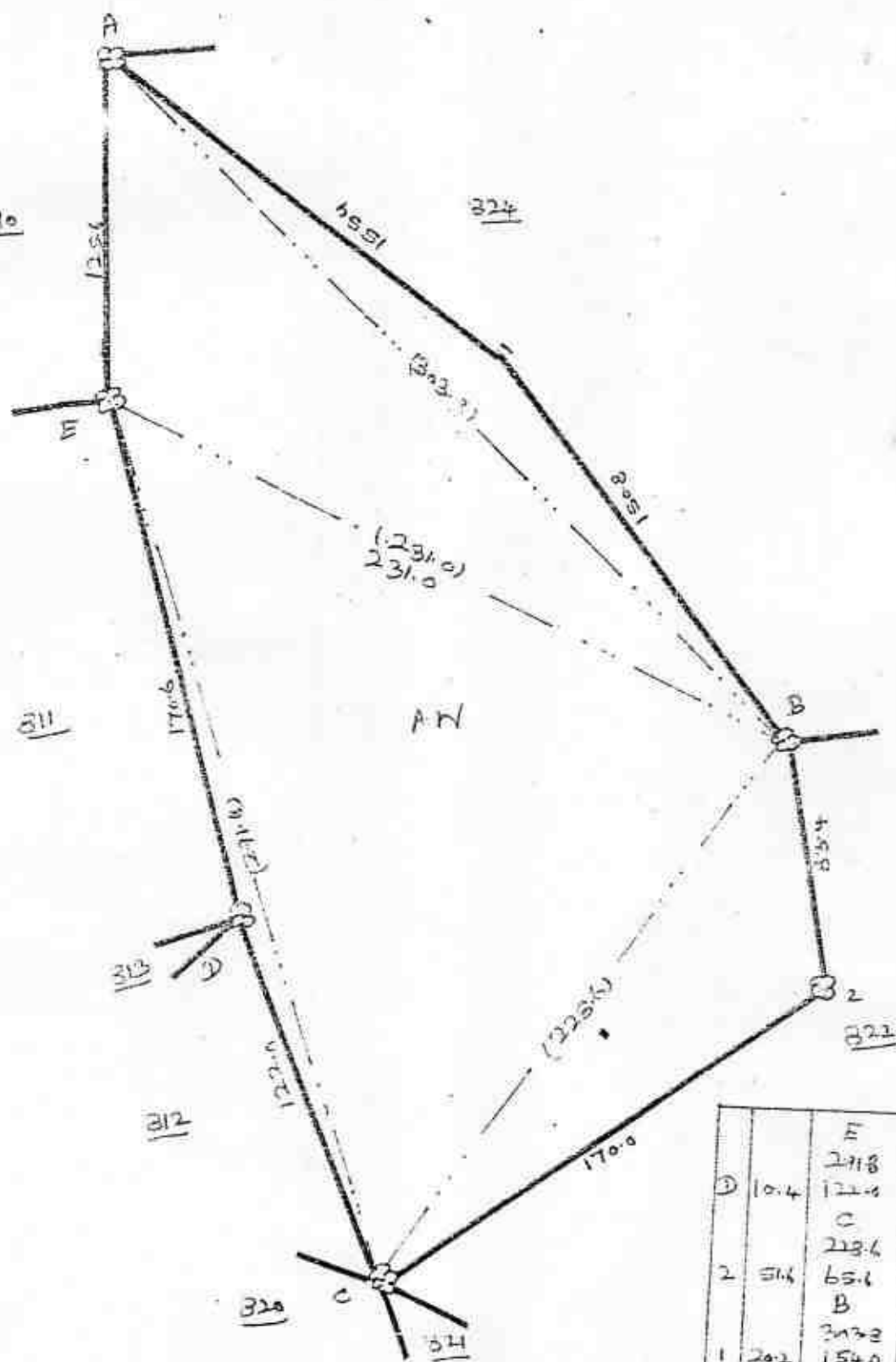
R. Rajasekar, M.Sc.,  
Recognised Qualified Person  
Reg. No. RQP / CNN / 264 / 2015/A

சாலை ம. திருச்சி

வட்டம். அக்டோபர் 2015

புல எண். 823

சீரமைப்பு { எண். 30 ANNEXURE IV-A  
பெயர். அக்டோபர் 2015  
பரப்பு: ஹெக்டேர் 4 ஏ. ஏ. 750



| சீரமைப்பு | பெயர் | பரப்பு | பெயர் | பரப்பு |
|-----------|-------|--------|-------|--------|
| 1         | 20.2  | 154.0  | 706   | 36     |
| 2         | 51.6  | 65.6   | B     |        |
| 3         | 10.4  | 121.0  | C     |        |
| 4         |       | 213.6  | D     |        |
| 5         |       | 271.8  | E     |        |

சாலை ம. திருச்சி  
அக்டோபர் 2015  
31-34  
R. Rajasekar, M.Sc.,  
Recognized Qualified Person  
Reg. No. RQP / CNN / 264 / 2015/A

சாலை ம. திருச்சி  
அக்டோபர் 2015  
பெயர். அக்டோபர் 2015  
பரப்பு: ஹெக்டேர் 4 ஏ. ஏ. 750





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- (ii) In the absence of the applicant one nominee of the applicant may be permitted to participate in the auction and allowed to be present when the tender applications are opened provided the nominee produces a letter from the applicant authorising the nominee to do so and signed before a Notary Public who shall attest the signature of the applicant and his nominee.
- (b) (i) Before opening tender applications received for each area, auction shall be conducted by the District Collector or the officer authorized by the District Collector allowing all eligible applicants to bid at the auction for making their offer of lease amount to obtain the area on lease. Immediately after conclusion of the auction, all the valid tender applications for the area shall be opened and examined by the District Collector or the authorized officer.
- (ii) The sealed tender applications shall be opened in the presence of the tender applicants or their nominees who may choose to be present. Failure on the part of any tender applicant or his nominee to be present on the date and time of auction or at the time of opening of the sealed tender applications shall not prevent the authorities concerned from conducting the auction and opening of the sealed tender applications with the participation of the other tender applicants or their nominees or others.
- (iii) Where the receipt of total no. of Tender cum Auction applications are less than three, auction process shall be annulled and recommended for a retender for one time within one month.
- (iv) The authorized officer shall declare the total number of valid applications received for an area, names of the applicants and the tender amount offered for the area by each of the applicants. He shall also declare the highest bid amount offered at the auction and the highest tender amount quoted in the tender applications and the names of the highest offerers of the bid amount and the tender amount before concluding the proceedings.
- (v) In a case where the highest auction amount is found to be less than the highest tender amount and where the said highest tender amount has been quoted by two or more applicants, the District Collector or the officer authorized by the District Collector shall call such applicants alone to make their further offers.
- (vi) After declaring the name of the highest bidder/tender applicant for an area, the EMD received from the applicant bidders other than the highest bidder/tender applicant shall be returned forthwith to the applicants/bidders present on obtaining acknowledgement for receipt of the same or sent by registered post in due course, if they are not present. The Earnest Money Deposit made by the highest bid amount or tender amount offeror, as the case may be, shall be adjusted towards payment of lease amount in case he is selected for grant of the area on lease to him for quarrying purpose.
7. The District Collector after the conclusion of the Auction Cum Tender procedures, shall forward all the applications received to the State Government through the Director of Geology and Mining. On receipt of the proposal from the District Collector, the Director of Geology and Mining shall forward the same to the State Government with his recommendations.
- 8 (a) (i). On receipt of the recommendation of the Director of Geology and Mining for grant of lease for an area the State Government shall communicate its decision to grant the lease to the applicant who is declared as the successful offer or of the bid amount or Tender amount whichever is greater.
- (ii). The State Government shall communicate its decision to grant the lease for the precise area directing to remit the balance amount indicated in the order of the State Government in the District Treasury concerned and to submit the original challan to the State Government within one month from the date of receipt of such communication and to submit the approved mining plan as per Rule 12 of the Granite Conservation and Development Rules, 1999 to the State Government within a period of three months from the date of receipt of the communication from the State Government.
- (iii). Where the applicants fail to remit the balance amount within the stipulated period, the amount already remitted shall be forfeited and the communication issued, shall be deemed to be cancelled. When the said applicants have remitted the amount within the stipulated period but are not able to submit the approved mining plan as per Rule 12 of the Granite Conservation and Development Rules, 1999 to the State Government within the stipulated period for reasons beyond their control, they may apply for extension of time for submission of the approved mining plan. The State Government on receipt of such request and after satisfying that the balance amount has been paid within the prescribed period, may grant extension of time for a further period not exceeding three months, if satisfied with the reasons furnished by the applicant. In case the applicant fails to submit the approved mining plan as per Rule 12 of the Granite Conservation and Development Rules, 1999 even in the extended period, the amounts remitted by the applicant shall be forfeited and the communication letter shall be deemed to be cancelled.



- (g) The lessee shall remove and transport the mineral from the leasehold area after obtaining transport permit from the District Collector concerned or any Officer authorized by him in this behalf and complying with the other conditions stipulated in these Rules.
  - (h) The lessee shall not quarry any other mineral other than the purpose for which the lease is granted. If, any other mineral / valuable metal is found to be noticed, the quarrying operation shall be stopped at once and intimated to the District Collector / Government.
  - (i) The lessee shall not without the previous consent in writing of the State Government assign, sublet, mortgage or in any other manner transfer the quarrying lease as specified in Rule-36F of Tamil Nadu Minor Mineral Concession Rule 1959.
  - (j) The lessee shall keep correct accounts showing the quantity and other particulars of all minerals quarried and transported from the quarry site. The lessee shall also allow any officer authorized by the State Government or the Director of Geology and Mining or the District Collector in this behalf to inspect the quarry and verify the records and accounts and to furnish such information and returns as may be required by him.
10. (a) The lessee shall carryout the quarrying operations in a skilful, scientific and systematic manner keeping in view the proper safety of the labour, conservation of minerals and preservation of the environment and ecology of the area.
- (b) The lessee shall allow any officer authorized by State Government, or the Director of Geology and Mining, or the District Collector concerned to enter upon the leasehold area and inspect for the purpose mentioned in clause (a) and for any other purpose which may be required for compliance of the provisions of the Act and these rules or any other Act or Rules framed by the Central Government or the State Government.
11. The lease granted under this rule may be renewed for a period not exceeding twenty years, provided that renewal of lease shall be subject to the satisfactory performance of the lessee during the quarry work in the past in fulfilling the conditions of lease and as per the Tamil Nadu Minor Mineral Concession Rules, 1959.

#### 12. ADDITIONAL CONDITIONS

- a) The period for which the area granted on lease for quarrying under this rules is only for twenty years.
- b) The quarrying lease will be granted only in the name of the successful Tenderer/bidder declared by the state Government.
- c) No quarrying activities commenced there to shall be done before the execution of the agreement.
- d) The Executed lease deed shall be registered at the cost of the lessee.
- e) While quarrying no hindrance shall be caused to the adjoining pattadars and public.
- f) The lessee should restrict his mining operations strictly within the permitted area as defined in the sketch without any encroachments.
- g) The lessee should maintain, at his cost proper signboards indicating the survey numbers, years of lease, name of the lease holder and lease period to the satisfaction of the District Collector and Commissioner/ Director of Geology and Mining and maintain it all time at the quarry site.
- h) The lessee should make his/her own arrangement to form the approach road from the public road to the place of the quarry.
- i) The lessee shall abide to all the provisions of Mines and Minerals (Development and Regulation) Act, 1957, The Metalliferous Mines Regulations 1961 or any other connected Laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Indian Explosives Act 1884, (Central Act IV of 1884) and the Rules made there under and the Tamil Nadu Minor Minerals Concession Rules, 1959.
- j) Quarry lease area should be demarcated state on ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar with DGPS reading shall be erected before commencement of quarrying and it should be maintained throughout the period of lease.
- k) No quarrying shall be made within the safety distance of 7.5 mts to the adjacent patta lands and 10 mts to the adjacent Government Poramboke lands.
- l) Pit Mouth register should be maintained in the quarry site.



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- m) A minimum distance of 50 mts. from any Civil structure/ habitation, Electric / Telephone lines, Railway line, Reservoir, Canal, National highways and other public works shall be kept from the periphery of any excavation area and 10mts safety distance to the village roads shall be kept and maintained during the entire lease period.
- n) Quarry operations shall be carried only after appointing Mines Manager/Mines Mate and it should be carried out on the supervision of Mines Manager/Mines Mate.
- o) Notice of opening of the quarry should be sent to the Director of Mines Safety, Bangalore.
- p) In any accident occur in the quarry area the lessees should give intimation to the Director of Mines Safety Bangalore and District Collector, Dharmapuri at once and lessee is solely responsible for any violation.
- q) The lessee should get the consent for establishment and for operation from the Tamil Nadu Pollution Control Board before the commencement of quarrying operation.
- r) The conditions imposed by the TNPCB in the consent order should be adhered without any omission.
- s) The Environmental Clearance and the consent of the TNPCB should be renewed periodically without any lapse.
- t) If any quarrying is found in the area granted on lease before the date of execution of lease deed, the lease is liable to be cancelled and criminal action will be initiated.
- u) No lease granted under this rule shall be extended.
- v) The lessee shall provide safety distance in the area as per the rules in force or any rule which may be imposed by Government. He must also take up all safety measures as directed by the Government at his own cost.

### 13. SPECIAL CONDITIONS

- i. The Government reserves the right to accept or reject any or all tender / bid applications either in part or in full without any liability to the Government or any of the officers of the Government.
- ii. The authority for acceptance of tender / bid shall rest with the Government. The Government do not bind themselves to accept the highest or any other tender / bid applications.
- iii. The applicants participating in the tender / bid either should have (or) shall obtain a valid Permanent Account Number issued by the Income Tax department of Government of India.
- iv. The successful bidder shall pay 2% on the total tender / bid amount into the TAN number CHEA11977A as TDS to IT Department and produce the remittance challan to the Deputy Director of Geology and Mining, Dharmapuri.
- v. After execution of the lease deed the lessees shall have to pay as 2% on the seigniorage fee as TDS to Income Tax Department on the total Seigniorage fee paid for the total volume of transportation at the time of obtaining transport permit.
- vi. The lessee shall pay 10% of the total amount of the seigniorage fee paid for obtaining transport permit towards the contribution of Dharmapuri District Mineral Foundation Trust Fund and the said amount should be remitted to current account number 6636419266 @ the Indian Bank, Dharmapuri Branch then and there without fail.
- vii. Transportation of Black Granite blocks should not be carried out from 6.00 P.M to 6.00 A.M.
- viii. The lessee shall strictly adhere to the statutory and safety requirements.
- ix. The waste materials generated during quarrying operation shall be dumped only within the area granted under lease.
- x. Quarrying shall be done as per the approved Mining Plan and as such laws made by the Central Government/State Government and any other notifications issued then and there.
- xi. The lessee/grantee shall submit scheme of mining, mine closure plan and other statutory requirements within the time stipulated for submission of the above as per rules.
- xii. The lessee shall submit half yearly returns in Form 'F' and Annual returns in Form 'G' as per GCDR 1999 within the prescribed time limit.
- xiii. The lessee should strictly adhere all the conditions imposed by the state Government, in the lease granting order, conditions imposed in the Environmental Clearance Certificate, conditions imposed by the Director of Geology and Mining and the District Collector, Dharmapuri and any other directions / instructions issued from time to time.
- xiv. Any other conditions stipulated by other Statutory/Government authorities shall be complied with.



Note:

As per announcement of the Hon'ble Chief Minister of Tamil Nadu News Letter No. 182, dated 30.08.2020, there shall be no restriction on intra-State movement of persons and goods. No separate permission/ approval/e-permit will be required for such movements. But the other state persons, who are enter into the Tamil Nadu, they should obtain e-pass. Hence, other state persons, who are interested in Granite Tender cum Auction, they are instructed to apply with valid documents viz., Aadhar Card, Travelling Ticket and Telephone/ Mobile No. for getting e- pass through Auto generated method by computer. After obtaining e-pass should attend the Tender Cum Auction accordingly.

14. SCHEDULE

Areas notified for lease under Tender-Cum-Auction as per Rule 8-A of Tamil Nadu Minor Mineral Concession Rules, 1959.

| Sl. No | Taluk      | Village         | S.F. No.                | Extent Proposed for lease  | Classification of land         | Mineral       |
|--------|------------|-----------------|-------------------------|----------------------------|--------------------------------|---------------|
| (1)    | (2)        | (3)             | (4)                     | (5)<br>(in hecst.)         | (6)                            | (7)           |
| 1      | Dharmapuri | Adagapadi ✓     | 495 (part)              | 2.48.5                     | U.A.W.<br>Karadu               | Black Granite |
| 2      | Pennagaram | Sidumanahalli   | 938 Part Bit-1          | 6.20.0                     | Anathinam                      | Black Granite |
| 3      | Pennagaram | Sidumanahalli ✓ | 938 Part Bit-2          | 5.63.0                     | Anathinam                      | Black Granite |
| 4      | Pennagaram | Ajjanahalli ✓   | 98 &<br>686/4 (part)    | 1.31.5<br>1.44.0<br>2.75.5 | U.A.W                          | Black Granite |
| 5      | Pennagaram | Ajjanahalli     | 856 (Part)              | 4.91.5                     | U.A.W                          | Black Granite |
| 6      | Pennagaram | Ajjanahalli     | 682/2 (Part)            | 2.91.0                     | U.A.W                          | Black Granite |
| 7      | Pennagaram | Ajjanahalli     | 223/B Part<br>(Bit-1)   | 2.58.0                     | Anathinam                      | Black Granite |
| 8      | Pennagaram | Ajjanahalli     | 223/B Part<br>(Bit-2)   | 2.65.0                     | Anathinam                      | Black Granite |
| 9      | Pennagaram | Ajjanahalli     | 830 (P) East<br>& 834/1 | 3.71.0<br>1.29.0<br>5.00.0 | U.A.W<br>Karadu &<br>Anathinam | Black Granite |
| 10     | Pennagaram | Ajjanahalli     | 830 (P) West<br>& 835/3 | 2.32.5<br>0.81.5<br>3.14.0 | U.A.W<br>Karadu &<br>Anathinam | Black Granite |
| 11     | Pennagaram | Ajjanahalli     | 824/3<br>& 823 Part     | 2.11.5<br>2.38.5<br>4.50.0 | Anathinam                      | Black Granite |
| 12     | Pennagaram | Ajjanahalli     | §10/2 (part)            | 2.48.0                     | Anathinam                      | Black Granite |
| 13     | Pennagaram | Ajjanahalli ✓   | 608/2B                  | 4.00.0                     | Anathinam                      | Black Granite |
| 14     | Pennagaram | Ajjanahalli     | 775/1                   | 1.08.5                     | Anathinam                      | Black Granite |





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| (1) | (2)             | (3)                  | (4)                 | (5)<br>(in hec.)           | (6)                         |               |
|-----|-----------------|----------------------|---------------------|----------------------------|-----------------------------|---------------|
| 15  | Pennagaram      | Mangurichi           | 22 (part)           | 5.00.0                     | U.A.W. Karadu               | Black Granite |
| 16  | Pennagaram      | Sunjalanatham        | 587 (Part)          | 4.52.0                     | U.A.W. Karadu               | Black Granite |
| 17  | Pennagaram      | Manchi-naickanahalli | 134/1 (part)        | 1.40.0                     | U.A.W. Kalankuthu           | Black Granite |
| 18  | Pennagaram      | Ramakondahalli       | 802(part)           | 1.94.0                     | U.A.W. Kundru               | Black Granite |
| 19  | Karimangalam    | Jakkupatty           | 151 Part Bit-1      | 3.70.0                     | U.A.W.                      | Black Granite |
| 20  | Karimangalam    | Jakkupatty           | 151 Part Bit-2      | 3.70.0                     | U.A.W.                      | Black Granite |
| 21  | Harur           | Gobinatham-patty     | 281(part)           | 4.54.0                     | U.A.W. Karadu               | Black Granite |
| 22  | Harur           | Polayamballi         | 383/1 Part Bit-1    | 2.60.0                     | U.A.W. Karadu               | Black Granite |
| 23  | Harur           | Polayamballi         | 383/1 Part Bit-2    | 2.00.0                     | U.A.W. Karadu               | Black Granite |
| 24  | Harur           | Polayamballi         | 383/1 Part Bit-3    | 1.52.0                     | U.A.W. Karadu               | Black Granite |
| 25  | Harur           | Reddipatti           | 9 (Part) Bit-1      | 3.20.0                     | U.A.W. Kundru               | Black Granite |
| 26  | Harur           | Reddipatti           | 9/Part Bit-2 & 13/2 | 1.40.0<br>1.03.5<br>2.43.5 | U.A.W. Kundru & Kallankuthu | Black Granite |
| 27  | Pappireddipatty | Alapuram             | 386 (Part)          | 4.88.5                     | U.A.W. Kallankuthu          | Black Granite |
| 28  | Pappireddipatty | Nallagudalahalli     | 94/ Part Bit-2      | 2.20.0                     | U.A.W. Parai                | Black Granite |
| 29  | Pappireddipatty | Sinthalpadi          | 44 (Part)           | 1.10.0                     | U.A.W.                      | Black Granite |
| 30  | Pappireddipatty | Sinthalpadi          | 74 (Part) & 75      | 0.40.0<br>1.05.0<br>1.45.0 | U.A.W. Parai                | Black Granite |

Dharmapuri,  
02-09-2020.

S. MALARVIZHI  
DISTRICT COLLECTOR,  
DHARMAPURI DISTRICT.

PRINTED BY THE DIRECTOR OF STATIONERY AND PRINTING AT THE GOVERNMENT BRANCH PRESS, SALEM  
AND PUBLISHED BY THE COLLECTOR OF THE DISTRICT.

13 Quantity  
Total Amount Tender } 58,88,000/-

Balance Quantity: 17 Quantity.

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**APPENDIX VI-A**  
(See Rule 8-A)

**TENDER APPLICATION FOR GRANT OF QUARRYING LEASE FOR GRANITE**  
(To be submitted in triplicate)



Dated                      Day of                      2020

From

To

The District Collector,  
Dharmapuri.

Madam,

I. I/We submit the application under Rule 8-A of the Tamil Nadu Minor Mineral Concession Rules, 1959, in respect of item No. .... in District Gazette Notification No. .... Dt. .... or in newspaper advertisement, dated. .... I/ We request that quarrying lease under Rule 8-A of the Tamil Nadu Minor Mineral Concession Rules, 1959 may be granted to me /us as per the procedure laid down in the above Rule.

II. A sum of Rs.5000/- (Rupees Five Thousand only) being the non-refundable application fee has been remitted through challan under the following head of account.

"0853 Non-ferrous Mining and Metallurgical Industries-102, Mineral Concession Fees Rent and Royalties-AA Quarries and Minerals 2705- Non -Taxation Fee-Application D.P.Code.No.0853-00-102-AA-2752" Vide Challan number. .... Dated .....@ State Bank of India, Dharmapuri.

(or)

Demand draft Rs.5000/- (Rupees Five thousand only) from a Nationalized Bank (or) Co-operative Bank drawn in favour of the District Collector, Dharmapuri, DD No. .... dated ..... of ..... Bank ..... Branch is enclosed.

III. The required particulars are given below:

1. Name of the applicant in which the quarry lease is required to be granted with full address.
2. (a) Is the applicant an Individual or Private Company, Firm or Association?  
  
(b) If the applicant is an Individual, specify his name, nationality and address:  
  
(c) If the applicant is private company, firm or association, specify name of directors, partners, members and their Nationality (Documentary evidence should be produced)



3. (a) Particulars of remittance of application fee  
(enclose original chalan or Demand draft from  
Nationalised bank / Co-operative bank)
- (b) Particulars of remittance of Earnest Money Deposit  
(enclose original chalan or Demand draft from  
Nationalised bank / Co-operative bank)
4. Has the applicant filed an affidavit stating that the  
applicant-
  - (a) has filed up-to date income-tax returns;
  - (b) has paid the Income tax on him and
  - (c) has paid the income tax on the basis of  
self-assessment as prescribed in the Income  
Tax Act, 1961.
5. (a) Whether Mining Dues Clearance Certificate  
towards payment of quarrying dues,  
if any, enclosed?
- (b) If on the date of application the applicant does not  
hold any quarrying lease / mining lease whether an  
affidavit to this effect is furnished?
6. Is the applicant having an existing industry or  
Industrial programme for proposed industry? Specify  
and enclose the industrial programme and furnish the  
following.
  - (a) Category of the existing / proposed Industry:  
(e.g. 100% E.O.U./ D.G.T.D./ S.S.I)
  - (b) License Number and Date:
  - (c) Installed capacity / Production capacity per annum  
in Sq. Mts
  - (d) Total investment in the industry:
  - (e) Date of commencement of the Industry:
  - (f) Nature of products manufactured [Specify quantities  
of individual items (e.g. building slabs/monuments/  
tiles etc.)] per annum in Sq. Mts.:
  - (g) Annual requirement of raw materials per annum in  
cubic metres:
  - (h) Expansion details, if any (furnish documentary  
evidence) (Furnish above details for proposed  
industry also excepting Sl.No.6(b) if license is  
not yet obtained, 6(e) and 6(h):
7. Minor Mineral which the applicant intends to quarry  
with descriptions:
8. Period for which quarrying lease is required:
9. Total extent of the area applied for:
10. Details of the area for which the tender application is made.

Not Applicable



11

| Sl. No in the<br>Gazette<br>notification | District | Taluk | Village | Survey<br>Number | Area in<br>Hectare |
|------------------------------------------|----------|-------|---------|------------------|--------------------|
| (1)                                      | (2)      | (3)   | (4)     | (5)              | (6)                |

- 11 Maximum tender amount the applicant is willing to offer for getting the area in lease for quarrying: (Specify both in figures and words)
- 12 Particulars of areas already held under quarrying lease in TamilNadu. (Enclose an affidavit showing the particulars of areas mineral wise in each District of the State which the applicant and any other person jointly with him already holds under a quarry lease; already applied for but not yet granted; and being applied for simultaneously).
- 13 Any other particulars which the applicant wishes to furnish:

I /We do hereby declare that the particulars furnished above are correct and am /are ready to furnish any other details and security deposit as may required by the Government or District Collector or District Forest Officer. I hereby swear and state that I/We know very well about the provisions contained in the Tamil Nadu Minor Mineral Concession Rules, 1959 in respect of granting of quarry lease applied for and other conditions stipulated in connection with the quarrying and other operations.

Place :

Yours faithfully

Date :

Signature of the applicant

  
**R. Rajasekar, M.Sc.,**  
**Recognised Qualified Person**  
**Reg. No. RQP / CNN / 264 / 2015/A**





5928

29-3-2006

KMB Trading Company  
Salan 4

K. Yusuff Basha

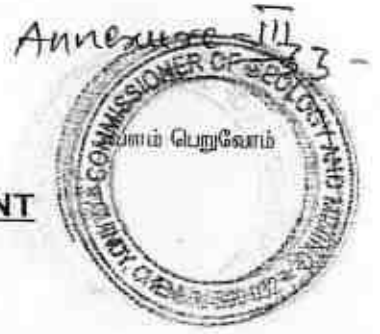
K. Yusuff Basha,  
Managing Partner of the firm  
K. Yusuff Basha & Co.,  
1/15-55  
Thoothukudi

-3-

4. The Capital of the firm shall be contributed by the partners as and when necessary for the purpose of the partnership business.
5. The Duration of the firm shall be "AT WILL".
6. The party of the First Part K.Yusuff Basha shall be the Managing Partner of the firm who shall carry on the business faithfully and diligently to the common interest of the firm and to attend Central & State Government, Sales Tax, Income Tax, Court affairs etc on behalf of the firm.
7. Funds required for the partnership business may be raised by way of loans from outsiders or from the partners. The pronotes shall be signed and executed by K.Yusuff Basha individually on behalf of the firm in all the cases of borrowings. Borrowing by partners in their individual capacity shall not bind the firm in any way.

  
K. Yusuff Basha

**TAMILNADU FOREST DEPARTMENT**



From

To

Thiru.K.Thirumal, I.F.S.,  
District Forest Officer,  
Dharmapuri.

The District Collector,  
Dharmapuri.

E-Mail : [dfodharmapuri@gmail.com](mailto:dfodharmapuri@gmail.com)  
Telephone : 04342-230003  
Fax: 04342- 230613.

C.No.1729/2017/D, Dated. 23.04.2018.

Madam,

Sub: Mines and Minerals - No objection Certificate of Forest Department for conducting open lease of black Granite quarries in the Government Revenue (Puramboke) land - requested - reg.

- Ref:
- 1) District Collector, Dharmapuri C.No.410/2016 (Mines), Dated 06.06.2017.
  - 2) This office C.No. 1729/2017, dated 06.06.2017.
  - 3) Forest Range Officer, Pennagaram C.No. 256/2017, dated 06.09.2017.

-----  
With reference to the above subject, remarks of the Forest Department is detailed below

- 1) All the proposed mining areas falls in the Government Revenue (Purambokku) lands which is outside the Reserved Forest and Protected areas.
- 2) New quarries (minor and major minerals), stone quarrying and crushing units shall be prohibited upto **one km** distance from the Protected area (i.e., Eco-Sensitive Zone).

All existing quarries present **within 500 meters** distance shall be prohibited and those quarries that are present **beyond 500 meters** (but within one km) will be allowed to operate until it reach economically unfeasible stage or till the validity of lease period, after which shall be banned.

 **இந்திய அரசாங்கம்**  
Government of India

 **யூசுப் பாசா கி**  
Yusuff Bashe K

பிறப்பு நாள் / DOB: 11/08/1965  
ஆய்வு / Male



**9227 6356 6537**

**ஆதார் - சாதாரண மனிதனின் அதிகாரம்**

 **இந்திய அடையாளம், தகவல் மற்றும் ஆய்வகம்**  
Unique Identification Authority of India

 **முதலாம் தகவல் / தகவல் பெயர்: கி**  
கொம்பந்தி: எம். சாதாரண மனிதன்  
சாதாரண மனிதன் கொம்பந்தி: சாதாரண மனிதன்  
சாதாரண மனிதன் தகவல்: கி

**Address: 6/01 Mohideen  
Mohideen, 15-15, KMD  
STREET,  
SATHYANARAYANA ROAD,  
Salem, Atagspuram, Tamil  
Nadu, 636004**

**9227 6356 6537**

 1947  
1022 900 1947

 [help@uidai.gov.in](mailto:help@uidai.gov.in)

 [www.uidai.gov.in](http://www.uidai.gov.in)

  
**R. Rajasekar, M.Sc.,**  
Recognised Qualified Person  
Reg. No. RQP / CNN / 264 / 2015/A

भारत सरकार / GOVERNMENT OF INDIA  
खान मंत्रालय / MINISTRY OF MINES  
भारतीय खान ब्यूरो / INDIAN BUREAU OF MINES



R. Rajasekar

अर्हताप्राप्त व्यक्ति के रूप में मान्यता प्रमाण पत्र  
(खनिज रियायत नियमावली, 1960 के नियम 22सी के तहत)  
**CERTIFICATE OF RECOGNITION AS QUALIFIED PERSON**  
(Under Rule 22C of Mineral Concession Rules, 1960)

श्री आर. राजशेकर, पिता राजमानिकम वी, नं.4ए, चोया नगर, पेन्नाडम पी.वो., तीतकूडी तालुक, कडलूर डिस्ट्रिक्ट - 606 105, जिनका फोटो और हस्ताक्षर ऊपर दिया हुआ है, तथा जिनहोंने अपनी अर्हता और अनुभव का संतोषजनक साक्ष्य दिया है, को खनन योजना तैयार करने हेतु खनिज रियायत नियमावली 1960 के नियम 22सी के तहत अर्हताप्राप्त व्यक्ति के रूप में मान्यता प्रदान की जाती है ।

Shri R. Rajasekar, S/o, Rajamanickam V, No.4A, Chozha Nagar, Pennadam P.O., Thittakudi Taluk, Cuddalore - 606 105, whose **Photograph and signature** is affixed herein above, having given satisfactory evidence of his qualifications & experience hereby **RECOGNISED** under Rule 22C of the Mineral Concession Rule, 1960 as a Qualified Person to prepare Mining Plans.

उनकी पंजीयन संख्या है  
His registration number is

RQP /CNN/264/2015/A

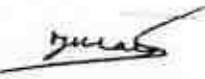
यह मान्यता 10 वर्षों की अवधि के लिए मान्यता है जो दिनांक 23.04.2025 को समाप्त होगी।  
This recognition is valid for a period of 10 years ending on 27.04.2025.

उनके द्वारा प्रस्तुत खनन योजना में गलत जानकारी / दस्तावेज पाए जाने की स्थिति में यह प्रमाण पत्र वापस लिया जाएगा / निरस्त किया जाएगा।

This certificate will liable to be withdrawn / cancelled in the event of furnishing the wrong information / documents in the Mining Plan submitted by him.

स्थान/ Place : Chennai  
दिनांक/ Date : 28.04.2015

  
R. Rajasekar, M.Sc.,  
Recognised Qualified Person  
Reg. No. RQP / CNN / 264 / 2015/A

  
क्षेत्रीय खान नियंत्रक / Regional Controller of Mines  
भारतीय खान ब्यूरो / Indian Bureau of Mines  
चेन्नई क्षेत्र / Chennai Region

## DIRECTORATE OF GEOLOGY AND MINING

From  
Thiru D. Mohan, I.A.S.,  
Director of Geology and Mining,  
Guindy,  
Chennai - 600 032.

To  
M/s. KMB Trading Company,  
No. 3/50, Bangalore Main Road,  
Five Road,  
Salem District - 636 004.

Rc.No. 6164/MM4/2020 dated: 10.10.2025

Sir,

Sub: Mines and Minerals - Minor Mineral - Black Granite - Dharmapuri district - Pennagaram taluk - Ajjanahalli village - over an extent of 4.50.0 ha of Poramboke lands - SF. Nos. 824/3 (2.11.5 ha) and 823 (P) (2.38.5 ha) - Quarry lease application preferred by M/s. KMB Trading Company, Salem - Precise area communicated by the Government - Submission of Modified Mining Plan - Recommended and forwarded by the Deputy Director (G&M), Dharmapuri - Approval accorded.

- Ref:
1. Commissioner of Geology and Mining in original file No. 6164/MM4/2020 dated 31.12.2020 and 06.02.2021.
  2. Government letter No. 274/MME.2/2021-1, dated 23.02.2021 (Precise Area Communication).
  3. This office letter Rc.No. 6164/MM4/2020 dated 19.04.2023.
  4. Modified Mining Plan submitted by M/s. KMB Trading Company Dharmapuri, dated 28.06.2024.
  5. The Assistant Director (G&M), Dharmapuri Letter Rc. No. 176/2020(Mines), dated 10.07.2025.

\*\*\*\*\*

Kind attention is invited to the references cited.

2) A quarry lease application preferred by M/s. KMB Trading Company, Salem for quarrying Black granite over an extent of 4.50.0 ha of patta lands in SF. Nos. 824/3 (2.11.5 ha) and 823 (P) (2.38.5 ha) of Ajjanahalli village, Pennagaram taluk, Dharmapuri district was forwarded to the Government by the Commissioner of Geology and Mining vide reference 1<sup>st</sup> cited under rule 8-A of TNMMCR, 1959. The Government have communicated the precise area for an extent of 4.50.0 ha and requested the applicant to submit the approved mining plan through the Commissioner of Geology and Mining and to produce



environmental clearance obtained from the competent authority for the subject area. Accordingly, the Mining Plan submitted by applicant was approved by CGM vide reference 3<sup>rd</sup> cited

3) In the reference 5<sup>th</sup> cited, the Assistant Director (G&M) has recommended and forwarded the Modified Mining Plan submitted by M/s. KMB Trading Company, Salem for approval.

4) On scrutinizing the mining plan submitted by M/s. KMB Trading Company and the report of the Assistant Director (G&M), Dharmapuri, the following are submitted.

- i) The Government vide letter No. 274/MME.2/2021-1, dated 23.02.2021 has issued Precise area over an extent of 4.50.0 ha of poramboke lands in SF. Nos. 824/3 (2.11.5 ha) and 823 (P) (2.38.5 ha) of Ajjanahalli village, Pennagaram taluk, Dharmapuri district with instructions to furnish the approved mining plan through the Director of Geology and Mining and to produce environmental clearance obtained from the competent authority for the subject area.
- ii) The Mining Plan of M/s. KMB Trading Company, Salem was approved by the Commissioner of Geology and Mining vide reference 3<sup>rd</sup> cited.
- iii) The Assistant Director, G&M, Dharmapuri has stated that M/s. KMB Trading Company, Salem in letter dated 28.06.2025 has informed that they have applied for Terms of Reference for the proposed black granite quarry lease and the proposal was placed in 804<sup>th</sup> SEIAA meeting held on 01.04.2025. Based on the presentation made by the proponent, the SEIAA has decided to recommend for grant of Terms of Reference (TOR) with public hearing subject to certain conditions.
  - The PP (Project Proponent) should indicate the proposed mining area at the bottom and top levels with respect to the ground level (mean

reduced level) and make appropriate corrections in the Approved Mine Plan and the same shall be submitted along with the EIA report.

- iv) The modified mining plan submitted by M/s. KMB Trading Company, Salem has been forwarded and recommended by the Assistant Director, (G&M), Dharmapuri.
- v) In accordance with the said conditions mentioned by SEIAA, M/s. KMB Trading Company, Salem has submitted the Modified Mining upto a depth of 45 m (24m above ground level + 21 m below ground level).
- vi) The Assistant Director (G&M), Dharmapuri has reported that the draft mining plan has been examined as per Act and rules in force.
- vii) The proposed Geological, Mineable and Recoverable reserves as per the Modified Mining Plan are give below:-

|                                                                  |              |
|------------------------------------------------------------------|--------------|
| Geological reserves                                              | 37,10,887 MT |
| Mineable reserves                                                | 11,81,575 MT |
| Proposed production (Five Years)                                 | 3,15,871 MT  |
| Recoverable reserves @ 20% (Saleable Black Granite) (Five Years) | 20918 MT     |
| Granite Waste @ 80% (Five Years)                                 | 83,666 MT    |

- viii) The proposed year wise production for five years is give below:-

| Year         | ROM (in MT)   | Saleable @ 20% (in MT) | Granite Waste @ 80% (in MT) | Top Soil (MT) | Weathered Rock (MT) | Side Burden (MT) |
|--------------|---------------|------------------------|-----------------------------|---------------|---------------------|------------------|
| First        | 117657        | 3824                   | 15296                       | 31680         | 43344               | 23513            |
| Second       | 69275         | 4505                   | 18020                       | -             | -                   | 46750            |
| Third        | 51113         | 3843                   | 15370                       | -             | -                   | 31900            |
| Fourth       | 35700         | 3180                   | 12720                       | -             | -                   | 19800            |
| Fifth        | 42126         | 5566                   | 22260                       | -             | -                   | 14300            |
| <b>Total</b> | <b>315871</b> | <b>20918</b>           | <b>83666</b>                | <b>31680</b>  | <b>43344</b>        | <b>136263</b>    |

- ix) The ROM for the Mining Plan period is 315871 MT and the proposed production for the Mining Plan period is 20918 MT @ 20% recovery for a depth of 45 m.(24 m above ground level + 21 m below ground level)
- x) The Assistant Director (G&M), Dharmapuri has informed that the details given in the Modified Mining plan has been verified with reference to the field conditions of the lease applied area and found correct.
- xi) It has been proposed to dump the waste on the south west and south east side of the lease boundary area.

5) The Modified Mining Plan submitted by M/s. KMB Trading Company, Salem and report of the Assistant Director (G&M), Dharmapuri have been examined with reference to the provisions of Rule 12 of Granite Conservation and Development Rules, 1999 read with G.O.(Ms). No: 87, Industries (MMC.1), Department dated: 22.02.2001. Based on the recommendation of the Assistant Director (G&M), Dharmapuri the mining plan submitted by M/s. KMB Trading Company, Salem is hereby approved subject to the following conditions.

- i. This Modified Mining Plan is approved without prejudice to any other Law applicable to the quarry lease from time to time whether such Laws are made by the Central Government, State Government or any other authority.
- ii. The approval of the Modified Mining Plan does not in any way imply the approval of the Government in terms of any other provisions of the Mines and Minerals (Development and Regulation) Act 1957, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Indian Explosives Act, 1884 (Central Act IV of 1884) and the rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.



- iii. This Modified Mining Plan including progressive mine closure plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
- iv. Provisions of the Mines Act, 1952 and the Rules and Regulations made there under including submission of notice of opening, appointment of manager and other statutory officials as required under Mines Act, 1952 shall be complied with.
- v. Provisions made under Mines and Minerals (Development & Regulation) Act, 1957, MMDR Amendment Act, 2015 and Granite conservation and Development Rules, 1999 made thereunder shall be complied with.
- vi. Environment Clearance should be obtained from the competent authority in respect of the subject area as per rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 and as per the notification of the Ministry of Environment and Forest and any other clearances if any.
- vii. A safety distance of 7.5 m should be provided to the adjacent patta lands and should not cause hindrance to them while quarrying and transportation.
- viii. A safety distance of 10 m should be provided to the adjacent Government Poramboke lands.
- ix. All conditions stipulated in District Gazette No. 05 Extra ordinary notification dated 03.09.2020 should be adhered by the lessee.
- x. The quarry operation should be restricted only in the area granted on lease.
- xi. The applicant should fence the lease granted area with barbed wire before the execution of lease deed as follows.
  - The pillar post shall be firmly grounded with concrete foundation of height not less than 2 m with a distance between two pillars shall not be more than 3mts.

- The applicant shall incorporate the DGPS readings for the entire boundary pillars of the area and the same should be clearly shown in the mining plan.
  - A soft copy of the digitized map with DGPS readings should be submitted in CD to the Assistant Director (G&M), Dharmapuri.
- xii. As per rule 12 (v) of Mineral (other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016, the applicant firm shall at his own expense, erect, maintain and keep in repair all boundary pillars.
  - xiii. No hindrance shall be caused to the adjacent patta lands and Government poramboke lands while quarrying and transportation of granite.
  - xiv. No blasting and transportation of materials in vehicles should be carried out from 6.00 pm to 6.00 am.
  - xv. The waste materials generated during the course of quarrying should be dumped only within the lease hold area that will be earmarked for the purpose in the mining plan as per rule 31 of GCDR, 1999.
  - xvi. Relaxation to be obtained under Rule 106(2)(b) of Metalliferous Mines Regulations, 1961 from the Director of Mines Safety, if necessary.
  - xvii. If anything is found to be concealed as required by the Granite Conservation and Development Rules, 1999 and Tamil Nadu Minor Mineral Concession Rules, 1959 and proposal for rectification has not been made, the approval shall be deemed to have been withdrawn with immediate effect.
  - xviii. The applicant shall strictly adhere to the statutory and safety requirements and the applicant should ensure the periodical medical checkup to the quarry workers to safeguard them from quarry related diseases.
  - xix. The applicant shall submit Scheme of Mining, mine closure plan and other statutory requirements within the time stipulated for submission of the above as per GCDR, 1999 rules.
  - xx. The boundary stone should be fixed for the subject quarry and the district administration / Geology and Mining

Department should ensure that the quarrying operation should be restricted only within the area granted for lease.

- xxi. A green belt should be constructed to prevent sound and air pollution due to the proposed quarrying activity by planting atleast 500 seedlings of Neem and Pungan all around the area.
- xxii. When the quarried material is transported, necessary permits should be produced before the forest check post officials and necessary entries should be made in the register.
- xxiii. The conditions mentioned in G.O No. 79 Industries Department dated 06.04.2015 should be complied with.
- xxiv. The applicant may use mild explosives during quarrying, and storing of explosives if required, by obtaining valid license under explosive Acts and Rules.
- xxv. The applicant should carry out DGPS survey and erection of RCC boundary pillars as per the norms stipulated in the EOI notification in Rc.No.2921/MM4/2019 dated.01.02.2018 and subsequent corrigendum dated 13.08.2019, using the agencies empaneled by the CGM.
- xxvi. Child labourers should not be engaged in the quarry works and the quarry workers should be registered in the Tamil Nadu Construction Labour Welfare Board.
- xxvii. If any violation is found during quarrying operation, the penal provisions of Tamil Nadu Minor Mineral Concession Rules 1959 and other rules and Act in force will attract.
- xxviii. The applicant should remit the Stamp Duty as per the approved modified mining plan during the currency of the lease period.
- xxix. The earlier instances of irregular / illegal quarrying, if any, shall not be regularized through the approval of this document.
- xxx. The applicant shall remit the penalty / cost of mineral / other dues if any as arrived by the District Collector / Assistant Director (G&M), Dharmapuri district.
- xxxi. Non adherence to any condition set-out above, the approval shall be deemed to have been withdrawn with immediate effect.

xxxii. The applicant should comply with the additional conditions stipulated by the Government of India, Ministry of Mines, Order No.11/02/2020, dated.14.01.2020 issued as per the Order of the Hon'ble Supreme Court of India, dated.08.01.2020 which states that "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."

Encl.: Approved Modified Mining Plan.

Sd/- D.Mohan  
Director of Geology and Mining

Forwarded / By Order

  
Joint Director

**Copy to:**

1. The Additional Chief Secretary  
to Government (FAC),  
Natural Resources Department,  
4<sup>th</sup> Floor, Secretariat, Chennai-9.
2. The Director of Mines Safety,  
3<sup>rd</sup> Floor, Left Wing,  
New Additional Building,  
CGO Complex, Shastri Bhawan,  
Nungambakkam, Chennai - 06
3. The District Collector,  
Dharmapuri District.

  
10/10/20

# REVISED MINING PLAN

FOR AJJANAHALLI VILLAGE BLACK GRANITE QUARRY MINING LEASE

WITH PROGRESSIVE QUARRY CLOSURE PLAN

Government Poramboke land /Opencast, Semi-Mechanized mining/Non - forest,  
Non-captive use 'B' Category

Lease period 20 Years from the date of lease execution

(For the ensuring mining plan prepared for the period of first five years)

(Prepared under rule 12 & 13 of Granite Conservation and Development Rules, 1999)



## LOCATION OF THE LEASE AREA

STATE : TAMILNADU  
DISTRICT : DHARMAPURI  
TALUK : PENNAGARAM  
VILLAGE : AJJANAHALLI  
S.F. No's : 823 (Part) & 824/3  
EXTENT : 4.50.0 HECTARES

## ADDRESS OF THE APPLICANTS

**M/s.KMB Trading Company,**

**No.3/50, Bangalore Main Road,**

**Five Roads,**

**Salem District - 636004.**

## PREPARED BY

Dr. S. KARUPPANNAN, M.Sc., Ph.D.

Qualified Person



**GEO TECHNICAL MINING SOLUTIONS**

(A NABET accredited & ISO certified Company)

No: 1/213-B, Natesan Complex,

Oddapatti, Collectorate Post office, Dharmapuri -636705

Ph: +91 9443937841, 7010076633

E-mail: info.gtmsdpt@gmail.com;

Website: www.gtmsind.com

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### ANNEXURES

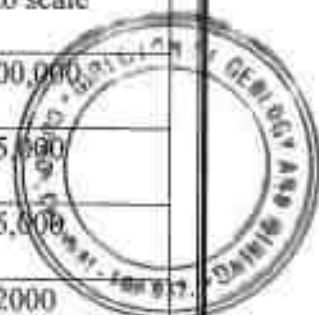
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| 10      | Year wise Development, Production Plan     | V         | 1:2000                                     |
| 11      | Year wise Development, Production Sections | V A       | <b>Section</b><br>HOR 1:1000<br>VER 1:1000 |
| 12      | Mine layout & Land Use Pattern Plan        | VI        | 1:2000                                     |
| 14      | Conceptual Plan                            | VII       | 1:2000                                     |
| 15      | Conceptual Sections                        | VILA      | <b>Section</b><br>HOR 1:1000<br>VER 1:1000 |
| 16      | Progressive Mine Closure Plan              | VIII      | 1:2000                                     |





M/s.KMB Trading Company,  
No.3/50, Bangalore Main Road,  
Five Roads,  
Salem District - 636004.

**CONSENT LETTER FROM THE LESSEE**

The Revised Mining Plan in respect of Black granite quarry lease in S.F.No's : 822/3 (Part) & 824/3 over an extent of 4.50.0hectares of Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District, Tamil Nadu State has been prepared by

**Dr. S. KARUPPANNAN. M.Sc., Ph.D. (Qualified Person)**  
**(Under rule 13 (1) of Granite Conservation and Development Rules, 1999)**

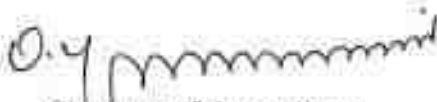
I request "The Commissioner, Department of Geology and Mining, Guindy, Chennai-600032" to make further correspondence regarding modifications of the mining plan with the said Qualified Person on this following address

**Dr. S.KARUPPANNAN.M.Sc.,Ph.D.,**  
Qualified Person  
**GEO TECHNICAL MINING SOLUTIONS**  
(A NABET Accredited & ISO Certified Company)  
No: 1/213-B, Ground Floor, Natesan Complex,  
Oddapatti, Collectorate Post office, Dharmapuri-636705  
Ph: +91 9443937841, 7010076633,  
E-mail: info.gtmsdpi@gmail.com,  
Website: [www.gtmsind.com](http://www.gtmsind.com)

I hereby undertake that all modifications so made in the mining plan by the Qualified Person may be deemed to have been made with my knowledge and consent and shall be acceptable to me and binding on me in all respects.

Place: Salem, TN

Date:

  
Signature of the applicant  
**(M/s.KMB Trading Company)**

**M/s.KMB Trading Company,**  
No.3/50, Bangalore Main Road,  
Five Roads,  
Salem District - 636004.

**DECLARATION**

The Revised Mining Plan in respect of Black granite quarry lease in Government Poramboke land of S.F.No's : 823 (Part) & 824/3 over an extent of 4.50.0hectares of Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District, Tamil Nadu State have been prepared with my consultation and I have understood and agree the contents to implement in accordance with the Granite Conservation & Development Rules, 1999.

Place: Salem, TN

Date:

  
Signature of the applicant  
(M/s.KMB Trading Company)



**Dr.S.KARUPPANNAN,M.Sc.,Ph.D.**

Qualified Person

**GEO TECHNICAL MINING SOLUTIONS**

(ISO certified Company)

No: 1/213-B, Ground Floor, Natesan Complex,

Oddapatti, Collectorate Post office, Dharmapuri-636705

Ph: +91 9443937841, +917010076633,

E-mail: [info.gtmsdpi@gmail.com](mailto:info.gtmsdpi@gmail.com),

Website: [www.gtmsind.com](http://www.gtmsind.com)



**CERTIFICATE**

This is to certify that, the provisions of under rule 12 & 13 of *Granite*

*Conservation and Development Rules, 1999* have been observed in the Mining plan for Black granite quarry lease in Government Poramboke land of S.F.No's: 823 (Part) & 824/3 over an extent of 4.50.0 hectares of Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District, Tamil Nadu State prepared to **M/s.KMB Trading Company, Salem.**

Wherever specific permission / exemptions / relaxations or approvals are required, the applicant will approach the concerned authorities of State and Central governments for granting such permissions etc.

Place: Dharmapuri, TN

Date:

Signature of the Qualified Person.

**Dr.S.KARUPPANNAN,M.Sc.,Ph.D.,**  
Qualified Person

**GEO TECHNICAL MINING SOLUTIONS**  
A NABET Accredited and ISO Certified Company  
1/213-B, Ground Floor, Natesan Complex,  
Collectorate Post Office, Oddapatti,  
Dharmapuri-636705, Tamil Nadu, India

**Dr.S.KARUPPANNAN,M.Sc.,Ph.D.**

Qualified Person

**GEO TECHNICAL MINING SOLUTIONS**

(ISO certified Company)

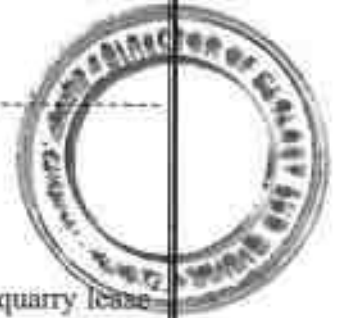
No: 1/213-B, Ground Floor, Natesan Complex,

Oddapatti, Collectorate Post office, Dharmapuri-636705

Ph: +91 9443937841, +917010076633,

E-mail: [info.gtmsdpi@gmail.com](mailto:info.gtmsdpi@gmail.com),

Website: [www.gtmsind.com](http://www.gtmsind.com)



### CERTIFICATE

I certify that, in preparation of Mining plan in respect of Black granite quarry lease in S.F.No's : 823 (Part) & 824/3 over an extent of 4.50.0hectares of Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District, Tamil Nadu State prepared to **M/s.KMB Trading Company**, Salem, Covers all the provisions of Mines Act, Rules, and Regulations etc made therein and if any specific permissions required the applicant should approach "**The Director General of Mines and Safety**", Chennai. The standards prescribed by DGMS with respect to mines health will be strictly implemented.

Place: Dharmapuri, TN

Date:

Signature of the Qualified Person.

**Dr.S.KARUPPANNAN,M.Sc.,Ph.D.,**

Qualified Person

**GEO TECHNICAL MINING SOLUTIONS**

A NADET Accredited and ISO Certified Company

1/213-B, Ground Floor, Natesan Complex,

Collectorate Post Office, Oddapatti,

Dharmapuri-636705, TamilNadu, India

# MINING PLAN

## FOR AJJANAHALLI VILLAGE BLACK GRANITE MINING LEASE WITH PROGRESSIVE QUARRY CLOSURE PLAN

Government Poramboke land /Opencast-Semi Mechanized Mining/Non-Forest  
Non-Captive Use – “B” Category

**Lease Period 20 Years from the date of lease execution**

*(For the ensuring mining plan prepared for the period of first five years)*

**(Prepared under rule 12 & 13 of Granite Conservation and Development Rules, 1999)**



### **INTRODUCTORY NOTES:**

- a) **Introduction:** The Mining plan with progressive quarry closure plan is prepared for **M/s.KMB Trading Company**, residing at No.3/50, Bangalore Main Road, Five Roads, Salem District – 636004 and filed with application for new proposal has requested to grant the quarrying lease for Black granite in S.F.No's. 823 (Part) & 824/3 over an extent of 4.50.0hectares of Ajjanahalli Village, Pernagaram Taluk, Dharmapuri District, Tamil Nadu State. Special publication Rc.No.410/2016/(Mines) dated 02.09.2020 for eligible Govt Poramboke land quarry lease through tender cum action published in the Dharmapuri district gazette notification English and Tamil No.05 dated 03.09.2020. On behalf of District Collector, the special officer appointed by district collector had conducted the tender opening dated on 28.09.2020 and the auction held on 29.09.2020, M/s.KMB Trading Company has requested the highest bid amount. The proposal of the District Collector, Dharmapuri forwarded to the Commissioner of Geology and mining, Chennai, dated 23.10.2020. In this connection the Commissioner of Geology and mining, Chennai has filed the proposal on 31.12.2020 and 06.02.2021.
- b) **Letter of Principal Secretary of Tamil Nadu:** The Principal Secretary to Government of TamilNadu has directed to the applicant M/s.KMB Trading Company through his precise area communication letter 274/MME.2/2021-1, Dated: 23.02.2021, to furnish approved mining plan through the Commissioner of Geology and Mining within a period of 3 months as per sub-rule (8)(a)(iv) of rule 8-A of the TamilNadu Minor Mineral Concession Rules, 1959 and to produce Environmental Clearance obtained from competent authority for the quarrying lease black granite at Tamil Nadu State, Dharmapuri

District, Pennagaram Taluk, Ajjanahalli Village in S.F.No's. 823 (Part) & 824/3 over an extent of 4.50.0hectares has grant of quarrying lease for 20 (Twenty) years under rule 8-A of Tamil Nadu Minor Mineral Concession Rules, 1959, subject to the following conditions: -

- 1) A safety distance of 7.5 meters and 10 meters should be provided to the adjacent patta and Government Poramboke lands, respectively.
- 2) All conditions stipulated in the District Gazette No.05 Extra ordinary notification dated 03.09.2020 should be adhered by the lessee.
- 3) Environmental clearance should be obtained from the State Level Environmental Impact Assessment Authority before grant of quarry lease as per rule 42 of the Tamil Nadu Minor Mineral Concession Rules, 1959.
- 4) The applicant firm should fence the lease granted area with barbed wire before the execution of lease deed as follows: -
  - The pillar post shall be firmly grounded with concrete foundation of height not less than 2 meters with a distance between two pillars shall not be more than 3 meters.
  - The applicant firm shall incorporate the DGPS readings for the entire boundary Pillars of the area and the same should be clearly shown in the mining plan.
  - A soft copy of the digitized map with DGPS readings should be submitted in the CD form to the Deputy Director, Dharmapuri.
- 5) The District administration and Geology and Mining department should ensure the conditions imposed in G.O.Ms. No.79, Industries Department, dated 06.04.2015.
- 6) As per rule 12 (V) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016, the applicant firm shall at his own expenses erect, maintain and keep in repair all the boundary pillars.
- 7) The applicant firm should use mild explosives during quarrying.
- 8) Child labourers should not be engaged in the quarry works.
- 9) If any violation is found during quarrying operation, the penal provisions of the Tamil Nadu Minor Mineral Concession Rules, 1959 and other rules and act in force will attract.
- 10) The applicant firm should ensure that while starting the quarry work, all the quarry workers working under their control are registered in the Labour Welfare Board and also enrolled in the ongoing insurance scheme.
- 11) The District Collector, Dharmapuri shall obtain a sworn-in-affidavit from the applicant firm containing the above conditions before execution of lease deed and also ensure that the instructions issued in Government Letter No.





12789/MMB2/2002-7, Industries Department, Dated: 9.1.2003 are complied with.

- 3) **The previous lease particulars:** The proposed lease area was previously granted to quarrying of black granite in favor of M/s.Emmessen Exports, in the S.F.No.824/3(P) extent of 1.83.0Hects vide G.O.Ms.No.750, Industries (MMB) Department, dated 24.07.1990 and the lease period is 19.08.1990 to 18.08.2000 for a period of 10 years

Now, applicant applied for new proposals has submitted to the District Collector, Department of Geology and Mining, Dharmapuri dated 23.10.2020 and the Principal Secretary to Government, recommended to his precise area communication letter 274/MME.2/2021-1, Dated: 23.02.2021 for period of twenty years recommended in favor of M/s.KMB Trading Company, Salem District for quarrying lease black granite at Tamil Nadu State, Dharmapuri District, Pennagaram Taluk, Ajjanahalli Village in S.F.No's: 823 (Part) & 824/3, over an extent of 4.50.0hectares

There is an existing pit was noticed and marked in the surface and geological plan (Ref Plate No's. III).

- c) **Preparation and submission of Revised Mining plan:** The Project Proponent, Tvl. KMB Trading company has applied for Terms of Reference for the proposed black granite quarry lease over an extent **4.50.0 Ha** at S.F.Nos. 823 (P) & 824/3 of Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District, Tamil Nadu. The proposal was placed in **804<sup>th</sup> SEIAA meeting held on 01.04.2025**. Based on the presentation made by the proponent SEIAA decided to recommend for grant of Terms of Reference (TOR) with Public Hearing. After detailed deliberations, the Authority accepted the recommendations of SEAC and decided to grant Terms of Reference (ToR) with Public Hearing subject to the conditions as recommended by SEAC in addition to the following conditions.

- *The PP should indicate the proposed mining area at the bottom and top levels with respect to the ground level (mean Reduced Level) and make appropriate corrections in the Approved Mine Plan and the same shall be submitted along with the EIA report.*

*In the revised mining plan prepared for indicate the ground level at the bottom and top levels with respect to the ground level (mean Reduced Level).*

- d) **Geological resources and Mineable reserves:** Geological resource of total ROM is estimated to be **3710887MT (Note: Metric Tonne)** including the resources of safety zone. Of which, Black granite is about **125111MT** at the recovery of 20% and granite

rejects are 500424MT at 80%, Weathered rock is about 242976 MT, Top soil is 161984MT and side burden is 2680392MT (Refer Plate No's. IVA). The mineable reserve of ROM is estimated to be 1181575MT by deducting the reserve safety zone, block in benches from the total Geological resources. Of which, Black granite is about 93901MT at the recovery of 20% and granite rejects are 375597MT at 80%, weathered rock is about 134196MT, Top soil is 95280MT and side burden is 482601MT upto a depth of 45m (24m above ground level +21m below ground level) (Refer Plate No's. VII A).

- c) **Proposed production schedule:** Total proposed production of ROM is about 315871MT. Of which, Black granite is about 20918MT at the recovery of 20% and granite rejects are 83666MT at 80%, weathered rock is about 43344MT, Top soil is 31680MT and side burden is 136263MT up to a depth of 45m (24m above ground level +21m below ground level) for first five years mining plan period. Annual Peak production is 5566MT of Black granite per year (Refer Plate No. VA).

f) **Environmental sensitivity of the lease area: -**

1. **Interstate Boundary:** There is a Karnataka Interstate Boundary situated about 5.8km radius away on the western side of the lease area.
2. **Wildlife Sanctuaries any:** There is a Cauvery Wildlife Sanctuary is located at 8.74km from the proposed site of the lease area.
3. **Forest (conservation) Act, 1980:** There is no Reserved Forest is situated around 60m radius from the lease area.
4. **CRZ Notification, 2019:** There is no Sea coastal zone found within radius of 10km and this project site doesn't attract CRZ Notification, 2019.

**1.0 GENERAL:**

|    |                       |                                                |
|----|-----------------------|------------------------------------------------|
| a. | Name of the Applicant | M/s.KMB Trading Company                        |
|    | Applicant address     | : No.3/50, Bangalore Main Road,<br>Five Roads, |
|    | District              | : Salem                                        |
|    | State                 | : Tamil Nadu                                   |
|    | Pin code              | : 636004                                       |
|    | Phone                 | :                                              |
|    | Fax                   | : Nil                                          |
|    | Gram                  | : Nil                                          |
|    | Telex                 | : Nil                                          |
|    | E-mail                | : —                                            |



|    |                                                                                    |                                                                                                                                                                                                                                                          |
|----|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| b. | Status of the applicant                                                            |                                                                                                                                                                                                                                                          |
|    | Private individual                                                                 | : Private individual                                                                                                                                                                                                                                     |
|    | Cooperative Association                                                            | : ---                                                                                                                                                                                                                                                    |
|    | Private company                                                                    | : ---                                                                                                                                                                                                                                                    |
|    | Public Company                                                                     | : ---                                                                                                                                                                                                                                                    |
|    | Public Sector Undertaking                                                          | : ---                                                                                                                                                                                                                                                    |
|    | Joint Sector Undertaking                                                           | : ---                                                                                                                                                                                                                                                    |
|    | Other (pl. specify)                                                                | : ---                                                                                                                                                                                                                                                    |
| c. | Mineral(s) Which are occurring in the area and which the applicant intends to mine | : Black granite quarry lease                                                                                                                                                                                                                             |
| d. | Period for which the mining lease granted /renewed/ proposed to be applied         | : Mining lease proposed for the period of 20 (Twenty) years under rule 8-A of Tamil Nadu Minor Mineral Concession Rules, 1959                                                                                                                            |
| e. | Name of the QP preparing the Mining Plan                                           | : Dr. S.KARUPPANNAN, M.Sc.,Ph.D.                                                                                                                                                                                                                         |
|    | Address                                                                            | : <b>GEO TECHNICAL MINING SOLUTIONS</b><br>No: 1/213-B, Ground Floor,<br>Natesan Complex, Oddapatti,<br>Collectorate Post office, Dharmapuri-636705<br>Ph: +91 9443937841, +917010076633,<br>E-mail: info.gtmsdpi@gmail.com,<br>Website: www.gtmsind.com |
|    | Phone                                                                              | : +91 9443937841, 7010076633                                                                                                                                                                                                                             |
|    | Fax                                                                                | : Nil                                                                                                                                                                                                                                                    |
|    | e-mail                                                                             | : info.gtmsdpi@gmail.com                                                                                                                                                                                                                                 |
|    | Telex                                                                              | : Nil                                                                                                                                                                                                                                                    |
| f. | Name of the prospecting agency                                                     | : The Commissioner,<br>Department of Geology and Mining                                                                                                                                                                                                  |
|    | Address                                                                            | : Thiru.Ve.Ka.Industrial Estate,Guindy, Chennai-600032                                                                                                                                                                                                   |
|    | Phone                                                                              | : ---                                                                                                                                                                                                                                                    |
| g. | Reference No. and date of consent letter from the State government                 | : The Principal Secretary to Government,<br>Government of Tamil Nadu, Letter.No. 274/MME.2/2021-1, Dated: 23.02.2021                                                                                                                                     |

## 2.0 LOCATION AND ACCESSIBILITY:

|    |                                                          |                           |                      |                        |                             |                             |
|----|----------------------------------------------------------|---------------------------|----------------------|------------------------|-----------------------------|-----------------------------|
| a. | Details of the Area:                                     | : Refer plate no: IA & IB |                      |                        |                             |                             |
|    | District & State                                         | : Dharmapuri, Tamil Nadu  |                      |                        |                             |                             |
|    | Taluk                                                    | : Pennagaram              |                      |                        |                             |                             |
|    | Village                                                  | : Ajjanahalli             |                      |                        |                             |                             |
|    | Khasra No./ Plot No./ Block Range / Felling Series etc.: |                           |                      |                        |                             |                             |
|    | Survey No.                                               | Sub division              | Total Extent in Hect | Name of the Land Owner | Mine lease Applied S.F. No. | Mine lease Applied Area out |

|                                                                                                                                                                                                                                                                                                                                                            |                  |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         | of total area in hect. |           |          |           |   |                  |                 |   |                  |                 |   |                 |                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------|-----------|----------|-----------|---|------------------|-----------------|---|------------------|-----------------|---|-----------------|-----------------|
| 823                                                                                                                                                                                                                                                                                                                                                        | -                | 4.98.0          | Government                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 823 (P) | 2.38.5                 |           |          |           |   |                  |                 |   |                  |                 |   |                 |                 |
| 824                                                                                                                                                                                                                                                                                                                                                        | 3                | 2.11.5          | Poramboke Land                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 824/3   | 2.11.5                 |           |          |           |   |                  |                 |   |                  |                 |   |                 |                 |
| <b>Total Extent</b>                                                                                                                                                                                                                                                                                                                                        |                  | <b>7.09.5</b>   | <b>Total lease area extent</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | <b>4.50.0</b>          |           |          |           |   |                  |                 |   |                  |                 |   |                 |                 |
| Lease area (hectares)                                                                                                                                                                                                                                                                                                                                      |                  |                 | : 4.50.0 hectares                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |                        |           |          |           |   |                  |                 |   |                  |                 |   |                 |                 |
| Whether the area is recorded to be in forest (please specify whether protected, reserved, etc)                                                                                                                                                                                                                                                             |                  |                 | : The proposed lease area is recorded as Govt Poramboke land. Copy of 'A' register is enclosed. (Ref. Anne. No: VI)                                                                                                                                                                                                                                                                                                                                                                                                                      |         |                        |           |          |           |   |                  |                 |   |                  |                 |   |                 |                 |
| Ownership / Occupancy                                                                                                                                                                                                                                                                                                                                      |                  |                 | : Govt of Tamilnadu (Ref. Annex. No:VI).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |                        |           |          |           |   |                  |                 |   |                  |                 |   |                 |                 |
| Existence of Public Road / Railway line if any nearby and approximate distance                                                                                                                                                                                                                                                                             |                  |                 | : <ul style="list-style-type: none"> <li>✓ Exploited Black granite materials will be transported to through approach road is situated on the north eastern side.</li> <li>✓ There is no NH road situated around 5km radius from the lease area.</li> <li>✓ There is no SH road situated around 5km radius from the lease area.</li> <li>✓ There is MDR-654 road situated about 2.0km radius away from the eastern side of the lease area.</li> <li>✓ There is no railway line situated around 5km radius from the lease area.</li> </ul> |         |                        |           |          |           |   |                  |                 |   |                  |                 |   |                 |                 |
| Toposheet No. with latitude and longitude                                                                                                                                                                                                                                                                                                                  |                  |                 | : Toposheet No. 57 H/16<br>Latitude : From 12°02'36.9302"N<br>To 12°02'48.7413"N<br>longitude: From 77°47'52.0568"E<br>to 77°48'05.2343"E                                                                                                                                                                                                                                                                                                                                                                                                |         |                        |           |          |           |   |                  |                 |   |                  |                 |   |                 |                 |
| Geo-Coordinates of the lease boundary:                                                                                                                                                                                                                                                                                                                     |                  |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |                        |           |          |           |   |                  |                 |   |                  |                 |   |                 |                 |
| <table border="1"> <thead> <tr> <th>PILLAR No</th> <th>LATITUDE</th> <th>LONGITUDE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>12°02'44.3356" N</td> <td>77°47'52.0568"E</td> </tr> <tr> <td>2</td> <td>12°02'48.3253" N</td> <td>77°47'52.9547"E</td> </tr> <tr> <td>3</td> <td>12°02'48.7413"N</td> <td>77°47'55.7122"E</td> </tr> </tbody> </table> |                  |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |                        | PILLAR No | LATITUDE | LONGITUDE | 1 | 12°02'44.3356" N | 77°47'52.0568"E | 2 | 12°02'48.3253" N | 77°47'52.9547"E | 3 | 12°02'48.7413"N | 77°47'55.7122"E |
| PILLAR No                                                                                                                                                                                                                                                                                                                                                  | LATITUDE         | LONGITUDE       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |                        |           |          |           |   |                  |                 |   |                  |                 |   |                 |                 |
| 1                                                                                                                                                                                                                                                                                                                                                          | 12°02'44.3356" N | 77°47'52.0568"E |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |                        |           |          |           |   |                  |                 |   |                  |                 |   |                 |                 |
| 2                                                                                                                                                                                                                                                                                                                                                          | 12°02'48.3253" N | 77°47'52.9547"E |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |                        |           |          |           |   |                  |                 |   |                  |                 |   |                 |                 |
| 3                                                                                                                                                                                                                                                                                                                                                          | 12°02'48.7413"N  | 77°47'55.7122"E |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |                        |           |          |           |   |                  |                 |   |                  |                 |   |                 |                 |

|     |                                                                                                                                                                                                                                                                                                                                                                           |    |                                        |                 |  |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----------------------------------------|-----------------|--|
|     |                                                                                                                                                                                                                                                                                                                                                                           | 4  | 12°02'43.7631" N                       | 77°47'57.3776"E |  |
|     |                                                                                                                                                                                                                                                                                                                                                                           | 5  | 12°02'42.8893"N                        | 77°47'59.0373"E |  |
|     |                                                                                                                                                                                                                                                                                                                                                                           | 6  | 12°02'43.5471"N                        | 77°48'01.3070"E |  |
|     |                                                                                                                                                                                                                                                                                                                                                                           | 7  | 12°02'44.3090"N                        | 77°48'04.1131"E |  |
|     |                                                                                                                                                                                                                                                                                                                                                                           | 8  | 12°02'44.5198" N                       | 77°48'05.2343"E |  |
|     |                                                                                                                                                                                                                                                                                                                                                                           | 9  | 12°02'39.6314" N                       | 77°47'57.9847"E |  |
|     |                                                                                                                                                                                                                                                                                                                                                                           | 10 | 12°02'36.9302" N                       | 77°47'57.6795"E |  |
|     | Land use pattern (Forest, Agricultural, Grazing, Barren etc.)                                                                                                                                                                                                                                                                                                             |    | : It is an existing quarry lease area. |                 |  |
| b). | <i>Attach a general location and vicinity map showing area boundaries and existing and proposed access routs. It is preferred that the area to be marked on a survey of India topographical map or a cadastral map or forest map as the case may be. However if none of these are available, the area should be shown on an accurate sketch map on scale of 1 : 5000.</i> |    | : Refer plate no-IA & IB               |                 |  |



#### **i) INFRASTRUCTURE AND COMMUNICATION:**

| S.No | Description              | Place                     | Distance | Direction |
|------|--------------------------|---------------------------|----------|-----------|
| a.   | Nearest post office      | Eriyur –<br>Sunchalnatham | 3.8Km    | South     |
| b.   | Nearest police station   | Eriyur                    | 4.07Km   | South     |
| c.   | Nearest fire station     | Hogenakkal                | 8.7Km    | North     |
| d.   | Nearest medical facility | Pennagaram                | 14.0Km   | Northeast |
| e.   | Nearest school           | M.Thanda                  | 1.20km   | South     |
| f.   | Nearest railway station  | Sivadi                    | 34.4km   | East      |
| g.   | Nearest port facility    | Chennai                   | 310.0km  | Northeast |
| h.   | Nearest airport          | Salem                     | 40.64km  | SE        |
| i.   | Nearest DSP office       | Dharmapuri                | 37.0km   | Northeast |
| j.   | Nearest villages         | Sigaralahalli             | 1.25km   | NW        |
|      |                          | Ajjanahalli               | 1.5km    | SE        |
|      |                          | M.Thanda                  | 1.4km    | SW        |
|      |                          | Badanavadi R.F            | 1.0km    | West      |

## PART – A

### 3.0 GEOLOGY AND MINERAL RESERVES:

*(a) Briefly describe the topography and general geology and local/mine geology of the mineral deposit including drainage pattern:*

|     |            |   |                                                                                                                                                                |
|-----|------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (i) | Topography | : | The lease area exhibits an undulated terrain and average altitude of about 422m AMSL. The slope is towards south east side and falls in Toposheet no. 57 H/16. |
|-----|------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------|

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| (ii) | General Geology:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |
|      | <p>The geological formations of the district belong mainly to Archaean age along with rock of Proterozoic age. The former is represented by Khondalite Group of rocks, Charnockite Group of rocks, Migmatite Complex, Sathyamangalam Group of rocks, Bhavani Group of rocks and Kolar Alkaline rocks. The Charnockite Group occupies a major part of southern part of this district, and it is mainly charnockites along with some small bands of pyroxene granulites and magnetite quartzite. Two small patches of pyroxenite and gabbro are seen to occur in the pyroxene granulite near about 10 km. NE of Harur. The Migmatite Complex includes garnetiferous quartzo feldspathic gneiss and hornblende-biotite gneiss, the former exposed on the western part of the district. The Bhavani Group in this area includes fissile hornblende-biotite gneiss, granitoid gneiss and pink migmatite. The Alkaline Complex is represented by epidote-hornblende gneiss, ultramafics, syenite and carbonatite and these are distributed in the eastern part of the district.</p> |  |

**Order of superposition as under,**

| Age                           | Group             | Rock Formation                                       |
|-------------------------------|-------------------|------------------------------------------------------|
| Recent to Sub recent          | ---               | Topsoil                                              |
| Archaean to lower Proterozoic | --                | Dolerite                                             |
| Archaean                      | Migmatite complex | Hornblende -biotite gneiss                           |
|                               | Charnockite Group | Magnetite quartzite, Pyroxene Granulite, Charnockite |

|       |                                                                                                                                                                                                              |  |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| (iii) | Local / Mine Geology of The Mineral Deposit:                                                                                                                                                                 |  |
|       | <p><b>a) Topography of the proposed lease area:</b></p> <p>The lease area exhibits an undulated terrain and average altitude of about 422m AMSL. The slope is towards south east side of the lease area.</p> |  |

The black granite mostly concealed under reddish gravelly soil with thickness of 2m and 3m weathered rock below from the top soil, totally overburden having thickness of 5m followed by black Granites. The granite gneiss forms the country rock the area with trending of North-South with a dip of 90° East and " **BLACK GRANITE**" (Dolerite) between the batholithic formation of pre-existing country rock of Granite gneiss discordantly with trending of N20°W – S62°E with Vertical dipping with an average length of 280 meters and average width of 25 meters (The width of the dyke is identified by Geophysical prospecting) which stretches about the entire area. The black granite is clearly exposed at surface and few small detached boulders are observed with linear strike direction of the dyke with spheroidal weathering and cuboidal joints.

The black granite (Dolerite dyke) rock is brownish black in color, inequigranular, fine to medium grained texture. It shows sub-ophitic texture. The color of the rock changes depending on the texture of the rock. The dykes is fine grained at the contact of country rock. The dolerite is composed of laths of plagioclase embedded in the plates of Augite (Ophitic texture), Apatite, Magnetite and Pyrite forms the secondary mineral.

Strike and dip joints are observed at the surface level which is likely to decrease in deep seated condition. The recovery of black granite may vary from 20%. Hence, taking in to consideration of the above geological factors, an average recovery of 20% upto 45m depth (2m Topsoil + 3m weathered rock + 40m Black granite) has been computed as economically viable at present market scenario. This mining plan is discussed based on 20% recovery factor. The physical attitude of the black granite deposit in this area is given below.

Strike direction = N20°W – S62°E

Dip direction and amount = Vertical dip.

The Surface plan showing elevation, contour, existing pit dimension, accessibility road and Geological map was prepared the lease area.

#### **b) Mode of origin:**

Dolerite is typically found as a hypabyssal igneous rock, typically within dykes. Formation of dolerite cools under basaltic volcanoes, dyke and has strike direction of NW-SE with steep dip and traversed by dolerite dyke trending NW-SE deviates upto N20°W – S62°E direction. It cools moderately



quickly when magma moves up into fractures and weak zones below a volcano. There, it forms dikes (tabular igneous rock bodies that cut across pre-existing rock layers or bodies) or sills (tabular igneous rock bodies that form parallel to pre-existing rock layers). The moderate cooling rate allows small visible crystals to form in the rock.

**c) Physiography of the rocks:**

A medium grained mafic intrusive rock whose main components are calcic plagioclase and clinopyroxene and which is characterized by ophitic texture; usually found in sills and dykes.

**d) Chemical composition of rocks:**

The black granite is mainly composed of Augite, plagioclase feldspar, pyroxene.

**Order of superposition of rocks in the proposed site:**

| Age                           | Group | Rock Formation                        |
|-------------------------------|-------|---------------------------------------|
| Recent to Sub recent          | —     | Topsoil and weathered rock (5m thick) |
| Archaean to lower Proterozoic | —     | Black granite (Dolerite)              |

(iv) Drainage Pattern : There are no major water bodies like rivers, etc., located within a radius of 50m and the drainage is sub-dendritic in general.

(b) *The topographic plan of the lease area prepared on a scale of 1 : 1000 or 1 : 2000 with contour interval of 3 to 10m depending upon the topography of the area should be taken as the base plan for preparation of geological plan. The details of exploration already carried out including evidences of mineral existence should be shown on the geological plan:*

a. Present status: QP along with hydrogeologists and DGPS team of Geotechnical Mining Solutions, Dharnapuri analyzed the lease area for mining plan preparation. The proposed lease area is a fresh lease grant and the area exhibits existing pit and has strike of the granite body is trending in N20°W – S62°E direction with steep dip.

b. Surface Plan : Surface plan showing elevation, contours, existing pit and accessibility road was

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | prepared at the scale of 1: 1000, as shown in Plate No.III.                                                                                                           |                           |                               |                |                           |                               |   |     |     |     |     |    |     |     |     |     |     |     |     |     |     |    |     |     |     |     |   |     |     |     |     |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-------------------------------|----------------|---------------------------|-------------------------------|---|-----|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|-----|-----|-----|---|-----|-----|-----|-----|
|      | c. Geological sections :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Longitudinal and transverse geological cross sections were prepared at the horizontal scale of 1: 1000 and at the vertical scale of 1:1000, as shown in Plate No. IV. |                           |                               |                |                           |                               |   |     |     |     |     |    |     |     |     |     |     |     |     |     |     |    |     |     |     |     |   |     |     |     |     |
|      | should be prepared at suitable intervals on a scale of 1: 1000 / 1: 2000;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                       |                           |                               |                |                           |                               |   |     |     |     |     |    |     |     |     |     |     |     |     |     |     |    |     |     |     |     |   |     |     |     |     |
| c)   | <p><i>Broadly indicate the Yearwise future programme of exploration, taking into consideration the future production programme planned in next five years as in table below :-</i></p> <table border="1"> <thead> <tr> <th>Year</th> <th>No.of boreholes</th> <th>Total meterage</th> <th>No.of Pits and Dimensions</th> <th>No.of Trenches and Dimensions</th> </tr> </thead> <tbody> <tr> <td>I</td> <td>N.A</td> <td>---</td> <td>---</td> <td>N.A</td> </tr> <tr> <td>II</td> <td>N.A</td> <td>---</td> <td>---</td> <td>N.A</td> </tr> <tr> <td>III</td> <td>N.A</td> <td>---</td> <td>---</td> <td>N.A</td> </tr> <tr> <td>IV</td> <td>N.A</td> <td>---</td> <td>---</td> <td>N.A</td> </tr> <tr> <td>V</td> <td>N.A</td> <td>---</td> <td>---</td> <td>N.A</td> </tr> </tbody> </table> <p>No future programme proposed in this area. Hence exploration proposal is not required and its homogeneous parent rock to this mining project.</p>                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                       | Year                      | No.of boreholes               | Total meterage | No.of Pits and Dimensions | No.of Trenches and Dimensions | I | N.A | --- | --- | N.A | II | N.A | --- | --- | N.A | III | N.A | --- | --- | N.A | IV | N.A | --- | --- | N.A | V | N.A | --- | --- | N.A |
| Year | No.of boreholes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Total meterage                                                                                                                                                        | No.of Pits and Dimensions | No.of Trenches and Dimensions |                |                           |                               |   |     |     |     |     |    |     |     |     |     |     |     |     |     |     |    |     |     |     |     |   |     |     |     |     |
| I    | N.A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ---                                                                                                                                                                   | ---                       | N.A                           |                |                           |                               |   |     |     |     |     |    |     |     |     |     |     |     |     |     |     |    |     |     |     |     |   |     |     |     |     |
| II   | N.A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ---                                                                                                                                                                   | ---                       | N.A                           |                |                           |                               |   |     |     |     |     |    |     |     |     |     |     |     |     |     |     |    |     |     |     |     |   |     |     |     |     |
| III  | N.A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ---                                                                                                                                                                   | ---                       | N.A                           |                |                           |                               |   |     |     |     |     |    |     |     |     |     |     |     |     |     |     |    |     |     |     |     |   |     |     |     |     |
| IV   | N.A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ---                                                                                                                                                                   | ---                       | N.A                           |                |                           |                               |   |     |     |     |     |    |     |     |     |     |     |     |     |     |     |    |     |     |     |     |   |     |     |     |     |
| V    | N.A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ---                                                                                                                                                                   | ---                       | N.A                           |                |                           |                               |   |     |     |     |     |    |     |     |     |     |     |     |     |     |     |    |     |     |     |     |   |     |     |     |     |
| d)   | <p><i>Indicate geological and recoverable reserves and grade, duly supported by standard method of estimation and calculations along with required sections (giving split up of various categories i.e. proved, probable, possible). Indicate cut-off grade. Availability of resources should also be indicated for the entire leasehold.</i></p> <p>The geological resources were computed by cross section method with respect to the boundaries of the lease area. In this method, the lease area was divided into one longitudinal and three transverse sections to calculate the volume of material up to the depth of 45m (which is 2m topsoil + 3m Weathered Rock + 40m Black granite) (24m above ground level +21m below ground level). The longitudinal and transverse cross sections were assigned XY-AB, XY-CD &amp; XY-EF using the cross-sectional method, total ROM is estimated to be 3710887MT including the resources of safety zone. Of which, Black granite is about 125111MT at the rate of 20% and granite waste are 500424MT at the recovery of 80%, Weathered rock is 242976MT, Topsoil is 161984MT and side burden is 2680392MT upto a depth of 45m (24m above ground level +21m below ground level) (Refer Plate No. IVA).</p> |                                                                                                                                                                       |                           |                               |                |                           |                               |   |     |     |     |     |    |     |     |     |     |     |     |     |     |     |    |     |     |     |     |   |     |     |     |     |

| GEOLOGICAL RESOURCES |       |               |              |              |                          |              |             |                                  |                          |                |                      |                   |
|----------------------|-------|---------------|--------------|--------------|--------------------------|--------------|-------------|----------------------------------|--------------------------|----------------|----------------------|-------------------|
| Section              | Bench | Length in (m) | Width in (m) | Depth in (m) | RoM in (M <sup>3</sup> ) | Bulk Density | RoM in (MT) | Black Granite 20% Recovery in MT | Graville Waste 80% in MT | Top Soil in MT | Weathered rock in MT | Side Burden in MT |
| XY-AB                | I     | 98            | 120          | 2            | 23520                    | 2            | 47040       | .....                            | .....                    | 47040          | .....                | .....             |
|                      | II    | 98            | 120          | 3            | 35280                    | 2            | 70560       | .....                            | .....                    | .....          | 70560                | .....             |
|                      | IV    | 77            | 43           | 5            | 16555                    | 2.75         | 45526       | .....                            | .....                    | .....          | .....                | 45526             |
|                      | V     | 98            | 95           | 5            | 46550                    | 2.75         | 128013      | .....                            | .....                    | .....          | .....                | 128013            |
|                      | VI    | 98            | 95           | 5            | 46550                    | 2.75         | 128013      | .....                            | .....                    | .....          | .....                | 128013            |
|                      | VII   | 98            | 95           | 5            | 46550                    | 2.75         | 128013      | .....                            | .....                    | .....          | .....                | 128013            |
|                      | VIII  | 98            | 95           | 5            | 46550                    | 2.75         | 128013      | .....                            | .....                    | .....          | .....                | 128013            |
|                      | IX    | 98            | 95           | 5            | 46550                    | 2.75         | 128013      | .....                            | .....                    | .....          | .....                | 128013            |
|                      | X     | 98            | 95           | 5            | 46550                    | 2.75         | 128013      | .....                            | .....                    | .....          | .....                | 128013            |
|                      | III   | 25            | 25           | 5            | 3125                     | 2.65         | 8281        | 1657                             | 6624                     | .....          | .....                | .....             |
| TOTAL                | IV    | 77            | 25           | 5            | 9625                     | 2.65         | 25506       | 5102                             | 20404                    | .....          | .....                | .....             |
|                      | V     | 98            | 25           | 5            | 12250                    | 2.65         | 32463       | 6493                             | 25970                    | .....          | .....                | .....             |
|                      | VI    | 98            | 25           | 5            | 12250                    | 2.65         | 32463       | 6493                             | 25970                    | .....          | .....                | .....             |
|                      | VII   | 98            | 25           | 5            | 12250                    | 2.65         | 32463       | 6493                             | 25970                    | .....          | .....                | .....             |
|                      | VIII  | 98            | 25           | 5            | 12250                    | 2.65         | 32463       | 6493                             | 25970                    | .....          | .....                | .....             |
|                      | IX    | 98            | 25           | 5            | 12250                    | 2.65         | 32463       | 6493                             | 25970                    | .....          | .....                | .....             |
|                      | X     | 98            | 25           | 5            | 12250                    | 2.65         | 32463       | 6493                             | 25970                    | .....          | .....                | .....             |
|                      | TOTAL |               |              |              | 440905                   |              | 1159769     | 45717                            | 182848                   | 47040          | 70560                | 813604            |
|                      | I     | 84            | 131          | 2            | 22008                    | 2            | 44016       | .....                            | .....                    | 44016          | .....                | .....             |
|                      | XY-CD | II            | 84           | 131          | 3                        | 33012        | 2           | 66024                            | .....                    | .....          | .....                | 66024             |
| V                    |       | 84            | 106          | 3            | 26712                    | 2.75         | 73458       | .....                            | .....                    | .....          | .....                | 73458             |
| VI                   |       | 84            | 106          | 5            | 44520                    | 2.75         | 122430      | .....                            | .....                    | .....          | .....                | 122430            |







(c) *Indicate mineable reserves by slice plan / level plan method, as applicable, as per the proposed mining parameters:*

The mineable reserves of ROM are estimated to be 1181575MT by deducting the reserve safety zone, block in benches from the total Geological resources. Of which, Black granite is about 93901MT at the recovery of 20% and granite waste are 375597MT at 80%, weathered rock is about 134196MT. Top soil is 95280MT and side burden is 482601MT upto a depth of 45m (24m above ground level  $\pm$  21m below ground level). The commercially viable Black granite has been prepared on 1: 1000 scale and sections are prepared in a scale of 1:1000 in horizontal axis and 1:1000 as vertical axis (Refer plate no. VII A).

# GRANITE MINEABLE RESOURCES

| Section | Bench | Length in (m) | Width in (m) | Depth in (m) | RoM in (M <sup>3</sup> ) | Bulk Density | RoM in (MT) | Black Granite 20% Recovery in MT | Granite Waste 80% in MT | Top Soil in MT | Weathered rock in MT | Side Burden in MT |
|---------|-------|---------------|--------------|--------------|--------------------------|--------------|-------------|----------------------------------|-------------------------|----------------|----------------------|-------------------|
| XY-AB   | I     | 88            | 90           | 2            | 15840                    | 2            | 31680       | .....                            | .....                   | 31680          | .....                | .....             |
|         | II    | 86            | 86           | 3            | 22188                    | 2            | 44376       | .....                            | .....                   | .....          | 44376                | .....             |
|         | IV    | 57            | 30           | 5            | 8550                     | 2.75         | 23513       | .....                            | .....                   | .....          | .....                | 23513             |
|         | V     | 73            | 50           | 5            | 18250                    | 2.75         | 50188       | .....                            | .....                   | .....          | .....                | 50188             |
|         | VI    | 68            | 40           | 5            | 13600                    | 2.75         | 37400       | .....                            | .....                   | .....          | .....                | 37400             |
|         | VII   | 63            | 30           | 5            | 9450                     | 2.75         | 25988       | .....                            | .....                   | .....          | .....                | 25988             |
|         | VIII  | 58            | 20           | 5            | 5800                     | 2.75         | 15950       | .....                            | .....                   | .....          | .....                | 15950             |
|         | IX    | 53            | 10           | 5            | 2650                     | 2.75         | 7288        | .....                            | .....                   | .....          | .....                | 7288              |
|         | X     | 18            | 1            | 5            | 90                       | 2.75         | 248         | 30                               | 1876                    | .....          | .....                | .....             |
|         | IV    | 57            | 25           | 5            | 7125                     | 2.65         | 18881       | 3776                             | 14105                   | .....          | .....                | .....             |
|         | V     | 73            | 25           | 5            | 9125                     | 2.65         | 24181       | 4836                             | 19345                   | .....          | .....                | .....             |
|         | VI    | 68            | 25           | 5            | 8500                     | 2.65         | 22525       | 4505                             | 18020                   | .....          | .....                | .....             |
|         | VII   | 63            | 25           | 5            | 7875                     | 2.65         | 20869       | 4174                             | 16695                   | .....          | .....                | .....             |
|         | VIII  | 58            | 25           | 5            | 7250                     | 2.65         | 19213       | 3843                             | 15370                   | .....          | .....                | .....             |
|         | IX    | 53            | 25           | 5            | 6625                     | 2.65         | 17556       | 3511                             | 14045                   | .....          | .....                | .....             |
|         | X     | 48            | 25           | 5            | 6000                     | 2.65         | 15900       | 3180                             | 12720                   | .....          | .....                | .....             |
|         | TOTAL |               |              |              | 148918                   |              | 375756      | 27875                            | 111498                  | 31680          | 44376                | 160327            |

| TOTAL       |      |     |    |   |  |   |  |  |  | 148918 |      | 399383  | 32602  | 130398 | 31680 | 44376  | 160327 |
|-------------|------|-----|----|---|--|---|--|--|--|--------|------|---------|--------|--------|-------|--------|--------|
| XY-<br>CD   | I    | 84  | 80 | 2 |  | 2 |  |  |  | 13440  | 2    | 26880   | ....   | ....   | 26880 | ....   |        |
|             | II   | 84  | 76 | 3 |  | 2 |  |  |  | 19152  | 2    | 38304   | ....   | ....   | ....  | 38304  |        |
|             | V    | 84  | 45 | 3 |  | 3 |  |  |  | 11340  | 2.75 | 31185   | ....   | ....   | ....  | ....   | 31185  |
|             | VI   | 84  | 35 | 5 |  | 5 |  |  |  | 14700  | 2.75 | 40425   | ....   | ....   | ....  | ....   | 40425  |
|             | VII  | 84  | 25 | 5 |  | 5 |  |  |  | 10500  | 2.75 | 28875   | ....   | ....   | ....  | ....   | 28875  |
|             | VIII | 84  | 15 | 5 |  | 5 |  |  |  | 6300   | 2.75 | 17325   | ....   | ....   | ....  | ....   | 17325  |
|             | IX   | 84  | 5  | 5 |  | 5 |  |  |  | 2100   | 2.75 | 5775    | ....   | ....   | ....  | ....   | 5775   |
|             | V    | 84  | 25 | 3 |  | 3 |  |  |  | 6300   | 3.10 | 19530   | 3906   | 15624  | ....  | ....   |        |
|             | VI   | 84  | 25 | 5 |  | 5 |  |  |  | 10500  | 3.10 | 32550   | 6510   | 26040  | ....  | ....   |        |
|             | VII  | 84  | 25 | 5 |  | 5 |  |  |  | 10500  | 3.10 | 32550   | 6510   | 26040  | ....  | ....   |        |
|             | VIII | 84  | 25 | 5 |  | 5 |  |  |  | 10500  | 3.10 | 32550   | 6510   | 26040  | ....  | ....   |        |
|             | IX   | 84  | 25 | 5 |  | 5 |  |  |  | 10500  | 3.10 | 32550   | 6510   | 26040  | ....  | ....   |        |
|             | X    | 84  | 20 | 5 |  | 5 |  |  |  | 8400   | 3.10 | 26040   | 5208   | 20832  | ....  | ....   |        |
| TOTAL       |      |     |    |   |  |   |  |  |  | 134232 |      | 364539  | 35154  | 140616 | 26880 | 38304  | 123585 |
| XY-EF       | I    | 108 | 85 | 2 |  | 2 |  |  |  | 18360  | 2    | 36720   | ....   | ....   | ....  | ....   |        |
|             | II   | 106 | 81 | 3 |  | 3 |  |  |  | 25758  | 2    | 51516   | ....   | ....   | ....  | 51516  |        |
|             | V    | 103 | 50 | 5 |  | 5 |  |  |  | 25750  | 2.75 | 70813   | ....   | ....   | ....  | ....   | 70813  |
|             | VI   | 98  | 40 | 5 |  | 5 |  |  |  | 19600  | 2.75 | 53900   | ....   | ....   | ....  | ....   | 53900  |
|             | VII  | 93  | 30 | 5 |  | 5 |  |  |  | 13950  | 2.75 | 38363   | ....   | ....   | ....  | ....   | 38363  |
|             | VIII | 88  | 20 | 5 |  | 5 |  |  |  | 8800   | 2.75 | 24200   | ....   | ....   | ....  | ....   | 24200  |
|             | IX   | 83  | 10 | 5 |  | 5 |  |  |  | 4150   | 2.75 | 11413   | ....   | ....   | ....  | ....   | 11413  |
|             | V    | 103 | 25 | 5 |  | 5 |  |  |  | 12875  | 3.10 | 39913   | 7983   | 31930  | ....  | ....   |        |
|             | VI   | 98  | 25 | 5 |  | 5 |  |  |  | 12250  | 3.10 | 37975   | 7595   | 30380  | ....  | ....   |        |
|             | VII  | 93  | 25 | 5 |  | 5 |  |  |  | 11625  | 3.10 | 36038   | 7208   | 28830  | ....  | ....   |        |
|             | VIII | 88  | 25 | 5 |  | 5 |  |  |  | 11000  | 3.10 | 34100   | 6820   | 27280  | ....  | ....   |        |
|             | IX   | 83  | 25 | 5 |  | 5 |  |  |  | 10375  | 3.10 | 32163   | 6433   | 25730  | ....  | ....   |        |
|             | X    | 78  | 25 | 5 |  | 5 |  |  |  | 9750   | 3.10 | 30225   | 6045   | 24180  | ....  | ....   |        |
| TOTAL       |      |     |    |   |  |   |  |  |  | 184243 |      | 497339  | 42084  | 168330 | 36720 | 51516  | 198689 |
| GRAND TOTAL |      |     |    |   |  |   |  |  |  | 467393 |      | 1261261 | 109840 | 439344 | 95280 | 134196 | 482601 |

#### 4.0 MINING:

| a.    | Briefly describe the existing / proposed method for developing / working the deposit with all design parameters.<br>(Note: In case of pocket deposits, sequence of development/ working may be indicated on the same plan)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | It is an existing quarry lease and its works for open cast, semi-mechanized methods are adopted and on single shift basis only. Under the regulation 106 of the Metalliferous Mines Regulations, 1961 in all open cast workings in hard rock, the benches and sides should be properly benched and sloped. The bench height should not exceed 5m and the bench width should not less than the bench height. The slope of the benches should not exceed 45° from horizontal. Doesn't any change of mining method in future. |          |                                      |                                  |                        |                                      |                                  |                        |                  |                                  |   |   |       |        |      |       |       |       |          |    |   |   |       |      |       |   |       |          |     |   |   |       |      |       |   |       |         |    |   |   |       |      |       |   |       |         |   |   |   |       |      |       |   |       |         |       |   |       |        |       |       |       |        |         |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------|----------------------------------|------------------------|--------------------------------------|----------------------------------|------------------------|------------------|----------------------------------|---|---|-------|--------|------|-------|-------|-------|----------|----|---|---|-------|------|-------|---|-------|----------|-----|---|---|-------|------|-------|---|-------|---------|----|---|---|-------|------|-------|---|-------|---------|---|---|---|-------|------|-------|---|-------|---------|-------|---|-------|--------|-------|-------|-------|--------|---------|
| b.    | <p><b>Indicate quantum of development and tonnage and grade of production expected pit wise as in table below.</b></p> <p>Total proposed production of ROM is about <b>333629MT</b>. Of which, Black granite is about <b>24469MT</b> at the recovery of 20% and granite rejects are <b>97873MT</b> at the recovery of 80%, weathered rock is about <b>43344MT</b>, Top soil is <b>31680MT</b> and side burden is <b>136263MT</b> up to a depth of 45m (24m above ground level +21m below ground level) for first five years mining plan period. Annual Peak production is <b>6510MT</b> of Black granite per year (Refer Plate No. VA).</p> <table><tr><th>Year</th><th>Pit No.(o)</th><th>Topsoil (MT)</th><th>ROM (MT)</th><th>Salvageable Black granite @ 20% (MT)</th><th>Black granite Rejects @ 80% (MT)</th><th>Weathered rock in (MT)</th><th>Side Burden (MT)</th><th>Overburden / Black granite ratio</th></tr><tr><td>I</td><td>I</td><td>31680</td><td>120904</td><td>4474</td><td>17893</td><td>43344</td><td>23513</td><td>1 : 6.14</td></tr><tr><td>II</td><td>I</td><td>—</td><td>73100</td><td>5270</td><td>21080</td><td>—</td><td>46750</td><td>1 : 10.3</td></tr><tr><td>III</td><td>I</td><td>—</td><td>54375</td><td>4495</td><td>17980</td><td>—</td><td>31900</td><td>1 : 8.3</td></tr><tr><td>IV</td><td>I</td><td>—</td><td>38400</td><td>3720</td><td>14880</td><td>—</td><td>19800</td><td>1 : 6.2</td></tr><tr><td>V</td><td>I</td><td>—</td><td>46850</td><td>6510</td><td>26040</td><td>—</td><td>14300</td><td>1 : 2.6</td></tr><tr><td>Total</td><td>—</td><td>31680</td><td>333629</td><td>24469</td><td>97873</td><td>43344</td><td>136263</td><td>1 : 6.5</td></tr></table> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Year     | Pit No.(o)                           | Topsoil (MT)                     | ROM (MT)               | Salvageable Black granite @ 20% (MT) | Black granite Rejects @ 80% (MT) | Weathered rock in (MT) | Side Burden (MT) | Overburden / Black granite ratio | I | I | 31680 | 120904 | 4474 | 17893 | 43344 | 23513 | 1 : 6.14 | II | I | — | 73100 | 5270 | 21080 | — | 46750 | 1 : 10.3 | III | I | — | 54375 | 4495 | 17980 | — | 31900 | 1 : 8.3 | IV | I | — | 38400 | 3720 | 14880 | — | 19800 | 1 : 6.2 | V | I | — | 46850 | 6510 | 26040 | — | 14300 | 1 : 2.6 | Total | — | 31680 | 333629 | 24469 | 97873 | 43344 | 136263 | 1 : 6.5 |
| Year  | Pit No.(o)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Topsoil (MT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ROM (MT) | Salvageable Black granite @ 20% (MT) | Black granite Rejects @ 80% (MT) | Weathered rock in (MT) | Side Burden (MT)                     | Overburden / Black granite ratio |                        |                  |                                  |   |   |       |        |      |       |       |       |          |    |   |   |       |      |       |   |       |          |     |   |   |       |      |       |   |       |         |    |   |   |       |      |       |   |       |         |   |   |   |       |      |       |   |       |         |       |   |       |        |       |       |       |        |         |
| I     | I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 31680                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 120904   | 4474                                 | 17893                            | 43344                  | 23513                                | 1 : 6.14                         |                        |                  |                                  |   |   |       |        |      |       |       |       |          |    |   |   |       |      |       |   |       |          |     |   |   |       |      |       |   |       |         |    |   |   |       |      |       |   |       |         |   |   |   |       |      |       |   |       |         |       |   |       |        |       |       |       |        |         |
| II    | I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 73100    | 5270                                 | 21080                            | —                      | 46750                                | 1 : 10.3                         |                        |                  |                                  |   |   |       |        |      |       |       |       |          |    |   |   |       |      |       |   |       |          |     |   |   |       |      |       |   |       |         |    |   |   |       |      |       |   |       |         |   |   |   |       |      |       |   |       |         |       |   |       |        |       |       |       |        |         |
| III   | I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 54375    | 4495                                 | 17980                            | —                      | 31900                                | 1 : 8.3                          |                        |                  |                                  |   |   |       |        |      |       |       |       |          |    |   |   |       |      |       |   |       |          |     |   |   |       |      |       |   |       |         |    |   |   |       |      |       |   |       |         |   |   |   |       |      |       |   |       |         |       |   |       |        |       |       |       |        |         |
| IV    | I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 38400    | 3720                                 | 14880                            | —                      | 19800                                | 1 : 6.2                          |                        |                  |                                  |   |   |       |        |      |       |       |       |          |    |   |   |       |      |       |   |       |          |     |   |   |       |      |       |   |       |         |    |   |   |       |      |       |   |       |         |   |   |   |       |      |       |   |       |         |       |   |       |        |       |       |       |        |         |
| V     | I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 46850    | 6510                                 | 26040                            | —                      | 14300                                | 1 : 2.6                          |                        |                  |                                  |   |   |       |        |      |       |       |       |          |    |   |   |       |      |       |   |       |          |     |   |   |       |      |       |   |       |         |    |   |   |       |      |       |   |       |         |   |   |   |       |      |       |   |       |         |       |   |       |        |       |       |       |        |         |
| Total | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 31680                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 333629   | 24469                                | 97873                            | 43344                  | 136263                               | 1 : 6.5                          |                        |                  |                                  |   |   |       |        |      |       |       |       |          |    |   |   |       |      |       |   |       |          |     |   |   |       |      |       |   |       |         |    |   |   |       |      |       |   |       |         |   |   |   |       |      |       |   |       |         |       |   |       |        |       |       |       |        |         |
| c.    | <b>Composite plans and Year wise sections (In case of 'A' class mines):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Not applicable. It is a "B" category of quarry lease                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |          |                                      |                                  |                        |                                      |                                  |                        |                  |                                  |   |   |       |        |      |       |       |       |          |    |   |   |       |      |       |   |       |          |     |   |   |       |      |       |   |       |         |    |   |   |       |      |       |   |       |         |   |   |   |       |      |       |   |       |         |       |   |       |        |       |       |       |        |         |

**Composite plans and Year wise sections (In case of 'B' category of quarry lease):**

| YEARWISE DEVELOPMENT AND PRODUCTION |         |             |                  |                 |                 |                   |                 |                   |                                              |                                  |                         |                            |                         |        |
|-------------------------------------|---------|-------------|------------------|-----------------|-----------------|-------------------|-----------------|-------------------|----------------------------------------------|----------------------------------|-------------------------|----------------------------|-------------------------|--------|
| Year                                | Section | Bench       | Length<br>in (m) | Width<br>in (m) | Depth<br>in (m) | RoM<br>in<br>(M³) | Bulk<br>Density | RoM<br>in<br>(MT) | Black<br>Granite<br>20%<br>Recovery<br>in MT | Granite<br>Waste<br>80% in<br>MT | Top<br>Soil<br>in<br>MT | Weathered<br>rock in<br>MT | Side<br>Burden<br>in MT |        |
| I-YEAR                              | XY-AB   | I           | 88               | 90              | 2               | 15840             | 2               | 31680             | ....                                         | ....                             | 31680                   | ....                       | ....                    |        |
|                                     |         | II          | 84               | 86              | 3               | 21672             | 2               | 43344             | ....                                         | ....                             | ....                    | 43344                      | ....                    |        |
|                                     |         | IV          | 57               | 30              | 5               | 8550              | 2.75            | 23513             | ....                                         | ....                             | ....                    | ....                       | 23513                   |        |
|                                     |         | III         | 18               | 1               | 5               | 90                | 3.10            | 279               | 56                                           | 223                              | ....                    | ....                       | ....                    |        |
|                                     |         | VI          | 57               | 25              | 5               | 7125              | 3.10            | 22088             | 4418                                         | 17670                            | ....                    | ....                       | ....                    |        |
|                                     |         | TOTAL       |                  |                 |                 |                   | 53277           |                   | 120904                                       | 4474                             | 17893                   | 31680                      | 43344                   | 23513  |
| II-YEAR                             | XY-AB   | V           | 68               | 50              | 5               | 17000             | 2.75            | 46750             | ....                                         | ....                             | ....                    | ....                       | 46750                   |        |
|                                     |         | V           | 68               | 25              | 5               | 8500              | 3.10            | 26350             | 5270                                         | 21080                            | ....                    | ....                       | ....                    |        |
| III-YEAR                            | XY-AB   | TOTAL       |                  |                 |                 |                   | 25500           |                   | 73100                                        | 5270                             | 21080                   | 0                          | 46750                   |        |
|                                     |         | VI          | 58               | 40              | 5               | 11600             | 2.75            | 31900             | ....                                         | ....                             | ....                    | ....                       | 31900                   |        |
|                                     |         | VI          | 58               | 25              | 5               | 7250              | 3.10            | 22475             | 4495                                         | 17980                            | ....                    | ....                       | ....                    |        |
|                                     |         | TOTAL       |                  |                 |                 |                   | 18850           |                   | 54375                                        | 4495                             | 17980                   | 0                          | 31900                   |        |
| IV-YEAR                             | XY-AB   | VII         | 48               | 30              | 5               | 7200              | 2.75            | 19800             | ....                                         | ....                             | ....                    | ....                       | 19800                   |        |
|                                     |         | VII         | 48               | 25              | 5               | 6000              | 3.10            | 18600             | 3720                                         | 14880                            | ....                    | ....                       | ....                    |        |
| V-YEAR                              | TOTAL   | TOTAL       |                  |                 |                 |                   | 13200           |                   | 38400                                        | 3720                             | 14880                   | 0                          | 19800                   |        |
|                                     |         | VIII        | 38               | 20              | 5               | 3800              | 2.75            | 10450             | ....                                         | ....                             | ....                    | ....                       | 10450                   |        |
|                                     |         | IX          | 28               | 10              | 5               | 1400              | 2.75            | 3850              | ....                                         | ....                             | ....                    | ....                       | 3850                    |        |
|                                     |         | VIII        | 38               | 25              | 5               | 4750              | 3.10            | 14725             | 2945                                         | 11780                            | ....                    | ....                       | ....                    |        |
|                                     |         | IX          | 28               | 25              | 5               | 3500              | 3.10            | 10850             | 2170                                         | 8680                             | ....                    | ....                       | ....                    |        |
|                                     |         | X           | 18               | 25              | 5               | 2250              | 3.10            | 6975              | 1395                                         | 5580                             | ....                    | ....                       | ....                    |        |
|                                     |         | TOTAL       |                  |                 |                 |                   | 15700           |                   | 46850                                        | 6510                             | 26040                   | 0                          | 14300                   |        |
|                                     |         | GRAND TOTAL |                  |                 |                 |                   | 126527          |                   | 333629                                       | 24469                            | 97873                   | 31680                      | 43344                   | 136263 |

| d.                                           | Attach supporting composite plan and section showing pit layouts, dumps, stacks of sub-grade mineral, if any, etc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | : Composite plan not prepared in this proposed lease area. It is "B" category of quarry lease.                                                                                                                                  |                                          |       |                 |                             |   |                |                                         |           |                     |                                              |       |                |   |              |         |    |    |   |    |              |                |    |    |   |     |              |                      |    |   |   |    |              |             |    |    |   |                      |    |    |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-------|-----------------|-----------------------------|---|----------------|-----------------------------------------|-----------|---------------------|----------------------------------------------|-------|----------------|---|--------------|---------|----|----|---|----|--------------|----------------|----|----|---|-----|--------------|----------------------|----|---|---|----|--------------|-------------|----|----|---|----------------------|----|----|
| e.                                           | <p><b>Indicate proposed rate of production when the mine is fully developed and the expected life of the mine and the year from which effected:</b></p> <p>At this rate of production, the expected life of quarry is calculated for periods and production details are given as below: -</p> <p><b>Black granite:</b></p> <table><tr><td>Mineable reserves of Black granite @ 20%</td><td>=</td><td><b>109840MT</b></td></tr><tr><td>Five years production @ 20%</td><td>=</td><td><b>24469MT</b></td></tr><tr><td>Annual Peak Production of Black granite</td><td>=</td><td><b>6510MT</b></td></tr><tr><td>Remaining mineable reserves of Black granite</td><td>=</td><td><b>85371MT</b></td></tr></table> <p>The regular working of the quarry and its production depends upon the demand from the market. Accordingly, there is a possibility to increase or decrease the production. The year wise production, anticipated the life of quarry etc., are only a tentative figure.</p> |                                                                                                                                                                                                                                 | Mineable reserves of Black granite @ 20% | =     | <b>109840MT</b> | Five years production @ 20% | = | <b>24469MT</b> | Annual Peak Production of Black granite | =         | <b>6510MT</b>       | Remaining mineable reserves of Black granite | =     | <b>85371MT</b> |   |              |         |    |    |   |    |              |                |    |    |   |     |              |                      |    |   |   |    |              |             |    |    |   |                      |    |    |
| Mineable reserves of Black granite @ 20%     | =                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>109840MT</b>                                                                                                                                                                                                                 |                                          |       |                 |                             |   |                |                                         |           |                     |                                              |       |                |   |              |         |    |    |   |    |              |                |    |    |   |     |              |                      |    |   |   |    |              |             |    |    |   |                      |    |    |
| Five years production @ 20%                  | =                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>24469MT</b>                                                                                                                                                                                                                  |                                          |       |                 |                             |   |                |                                         |           |                     |                                              |       |                |   |              |         |    |    |   |    |              |                |    |    |   |     |              |                      |    |   |   |    |              |             |    |    |   |                      |    |    |
| Annual Peak Production of Black granite      | =                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>6510MT</b>                                                                                                                                                                                                                   |                                          |       |                 |                             |   |                |                                         |           |                     |                                              |       |                |   |              |         |    |    |   |    |              |                |    |    |   |     |              |                      |    |   |   |    |              |             |    |    |   |                      |    |    |
| Remaining mineable reserves of Black granite | =                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>85371MT</b>                                                                                                                                                                                                                  |                                          |       |                 |                             |   |                |                                         |           |                     |                                              |       |                |   |              |         |    |    |   |    |              |                |    |    |   |     |              |                      |    |   |   |    |              |             |    |    |   |                      |    |    |
| f.                                           | <p><b>Attach a note furnishing a conceptual mining plan for the entire lease period (for "B" category mines) and upto the life of the mine (for "A" category mines) based on the geological, mining and environments considerations:</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                 |                                          |       |                 |                             |   |                |                                         |           |                     |                                              |       |                |   |              |         |    |    |   |    |              |                |    |    |   |     |              |                      |    |   |   |    |              |             |    |    |   |                      |    |    |
| (i)                                          | Time frame of completion of mineral exploration program in leasehold area: Give broad description identified potential areas to be covered in the given time frame:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | : Consider the indefinite depth the black granite deposit is proved beyond the workable limits about a depth 45m (which is 2m topsoil + 3m weathered rock + 40m black granite) (24m above ground level +21m below ground level) |                                          |       |                 |                             |   |                |                                         |           |                     |                                              |       |                |   |              |         |    |    |   |    |              |                |    |    |   |     |              |                      |    |   |   |    |              |             |    |    |   |                      |    |    |
| (ii)                                         | <p>Whether ultimate pit limit has been determined and demarcated on surface and geological plan:-</p> <p>The ultimate pit limit has been determined and demarcated at conceptual plan periods as given below</p> <table><tr><th colspan="6">Ultimate Pit – Section (XY-AB)</th></tr><tr><th>Bench</th><th>Bench R.L</th><th>Overburden/ Mineral</th><th>L (m)</th><th>W (m)</th><th>D (m)</th></tr><tr><td>I</td><td>R.L.422-420m</td><td>Topsoil</td><td>88</td><td>90</td><td>2</td></tr><tr><td>II</td><td>R.L.420-417m</td><td>Weathered rock</td><td>86</td><td>86</td><td>3</td></tr><tr><td>III</td><td>R.L.417-412m</td><td><b>Black granite</b></td><td>18</td><td>1</td><td>5</td></tr><tr><td rowspan="2">IV</td><td rowspan="2">R.L.412-407m</td><td>Side burden</td><td>57</td><td>30</td><td rowspan="2">5</td></tr><tr><td><b>Black granite</b></td><td>57</td><td>25</td></tr></table>                                                                                    |                                                                                                                                                                                                                                 | Ultimate Pit – Section (XY-AB)           |       |                 |                             |   |                | Bench                                   | Bench R.L | Overburden/ Mineral | L (m)                                        | W (m) | D (m)          | I | R.L.422-420m | Topsoil | 88 | 90 | 2 | II | R.L.420-417m | Weathered rock | 86 | 86 | 3 | III | R.L.417-412m | <b>Black granite</b> | 18 | 1 | 5 | IV | R.L.412-407m | Side burden | 57 | 30 | 5 | <b>Black granite</b> | 57 | 25 |
| Ultimate Pit – Section (XY-AB)               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                 |                                          |       |                 |                             |   |                |                                         |           |                     |                                              |       |                |   |              |         |    |    |   |    |              |                |    |    |   |     |              |                      |    |   |   |    |              |             |    |    |   |                      |    |    |
| Bench                                        | Bench R.L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Overburden/ Mineral                                                                                                                                                                                                             | L (m)                                    | W (m) | D (m)           |                             |   |                |                                         |           |                     |                                              |       |                |   |              |         |    |    |   |    |              |                |    |    |   |     |              |                      |    |   |   |    |              |             |    |    |   |                      |    |    |
| I                                            | R.L.422-420m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Topsoil                                                                                                                                                                                                                         | 88                                       | 90    | 2               |                             |   |                |                                         |           |                     |                                              |       |                |   |              |         |    |    |   |    |              |                |    |    |   |     |              |                      |    |   |   |    |              |             |    |    |   |                      |    |    |
| II                                           | R.L.420-417m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Weathered rock                                                                                                                                                                                                                  | 86                                       | 86    | 3               |                             |   |                |                                         |           |                     |                                              |       |                |   |              |         |    |    |   |    |              |                |    |    |   |     |              |                      |    |   |   |    |              |             |    |    |   |                      |    |    |
| III                                          | R.L.417-412m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Black granite</b>                                                                                                                                                                                                            | 18                                       | 1     | 5               |                             |   |                |                                         |           |                     |                                              |       |                |   |              |         |    |    |   |    |              |                |    |    |   |     |              |                      |    |   |   |    |              |             |    |    |   |                      |    |    |
| IV                                           | R.L.412-407m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Side burden                                                                                                                                                                                                                     | 57                                       | 30    | 5               |                             |   |                |                                         |           |                     |                                              |       |                |   |              |         |    |    |   |    |              |                |    |    |   |     |              |                      |    |   |   |    |              |             |    |    |   |                      |    |    |
|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Black granite</b>                                                                                                                                                                                                            | 57                                       | 25    |                 |                             |   |                |                                         |           |                     |                                              |       |                |   |              |         |    |    |   |    |              |                |    |    |   |     |              |                      |    |   |   |    |              |             |    |    |   |                      |    |    |



|                                       |                   |                                |                  |                  |                  |
|---------------------------------------|-------------------|--------------------------------|------------------|------------------|------------------|
| V                                     | R.L.407-402m      | Side burden                    | 73               | 50               | 5                |
|                                       |                   | Black granite                  | 73               | 25               |                  |
| VI                                    | R.L.402-397m      | Side burden                    | 68               | 40               | 5                |
|                                       |                   | Black granite                  | 68               | 25               |                  |
| VII                                   | R.L.397-392m      | Side burden                    | 63               | 30               | 5                |
|                                       |                   | Black granite                  | 63               | 25               |                  |
| VIII                                  | R.L.392-387m      | Side burden                    | 58               | 20               | 5                |
|                                       |                   | Black granite                  | 58               | 25               |                  |
| IX                                    | R.L.387-382m      | Side burden                    | 53               | 10               | 5                |
|                                       |                   | Black granite                  | 53               | 25               |                  |
| X                                     | R.L.382-377m      | Black granite                  | 48               | 25               | 5                |
| <b>TOTAL</b>                          |                   |                                |                  |                  | <b>45m</b>       |
| <b>Ultimate Pit – Section (XY-CD)</b> |                   |                                |                  |                  |                  |
| <b>Bench</b>                          | <b>Bench R.L.</b> | <b>Overburden/<br/>Mineral</b> | <b>L<br/>(m)</b> | <b>W<br/>(m)</b> | <b>D<br/>(m)</b> |
| I                                     | R.L.417-412m      | Topsoil                        | 84               | 80               | 2                |
| II                                    | R.L.412-407m      | Weathered rock                 | 84               | 76               | 3                |
| V                                     | R.L.407-402m      | Side burden                    | 84               | 45               | 3                |
|                                       |                   | Black granite                  | 84               | 25               |                  |
| VI                                    | R.L.402-397m      | Side burden                    | 84               | 35               | 5                |
|                                       |                   | Black granite                  | 84               | 25               |                  |
| VII                                   | R.L.397-392m      | Side burden                    | 84               | 25               | 5                |
|                                       |                   | Black granite                  | 84               | 25               |                  |
| VIII                                  | R.L.392-387m      | Side burden                    | 84               | 15               | 5                |
|                                       |                   | Black granite                  | 84               | 25               |                  |
| IX                                    | R.L.387-382m      | Side burden                    | 84               | 5                | 5                |
|                                       |                   | Black granite                  | 84               | 25               |                  |
| X                                     | R.L.382-377m      | Black granite                  | 84               | 20               | 5                |
| <b>TOTAL</b>                          |                   |                                |                  |                  | <b>33m</b>       |
| <b>Ultimate Pit – Section (XY-EF)</b> |                   |                                |                  |                  |                  |
| <b>Bench</b>                          | <b>Bench R.L.</b> | <b>Overburden/<br/>Mineral</b> | <b>L<br/>(m)</b> | <b>W<br/>(m)</b> | <b>D<br/>(m)</b> |
| I                                     | R.L.417-412m      | Topsoil                        | 84               | 80               | 2                |
| II                                    | R.L.412-407m      | Weathered rock                 | 84               | 76               | 3                |
| V                                     | R.L.407-402m      | Side burden                    | 103              | 50               | 5                |
|                                       |                   | Black granite                  | 103              | 25               |                  |
| VI                                    | R.L.402-397m      | Side burden                    | 98               | 40               | 5                |
|                                       |                   | Black granite                  | 98               | 25               |                  |
| VII                                   | R.L.397-392m      | Side burden                    | 93               | 30               | 5                |
|                                       |                   | Black granite                  | 93               | 25               |                  |
| VIII                                  | R.L.392-387m      | Side burden                    | 88               | 20               | 5                |
|                                       |                   | Black granite                  | 88               | 25               |                  |
| IX                                    | R.L.387-382m      | Side burden                    | 83               | 10               | 5                |
|                                       |                   | Black granite                  | 83               | 25               |                  |
| X                                     | R.L.382-377m      | Black granite                  | 78               | 25               | 5                |
| <b>TOTAL</b>                          |                   |                                |                  |                  | <b>35m</b>       |



|           |                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (iii)     | Whether the site for disposal of waste rock or an un-saleable material have/ has been examined for adequacy of land and suitability of long term use in the event of continuation of mining activity:- | : The black granite rejects are <b>31572m<sup>3</sup></b> (up to 80%), Side Burden are <b>49550m<sup>3</sup></b> and Weathered rock is <b>21672m<sup>3</sup></b> will be removed and dumped in the south side of the lease area average dimensions of (L80m X W45m X H 4.79m) & (L60m X W40m X H 20.64m) for the period of five years. The topsoil is <b>15840m<sup>3</sup></b> will be dumped in eastern side (L42m X W27m X H 13.96m) in the lease hold area to prevent ingress entry of cattle's and human as per rules 106 of Metalliferous Mines Regulations, 1961. If black granite may be unsold will be keep within the lease boundary. |
| (iv)      | Whether back filling of pits after recovery of mineral upto techno-economically feasible depth envisaged. If so, describe the broad features of the proposal:-                                         | : As the depth of persistence of the deposit may likely to continue for further depth, it is proposed not to backfilled the quarry pit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| (v)       | Whether post mining land use envisaged:-                                                                                                                                                               | : At the end of mining activities over the quarry pit may be utilized fish culture or storage of rain water reservoir used for irrigation purposes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <u>g.</u> | <b><i>Open cast Mines:</i></b>                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| (i)       | Describe briefly giving salient features of the mode of working (Mechanized, Semi-Mechanized, manual)                                                                                                  | : The mining operation is open-cast, semi-mechanized methods are adopted and on single shift basis only. Under the regulation 106 of the Metalliferous Mines Regulations, 1961 in all open cost workings in hard rock, the benches and sides should be properly benched and sloped. The bench height should not exceed 6m and the bench width should not less than the bench height. The slope of the benches should not exceed 45° from horizontal.                                                                                                                                                                                            |



|      |                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (ii) | Describe briefly the layout of mine workings, the layout of faces and sites for disposal of overburden/waste. A reference to the plans enclosed under 4(b) and 4(d) will suffice | <p>The Black Granite is proposed to quarry at 5m bench height &amp; width conventional open cast method.</p> <p>i) Drill hole diameter 32mm</p> <p>ii) Depth and inclination of drill hole: generally drilled vertically in an alignment, however in primary cutting in the absence of sheet joints to bottom level, horizontal holes also are drilled.</p> <p>iii) Spacing and burden: The spacing shall be about 0.1m to 0.3m from hole to hole and burden goes up to 1.6m for the splitting of the rock.</p> <p>The intrusive body will be tackled with latest technology by deploying diamond wire saw cutting for obtaining the good recovery factor of sizeable blocks.</p> |
|      | a. Details of Topsoil/ Overburden                                                                                                                                                | The topsoil is <b>15840m<sup>3</sup></b> will be dumped in eastern side (L42m X W27m X H 13.96m) in the lease hold area to prevent inherent entry of cattle's and human as per rules 106, Metalliferous Mines Regulations, 1961. If black granite may be unsold will be keep within the lease boundary.                                                                                                                                                                                                                                                                                                                                                                           |
|      | b. Mineral waste and side burden waste: -                                                                                                                                        | The black granite rejects are <b>31572m<sup>3</sup></b> (up to 80%), Side Burden are <b>49550m<sup>3</sup></b> and Weathered rock is <b>21672m<sup>3</sup></b> will be removed and dumped in the south side of the lease area average dimensions of (L80m X W45m X H 4.79m) & (L60m X W40m X H 20.64m) for the period of five years                                                                                                                                                                                                                                                                                                                                               |
| h.   | <b>Underground Mines:</b>                                                                                                                                                        | It is an open cast quarry operation only                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| i.   | <b>Extent of mechanization:</b>                                                                                                                                                  | Being a fresh quarry lease, opencast semi- mechanized methods of mining                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

adopted. Deployment of drills, compressors, excavators, tipper, Diamond wire saw, and line drilling machineries are deployed depending upon the size of the quarry, rate of production, etc. There will not continue or regular work to the above machinery. Hence, most of the quarry operations engage this equipment on hire basis.

The following machinery already deployed in this quarry by project proponent: -

**(1) (a) Drilling Machines:**

| Type        | No | Dia of hole (mm) | Size / Capacity | Make | Motive power       | H.P. |
|-------------|----|------------------|-----------------|------|--------------------|------|
| Jack Hammer | 4  | 32 mm            | Hand held       | ---  | Compressor Air     | ---  |
| Compressor  | 2  | ---              | Air             | ---  | Diesel/ Electrical | ---  |

**(1) (b) Cutting equipment's:**

- i. Diamond wire saw machine = 2 no's
- ii. Line drilling machinery = 1 no's

**(2) Loading Equipment:**

| Type      | No | H.P                   | Size/Capacity | Make   | Motive power |
|-----------|----|-----------------------|---------------|--------|--------------|
| Excavator | 1  | 2.9-4.5m <sup>3</sup> | ---           | Diesel | ---          |

**(3) Haulage and Transport Equipment**

(a) Haulage within the mining leasehold:

| Type   | Nos | Size / Capacity | Make | Motive power | H.P. |
|--------|-----|-----------------|------|--------------|------|
| Tipper | 2   | ---             | ---  | Diesel       | ---  |

**Whether the dumpers are fitted with exhaust conditioner should be indicated:** The dump is not used in this quarry area, hence it's a small "B" category mine.

|                                                                                |   |                                                                                                                                                    |
|--------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------|
| (b) Transport from mine head to the destination                                | : | Tipper will be used for transport.                                                                                                                 |
| (c) Describe briefly the transport system (please specify)                     | : | The hired tipper and excavator will be used for carrying out day to day mining activities on the day basis or hourly basis as per market scenario. |
| (d) Ore transported by: own trucks / hired trucks                              | : | Hired tippers and hydraulic excavator for production purposes.                                                                                     |
| (e) Main destination to which ore is transported (giving to and from distance) | : | The excavated Black granite transported to needy buyers                                                                                            |

(b) Details of hauling / transport equipment:

| Type | No  | Size / Capacity | Make | Motive power | H.P. |
|------|-----|-----------------|------|--------------|------|
| ---  | --- | ---             | ---  | ---          | ---  |

**(4).Miscellaneous:**

Describe briefly any allied operations and machineries related to the mining of the deposit not covered earlier.

|                          |   |                                                                                                                                                                                                                                                        |
|--------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (A) Operations           | : | The mining operation is open-cast, semi-mechanized methods are adopted and on single shift basis only.                                                                                                                                                 |
| (B) Machineries deployed | : | Deployment of drills, compressors, excavators, tipper, Diamond wire saw and line drilling machineries are deployed depending upon the size of the quarry, rate of production, etc. There will not continue or regular work to the above the machinery. |

5. **BLASTING:**  
*a) Broad blasting parameters like charge per hole, blasting pattern, charge per delay, maximum number of holes blasted in a round, manner and sequence of firing, etc.*

**Blasting pattern:** It is an Eco-friendly quarry operation, no blasting is proposed, Diamond wire saw cutting method is adopted by the lessee. Now a day, the splitting within the sheet rock is affected by diamond wire-sawing, which largely reduces the use of explosives in granite mining. Besides, chemical powder called as "Rock breaking Powder"  $[Ca(OH)_2]$  are also used for splitting. Many adverse effects of blasting are avoided and hence diamond wire cutting will substantially increase the recovery. Since primary cutting comprising splitting from the sheet rock is affected by diamond wire-sawing there will not be any drilling or blasting involved. Hence, there will not any adverse effects and vibration due to this type of mining operation.

**Chemical Blasting Method:** The Black Granite operations should not be conducted with any blasting. This will totally damage the possible output by inducing cracks in the rock. For this reason, Chemical explosives are not used for this process. Inserted the rock is split with help of chemical powder which is an expander of the rock. The process is as under long jack hammer holes of around 3

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                     |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>to 6 meters are drilled in close spacing. The spacing is generally 5 to 10mm after the entire line is drilled, it is plugged to prevent any foreign materials entering the hole, later two vertical and one bottom cut are made with slotters and wire saw machines. After these operations are complete, the holes are loaded with chemical generates a crack which is through the holes drilled. The crack is expanded any hydraulic bags are used to pull the rock.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                     |
|  | <p><b>b) Miscellaneous:</b></p> <p>Apart from the above, the following tools and tackles already provided by lessee in quarry leased area for quarry operations.</p> <p>a) For operation:</p> <ol style="list-style-type: none"> <li>1. Drill rods 0.4m, 0.5, 0.6m, 0.75m, 1.65m, 2.25m, 3m and 3.6m.</li> <li>2. Steel alloy chains of sufficient length of 12mm, 16mm, 18mm sizes.</li> <li>3. "D" Shackles to link the chain length,</li> <li>4. Rubber hose of required length,</li> <li>5. Hose clamps to link the compressor delivery hoses,</li> <li>6. Feather and wedges of 6" and 12" sizes, utilized for splitting the block from the mother rock. This is an important tool in the operation of the quarry.</li> <li>7. Crow bars,</li> <li>8. Spades,</li> <li>9. Sludge hammer,</li> <li>10. Iron pans,</li> <li>11. Pitcher hammer,</li> <li>12. Chisels,</li> <li>13. Consumables, such diesel, Hydraulic oil, etc</li> </ol> |                                                                                                                                                                                     |
|  | c) Powder factor in ore and overburden / waste / development heading / stope                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | : Not applicable                                                                                                                                                                    |
|  | d) Whether secondary blasting is needed, if so describe it briefly                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | : Not applicable                                                                                                                                                                    |
|  | e) Storage of explosives (like capacity and type of explosive magazine)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | : 1. The applicant will engage an authorized explosive agency to carry out the small amount of blasting and it will be supervised by competent and statutory foreman/mines manager. |

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2. First Aid Box will be keeping ready at all the time.<br>3. Necessary precautionary announcement will be carried out before the blasting operation.                                                                                                                                            |                             |                                      |                          |   |       |       |       |    |   |       |       |     |   |       |       |    |   |       |       |   |   |       |       |       |       |        |       |  |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------------------------------------|--------------------------|---|-------|-------|-------|----|---|-------|-------|-----|---|-------|-------|----|---|-------|-------|---|---|-------|-------|-------|-------|--------|-------|--|
| 6.    | <b>MINE DRAINAGE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                  |                             |                                      |                          |   |       |       |       |    |   |       |       |     |   |       |       |    |   |       |       |   |   |       |       |       |       |        |       |  |
|       | a) Likely depth of water table based on observations from nearby wells and water bodies :                                                                                                                                                                                                                                                                                                                                                                                                                                             | The ground water table is reported as of 55m in summer and 50m in rainy season from the general ground level in the adjacent bore wells of the area.                                                                                                                                             |                             |                                      |                          |   |       |       |       |    |   |       |       |     |   |       |       |    |   |       |       |   |   |       |       |       |       |        |       |  |
|       | b) Workings expected to be _____ m. above / reach below water table by the year _____ :                                                                                                                                                                                                                                                                                                                                                                                                                                               | Ultimate mining depth is 45m (24m above ground level +21m below ground level). So, the present mine lease will be proposed above the water table and hence, quarrying may not affect the ground water.                                                                                           |                             |                                      |                          |   |       |       |       |    |   |       |       |     |   |       |       |    |   |       |       |   |   |       |       |       |       |        |       |  |
|       | c) Quantity and quality of water likely to be encountered, the pumping arrangements and places where the mine water is finally proposed to be discharged :                                                                                                                                                                                                                                                                                                                                                                            | The ground water may not rise immediately in this type of mining. However, the rain water percolation and collection of water from the seepage shall be less than 300 Lpm and it shall be pumped about periodically by a stand by diesel powered Centrifugal pump motivated with 7.5 H.P. Motor. |                             |                                      |                          |   |       |       |       |    |   |       |       |     |   |       |       |    |   |       |       |   |   |       |       |       |       |        |       |  |
| 7.    | <b>STACKING OF MINERAL REJECTS AND DISPOSAL OF WASTE:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                  |                             |                                      |                          |   |       |       |       |    |   |       |       |     |   |       |       |    |   |       |       |   |   |       |       |       |       |        |       |  |
| (a)   | Indicate briefly the nature and quantity of top soil, overburden / waste and mineral rejects likely to be generated during the next five years:                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                  |                             |                                      |                          |   |       |       |       |    |   |       |       |     |   |       |       |    |   |       |       |   |   |       |       |       |       |        |       |  |
|       | <table><tr><th>Year</th><th>Topsoil/<br/>Overburden (MT)</th><th>Weathered rock &amp;<br/>Side burden (MT)</th><th>Mineral<br/>rejects/Waste</th></tr><tr><td>I</td><td>31680</td><td>66857</td><td>15296</td></tr><tr><td>II</td><td>—</td><td>46750</td><td>18020</td></tr><tr><td>III</td><td>—</td><td>31900</td><td>15370</td></tr><tr><td>IV</td><td>—</td><td>19800</td><td>12720</td></tr><tr><td>V</td><td>—</td><td>14300</td><td>22260</td></tr><tr><td>Total</td><td>31680</td><td>179607</td><td>83666</td></tr></table> | Year                                                                                                                                                                                                                                                                                             | Topsoil/<br>Overburden (MT) | Weathered rock &<br>Side burden (MT) | Mineral<br>rejects/Waste | I | 31680 | 66857 | 15296 | II | — | 46750 | 18020 | III | — | 31900 | 15370 | IV | — | 19800 | 12720 | V | — | 14300 | 22260 | Total | 31680 | 179607 | 83666 |  |
| Year  | Topsoil/<br>Overburden (MT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Weathered rock &<br>Side burden (MT)                                                                                                                                                                                                                                                             | Mineral<br>rejects/Waste    |                                      |                          |   |       |       |       |    |   |       |       |     |   |       |       |    |   |       |       |   |   |       |       |       |       |        |       |  |
| I     | 31680                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 66857                                                                                                                                                                                                                                                                                            | 15296                       |                                      |                          |   |       |       |       |    |   |       |       |     |   |       |       |    |   |       |       |   |   |       |       |       |       |        |       |  |
| II    | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 46750                                                                                                                                                                                                                                                                                            | 18020                       |                                      |                          |   |       |       |       |    |   |       |       |     |   |       |       |    |   |       |       |   |   |       |       |       |       |        |       |  |
| III   | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 31900                                                                                                                                                                                                                                                                                            | 15370                       |                                      |                          |   |       |       |       |    |   |       |       |     |   |       |       |    |   |       |       |   |   |       |       |       |       |        |       |  |
| IV    | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 19800                                                                                                                                                                                                                                                                                            | 12720                       |                                      |                          |   |       |       |       |    |   |       |       |     |   |       |       |    |   |       |       |   |   |       |       |       |       |        |       |  |
| V     | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 14300                                                                                                                                                                                                                                                                                            | 22260                       |                                      |                          |   |       |       |       |    |   |       |       |     |   |       |       |    |   |       |       |   |   |       |       |       |       |        |       |  |
| Total | 31680                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 179607                                                                                                                                                                                                                                                                                           | 83666                       |                                      |                          |   |       |       |       |    |   |       |       |     |   |       |       |    |   |       |       |   |   |       |       |       |       |        |       |  |

|     |                                                                                                                                                                                        |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (b) | Land chosen for disposal of waste with proposed justification                                                                                                                          | : | The side burden and granite rejects are dumped on SW & SE side.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| (c) | Attach a note indicating the manner of disposal and configuration, sequence of buildup of dumps along with the proposals for the stacking of sub-grade ore, to be indicated year wise. | : | <p>The black granite rejects are <math>31572\text{m}^3</math> (up to 80%), Side Burden are <math>49550\text{m}^3</math> and Weathered rock is <math>21672\text{m}^3</math> will be removed and dumped in the south side of the lease area average dimensions of (L80m X W45m X H 4.79m) &amp; (L60m X W40m X H 20.64m) for the period of five years.</p> <p>The topsoil is <math>15840\text{m}^3</math> will be dumped in eastern side (L42m X W27m X H 13.96m) in the lease hold area to prevent inherent entry of cattle's and human as per rules 106, Metalliferous Mines Regulations, 1961. If black granite may be unsold will be keep within the lease boundary. If black granite may be unsold will be keep within the lease boundary.</p> |
| 8.  | <b>USES OF MINERAL:</b>                                                                                                                                                                |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| (a) | Describe briefly the end-use of the mineral (sale to intermediary parties, captive consumption, export, industrial use)                                                                | : | The quarried Black granite blocks are used to make floors, monuments etc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| (b) | Indicate physical and chemical specifications stipulated by buyers                                                                                                                     | : | <p>The materials produced at this quarry are Black granite which is used in floors, furniture, counter tops and monuments.</p> <p>The properties of granite which are normally valued for exploitation are compressive strength, tensile strength, density, p-wave velocity, etc. For marketability, other requirements like colour, texture, granularity, size, water</p>                                                                                                                                                                                                                                                                                                                                                                        |



|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                        |      |                |                |      |  |  |              |     |  |  |                     |     |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------|----------------|------|--|--|--------------|-----|--|--|---------------------|-----|
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | absorption, porosity, hardness, moisture content, etc. are also essential. Raw blocks should be free from normal defects like fractures, joints, shears, hairline cracks, segregation, veins, etc.                                                                                                                                                                                                     |      |                |                |      |  |  |              |     |  |  |                     |     |
| (c) | Give details in case blending of different grades of ores is being practiced or is to be practiced at the mine to meet specifications stipulated by buyers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | : No blending process is involved in quarry. Blocks approved for export are shipped from harbor to exporter's designations.                                                                                                                                                                                                                                                                            |      |                |                |      |  |  |              |     |  |  |                     |     |
| 9.  | <b>OTHERS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                        |      |                |                |      |  |  |              |     |  |  |                     |     |
| (a) | <b>Describe briefly the following</b><br>Site services                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | : Infrastructure required for such mines like office, stores, canteen, first aid station, shelter latrine and bath rooms have been provided as per the Metalliferous Mines Regulations, 1961 as a welfare amenity for mine laborers. No manual mine or stock of spares, lubricant and fuels are required to be maintained at the mine site. Approach road is available from the mine road to the site. |      |                |                |      |  |  |              |     |  |  |                     |     |
| (b) | <p><b>Employment potential:</b></p> <p>As per Mines safety under the provisions of Metalliferous Mines Regulations, 1961 under the Mines Act, 1952, whenever the workers are employed more than 10, it is preferred to have a qualified Mining Mate to keep all the production workers directly under his control and supervision.</p> <p>The following man power is proposed for quarrying Black granite during the five years period the same manpower will be utilize for this Mining Plan period to achieve the proposed production and to comply the provisions of the MMR, 1961 norms.</p> <table border="1"> <tr> <td>1.</td> <td>Highly Skilled</td> <td>Quarry Manager</td> <td>1No.</td> </tr> <tr> <td></td> <td></td> <td>Mines Forman</td> <td>1No</td> </tr> <tr> <td></td> <td></td> <td>Mechanical Engineer</td> <td>1No</td> </tr> </table> |                                                                                                                                                                                                                                                                                                                                                                                                        | 1.   | Highly Skilled | Quarry Manager | 1No. |  |  | Mines Forman | 1No |  |  | Mechanical Engineer | 1No |
| 1.  | Highly Skilled                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Quarry Manager                                                                                                                                                                                                                                                                                                                                                                                         | 1No. |                |                |      |  |  |              |     |  |  |                     |     |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Mines Forman                                                                                                                                                                                                                                                                                                                                                                                           | 1No  |                |                |      |  |  |              |     |  |  |                     |     |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Mechanical Engineer                                                                                                                                                                                                                                                                                                                                                                                    | 1No  |                |                |      |  |  |              |     |  |  |                     |     |

|     |                                                                                                                                                                                                                                                                                                                                                |                |                        |                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                                                                                                                                                                                                                                                                                                                                                |                | Accountant cum & admin | 1No.                                                                                                                                                                                                                                                                                                                                                                                                                   |
|     | 2.                                                                                                                                                                                                                                                                                                                                             | Skilled        | Earth moving Operator  | 1No                                                                                                                                                                                                                                                                                                                                                                                                                    |
|     |                                                                                                                                                                                                                                                                                                                                                |                | Line drilling Operator | 1 Nos.                                                                                                                                                                                                                                                                                                                                                                                                                 |
|     |                                                                                                                                                                                                                                                                                                                                                |                | Wire saw Operator      | 2 No.                                                                                                                                                                                                                                                                                                                                                                                                                  |
|     |                                                                                                                                                                                                                                                                                                                                                |                | Driver                 | 1No                                                                                                                                                                                                                                                                                                                                                                                                                    |
|     | 3.                                                                                                                                                                                                                                                                                                                                             | Semi – skilled | Helpers, Greaser's     | 1 No                                                                                                                                                                                                                                                                                                                                                                                                                   |
|     | 4.                                                                                                                                                                                                                                                                                                                                             | Unskilled      | Cutter                 | 4Nos                                                                                                                                                                                                                                                                                                                                                                                                                   |
|     |                                                                                                                                                                                                                                                                                                                                                |                | Musdoor / Labours      | 8 Nos                                                                                                                                                                                                                                                                                                                                                                                                                  |
|     |                                                                                                                                                                                                                                                                                                                                                |                | <b>Total =</b>         | <b>22Nos</b>                                                                                                                                                                                                                                                                                                                                                                                                           |
| 10  | <b>MINERAL PROCESSING/BENEFICIATIONS:</b>                                                                                                                                                                                                                                                                                                      |                |                        |                                                                                                                                                                                                                                                                                                                                                                                                                        |
| (a) | If processing / beneficiations of the ore or minerals mined is planned to be conducted on site or adjacent to the extraction area, briefly describe the nature of the processing /beneficiation. This should indicate size and grade of feed material and concentrate (finished marketable product), recovery rate.                            |                | :                      | Excavated Black Granite raw blocks shall be directly sale to the needy buyers.                                                                                                                                                                                                                                                                                                                                         |
| (b) | Explain the disposal method for tailings or waste from the processing plant (quantity and quality of tailings proposed to be discharged, size and capacity of tailing pond, toxic effect of such tailings, if any, with process adopted to neutralize any such effect before their disposal and dealing of excess water from the tailing dam). |                | :                      | No water shall be used for quarrying or any other processing except drinking water to be drawn from public sources. Some stagnation of rain water in the pit shall be used for drilling and spraying haul roads. Therefore, need for tailing dam doesn't arise. But tailing control of rain water flow during rainy season has to be done by decanting the SPM in a pit before passing the water in to natural system. |
| (c) | A flow sheet or schematic diagram of the processing procedure should be attached.                                                                                                                                                                                                                                                              |                | :                      | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                         |
| (d) | Specify quantity and type of                                                                                                                                                                                                                                                                                                                   |                | :                      | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                         |





|     |                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | chemicals to be used in the processing plant.                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| (e) | Specify quantity and type of chemicals to be stored on site / plant.                                                                                   | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| (f) | Indicate quantity (KLD per day) of water required for mining and processing and sources of supply of water. Disposal of water and extent of recycling. | <p>Drinking is 0.50KLD, utilized water is 0.7KLD, Dust suppression is 1.0KLD and Green Belt is 1.0KLD. Minimum quantity of water 3.2KLD per day has to be maintained as per the Mines Rules, 1952. Drinking water will be bought to authorized vendor of the nearby the village.</p> <p>Dust suppression and green belt development will be bought to water tanker.</p> <p>The sewage water to a tune of 0.7KLD generated from the mine office toilet and mine labour toilet will be diverted to the septic tank followed by soak pit.</p> |

## PART – B

### 11.0 ENVIRONMENTAL MANAGEMENT PLAN:

a) Attach a note on the status of Baseline information with regard to the Following :

| 11.1   | Existing land use pattern indicating the area already degraded due to quarrying /pitting, dumping, roads, processing plant, workshop, township etc in a tabular form. The present land use pattern is given as below:                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                            |        |          |                      |    |                   |        |   |            |     |   |                         |     |   |      |     |   |            |     |   |                 |        |  |                |               |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------|----------------------|----|-------------------|--------|---|------------|-----|---|-------------------------|-----|---|------|-----|---|------------|-----|---|-----------------|--------|--|----------------|---------------|
|        | <table border="1"> <thead> <tr> <th>S. No.</th><th>Land Use</th><th>Present area (Hect.)</th></tr> </thead> <tbody> <tr> <td>1.</td><td>Area under Mining</td><td>0.07.0</td></tr> <tr> <td>2</td><td>Waste dump</td><td>Nil</td></tr> <tr> <td>3</td><td>Office (Infrastructure)</td><td>Nil</td></tr> <tr> <td>4</td><td>Road</td><td>Nil</td></tr> <tr> <td>5</td><td>Green Belt</td><td>Nil</td></tr> <tr> <td>6</td><td>Unutilized area</td><td>4.43.0</td></tr> <tr> <td></td><td><b>Total =</b></td><td><b>4.50.0</b></td></tr> </tbody> </table> |                                                                                                                                                                                                                                                                                                                            | S. No. | Land Use | Present area (Hect.) | 1. | Area under Mining | 0.07.0 | 2 | Waste dump | Nil | 3 | Office (Infrastructure) | Nil | 4 | Road | Nil | 5 | Green Belt | Nil | 6 | Unutilized area | 4.43.0 |  | <b>Total =</b> | <b>4.50.0</b> |
| S. No. | Land Use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Present area (Hect.)                                                                                                                                                                                                                                                                                                       |        |          |                      |    |                   |        |   |            |     |   |                         |     |   |      |     |   |            |     |   |                 |        |  |                |               |
| 1.     | Area under Mining                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0.07.0                                                                                                                                                                                                                                                                                                                     |        |          |                      |    |                   |        |   |            |     |   |                         |     |   |      |     |   |            |     |   |                 |        |  |                |               |
| 2      | Waste dump                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Nil                                                                                                                                                                                                                                                                                                                        |        |          |                      |    |                   |        |   |            |     |   |                         |     |   |      |     |   |            |     |   |                 |        |  |                |               |
| 3      | Office (Infrastructure)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Nil                                                                                                                                                                                                                                                                                                                        |        |          |                      |    |                   |        |   |            |     |   |                         |     |   |      |     |   |            |     |   |                 |        |  |                |               |
| 4      | Road                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Nil                                                                                                                                                                                                                                                                                                                        |        |          |                      |    |                   |        |   |            |     |   |                         |     |   |      |     |   |            |     |   |                 |        |  |                |               |
| 5      | Green Belt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Nil                                                                                                                                                                                                                                                                                                                        |        |          |                      |    |                   |        |   |            |     |   |                         |     |   |      |     |   |            |     |   |                 |        |  |                |               |
| 6      | Unutilized area                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4.43.0                                                                                                                                                                                                                                                                                                                     |        |          |                      |    |                   |        |   |            |     |   |                         |     |   |      |     |   |            |     |   |                 |        |  |                |               |
|        | <b>Total =</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>4.50.0</b>                                                                                                                                                                                                                                                                                                              |        |          |                      |    |                   |        |   |            |     |   |                         |     |   |      |     |   |            |     |   |                 |        |  |                |               |
| 11.2   | Water Regime                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | : Water table in this area is noticed at a depth of 55m in summer and 50m in rainy season from the general ground level and presently the quarrying of black granite is proposed up to a depth of 45m (24m above ground level +21m below ground level). Hence, it will not affect the ground water depletion of this area. |        |          |                      |    |                   |        |   |            |     |   |                         |     |   |      |     |   |            |     |   |                 |        |  |                |               |
| 11.3   | Flora and Fauna                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | : There is no major flora observed in this area and except acacia bushes, no other valuable trees are noticed in the lease area. Further, neither flora of botanical interest nor fauna of zoological interest is noticed in this area.                                                                                    |        |          |                      |    |                   |        |   |            |     |   |                         |     |   |      |     |   |            |     |   |                 |        |  |                |               |
| 11.4   | Quality of air, ambient noise level and water                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | : Air or dust expected to be generated from drilling process, hauling roads, places of excavation etc., will be suppressed by periodical wetting of land by water spraying.<br><br>In this quarry, the machinery operations like jack hammer drilling compressor and                                                       |        |          |                      |    |                   |        |   |            |     |   |                         |     |   |      |     |   |            |     |   |                 |        |  |                |               |



|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | excavators will generate sound pollution. The sound level should be within the limits of 58dBA. To minimize this sound pollution within the permissible limits, the machinery will be operated at different places and time. The sound pollution can be reduced periodical maintenance of the mining equipment. However, periodical noise level monitoring will be carried out every six months around the quarry site. |                 |            |           |                 |            |   |               |    |        |      |   |             |    |       |       |   |          |    |       |      |   |                |      |       |     |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------|-----------|-----------------|------------|---|---------------|----|--------|------|---|-------------|----|-------|-------|---|----------|----|-------|------|---|----------------|------|-------|-----|
| 11.5 | <p><b>Climatic conditions:</b></p> <p>Dharmapuri District climate is classified as tropical. The summers here have a good deal of rainfall, while the winters have very little. The temperature here averages 26.8°C 80.2°F. The annual rainfall is 877mm 34.5inch.</p> <p>At an average temperature of 30.1°C 86.2°F, may is the hottest month of the year. December is the coldest month, with temperatures averaging 23.3°C 73.9°F.</p>                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |            |           |                 |            |   |               |    |        |      |   |             |    |       |       |   |          |    |       |      |   |                |      |       |     |
| 11.6 | <p><b>Human Settlement:</b></p> <p>The nearest villages are found in the buffer zone with population as per 2011 census.</p> <table><tr><th>S.No</th><th>Village</th><th>Direction</th><th>Distance in Kms</th><th>Population</th></tr><tr><td>1</td><td>Sigaralahalli</td><td>NW</td><td>1.25km</td><td>8639</td></tr><tr><td>2</td><td>Ajjanahalli</td><td>SE</td><td>1.5km</td><td>10481</td></tr><tr><td>3</td><td>M.Thanda</td><td>SW</td><td>1.4km</td><td>1860</td></tr><tr><td>4</td><td>Badanavadi R.F</td><td>West</td><td>1.0km</td><td>Nil</td></tr></table> |                                                                                                                                                                                                                                                                                                                                                                                                                         | S.No            | Village    | Direction | Distance in Kms | Population | 1 | Sigaralahalli | NW | 1.25km | 8639 | 2 | Ajjanahalli | SE | 1.5km | 10481 | 3 | M.Thanda | SW | 1.4km | 1860 | 4 | Badanavadi R.F | West | 1.0km | Nil |
| S.No | Village                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Direction                                                                                                                                                                                                                                                                                                                                                                                                               | Distance in Kms | Population |           |                 |            |   |               |    |        |      |   |             |    |       |       |   |          |    |       |      |   |                |      |       |     |
| 1    | Sigaralahalli                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | NW                                                                                                                                                                                                                                                                                                                                                                                                                      | 1.25km          | 8639       |           |                 |            |   |               |    |        |      |   |             |    |       |       |   |          |    |       |      |   |                |      |       |     |
| 2    | Ajjanahalli                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | SE                                                                                                                                                                                                                                                                                                                                                                                                                      | 1.5km           | 10481      |           |                 |            |   |               |    |        |      |   |             |    |       |       |   |          |    |       |      |   |                |      |       |     |
| 3    | M.Thanda                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | SW                                                                                                                                                                                                                                                                                                                                                                                                                      | 1.4km           | 1860       |           |                 |            |   |               |    |        |      |   |             |    |       |       |   |          |    |       |      |   |                |      |       |     |
| 4    | Badanavadi R.F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | West                                                                                                                                                                                                                                                                                                                                                                                                                    | 1.0km           | Nil        |           |                 |            |   |               |    |        |      |   |             |    |       |       |   |          |    |       |      |   |                |      |       |     |
| 11.7 | Public buildings, places of worship and monuments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | : No infrastructure like residential building, places of special interest like archeological monuments, Sanctuaries, etc., are found around 300m radius.                                                                                                                                                                                                                                                                |                 |            |           |                 |            |   |               |    |        |      |   |             |    |       |       |   |          |    |       |      |   |                |      |       |     |
| 11.8 | Attach plans showing the locations of sampling stations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | : We have tested for every season (6 months once) around 1km radius Ambient air quality, Water quality Ambient noise level and vibration are periodically as per the                                                                                                                                                                                                                                                    |                 |            |           |                 |            |   |               |    |        |      |   |             |    |       |       |   |          |    |       |      |   |                |      |       |     |

|      |                                                                                                                 |                                                                                                                                      |
|------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
|      |                                                                                                                 | guidance of MoEF and EIA Notification 2006 and also covering DGMS norms.                                                             |
| 11.9 | Does area (partly or fully) fall under notified area under Water (Prevention & Control of Pollution), Act, 1974 | The lease area doesn't fall under notified area under Water (Prevention & Control of Pollution), Act, 1974 within the radius of 1km. |

a) *Attach an Environmental Impact Assessment Statement describing the impact of Mining and beneficiation on environment on the following over the next five years (and upto conceptual plan period for 'A' category mines)*

| i)           | <p><b>Land area indicating the area likely to be degraded due to quarrying / pitting, dumping, roads, workshop, processing plant, township etc:</b></p> <p>The details of the land use pattern, during the ensuing plan period and till lease period is shown in the tabular form:</p> <table border="1"> <thead> <tr> <th>S. No.</th><th>Land Use</th><th>Area in use during the quarrying period (Hect.)</th></tr> </thead> <tbody> <tr> <td>1.</td><td>Under quarrying area</td><td>0.71.00</td></tr> <tr> <td>2</td><td>Infrastructure</td><td>0.01.00</td></tr> <tr> <td>3</td><td>Roads</td><td>0.02.00</td></tr> <tr> <td>4</td><td>Waste dump</td><td>0.71.00</td></tr> <tr> <td>5</td><td>Green belt</td><td>0.20.00</td></tr> <tr> <td>6</td><td>Unutilized</td><td>2.85.00</td></tr> <tr> <td colspan="2"><b>Total</b></td><td><b>4.50.00</b></td></tr> </tbody> </table> |                                                                                                                                                                                                                                                       | S. No. | Land Use | Area in use during the quarrying period (Hect.) | 1. | Under quarrying area | 0.71.00 | 2 | Infrastructure | 0.01.00 | 3 | Roads | 0.02.00 | 4 | Waste dump | 0.71.00 | 5 | Green belt | 0.20.00 | 6 | Unutilized | 2.85.00 | <b>Total</b> |  | <b>4.50.00</b> |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------|-------------------------------------------------|----|----------------------|---------|---|----------------|---------|---|-------|---------|---|------------|---------|---|------------|---------|---|------------|---------|--------------|--|----------------|
| S. No.       | Land Use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Area in use during the quarrying period (Hect.)                                                                                                                                                                                                       |        |          |                                                 |    |                      |         |   |                |         |   |       |         |   |            |         |   |            |         |   |            |         |              |  |                |
| 1.           | Under quarrying area                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.71.00                                                                                                                                                                                                                                               |        |          |                                                 |    |                      |         |   |                |         |   |       |         |   |            |         |   |            |         |   |            |         |              |  |                |
| 2            | Infrastructure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.01.00                                                                                                                                                                                                                                               |        |          |                                                 |    |                      |         |   |                |         |   |       |         |   |            |         |   |            |         |   |            |         |              |  |                |
| 3            | Roads                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.02.00                                                                                                                                                                                                                                               |        |          |                                                 |    |                      |         |   |                |         |   |       |         |   |            |         |   |            |         |   |            |         |              |  |                |
| 4            | Waste dump                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.71.00                                                                                                                                                                                                                                               |        |          |                                                 |    |                      |         |   |                |         |   |       |         |   |            |         |   |            |         |   |            |         |              |  |                |
| 5            | Green belt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.20.00                                                                                                                                                                                                                                               |        |          |                                                 |    |                      |         |   |                |         |   |       |         |   |            |         |   |            |         |   |            |         |              |  |                |
| 6            | Unutilized                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2.85.00                                                                                                                                                                                                                                               |        |          |                                                 |    |                      |         |   |                |         |   |       |         |   |            |         |   |            |         |   |            |         |              |  |                |
| <b>Total</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>4.50.00</b>                                                                                                                                                                                                                                        |        |          |                                                 |    |                      |         |   |                |         |   |       |         |   |            |         |   |            |         |   |            |         |              |  |                |
| ii).         | Air Quality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Air or dust expected to be generated from drilling process, hauling roads, places of excavation, etc., will be suppressed by periodical wetting of land by water spraying.                                                                            |        |          |                                                 |    |                      |         |   |                |         |   |       |         |   |            |         |   |            |         |   |            |         |              |  |                |
| iii).        | Water quality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | A water sample from the open/bore wells was tested to NABL approved lab to assess hardness, Salinity, colour, Specific gravity, etc.                                                                                                                  |        |          |                                                 |    |                      |         |   |                |         |   |       |         |   |            |         |   |            |         |   |            |         |              |  |                |
| iv).         | Noise levels                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Quarrying of Black granite will be carried out by drilling and blasting by using low power explosives, and hence, noise will be very minimum. However, periodical noise level monitoring will be carried out every six months around the quarry site. |        |          |                                                 |    |                      |         |   |                |         |   |       |         |   |            |         |   |            |         |   |            |         |              |  |                |
| v).          | Vibration levels                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | It is an Eco-friendly quarry operation, no                                                                                                                                                                                                            |        |          |                                                 |    |                      |         |   |                |         |   |       |         |   |            |         |   |            |         |   |            |         |              |  |                |



|        |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | (due to blasting)         | <p>blasting is proposed, Diamond wire saw cutting method is adopted by the lessee. Now days, the splitting within the sheet rock is affected by diamond wire-sawing, which largely reduces the use of explosives in granite mining. Besides, chemical powder called as "Rock breaking Powder" <math>[Ca(OH)_2]</math> are also used for splitting. Many adverse effects of blasting are avoided and hence diamond wire cutting will substantially increase the recovery. Since primary cutting comprising splitting from the sheet rock is affected by diamond wire-sawing there will not be any drilling or blasting involved. Hence, there will not any adverse effects and vibration due to this type of mining operation. The maximum peak particle velocity shall be recorded using mini seismograph devices as per the guidance of MoEF and EIA Notification 2006 and also covering DGMS norms.</p> |
| vi).   | Water regime              | Drinking water will be bought to authorized vendor of the nearby the village. The dust suppression and green belt development will be bought to water tanker.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| vii).  | Socio-economics           | <ol style="list-style-type: none"> <li>1. To provide Employment opportunities of the nearby villagers.</li> <li>2. For the cultural development of the nearby villagers.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| viii). | Historical monuments etc. | There are no historical monuments, etc found around 10km radius.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

c) Attach an Environmental Management Plan (supported by appropriate plans and sections) defining the time bound action proposed to be taken with sequence & timing in the following areas (or diagrams should be used):

|     |                                              |                                                                            |
|-----|----------------------------------------------|----------------------------------------------------------------------------|
| i). | Temporary storage and utilization of topsoil | The topsoil is $15840m^3$ will be dumbled in eastern side (L42m X W27m X H |
|-----|----------------------------------------------|----------------------------------------------------------------------------|

|        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 13.96m) in the lease hold area to prevent inherent entry of cattle's and human as per rules 106, Metalliferous Mines Regulations, 1961. If black granite may be unsold will be keep within the lease boundary.                                                                                                                                                                                                                                |              |                  |                |              |                  |      |              |       |                |      |     |     |      |          |        |                          |    |     |     |                |          |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------------|----------------|--------------|------------------|------|--------------|-------|----------------|------|-----|-----|------|----------|--------|--------------------------|----|-----|-----|----------------|----------|
| ii).   | Yearwise proposal for reclamation of land affected by abandoned quarries and other mining activities during first five years (and upto conceptual plan period for 'A' category mines) clarifying the extent of back filling and re-contouring and / or alternative use of unfilled / partially filled excavations / road sides / slopes and mine. In case abandoned quarries/ pits are proposed to be used as reservoir, their size, water holding capacity and proposal for utilization of such water be given.                                                                                                                                                                                                                                                                                                                                                                                                        | : The present mining is proposed to a depth of 45m (24m above ground level +21m below ground level) has been envisaged as workable depth for safe & economic mining during the lease period. The mined-out area will be fenced on top of open cast working with S1 fencing. Low lying areas with water logging shall be used for fish culture. No immediate proposals for closure of pits as the Black granite persist still at deeper level. |              |                  |                |              |                  |      |              |       |                |      |     |     |      |          |        |                          |    |     |     |                |          |
| iii).  | <p><i>Programme of afforestation, Yearwise for the initial five years (and upto conceptual plan period for 'A' category mines) indicating the number of plants with name of species to be afforested under different areas in hectares.</i></p> <p>Safety barrier, nearby school area and Nearest Panchayat approach Roads has been identified to be utilized for Greenbelt appropriate native species of Neem, Pungan and other regional trees will be planted in a phased manner as described below</p> <table><tr><th>Year</th><th>Place</th><th>Area in Sq.m</th><th>No.of Plants</th><th>Rate of survival</th><th>Rate</th><th>Amount in Rs</th></tr><tr><td>First</td><td>Lease Boundary</td><td>2000</td><td>200</td><td>80%</td><td>@100</td><td>20,000/-</td></tr><tr><td>Second</td><td>Approach road and Nearby</td><td>--</td><td>400</td><td>80%</td><td>Rs Per sapling</td><td>40,000/-</td></tr></table> |                                                                                                                                                                                                                                                                                                                                                                                                                                               | Year         | Place            | Area in Sq.m   | No.of Plants | Rate of survival | Rate | Amount in Rs | First | Lease Boundary | 2000 | 200 | 80% | @100 | 20,000/- | Second | Approach road and Nearby | -- | 400 | 80% | Rs Per sapling | 40,000/- |
| Year   | Place                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Area in Sq.m                                                                                                                                                                                                                                                                                                                                                                                                                                  | No.of Plants | Rate of survival | Rate           | Amount in Rs |                  |      |              |       |                |      |     |     |      |          |        |                          |    |     |     |                |          |
| First  | Lease Boundary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2000                                                                                                                                                                                                                                                                                                                                                                                                                                          | 200          | 80%              | @100           | 20,000/-     |                  |      |              |       |                |      |     |     |      |          |        |                          |    |     |     |                |          |
| Second | Approach road and Nearby                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | --                                                                                                                                                                                                                                                                                                                                                                                                                                            | 400          | 80%              | Rs Per sapling | 40,000/-     |                  |      |              |       |                |      |     |     |      |          |        |                          |    |     |     |                |          |

|        |                                                                                                                                                                     |              |   |     |                                                                                                                                                                                                                                                                                                                   |  |          |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------|
|        |                                                                                                                                                                     | Village Road |   |     |                                                                                                                                                                                                                                                                                                                   |  |          |
|        | Third                                                                                                                                                               | Schools      | ~ | 200 | 80%                                                                                                                                                                                                                                                                                                               |  | 20,000/- |
|        | Total                                                                                                                                                               |              |   |     |                                                                                                                                                                                                                                                                                                                   |  | 80,000/- |
| iv).   | Stabilization and vegetation of dumps along with waste dump management Year wise for the first five years (and upto conceptual plan period for 'A' category mines), |              |   | :   | The black granite rejects are 31572m <sup>3</sup> (up to 80%), Side Burden are 49550m <sup>3</sup> and Weathered rock is 21672m <sup>3</sup> will be removed and dumped in the south side of the lease area average dimensions of (L80m X W45m X H 4.79m) & (L60m X W40m X H 20.64m) for the period of five years |  |          |
| v).    | Measures to control erosion / sedimentation of water courses.                                                                                                       |              |   | :   | No soil erosion takes place in this quarrying activity.                                                                                                                                                                                                                                                           |  |          |
| vi).   | Treatment and disposal of water from mine.                                                                                                                          |              |   | :   | It will not be harmful and it doesn't require any treatment before discharging into the natural courses.                                                                                                                                                                                                          |  |          |
| vii).  | Measures for minimizing adverse effects on water regime;                                                                                                            |              |   | :   | There is no water to be pumped out will be very pure and portable and therefore, it will not affect any water regime surrounding the quarry.                                                                                                                                                                      |  |          |
| viii). | Protective measures for ground vibrations / air blast caused by blasting.                                                                                           |              |   | :   | It is a small "B" category open cast, semi mechanized mining and no heavy machinery shall be used. The only smooth blasting is proposed, therefore no change for ground vibration or noise from the quarry.                                                                                                       |  |          |
| ix).   | Measures for protecting historical monuments and for rehabilitation of human settlements likely to be disturbed due to mining activity.                             |              |   | :   | No historical monuments and for rehabilitation of human settlements doesn't to be disturbed during mining activity.                                                                                                                                                                                               |  |          |
| x).    | Socioeconomic benefits arising out of mining.                                                                                                                       |              |   | :   | The nearest villages are will get employment benefits.                                                                                                                                                                                                                                                            |  |          |



d). *Monitoring schedules for different environmental components after the commencement of mining and other related activities. (for 'A' category mines only)*

Not applicable. It is "B" category quarry

#### **12.0 PROGRESSIVE MINE CLOSURE PLAN:**

|      |                                                                                                            |   |                                                                                                                                                                                                                                                                                                             |
|------|------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12.1 | Steps proposed for phased restoration, reclamation of already mined out area.                              | : | The present mining is proposed to depth of 45m (24m above ground level +21m below ground level). The mined-out area will be fenced on top of open cast working with S1 fencing to arrest the entry of cattle's and public in to the quarry site.                                                            |
| 12.2 | Measures to be under taken on mine closure as per Act & Rules                                              | : | Measures will be taken as per the Acts and Rules. The quarried pit will be fenced by Barbed wire fencing. Green belt development at the rate of 200 trees are proposed lease boundary for mining plan period. No immediate proposals for closure of pit as the Black granite persist still at deeper level. |
| 12.3 | Mitigation measures to be undertaken for safety and restoration/ reclamation of the already mined out area | : | The quarry lease is an existing mining lease for 20 years lease period.                                                                                                                                                                                                                                     |
| 12.4 | Mine closure activity                                                                                      | : | The mined-out area will be fenced on top of open cast working with S1 fencing. Low lying areas with water logging shall be used for fish culture. No immediate proposals for closure of pit as the Black granite persist still at deeper level.                                                             |
| 12.5 | Safety and security                                                                                        | : | Safety measures implement to the prevent access to surface opening excavations will be taken as per Metalliferous Mines Regulations, 1961, it is a small open cast mining method adopted.                                                                                                                   |





|      |                                                                         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------|-------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |                                                                         |   | Safety provisions like helmet, goggles, safety shoes, Dust mask, Ear muffs etc have to be provided as per the circulars and amendments made for Mine labours under the guidance of DGMS being a mechanized operation.                                                                                                                                                                                                                                                                                                                                                                                                             |
| 12.6 | Disaster management and Risk Assessment                                 | : | Open cast mining method is adopted in this quarry. If the benches are made with proposed height and width no risk will be there. Even then if any minor or major accident happens the quarry staffs having First aid facilities with first aid box with all necessary medicine and stretchers etc to give first aid treatment at the site and will arrange immediately the vehicle to reach nearest hospital, if any disaster happens the lessee is capable to meet such eventualities. At the time of any accident during mining activity, proposal of first aid facility at quarry and one vehicle always ready at quarry site. |
| 12.7 | Care and maintenance during temporary discontinuance                    | : | During temporary discontinuance the working place will be fenced completely and a board of discontinuance will be changed on the main entrance of the working place. One watch man will be kept on the quarry area for security purposes also look after the survival of the plants.                                                                                                                                                                                                                                                                                                                                              |
| 12.8 | Economic repercussions of closure of quarry and man power entrenchments | : | During the five years mining period the employment potential will be generated, general financial status and socio-economic conditions of approx. 22 labors will be improved. During the next five-year compensations will be given as per rules.                                                                                                                                                                                                                                                                                                                                                                                 |



**12.9 Proposed Financial Estimate / Budget for (EMP) Environment Management:**

|          |                                                       |                                         |
|----------|-------------------------------------------------------|-----------------------------------------|
| <b>A</b> | <b>Fixed Asset Cost:</b>                              |                                         |
|          | 1. Land Cost                                          | : Rs. 4,10,00,000, /-                   |
|          | 2. Labour Shed                                        | : Rs. 3,00,00,000, /-                   |
|          | 3. Sanitary Facility                                  | : Rs. 1,10,000/-                        |
|          | 4. Fencing                                            | : Rs. 90,000/-                          |
|          | <b>Total</b>                                          | : <b>Rs. 4,15,00,000/-</b>              |
| <b>B</b> | <b>B. Machinery cost</b>                              | : <b>Rs. 1,78,00,000/- (Hire Basis)</b> |
| <b>C</b> | <b>Total Expenditure of EMP cost (for five years)</b> |                                         |
|          | 1. Drinking Water Facility                            | : Rs. 1,20,000/-                        |
|          | 2. Water Quality Test                                 | : Rs. 70,000/-                          |
|          | 3. Permanent water sprinkler                          | : Rs. 70,000/-                          |
|          | 4. Afforestation and maintenance                      | : Rs. 30,000/-                          |
|          | 5. Safety Kits                                        | : Rs. 80,000/-                          |
|          | 6. Air quality Test                                   | : Rs. 40,000/-                          |
|          | 7. Noise / Vibration test                             | : Rs. 40,000/-                          |
|          | <b>Total</b>                                          | : <b>Rs. 4,20,000/-</b>                 |
| <b>D</b> | <b>Total Project Cost (A+B+C)</b>                     | : <b>Rs. 5,97,20,000/-</b>              |

**13.0 FINANCIAL ASSURANCE:**

Not applicable, it is a small "B" Black granite quarry.

**14.0 CERTIFICATES:**

All required certificates are enclosed.

**15.0 PLAN AND SECTIONS, ETC:**

Plan and Sections are submitted along with mining plan.

**16.0 ANY OTHER DETAILS INTEND TO FURNISH BY THE APPLICANT**

- (i) Care and precautionary measures will be taken for the safety of workers as per Rules and Acts.
- (ii) The applicant will endeavor every attempt to quarry the Black granite economically without any wastage and to improve the environment and ecology.
- (iii) The Mining Plan with progressive quarry closure plan is prepared by incorporating the conditions stipulated in the precise area communication issued by the Principal Secretary to Government Industrial (MME.2) Department Secretariat, Chennai letter No.274/MME.2/2021-1, Dated: 23.02.2021
- (iv) Total proposed production of ROM is about 315871MT. Of which, Black granite is about 20918MT at the recovery of 20% and granite rejects are 83666MT at the recovery of 80%, weathered rock is about 43344MT, Top soil is 31680MT and side burden is 136263MT up to a depth of 45m (24m above ground level +21m below ground level) for first five years mining plan period. Annual Peak production is 5566MT of Black granite per year.

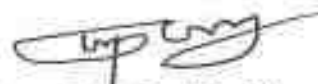


### 17.0 CSR Expenditure:

\* CSR (Corporate Social responsibility) shall provide by the applicant @ 2.0% of average net profit of the company for the last three financial years to the nearby village on the Ministry has notified the amendments in section 135 of the Act as well in the CSR Rules on 22<sup>nd</sup> January 2021 as circular no. CSR-05/01/2021-CSR-MCA dated 25<sup>th</sup> August 2021.

Place: Dharmapuri, TN

Date:



Signature of the Qualified Person

Dr. S. KARUPPANNAN, M.Sc., Ph.D.  
Qualified Person  
GEO TECHNICAL MINING SOLUTIONS  
A TIASET Accredited and ISO Certified Company  
3/112-B, Ground Floor, Natesan Complex,  
Collectorate Post Office, Oddepur,  
Hosurpet-517002, Tirumangal, India



5/8

DIRECTOR  
Department of Geology & Mining  
Guindy, Chennai - 600 032.

09/10/2023

This Mining Plan is Approved  
Subject to the Conditions / Stipulation  
Indicated in the Mining Plan Approval

Letter No. 1164 / 10004 / Dated 2023

10-10-2023



Industries (MME) Department,  
Secretariat, Chennai - 600 009



Letter No.274/MME.2/2021 - 1, Dated 23.02.2021

From

Thiru N. Muruganandam, I.A.S.,  
Principal Secretary to Government.

To

Tvl. KMB Trading Company,  
3/50, Bangalore Main Road,  
Five Roads,  
Salem District - 636004.



Sir,

Sub: Mines and Minerals - Minor Mineral - Black Granite -  
Ajjanahalli Village - Pennagaram Taluk - Dharmapuri  
District - S.F.Nos.824/3 (2.11.5 hectares) and 823  
(Part) (2.38.5 hectares) - Over an extent of 4.50.0  
hectares of Government Poramboke land - Highest Bid  
amount offered by Tvl. KMB Trading Company, Salem  
District - Precise Area Communicated - Balance Lease  
Amount - Approved Mining Plan and Environmental  
Clearance - Called for.

- Ref: 1. Dharmapuri District Gazette Extraordinary Issue in  
English and Tamil No. 05 dated:03.09.2020.
2. Application of Highest Bidder of Tvl. KMB Trading  
Company, Salem on 29.09.2020.
3. From the District Collector, Dharmapuri Letter Roc  
No.176/2020 (Mines), dated 23.10.2020.
4. From the Director of Geology and Mining, File  
No.6164/MM4/2020, dated: 31.12.2020 and  
06.02.2021.

I am directed to state that in the references third and fourth cited,  
the District Collector, Dharmapuri and the Director of Geology and Mining  
have recommended to declare you as Successful bidder and to  
grant quarry lease for quarrying of Black Granite over an extent of  
4.50.0 hectares of Government Poramboke land in S.F.No.824/3  
(2.11.5 hectares) and 823 (Part) (2.38.5 hectares) in Ajjanahalli Village of  
Pennagaram Taluk, Dharmapuri District for a period of 20 years under  
rule 8-A of the Tamil Nadu Minor Mineral Concession Rules, 1959.

//P.T.O//



2. I am directed to declare you as successful bidder to grant quarry lease for quarrying of Black Granite over an extent of 4.50.0 hectares) of Government Poramboke land in S.F.No.824/3 (2.11.5 hectares and 823 (Part) (2.38.5 hectares) in Ajjanahalli Village of Pennagaram Taluk, Dharmapuri District for a period of 20 years under rule 8-A of the Tamil Nadu Minor Mineral Concession Rules, 1959 subject to the outcome of W.P.No.13811 of 2020 and W.M.P.No.17315 of 2020 and W.P.No.14092/2020.

3. In this connection, I am directed to request you to remit the balance lease amount of Rs.3,85,00,000/- in the District Treasury concerned and to submit the original challan to Government within a period of one month from the date of this communication and to submit the Approved Mining Plan as per Rule 12 of the Granite Conservation and Development Rules, 1999 through the Commissioner of Geology and Mining to Government within the period of 3 months from the date of receipt of this communication as per Rule 8-A(8)(a)(ii) of the Tamil Nadu Minor Mineral Concession Rules, 1959 and also to produce Environmental Clearance obtained from the Competent Authority for the above said area in the conditions stipulated in the prescribed Act and Rules in addition to the following conditions:-



- 1) A safety distance of 7.5 meters and 10 meters should be provided to the adjacent patta and Government Poramboke lands, respectively.
- 2) All conditions stipulated in the District Gazette No.05 Extraordinary notification dated 03.09.2020 should be adhered by the lessee.
- 3) Environmental clearance should be obtained from the State Level Environmental Impact Assessment Authority before grant of quarry lease as per rule 42 of the Tamil Nadu Minor Mineral Concession Rules, 1959.
- 4) The applicant firm should fence the lease granted area with barbed wire before the execution of lease deed as follows: -
  - The pillar post shall be firmly grounded with concrete foundation of height not less than 2 meters with a distance between two pillars shall not be more than 3 meters.
  - The applicant firm shall incorporate the DGPS readings for the entire boundary Pillars of the area and the same should be clearly shown in the mining plan.
  - A soft copy of the digitized map with DGPS readings should be submitted in the CD form to the Deputy Director, Dharmapuri.



- 5) The District Administration and Geology and Mining Department should ensure the conditions imposed in G.O.(Ms).No.79, Industries Department, dated 06.04.2015.
- 6) As per Rule 12(V) of Minerals (other than Atomic & Hydro- carbons Energy Minerals) Concession Rules, 2016, the applicant firm shall at his own expenses erect, maintain and keep in repair all the boundary pillars.
- 7) The applicant firm should use mild explosives during quarrying.
- 8) Child Labourers should not be engaged in quarry works.
- 9) If any violation is found during quarrying operation, the penal provisions of the Tamil Nadu Minor Mineral Concession Rules, 1959 and other rules and act in force will attract.
- 10) The applicant firm should ensure that while starting the quarry work, all the quarry workers working under their control are registered in the Labour Welfare Board and also enrolled in the ongoing insurance scheme.
- 11) The District Collector, Dharmapuri shall obtain a sworn-in affidavit from the applicant firm containing the above conditions before execution of lease deed and also ensure that instructions issued in Government Letter No.12789/MMS/2002-7, Industries Department, Dated: 9.1.2003 are complied with.



Yours faithfully,

*[Signature]*  
23.2.2021

for Principal Secretary to Government  
Jrg  
23/2/2021

Copy to:-

The Commissioner of Geology and Mining,  
Guindy, Chennai - 600 032.

The District Collector,  
Dharmapuri District.

*[Signature]*

Recognized Signature Person  
File No. KQP / CNN / 264 / 2019A





# DHARMAPURI DISTRICT GAZETTE

EXTRAORDINARY

PUBLISHED BY AUTHORITY

No. 5]

DHARMAPURI, SEPTEMBER 3, 2020

[Sarvari, Aaval 18—Thiruvalluvar Aandu 2051]

## NOTIFICATION BY THE COLLECTOR

[Roc.No.410/2016/(Mines), Dated: 02.09.2020]

[Notice Inviting Tender Applications for the Grant of Quarry Lease for Black Granite situated in Government lands in Dharmapuri District under Tender-Cum-Auction system as per Rule 8-A of the Tamil Nadu Minor Mineral Concession Rules, 1959].

Last date and time for submission of tender application  
Date and time on which open auction will be conducted  
and opening of tender applications

28.09.2020 @ 03.00 P.M.  
29.09.2020 @ 11.00 A.M.

- For and on behalf of the Government of Tamil Nadu sealed Tender applications in Triplicate are invited by the District Collector Dharmapuri at Collectorate, Dharmapuri up to 01.00 P.M. on 28.09.2020 (as per the office clock of the Deputy Director of Geology and Mining, Dharmapuri, 2<sup>nd</sup> Floor, DRDA Building, Collectorate, Dharmapuri) from the individuals or companies or partnership firms for the purpose for obtaining quarry lease to quarry black granite from the areas situated in Government lands in Dharmapuri District specified in the schedule for a period twenty years in accordance with the Tamil Nadu Minor Mineral Concession Rules, 1959 more specifically as per rule 8-A of the above said rules notified in G.O.Ms.No.103/Industries/MMC1/Department Dt:13.07.1996 and published in Tamil Nadu Government Gazette, Extraordinary No.337, part-III, section 1(a) Dt:13.07.1996 and subsequently amended.
- The tender applications submitted as per the notification shall be in the form prescribed as per appendix VI-A of Tamil Nadu Minor Mineral Concession Rules, 1959. Model application form is enclosed with this gazette notification. The applications not submitted as prescribed in appendix VI-A and the applications without statutory enclosures shall not be entertained.
- The tenderers / Bidders shall make their own arrangements to visit the notified proposed quarry sites, assess the quantity and the quality of granite before making their offers. They should also make their own arrangements for providing necessary infrastructure including approach roads, etc., for quarrying granite, if the area is allotted to them on lease eventually.
- (a) All applications made in response to this notification shall be in the form prescribed in Appendix VI-A to these rules and they shall be sent directly to the District Collector, Dharmapuri District and submitted to the O/o The Deputy Director, Geology and Mining, 2<sup>nd</sup> Floor, DRDA Building, Collectorate, Dharmapuri on or before 03.00 P.M. of 28.09.2020 in person or by R/PAD in a sealed cover super scribed as 'TENDER APPLICATION FOR GRANT OF QUARRYING LEASE-ITEM SI.No. ....IN THE NOTICE' ADVERTISEMENT, DATED .....'. The name and address of the applicant shall also be legibly written on the sealed cover. For each item of area specified in the District Gazette Notification or in the news paper advertisement separate tender application shall be made.

(b) Every tender application made for grant of quarrying lease shall be accompanied by:-

- (i) Original challan for payment of Rs. 5000/- (Rupees Five Thousand only) towards non-refundable application fee in a Government Treasury in the District concerned. The amount can also be remitted through demand draft drawn in favour of the District Collector, Dharmapuri obtained from any Nationalized Bank or Co-Operative Bank and the original Demand Draft should be enclosed.
  - (ii) A demand draft for (Rs. 25,00,000/-) (Rupees Twenty Five Lakhs only) towards Earnest Money Deposit in favour of the District Collector, Dharmapuri drawn in any Nationalized Bank or Co-Operative Bank and the original Demand Draft should be enclosed.
  - (iii) An affidavit showing the particulars of the areas/mineral wise in each District of the State, which the applicant or any person jointly with him :-
    - (i) already holds under a quarrying lease
    - (ii) already applied for but not yet granted
    - (iii) is being applied for simultaneously.
  - (iv) A valid mining dues clearance certificate obtained from the Collector of the District where the quarrying or mining lease area is situated in the form prescribed in Appendix-VIII to these rules for having paid the mining dues, such as royalty, seigniorage fee, lease amount, dead rent, surface rent, area assessment, penalty amount or any other dues payable under the Act or these rules or under the lease deed or agreement already executed or entered into by the applicant if the applicant is not having any Mining/ Quarrying lease in the State of Tamil Nadu an Affidavit towards no mining dues also to be enclosed.
  - (v) An affidavit stating that the applicant has:-
    - i. Filed upto date income tax return.
    - ii. Paid the income tax assessed on him.
    - iii. Paid the income tax on the basis of the self assessment as provided in the Income Tax Act, 1961 (Central Act 43 of 1961) or any other later instructions of the Central Government.
  - (c) The application thus made shall contain the particulars about the maximum amount the applicant is willing to offer for getting the area applied for lease for quarrying purpose.
  - (d) All applications shall reach the addressee specified in the notice or advertisement within the specified time and date.
5. (a) Where the application is delivered personally, its receipt shall be acknowledged in the form in Appendix-IX to the rules of TNMMCR, 1959. Where an application is sent by post it shall be sent by registered post and its receipt shall also be acknowledged to the applicant by RPAD within three days from the date of receipt of application. The District Collector shall have no responsibility for any delay in receipt or loss in postal transit of any application or communication.
- (b) If any application is made for an area when there is no invitation of tender application, it shall summarily be rejected as premature application. If any application is received after the due time and date fixed for receipt of application, it shall be rejected by the District Collector as time barred application. Failure to satisfy the conditions and to comply with the requirements specified above will result in summarily rejection of an application for participation in auction or tender proceedings and the person who made such application is not entitled to participate in the auction or tender as the case may be. The rejection order passed on such application with the demand draft if any shall be sent through registered post to the applicant within seven days from the date of receipt of the application retaining the application and the cover.

#### TENDER - CUM - AUCTION PROCEDURE

6. (a) (i) Before opening tender applications received for each area for which applications are invited through notification and advertisement, an auction shall be conducted in which all tender applicants and also others who consider themselves as eligible and pay an Earnest Money Deposit of (Rs. 25,00,000/-) by a bank draft can participate. The auction bids of the non-tender applicants will be accepted subject to verification of their eligibility and subject to their submitting the application form with statutory enclosures and payment of application fee before commencement of the tender-cum-auction proceedings. For people who have already paid Earnest Money Deposit in tender, no separate fee need be levied for participating in auction.



- (ii) In the absence of the applicant one nominee of the applicant may be permitted to participate in the auction and allowed to be present when the tender applications are opened provided the nominee produces a letter from the applicant authorizing the nominee to do so and signed before a Notary Public who shall attest the signature of the applicant and his nominee.
- (b) (i) Before opening tender applications received for each area, auction shall be conducted by the District Collector or the officer authorized by the District Collector allowing all eligible applicants to bid at the auction for making their offer of lease amount to obtain the area on lease. Immediately after conclusion of the auction, all the valid tender applications for the area shall be opened and examined by the District Collector or the authorized officer.
- (ii) The sealed tender applications shall be opened in the presence of the tender applicants or their nominees who may choose to be present. Failure on the part of any tender applicant or his nominee to be present on the date and time of auction or at the time of opening of the sealed tender applications shall not prevent the authorities concerned from conducting the auction and opening of the sealed tender applications with the participation of the other tender applicants or their nominees or others.
- (iii) Where the receipt of total no. of Tender cum Auction applications are less than three, auction process shall be annulled and recommended for a retender for one time within one month.
- (iv) The authorized officer shall declare the total number of valid applications received for an area, names of the applicants and the tender amount offered for the area by each of the applicants. He shall also declare the highest bid amount offered at the auction and the highest tender amount quoted in the tender applications and the names of the highest offerers of the bid amount and the tender amount before concluding the proceedings.
- (v) In a case where the highest auction amount is found to be less than the highest tender amount and where the said highest tender amount has been quoted by two or more applicants, the District Collector or the officer authorized by the District Collector shall call such applicants alone to make their further offers.
- (vi) After declaring the name of the highest bidder/tender applicant for an area, the EMD received from the applicant bidders other than the highest bidder/tender applicant shall be returned forthwith to the applicants/bidders present on obtaining acknowledgement for receipt of the same or sent by registered post in due course, if they are not present. The Earnest Money Deposit made by the highest bid amount or tender amount offeror, as the case may be, shall be adjusted towards payment of lease amount in case he is selected for grant of the area on lease to him for quarrying purpose.
7. The District Collector after the conclusion of the Auction Cum Tender procedures, shall forward all the applications received to the State Government through the Director of Geology and Mining. On receipt of the proposal from the District Collector, the Director of Geology and Mining shall forward the same to the State Government with his recommendations:
- (a) (i) On receipt of the recommendation of the Director of Geology and Mining for grant of lease for an area the State Government shall communicate its decision to grant the lease to the applicant who is declared as the successful offer or of the bid amount or Tender amount whichever is greater.
- (ii) The State Government shall communicate its decision to grant the lease for the precise area directing to remit the balance amount indicated in the order of the State Government in the District Treasury concerned and to submit the original challan to the State Government within one month from the date of receipt of such communication and to submit the approved mining plan as per Rule 12 of the Granite Conservation and Development Rules, 1999 to the State Government within a period of three months from the date of receipt of the communication from the State Government.
- (iii) Where the applicants fail to remit the balance amount within the stipulated period, the amount already remitted shall be forfeited and the communication issued, shall be deemed to be cancelled. When the said applicants have remitted the amount within the stipulated period but are not able to submit the approved mining plan as per Rule 12 of the Granite Conservation and Development Rules, 1999 to the State Government within the stipulated period for reasons beyond their control, they may apply for extension of time for submission of the approved mining plan. The State Government on receipt of such request and after satisfying that the balance amount has been paid within the prescribed period, may grant extension of time for a further period not exceeding three months. If satisfied with the reasons furnished by the applicant. In case the applicant fails to submit the approved mining plan as per Rule 12 of the Granite Conservation and Development Rules, 1999 even in the extended period, the amounts remitted by the applicant shall be forfeited and the communication letter shall be deemed to be cancelled.

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- (iv) The applicant shall also submit the Environmental Clearance from the competent authority as per Rule 42 of Tamil Nadu Minor Mineral Concession Rules 1959 within the time limit as prescribed by the State Government.
  - (v) On receipt of the approved mining plan as per Rule 12 of the Geolite Conservation and Development Rules, 1999 and the Environmental Clearance from the competent authority as per Rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 the State Government shall issue the order granting the lease.
  - (b) Where the State Government is satisfied that the highest amount offered by the applicant is not reasonable in the circumstances of the case and that it will not be in the interest of mineral development to grant the lease to the said applicant, an order refusing to grant the lease to the applicant shall be passed by the State Government, communicating the reasons there for to the applicant.
  - (c) The lease deed shall be executed by the applicant with the District Collector concerned within one month from the date of receipt of the order of the State Government or within such further period not exceeding a period of thirty days as the District Collector may allow in this behalf. The lease deed shall be executed by the applicant on the appointed day and time with a map of the demarcated leased out area signed by the District Collector and the lessee, appended to it.
  - (d) Where the State Government has granted a quarrying lease, to an applicant, if the applicant fails to produce the signed copy of the demarcated map of the area or fails to produce the required stamp papers for preparing the lease deed or fails to execute the lease deed within the stipulated time, the State Government may cancel the order granting the lease to the defaulter and forfeit all amounts paid by him to the State Government. In the case of an area for which there are two or more applicants, after cancellation of the order granting the quarrying lease to the defaulter the State Government may grant the quarrying lease in favour of the next below highest bidder or tender applicant. Subject to the provision of clauses (a) and (b) If the next highest bidder or tender applicant is not communicating his acceptance of such an offer of the State Government within fifteen days from the date of receipt of the State Government's offer, the State Government shall call for fresh tender applications for the area concerned.

#### CONDITIONS FOR CARRYING OUT QUARRYING OPERATIONS.

5. (a) The date of commencement of the period for which the quarry lease is granted under this Rule shall be the date on which the lease deed is executed.
- (b) Before execution of the lease deed the successful bidder/tender applicant shall deposit as security @ twenty percent (20%) of the bid/tender amount for which the lease has been granted by the State Government.
- (c) All lessees, besides the one time payment of the bid amount / tender amount which is the lease amount, shall also pay seigniorage fee or dead rent whichever is more in respect of the actual quantity of the mineral removed or consumed at the rates prescribed from time to time in Appendix-II to these rules. Besides the onetime payment of lease amount and seigniorage fee or dead rent whichever is greater the lessee shall pay such other levies as may be prescribed by the State Government from time to time.

In the event of failure to pay the seigniorage fee or dead rent whichever is greater the lease shall be cancelled.

Provided that the lessee shall pay the dead rent for the first year of the lease before the execution of the lease deed and for the subsequent years thirty days before the date of commencement of each year of the lease period.

Provided further that the lessee is entitled to obtain transport permit and despatch slips for removal of the mineral from the leasehold area without paying seigniorage fee until the amount of dead rent already paid is got adjusted towards seigniorage fee payment.

- (d) No lessee is entitled to raise any dispute with reference to the survey and demarcation of the area leased out to him after execution of the lease deed.
- (e) The lease shall expire on the date specified in the lease deed and in no case extension of the period of the lease shall be made.
- (f) No lessee shall commence any quarrying operation in any area without executing the lease deed. No lessee shall continue quarrying in the area after the expiry of the stipulated lease period. If any quarrying or transportation of the mineral is done without complying with or in violation of the above conditions, it shall be treated as illicit quarrying and illicit transportation and the lessee is liable to be punished for the offence without prejudice to any other actions that can be taken on the person as provided in these Rules or the Act.

- (g) The lessee shall remove and transport the mineral from the leasehold area after obtaining transport permit from the District Collector concerned or any Officer authorized by him in this behalf and complying with the conditions stipulated in these Rules.
- (h) The lessee shall not quarry any other mineral other than the purpose for which the lease is granted. If any other mineral / valuable metal is found to be noticed, the quarrying operation shall be stopped at once and intimated to the District Collector / Government.
- (i) The lessee shall not without the previous consent in writing of the State Government assign, sublet, mortgage or in any other manner transfer the quarrying lease as specified in Rule-36F of Tamil Nadu Minor Mineral Concession Rule 1959.
- (j) The lessee shall keep correct accounts showing the quantity and other particulars of all minerals quarried and transported from the quarry site. The lessee shall also allow any officer authorized by the State Government or the Director of Geology and Mining or the District Collector in this behalf to inspect the quarry and verify the records and accounts and to furnish such information and returns as may be required by him.
10. (a) The lessee shall carryout the quarrying operations in a skilful, scientific and systematic manner keeping in view the proper safety of the labour, conservation of minerals and preservation of the environment and ecology of the area.
- (b) The lessee shall allow any officer authorized by State Government, or the Director of Geology and Mining or the District Collector concerned to enter upon the leasehold area and inspect for the purpose mentioned in clause (a) and for any other purpose which may be required for compliance of the provisions of the Act and these rules or any other Act or Rules framed by the Central Government or the State Government.
11. The lease granted under this rule may be renewed for a period not exceeding twenty years, provided that mineral of lease shall be subject to the satisfactory performance of the lessee during the quarry work in the past in fulfilling the conditions of lease and as per the Tamil Nadu Minor Mineral Concession Rules, 1959.

#### 12. ADDITIONAL CONDITIONS

- a) The period for which the area granted on lease for quarrying under this rule is only for twenty years.
- b) The quarrying lease will be granted only in the name of the successful Tenderer/bidder declared by the state Government.
- c) No quarrying activities commenced there to shall be done before the execution of the agreement.
- d) The Executed lease deed shall be registered at the cost of the lessee.
- e) While quarrying no hindrance shall be caused to the adjoining pattadars and public.
- f) The lessee should restrict his mining operations strictly within the permitted area as defined in the sketch without any encroachments.
- g) The lessee should maintain, at his cost proper signboards indicating the survey numbers, years of lease, name of the lease holder and lease period to the satisfaction of the District Collector and Commissioner/ Director of Geology and Mining and maintain it all time at the quarry site.
- h) The lessee should make his/her own arrangement to form the approach road from the public road to the place of the quarry.
- i) The lessee shall abide to all the provisions of Mines and Minerals (Development and Regulation) Act, 1957, The Metalliferous Mines Regulations 1961 or any other connected Laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1986, Indian Explosives Act 1884, (Central Act IV of 1884) and the Rules made there under and the Tamil Nadu Minor Minerals Concession Rules, 1959.
- j) Quarry lease area should be demarcated state on ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar with DGPS reading shall be erected before commencement of quarrying and it should be maintained throughout the period of lease.
- k) No quarrying shall be made within the safety distance of 7.5 mts to the adjacent patta lands and 10 mts to the adjacent Government Poramboke lands.
- l) Pit Mouth register should be maintained in the quarry site.

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- m) A minimum distance of 50 mts. from any Civil structure/ habitation, Electric / Telephone lines, Railways, Reservoir, Canal, National highways and other public works shall be kept from the periphery of any excavation area and 10mts safety distance to the village roads shall be kept and maintained during the entire lease period.
  - n) Quarry operations shall be carried only after appointing Mines Manager/Mines Mate and it should be carried out on the supervision of Mines Manager/Mines Mate.
  - o) Notice of opening of the quarry should be sent to the Director of Mines Safety, Bangalore.
  - p) In any accident occur in the quarry area the lessees should give intimation to the Director of Mines Safety Bangalore and District Collector, Dharmapuri at once and lessee is solely responsible for any violation.
  - q) The lessee should get the consent for establishment and for operation from the Tamil Nadu Pollution Control Board before the commencement of quarrying operation.
  - r) The conditions imposed by the TNPCB in the consent order should be adhered without any omission.
  - s) The Environmental Clearance and the consent of the TNPCB should be renewed periodically without any lapse.
  - t) If any quarrying is found in the area granted on lease before the date of execution of lease deed, the lease is liable to be cancelled and criminal action will be initiated.
  - u) No lease granted under this rule shall be extended.
  - v) The lessee shall provide safety distance in the area as per the rules in force or any rule which may be imposed by Government. He must also take up all safety measures as directed by the Government at his own cost.

#### 11. SPECIAL CONDITIONS

- i. The Government reserves the right to accept or reject any or all tender / bid applications either in part or full without any liability to the Government or any of the officers of the Government.
- ii. The authority for acceptance of tender / bid shall rest with the Government. The Government do not bind themselves to accept the highest or any other tender / bid applications.
- iii. The applicants participating in the tender / bid either should have (or) shall obtain a valid Permanent Account Number issued by the Income Tax department of Government of India.
- iv. The successful bidder shall pay 2% on the total tender / bid amount into the TAN number CHEA11977A as TDS to IT Department and produce the remittance challan to the Deputy Director of Geology and Mining, Dharmapuri.
- v. After execution of the lease deed the lessees shall have to pay as 2% on the seigniorage fee as TDS to Income Tax Department on the total Seigniorage fee paid for the total volume of transportation at the time of obtaining transport permit.
- vi. The lessee shall pay 10% of the total amount of the seigniorage fee paid for obtaining transport permit towards the contribution of Dharmapuri District Mineral Foundation Trust Fund and the said amount should be remitted to current account number 6636419266 @ the Indian Bank, Dharmapuri Branch then and there without fail.
- vii. Transportation of Black Granite blocks should not be carried out from 6.00 P.M to 6.00 A.M.
- viii. The lessee shall strictly adhere to the statutory and safety requirements.
- ix. The waste materials generated during quarrying operation shall be dumped only within the area granted under lease.
- x. Quarrying shall be done as per the approved Mining Plan and as such laws made by the Central Government/State Government and any other notifications issued then and there.
- xi. The lessee/grantee shall submit scheme of mining, mine closure plan and other statutory requirements within the time stipulated for submission of the above as per rules.
- xii. The lessee shall submit half yearly returns in Form 'F' and Annual returns in Form 'G' as per GCDR 1999 within the prescribed time limit.
- xiii. The lessee should strictly adhere all the conditions imposed by the state Government, in the lease granting order, conditions imposed in the Environmental Clearance Certificate, conditions imposed by the Director of Geology and Mining and the District Collector, Dharmapuri and any other directions / instructions issued from time to time.
- xiv. Any other conditions stipulated by other Statutory/Government authorities shall be complied with.



Note:

As per announcement of the Hon'ble Chief Minister of Tamil Nadu News Letter No. 182, dated 30.08.2020, there shall be no restriction on intra-State movement of persons and goods. No separate permission/ approval/e-permit will be required for such movements. But the other state persons, who are enter into the Tamil Nadu, they should obtain e-pass. Hence, other state persons, who are interested in Granite Tender cum Auction, they are instructed to apply with valid documents viz., Aadhar Card, Travelling Ticket and Telephone/ Mobile No. for getting e- pass through Auto generated method by computer. After obtaining e-pass should attend the Tender Cum Auction accordingly.

## 14. SCHEDULE

Areas notified for lease under Tender-Cum-Auction as per Rule 8-A of Tamil Nadu Minor Mineral Concession Rules, 1959.

| Sl. No | Taluk      | Village       | S.E.No.                 | Extent Proposed for lease | Classification of land          | Mineral       |
|--------|------------|---------------|-------------------------|---------------------------|---------------------------------|---------------|
| (1)    | (2)        | (3)           | (4)                     | (5)<br>(in hecct.)        | (6)                             | (7)           |
| 1      | Dharmapuri | Adagapadi     | 495 (part)              | 248.5                     | U.A.W.<br>Karnadu               | Granite       |
| 2      | Pennagaram | Sidumanshalli | 938 Part Bii-1          | 620.0                     | Anathinam                       | Black Granite |
| 3      | Pennagaram | Sidumanshalli | 938 Part Bii-2          | 563.0                     | Anathinam                       | Black Granite |
| 4      | Pennagaram | Ajjanahalli   | 98 &<br>686/4 (part)    | 131.5<br>144.0<br>275.5   | U.A.W                           | Black Granite |
| 5      | Pennagaram | Ajjanahalli   | 856 (Part)              | 491.5                     | U.A.W                           | Black Granite |
| 6      | Pennagaram | Ajjanahalli   | 682/2 (Part)            | 291.0                     | U.A.W                           | Black Granite |
| 7      | Pennagaram | Ajjanahalli   | 223/B Part<br>(Bii-1)   | 258.0                     | Anathinam                       | Black Granite |
| 8      | Pennagaram | Ajjanahalli   | 223/B Part<br>(Bii-2)   | 265.0                     | Anathinam                       | Black Granite |
| 9      | Pennagaram | Ajjanahalli   | 830 (P) East<br>& 834/1 | 371.0<br>129.0<br>500.0   | U.A.W<br>Karnadu &<br>Anathinam | Black Granite |
| 10     | Pennagaram | Ajjanahalli   | 830 (P) West<br>& 835/2 | 232.5<br>081.5<br>314.0   | U.A.W<br>Karnadu &<br>Anathinam | Black Granite |
| 11     | Pennagaram | Ajjanahalli   | 824/3<br>& 822 Part     | 211.5<br>238.5<br>450.0   | Anathinam                       | Black Granite |
| 12     | Pennagaram | Ajjanahalli   | 810/2 (part)            | 248.0                     | Anathinam                       | Black Granite |
| 13     | Pennagaram | Ajjanahalli   | 608/2B                  | 400.0                     | Anathinam                       | Black Granite |
| 14     | Pennagaram | Ajjanahalli   | 775/1                   | 108.5                     | Anathinam                       | Black Granite |



| (1) | (2)             | (3)                  | (4)                 | (5)<br>(in hec.)           | (6)                         |               |
|-----|-----------------|----------------------|---------------------|----------------------------|-----------------------------|---------------|
| 15  | Pennagaram      | Mangurichi           | 22 (part)           | 5.00.0                     | U.A.W. Karadu               | Black Granite |
| 16  | Pennagaram      | Sunjanatham          | 587 (Part)          | 4.52.0                     | U.A.W. Karadu               | Black Granite |
| 17  | Pennagaram      | Manchi-naickanahalli | 134/1 (part)        | 1.40.0                     | U.A.W. Kalankuthu           | Black Granite |
| 18  | Pennagaram      | Ramakonda-halli      | 802(part)           | 1.94.0                     | U.A.W. Kundru               | Black Granite |
| 19  | Karimangalam    | Jakkupatty           | 151 Part Bit-1      | 3.70.0                     | U.A.W.                      | Black Granite |
| 20  | Karimangalam    | Jakkupatty           | 151 Part Bit-2      | 3.70.0                     | U.A.W.                      | Black Granite |
| 21  | Harur           | Gobinatham-patty     | 281(part)           | 4.54.0                     | U.A.W. Karadu               | Black Granite |
| 22  | Harur           | Polayumballi         | 383/1 Part Bit-1    | 2.60.0                     | U.A.W. Karadu               | Black Granite |
| 23  | Harur           | Polayumballi         | 383/1 Part Bit-2    | 2.00.0                     | U.A.W. Karadu               | Black Granite |
| 24  | Harur           | Polayumballi         | 383/1 Part Bit-3    | 1.52.0                     | U.A.W. Karadu               | Black Granite |
| 25  | Harur           | Reddipatti           | 9 (Part) Bit-1      | 3.20.0                     | U.A.W. Kundru               | Black Granite |
| 26  | Harur           | Reddipatti           | 9/Part Bit-2 & 13/2 | 1.40.0<br>1.03.5<br>2.43.5 | U.A.W. Kundru & Kallankuthu | Black Granite |
| 27  | Pappireddipatty | Alaguram             | 386 (Part)          | 4.88.5                     | U.A.W. Kallankuthu          | Black Granite |
| 28  | Pappireddipatty | Nallagudala halli    | 94/ Part Bit-2      | 2.20.0                     | U.A.W. Parni                | Black Granite |
| 29  | Pappireddipatty | Sinthalpadi          | 44 (Part)           | 1.10.0                     | U.A.W.                      | Black Granite |
| 30  | Pappireddipatty | Sinthalpadi          | 74 (Part) & 75      | 0.40.0<br>1.05.0<br>1.45.0 | U.A.W. Parni                | Black Granite |

Dharmapuri,  
02-09-2020.

S. MALARVIZHI  
DISTRICT COLLECTOR,  
DHARMAPURI DISTRICT.

PRINTED BY THE DIRECTOR OF STATIONERY AND PRINTING AT THE GOVERNMENT BRANCH PRESS, SALEM  
AND PUBLISHED BY THE COLLECTOR OF THE DISTRICT.

13. Quantity  
Total  
Amount  
Tender

58,88,000/-

Balance Quantity 17 Quantity

9  
APPENDIX VI-A  
(See Rule 8-A)

TENDER APPLICATION FOR GRANT OF QUARRYING LEASE FOR GRANITE  
(To be submitted in triplicate)

Dated \_\_\_\_\_ Day of \_\_\_\_\_ 2020

From \_\_\_\_\_

To \_\_\_\_\_

The District Collector,  
Dharmapuri.

Madam,

I/We submit the application under Rule 8-A of the Tamil Nadu Minor Mineral Concession Rules, 1959, in respect of Item No. \_\_\_\_\_ in District Gazette Notification No. \_\_\_\_\_, Dt. \_\_\_\_\_ or in newspaper advertisement, dated \_\_\_\_\_/\_\_\_\_\_. We request that quarrying lease under Rule 8-A of the Tamil Nadu Minor Mineral Concession Rules, 1959 may be granted to me/us as per the procedure laid down in the above Rule.

II. A sum of Rs. 5000/- (Rupees Five Thousand only) being the non-refundable application fee has been remitted through challan under the following head of account:

"0853 Non-ferrous Mining and Metallurgical Industries-102, Mineral Concession Fees Rent and Royalties-AA Quarries and Minerals 2705- Non - Taxation Fee-Application D.P.Code.No.0813-00-102-AA-2753" Vide Challan number \_\_\_\_\_ Dated \_\_\_\_\_ @ State Bank of India, Dharmapuri.

(or)

Demand draft Rs. 5000/- (Rupees Five thousand only) from a Nationalized Bank (or) Co-operative Bank drawn in favour of the District Collector, Dharmapuri, DD No. \_\_\_\_\_ dated \_\_\_\_\_ of \_\_\_\_\_ Bank \_\_\_\_\_ Branch is enclosed.

III. The required particulars are given below:

- I. Name of the applicant in which the quarry lease is required to be granted with full address.
2. (a) Is the applicant an Individual or Private Company, Firm or Association?
- (b) If the applicant is an Individual, specify his name, nationality and address:
- (c) If the applicant is private company, firm or association, specify name of directors, partners, members and their Nationality (Documentary evidence should be produced)



3. (a) Particulars of remittance of application fee (enclose original chalan or Demand draft from Nationalised bank / Co-operative bank)
- (b) Particulars of remittance of Earnest Money Deposit (enclose original chalan or Demand draft from Nationalised bank / Co-operative bank)
4. Has the applicant filed an affidavit stating that the applicant:
  - (a) has filed up-to date income-tax returns;
  - (b) has paid the Income tax on him and
  - (c) has paid the income tax on the basis of self-assessment as prescribed in the Income Tax Act, 1961.
5. (a) Whether Mining Dues Clearance Certificate towards payment of quarrying dues, if any, enclosed?
- (b) If on the date of application the applicant does not hold any quarrying lease / mining lease whether an affidavit to this effect is furnished?
6. Is the applicant having an existing industry or industrial programme for proposed industry? Specify and enclose the industrial programme and furnish the following:
  - (a) Category of the existing / proposed industry: (e.g. 100% E.O.U./ D.G.T.D./ S.S.I)
  - (b) License Number and Date:
  - (c) Installed capacity / Production capacity per annum in Sq. Mts
  - (d) Total investment in the industry:
  - (e) Date of commencement of the industry:
  - (f) Nature of products manufactured (Specify quantities of individual items (e.g. building slabs/monuments/tiles etc.)) per annum in Sq. Mts.
  - (g) Annual requirement of raw materials per annum in cubic metres:
  - (h) Expansion details, if any (furnish documentary evidence) (Furnish above details for proposed industry also excepting SI.No.6(b) if license is not yet obtained,6(e) and 6(h).
7. Minor Mines which the applicant intends to quarry with descriptions:
8. Period for which quarrying lease is required:
9. Total extent of the area applied for:
10. Details of the area for which the tender application is made.



Not Applicable



| Sl. No in the<br>Gazette<br>notification | District | Taluk | Village | Survey<br>Number |
|------------------------------------------|----------|-------|---------|------------------|
| (1)                                      | (2)      | (3)   | (4)     | (5)              |



- 11 Maximum tender amount the applicant is willing to offer for getting the area in lease for quarrying; (Specify both in figures and words)
- 12 Particulars of areas already held under quarrying lease in Tamil Nadu. (Enclose an affidavit showing the particulars of areas mineral wise in each District of the State which the applicant and any other person jointly with him already holds under a quarry lease, already applied for but not yet granted; and being applied for simultaneously).
- 13 Any other particulars which the applicant wishes to furnish.



I/We do hereby declare that the particulars furnished above are correct and am /are ready to furnish any other details and security deposit as may required by the Government or District Collector or District Forest Officer. I hereby swear and state that I/We know very well about the provisions contained in the Tamil Nadu Minor Mineral Concession Rules, 1959 in respect of granting of quarry lease applied for and other conditions stipulated in connection with the quarrying and other operations.

Place:

Yours faithfully

Date:

Signature of the applicant

*R. Raju. kar. S. S.*  
R. Raju. kar. S. S.,  
Recognised Qualified Person  
Reg. No. RQP / CNN / 264 / 2015/A

SURE-11

**COMMISSIONERATE OF GEOLOGY AND MINING**

From

Thiru.J.Jayakanthan, I.A.S.,  
Commissioner  
Department of Geology and Mining,  
Guindy, Chennai - 600 032.

To

M/s. KMB Trading Company Pvt  
Ltd,  
No.3/50, Bangalore Main Road,  
Five Roads,  
Salem District-636 004.

Re.No. 6164/MM4/2020      Dated      04.2023

Sir,

Sub: Mines and Quarries - Minor Mineral- Black Granite  
Dharmapuri district - Pennagaram taluk - Ajjanahalli village  
S.F.Nos.824/3 (2.11.5 ha) & 823 (Part) (2.38.5 ha) -  
extent of 4.50.0 ha in Government Poramboke land  
Quarry lease application preferred by Tvl.KMB Trading  
Firm, Salem - Precise area communicated by the  
Government - Mining Plan submitted by the applicant firm -  
forwarded and requested for delay condonation by the  
Deputy Director (G&M), Dharmapuri-Approval accorded.

- Ref:
1. Dharmapuri District Gazette Extraordinary issue in English and Tamil No.05 dated 03.09.2020
  2. Quarry Lease Application of the Highest Bidder Tvl.KMB Trading Firm, Salem dated 28.09.2020.
  3. The District Collector, Dharmapuri in Re.No. 176/2020/Mines dated 23.10.2020
  4. The Commissioner of Geology and Mining File in Re.No. 6164/MM4/2020 dated 31.12.2020 and 06.02.2021
  5. The Principal Secretary to Government, Industries (MME2) Department, Secretariat, Chennai - 600 009 Letters No.274/MME.2/2021-1, dated 23.02.2021 and 26.02.2021.
  6. The District Collector, Dharmapuri in letter Re.No.176/2020 (Mines), dated 07.05.2021 to the Government through Commissioner of Geology and Mining
  7. Tvl.KMB Trading Firm, Salem Letter dated 17.06.2021.



8. The Deputy Director (G&M), Dharmapuri letter  
Re.No.176/2020 (Mines) dated 28.06.2021.

Kind attention is invited to the above references cited

2) The applicant firm Tvl.KMB Trading Firm, Salem vide reference 7<sup>th</sup> cited had submitted the draft mining plan to district office on 17.06.2021 for quarrying Black granite situated over an extent of 4.50.0 ha of Government lands in S.F.Nos.824/3 (2.11.5 ha) & 823 (Part) (2.38.5 ha) of Ajjanah Pennagaram taluk, Dharmapuri district.

3) The Deputy Director (G&M), Dharmapuri has forwarded the mining plan submitted by the applicant firm Tvl.KMB Trading Firm, Salem and report as follows.,



- i. The applicant firm has submitted 6 copies of draft mining plan prepared by the recognized qualified person for approval on 17.06.2021 at office of the Deputy Director of Geology and Mining, Dharmapuri
- ii. In the mining plan the geological reserves, mineable reserves, year wise production and development program, Environmental and land use plan, Environment management plan, Progressive mine closure plan and conceptual plan have been incorporated
- iii. In the mining plan, it is stated that the proposed area lies in the latitude of 12°02'36.9302"N to 12°02'48.7631"N and longitude of 77°47'01.3070 E to 77°47'59.0373 E and is marked in the Topo Sheet No. 57 - H/16. The area is situated almost on an Undulating terrain having a gentle slope towards North western side. The dolerite dykes intruded into the country rock discordantly with a trend of N20°W, S62°E with vertical dipping 90°. The black granite boulders observed with a height of 8.0 m to 10.0 m on the center portion of the applied area. The black granite rock is medium coarse grained, medium dark to Black colour. It shows sub-ophitic texture. The Block of the rock changes depending on the texture of the rock. The dykes is fine grained at the contact of country rock. The Dolerite is composed of orthoclase

plagioclase embedded in the plates of Augite (Ophitic texture). Apatite, Magnetite and pyrite forms the secondary mineral. The special team has estimated the inferred recoverable reserves of black granite as 14,000 CBM with a recovery of 10%.

- iv. With regards to the Granite Mineral Resources in the applied area, the RQP has stated that, **the total Geological Reserves is 2,36,050 Cbm and the total Mineable Reserves (ROM) is 1,77,165 Cbm and total recoverable reserves is about 35,433Cbm at the rate of 20% recovery to the assumed depth of 45m below ground level. The proposed granite production for the first five years of the mining plan is 7,893 Cbm.**
- v. Further, with regard to the Environmental impact assessment, the RQP has stated that the mining plan is proposed for production of Black Granite dimensional stone without involving deep hole drilling. Min blasting is done to minimize the shattering effect. Such limited mining activity will not cause any impact adversely on Environment as far as pollution of air, water and noise is concerned. Further, the quarry operation is confined to 45m which is well above the water table which is 60m in summer and 52 during rainy season. This water table is observed in nearby wells. The water level would not be affected by the quarry operation. There is no lake, river or reservoir within 50m radius of the quarry lease applied area. Safety distance of 7.5 m and 10m should be provided to the adjacent patta and Government perambuke lands respectively.
- vi. Further, in respect of Environment Management Plan it is stated that the excavated waste to be generated in the quarry during production work will be proposed to dump on the Western and South Eastern side of the lease area. It is further stated that the essential safety distance provided along the lease boundary has been identified for dumping the top soil wastes to maintain afforestation. Appropriate species of trees &





Pungan trees will be planted in the subject specified manner. Finally, the RQP has concluded that the applicant shall comply with the provisions of the mines act, Rules and orders made there under, so that the safety of the mine and persons will be well protected. Further, the permission / exemptions / relaxations or approvals whenever required for safe and scientific quarrying of the deposit will be obtained from the Department of Mines Safety, Chennai and any violations pointed out by the inspecting authorities shall be rectified by the applicant as per guidelines of the department.

- vii. All the details mentioned in the mining plan have been verified and found correct. The Mining Plan has been prepared for a period of 20 years. The incorporated details may be taken for consideration and the Mining Plan is recommended for approval.
- viii. The applicant firm in their letter dated 17.06.2021, has informed that as per the directions of the Government in letter No. 274/MME.2/2021 dated 23.02.2021 and 26.02.2021, they have remitted the balance lease amount of 3,85,00,000/- and to submit approved mining plan to the Government within three months from the date of communication of precise area. But due to COVID-19 Pandemic 2<sup>nd</sup> wave, they were not able to submit draft mining plan and get approval of the same within the time limit prescribed by the Government. Therefore, requested the Director of Geology and Mining, Chennai to approve the mining plan condoning the delay arisen due to Covid-19 Pandemic crises.
- ix. As per sub rule 8(a)(iii) of Rule 8-A of TNMMCR, 1959 the applicant firm have to submit one copy of approved mining plan to the Government within three months from the date of receipt of precise area communication. Parallely as per the directions of the Government, the applicant firm have to submit another copy of approved mining plan to the State Environment Impact Assessment Authority for getting Environment Clearance.

- x. The sub rule (8) (a) (iv) of rule 8-A of TNMMCR, 1959 read as follows:  
"Where the applicants referred to in sub clauses (ii) fail to remit the balance amount within the stipulated period, the amount remitted shall be forfeited and the communication of the letter of commitment issued, as the case may be, shall be deemed to be cancelled. When the said applicants have remitted the amount within the stipulated period but are not able to submit the approved mining plan within the stipulated period for reasons beyond their control, they may apply for extension of time for submission of the approved mining plan. The State Government, on receipt of such request and after satisfying that the balance amount has been paid within the prescribed period, may grant extension of time for a further period not exceeding three months, if satisfied with the reasons furnished by the applicant. On receipt of the approved mining plan, the State Government shall issue the order granting the lease. In case the applicant fails to submit the approved mining plan even in the extended period, the amounts remitted by the applicant shall be forfeited and the letter of communication shall be deemed to be cancelled".
- xi. In this case the applicant firm have not submitted the draft mining plan to the Director of Geology and Mining through the District Officer and get approval of Director of Geology and Mining within the prescribed time limit and fulfilled the Government's direction due to Covid-19 wave.



Finally, the Deputy Director (G&M), Dharmapuri has forwarded the draft mining plan submitted by the applicant firm to the Director of Geology and Mining with a request to address the Government for condoning the delay in submission of Mining Plan due to Covid-19 Pandemic crises as per Sub rule 8(a) (iv) of rule 8-A of TNMMCR, 1959 for taking further necessary action on the mining plan by the Director of Geology and Mining since the Director of Geology and Mining is the Competent Authority for approval of mining plan in respect of

Granite as contemplated under Rule 12 of Granite Conservation and Development Rules-1999.

4) The mining plan is in accordance with the precise area of communication for grant of lease. Based on the report of the Deputy Director of Mines, Dharmapuri district, the Mining plan submitted by Tvl KMB Trading Firm, Sathur is hereby approved subject to the following conditions in addition to the conditions stipulated in the precise area communication issued by the Government:

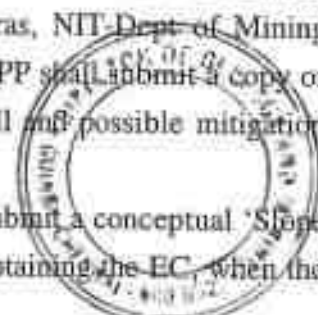


- i. The applicant firm should obey the final orders if any to be passed by the Hon'ble High Court of Madras in connection with the pending Writ Petitions filed against Tender Cum Auction conducted for the grant of quarry lease in Government land in respect of Granite.
- ii. The applicant firm should obtain prior environmental clearance from the competent authority.
- iii. This mining plan is approved without prejudice to any other Law applicable to the quarry lease from time to time whether such Laws are made by the Central Government, State Government or any other authority.
- iv. The approval of the mining plan does not in any way imply the approval of the Government in terms of any other provisions of the Mines and Minerals (Development and Regulation) Act 1957, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1986, Indian Explosives Act, 1884 (Central Act IV of 1884) and the rules made thereunder and the Tamil Nadu Minor Mineral Concession Rules, 1959.
- v. This mining plan including Progressive mine closure plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.



proposed quarry.

5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.
6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.
7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT Dept of Mining Engg. Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.
8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.
9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.
10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.
11. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.
12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,
13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?
14. Quantity of minerals mined out.
  - Highest production achieved in any one year
  - Detail of approved depth of mining.
  - Actual depth of the mining achieved earlier.
  - Name of the person already mined in that leases area.
  - If EC and CTO already obtained, the copy of the same shall be submitted.
  - Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.
15. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly





- show the land use and other ecological features of the study area (core and buffer zone).
16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,
  17. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.
  18. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.
  19. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.
  20. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.
  21. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.
  22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.
  23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.
  24. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
  25. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.
  26. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining

activities could be considered.

27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
28. Impact on local transport infrastructure due to the Project should be indicated.
29. A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.
30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.
31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.
32. 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-I in consultation with the DFO, State Agriculture University. 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.
33. Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly bags should be planted as per the advice of local forest 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.
34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
35. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
37. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
38. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
40. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the



|     |                                                                                                                                                                                                                                                                                                                                               |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | Project shall clearly indicate environmental, social, economic, employment potential, etc.                                                                                                                                                                                                                                                    |
| 41. | If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCCB. |
| 42. | The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.                                                                                                                                                                                           |
| 43. | Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.                                                                |

### 3.1.5.2. Standard

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1(a) | Mining of minerals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1    | Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 1.   | A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1.   | All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1.   | All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone)                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 1.   | Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1.   | Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 1.   | It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report |
| 1.   | Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1.   | The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1.   | Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |





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|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4. | Besides the above, the below mentioned general points are also to be followed:- a) All documents to be properly referenced with index and continuous page numbering. b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated. c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project. d) Where the documents provided are in a language other than English, an English translation should be provided. e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted. f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed. g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also be altered. h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable. i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps if any, clearly showing the land features of the adjoining area. |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 3.6. Agenda Item No 6:

#### 3.6.1. Details of the proposal

|                                                                                                     |         |                 |                           |
|-----------------------------------------------------------------------------------------------------|---------|-----------------|---------------------------|
| Ajjanahalli Village Black Granite Quarry by K M B TRADING COMPANY located at DHARMAPURI, TAMIL NADU |         |                 |                           |
| Proposal For                                                                                        |         | Fresh ToR       |                           |
| Proposal No                                                                                         | File No | Submission Date | Activity (Schedule Item)  |
| <u>SIA/TN/MIN/520786/2025</u>                                                                       | 11777   | 28/01/2025      | Mining of minerals (I(a)) |

#### 3.6.2. Project Salient Features

|      |
|------|
| null |
|------|

#### 3.6.3. Deliberations by the committee in previous meetings

|     |
|-----|
| N/A |
|-----|

#### 3.6.4. Deliberations by the SEAC in current meetings

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>The SEAC noted the following:</b></p> <ol style="list-style-type: none"> <li>1. The Project Proponent, Tvl. KMB Trading company has applied for Terms of Reference for the proposed black granite quarry lease over an extent 4.50.0 Ha at S.F.Nos. 823 (P) &amp; 824/3 of Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District, Tamil Nadu.</li> <li>2. The project/activity is covered under Category "B1" of Item I(a) "Mining of Minerals Projects" of the Schedule to the EIA Notification, 2006.</li> <li>3. As per the precise area communication, the lease period is 20 years and mining plan period is for</li> </ol> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

20 years & production should not exceed 35,433m<sup>3</sup> of Black granite@20%; 1,41,732m<sup>3</sup> of waste@80%; 67,098m<sup>3</sup> of weathered rock and 47,640m<sup>3</sup> of top soil. As per the approved mining plan, the annual peak production shall not exceed 2,100m<sup>3</sup> of RoM @20%; 8,400m<sup>3</sup> of waste@80%; 15,840m<sup>3</sup> of weathered rock and 21,672m<sup>3</sup> of top soil for an ultimate depth of 45m from the top surface.

4. The PP has furnished the DFO letter stating the distance of nearby Reserve Forests and Wildlife Sanctuaries vide letter dated 12.06.2023 which enlists the following:

| Sl.no | Name of the Reserve Forest/Wildlife Sanctuary | Distance |
|-------|-----------------------------------------------|----------|
| 1.    | Bevanur Reserve Forest                        | 1.57 Km  |
| 2.    | Masakal Reserve Forest                        | 3.34 Km  |
| 3.    | Pathanavaadi Reserve Forest                   | 1.0 Km   |
| 4.    | Cauvery South wild life Sanctuary             | 8.74 Km  |
| 5.    | Karnataka State Cauvery wild life Sanctuary   | 7.89 Km  |



Based on the presentation and details furnished by the project proponent, SEAC decided to grant Terms of Reference (TOR) with Public Hearing.

### 3.6.5. Recommendation of SEAC

Recommended

### 3.6.6. Details of Terms of Reference

#### 3.6.6.1. Specific

SEAC conditions - Site specific

1. A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal:
  - (i) Copy of the agreement forming CMC.
  - (ii) The Organisation chart of the Committee with defining the role of the members
  - (iii) The 'Standard Operating Procedures' (SoP) executing the planned activities.
2. The boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report.

3. Since the Cauvery Wildlife Sanctuary is located at 8.74km from the proposed site as on date, the PP shall furnish the prior NBWL Clearance along with the EIA report.
4. The PP should indicate the proposed mining area at the bottom and top levels with respect to the ground level (mean Reduced Level) and make appropriate corrections in the Approved Mine Plan and the same shall be submitted along with the EIA report.
5. The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report.
6. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m & upto 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations.
7. The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.
8. The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report.
9. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.
10. The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures.
11. The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report.



#### SEAC Standard Conditions

1. In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following:
  - (i) Original pit dimension
  - (ii) Quantity achieved Vs EC Approved Quantity
  - (iii) Balance Quantity as per Mineable Reserve calculated.
  - (iv) Mined out Depth as on date Vs EC Permitted depth
  - (v) Details of illegal/illicit mining
  - (vi) Violation in the quarry during the past working.
  - (vii) Quantity of material mined out outside the mine lease area
  - (viii) Condition of Safety zone/benches
  - (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.
2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.

3. The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.
4. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry.
5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.
6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.
7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches, to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.
8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.
9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.
10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.
11. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.
12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,
13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?
14. Quantity of minerals mined out.
  - Highest production achieved in any one year
  - Detail of approved depth of mining.

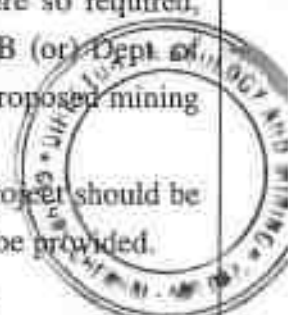




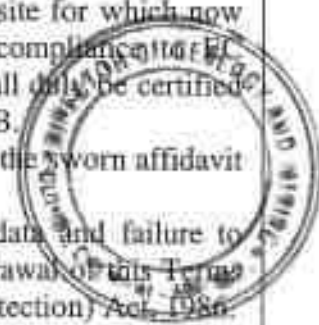
- Actual depth of the mining achieved earlier.
  - Name of the person already mined in that leases area.
  - If EC and CTO already obtained, the copy of the same shall be submitted.
  - Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.
15. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
  16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,
  17. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.
  18. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.
  19. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.
  20. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.
  21. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.
  22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.
  23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.
  24. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be



- prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
25. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.
  26. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.
  27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
  28. Impact on local transport infrastructure due to the Project should be indicated.
  29. A tree survey study shall be carried out (nos., name of the species, age, diameter etc..) both within the mining lease applied area & 300m buffer zone and its management during mining activity.
  30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.
  31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.
  32. 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-I in consultation with the DFO, State Agriculture University. 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.
  33. Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly bags should be planted as per the advice of local forest 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.
  34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
  35. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
  36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
  37. Public health implications of the Project and related activities for the population in the



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|  | <p>impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.</p> <p>38. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.</p> <p>39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.</p> <p>40. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.</p> <p>41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to the conditions given in the previous EC with the site photographs which shall only be certified by MoEF&amp;CC, Regional Office, Chennai (or) the concerned DEE/TNPCC.</p> <p>42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.</p> <p>43. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of Conditions of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.</p> |
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#### 3.6.6.2. Standard

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| 1(a) | Mining of minerals                                                                                                                                                                                                                                                                                                                                 |
| null |                                                                                                                                                                                                                                                                                                                                                    |
| 1.   | Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.             |
| 2.   | A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given                                                                                                                                                                                                                                |
| 3.   | All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee                                                                                   |
| 4.   | All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone)                     |
| 5.   | Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics                                                                |
| 6.   | Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority                                                                                      |
| 7.   | It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ |

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|     | conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report                                                                                                                                                                                                                                                                                                                                |
| 8.  | Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 9.  | The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 10. | Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given                                                                                                                                                                                                                                                                                            |
| 11. | Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 12. | A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the State Expert Appraisal Committees                                                                                             |
| 13. | Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 14. | Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 15. | The vegetation in the RF / PF areas in the study area, with necessary details, should be given                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 16. | A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted                                                                                                                                                                                                                                                                                                                                                                                               |
| 17. | Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished                                                                                                                                                                                             |
| 18. | A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost |
| 19. | Proximity to Areas declared as Critically Polluted or the Project areas likely to come under the Aravali Range, (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and                                                                                                                                                                                                                                                                                                                                                                                      |





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|         | furnished to the effect that the proposed mining activities could be considered.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 2<br>0. | Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2<br>1. | R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.                                                                                           |
| 2<br>2. | One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season); December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the data and other data so compiled presented date-wise in the EIA and EMP Report. Site- specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM <sub>10</sub> , particularly for free-silica, should be given. |
| 2<br>3. | Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.                                                                                                                                                                                                                                                                                                           |
| 2<br>4. | The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2<br>5. | Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2<br>6. | Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2<br>7. | Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2<br>8. | Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from State Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.                                                                                                                                                                                                                                                                               |
| 2<br>9. | Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 3<br>0. | Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 3<br>1. | A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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|        | should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 3<br>2 | Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 3<br>3 | Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 3<br>4 | Conceptual post-mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 3<br>5 | Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 3<br>6 | Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 3<br>7 | Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 3<br>8 | Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 3<br>9 | Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 4<br>0 | Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 4<br>1 | The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 4<br>2 | A Disaster management Plan shall be prepared and included in the EIA/EMP Report                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 4<br>3 | Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4<br>4 | Besides the above, the below mentioned general points are also to be followed:- a) All documents to be properly referenced with index and continuous page numbering. b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated. c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project. d) Where the documents provided are in a language other than English, an English translation should be provided. e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted. f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide Q.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available |

on the website of this Ministry, should be followed. g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation. h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable. i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

### 3.7. Agenda Item No 7:

#### 3.7.1. Details of the proposal

|                                                                                                                                                                                                                     |         |                 |                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------|---------------------------|
| <p>TyVL Global Mines, Rough Stone and Gravel Quarry, Extent: 2.03.0ha, S.F.No. 181/2 of Periya Venmani Village, Maduranthakam Taluk, Chengalpattu District. by global mines located at CHENGALPATTU, TAMIL NADU</p> |         |                 |                           |
| Proposal For                                                                                                                                                                                                        |         | Fresh ToR       |                           |
| Proposal No                                                                                                                                                                                                         | File No | Submission Date | Activity (Schedule Item)  |
| <u>SIA/TN/MIN/519667/2025</u>                                                                                                                                                                                       | 11783   | 27/01/2025      | Mining of minerals (I(a)) |

#### 3.7.2. Project Salient Features:

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| null |
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#### 3.7.3. Deliberations by the committee in previous meetings

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| N/A |
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#### 3.7.4. Deliberations by the SEAC in current meetings

##### The SEAC noted the following:

1. The project proponent, Tvl. Global Mines has applied for Terms of Reference for the proposed rough stone and gravel quarry over an extent of 2.03.0 Ha in S.F.Nos. 181/2, Periya Venmani, Maduranthakam Taluk, Chengalpattu District, Tamil Nadu.
2. The project/activity is covered under Category "B1" of Item 1(a) "Mining of Minerals Projects" of the Schedule to the EIA Notification, 2006.
3. As per approved mining plan, the lease period is for 5 years, the mining plan is valid for 5 years for total production quantity of 2,26,005 m<sup>3</sup> of rough stone and 4,698 m<sup>3</sup> of Gravel and annual peak production shall not exceed 69,025 m<sup>3</sup> of rough stone and 4,698 m<sup>3</sup> of Gravel for an ultimate depth of mining of 45m BGL.

Based on the presentation and details furnished by the project proponent, SEAC decided to grant Terms of Reference (TOR) with Public Hearing.

25.000,00

உட்டி, குத்து, உது

49) गणेश, 82-3

Abstract

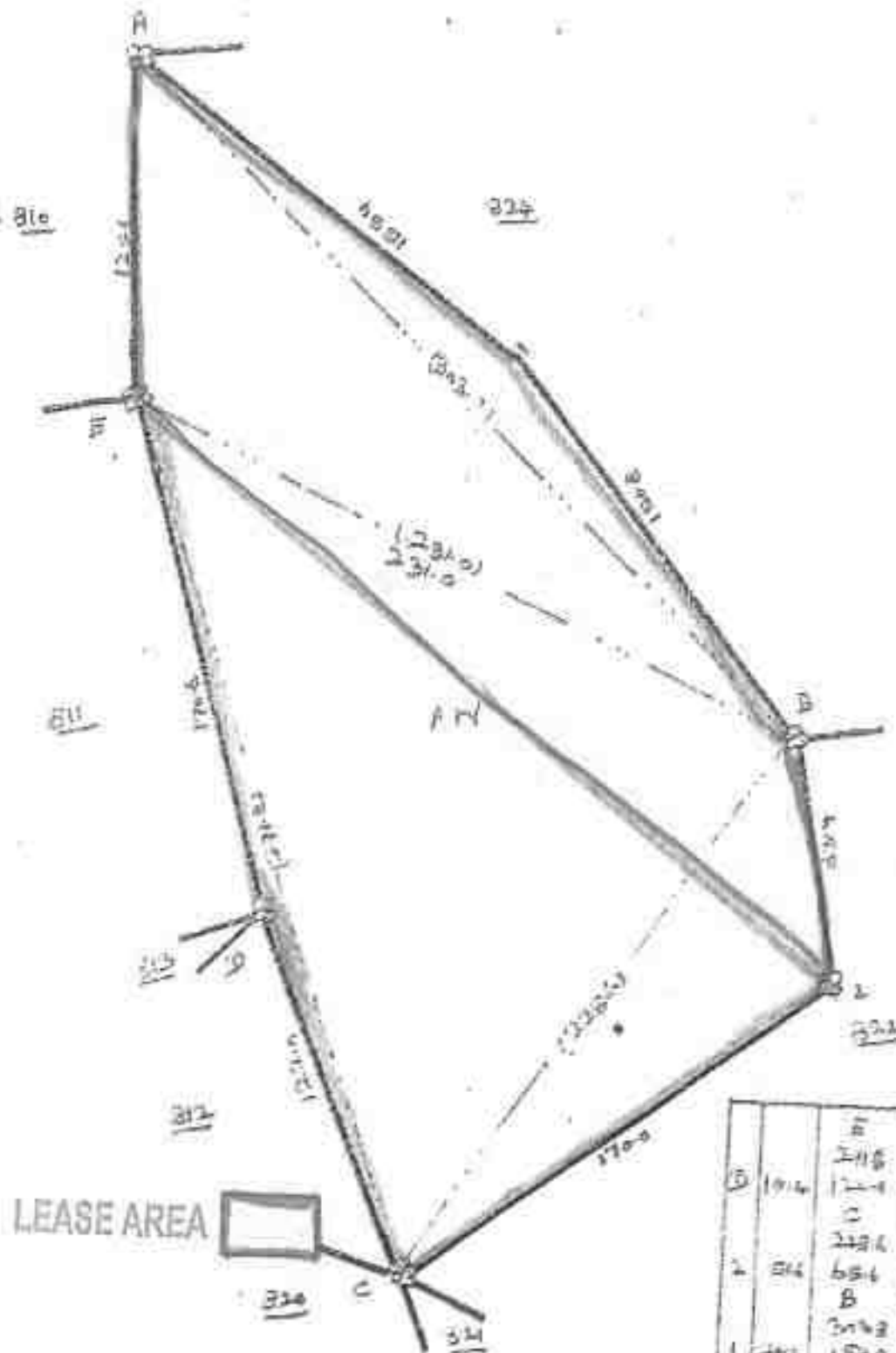
ANNEXURE V

டெயர்

பரப்பு: ஜென்மம்

2

ਗੁ. ੭



|   |      |      |    |
|---|------|------|----|
|   |      | 2    |    |
|   |      | 2118 |    |
| ⑤ | 1914 | 1211 |    |
|   |      | 2    |    |
|   |      | 2126 |    |
| 2 | 2014 | 654  |    |
|   |      | B    |    |
|   |      | 3112 |    |
| 1 | 1912 | 1500 |    |
|   |      | 304  | 24 |

செய்து  
பெரிய  
பெரிய

٥١-٥٤  
لَوْ يَكُونُ الْمَلَأَى

W

H. Rajeshkumar, M.Sc.,  
examin. Qualified Person

No. RQP / CNN / 264 / 2015A

சென்னை, 12.5.2022(வி.சு.)

12.  $\lim_{x \rightarrow 0} \frac{1}{x} \ln x$

U. G. 2

ଆପଣଙ୍କ ନିମନ୍ତେ/ଶୁଭେଚ୍ଛା

District : Dharmapuri

Taluk : Pennagaram

Village : Ajjanahalli [30]



Survey No : 824

Area : Hect 07 Ares 8,00

Scale : 1 : 2000





| 1   | 2                                      | 3                                               | 4                                    | 5                                    | 6   | 7                                                    | 8                                            | 9                                                            | 10                                                                           | 11                                                          |
|-----|----------------------------------------|-------------------------------------------------|--------------------------------------|--------------------------------------|-----|------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------|
| 820 | (1)<br>(2)                             | 820-1<br>-2                                     | அ<br>அ                               | 4<br>4                               | ... | 8-5<br>8-5                                           | 12<br>12                                     | 0 62<br>0 62                                                 | 1 15.0<br>2 62.0                                                             | 0 71<br>1 62                                                |
| 821 | 1<br>2                                 | 821-1<br>-2                                     | அ<br>அ                               | 4<br>4                               | ... | 8-5<br>8-5                                           | 12<br>12                                     | 0 62<br>0 62                                                 | 3 77.0<br>1 44.0                                                             | 2 33<br>0 89                                                |
| 822 | ...                                    | 822                                             | அ                                    | 4                                    | ... | 8-5                                                  | 12                                           | 0 62                                                         | 3 50.5<br>4 94.5                                                             | 2 17<br>3 06                                                |
| 823 | ...                                    | 823                                             | அ                                    | 4                                    | ... | 8-5                                                  | 12                                           | 0 62                                                         | 3 39.0                                                                       | 2 10                                                        |
| 824 | 1<br>2<br>3<br>4<br>(5)<br>6<br>7<br>8 | 824-1<br>-2<br>-3<br>-4<br>-5<br>-6<br>-7<br>-8 | அ<br>அ<br>அ<br>அ<br>அ<br>அ<br>அ<br>அ | 4<br>4<br>4<br>4<br>4<br>4<br>4<br>4 | ... | 8-5<br>8-5<br>8-5<br>8-5<br>8-5<br>8-5<br>8-5<br>8-5 | 12<br>12<br>12<br>12<br>12<br>12<br>12<br>11 | 0 62<br>0 62<br>0 62<br>0 62<br>0 62<br>0 62<br>0 62<br>0 62 | 4 98.0<br>0 08.0<br>0 30.0<br>2 11.5<br>0 53.5<br>1 21.5<br>1 21.5<br>1 21.5 | 3 08<br>...<br>0 21<br>1 42<br>0 33<br>0 75<br>0 75<br>0 75 |
| 825 | 1<br>2                                 | 825-1<br>-2                                     | அ<br>அ                               | 4<br>4                               | ... | 8-5                                                  | 12                                           | 0 62                                                         | 0 40.5<br>7 08.0                                                             | 0 26<br>4 47                                                |
| 826 | ...                                    | 826                                             | அ                                    | 4                                    | ... | 8-5                                                  | 12                                           | 0 62                                                         | 0 16.0<br>3 36.5                                                             | ...                                                         |
| 827 | 1<br>2<br>3<br>4<br>5<br>6             | 827-1<br>-2<br>-3<br>-4<br>-5<br>-6             | அ<br>அ<br>அ<br>அ<br>அ<br>அ           | 4<br>4<br>4<br>4<br>4<br>4           | ... | 8-5<br>8-5<br>8-5<br>8-5<br>8-5<br>8-5               | 12<br>12<br>12<br>12<br>12<br>12             | 0 62<br>0 62<br>0 62<br>0 62<br>0 62<br>0 62                 | 3 52.5<br>5 02.0<br>3 27.5<br>1 19.5<br>1 21.5<br>1 21.5                     | 2 08<br>3 10<br>2 03<br>71<br>0<br>0                        |
| 828 | 1                                      | 828-1                                           | அ                                    | 4                                    | ... | 8-5                                                  | 12                                           | 0 62                                                         | 1 21.5<br>1 21.5<br>1 21.5<br>1 56.5<br>9 68.0                               | 0 75<br>0 75<br>0 75<br>0 97<br>5 98                        |
| 829 | 1                                      | 829-1                                           | அ                                    | 4                                    | ... | 8-5                                                  | 12                                           | 0 62                                                         | 5 81.0                                                                       | 3 59                                                        |



407 கு. ரெங்கசாமி.

680 கு. பூரணி.

768 பூரணி எம். பி. மணி.

251 மு. குருநாதி.

1063 கு. வீராசாமி.

1064 கு. வீரபகவதர்.

1095 வீ. வெங்கடா.

L. S. S. S. S.

003  
7/1/201



தகவல் - (பரிந்துரை) இரா.உ.ப.ப.  
பெண்.நா.எண் - 5132 / 2023

## தமிழ்நாடு வனத்துறை

அனுப்புநர்

திரு. கே.வி.அப்பாலை நாயுடு, இ.வ.ப.,  
மாவட்ட வன அலுவலர்,  
தருமபுரி வனக்கோட்டம்,  
தருமபுரி - 5.

பெறுநர்

உதவி இயக்குநர்,  
புலியியல் மற்றும் சுரங்கத்துறை,  
தருமபுரி.

ந.க.எண். 5132/ 2023 / வ, நாள்: 12-06-2023

ஆண்படைவர்,

பொருள் : கனிமங்களும் குவாரிகளும் - சிறுகனிமம் - கருப்பு கிராணை  
தருமபுரி மாவட்டம் - பென்னாகரம் வட்டம் - அத்தனைஅள்ளி  
கிராமம் - புல எண்.824/3 - பாப்பு 2.11.5 ஹெக்டர் மற்றும் 823  
(பகுதி) பாப்பு 2.38.5 ஹெக்டர் ஆக நிலத்தில் அமைந்துள்ள  
கருப்பு கிராணை குவாரிக்கு அனுமதி வழங்க கோரிய Tvl.KMB  
Trading Company, Salarn என்ற நிறுவனத்திற்கு குவாரி  
குத்தகை வழங்குதல் தொடர்பாக - இப்புல எண்ணை சுற்றிலும்  
25 கி.மீ தூரத்தில் உள்ள காப்புக்காடுகள், தேசிய பூங்காக்கள்,  
வனஉயிரின சரணாலயம், சூழல் உணர்திறன் மண்டலம் மற்றும்  
யானை வழிதடங்கள் குறித்து - அறிக்கை அனுப்புதல் -  
தொடர்பாக.

பார்வை : 1) உதவி இயக்குநர், புலியியல் மற்றும் சுரங்கத்துறை, தருமபுரி  
ROC.No.176/2020 (கனிமம்) நாள். 18-05-2023.

2) வனச்சரக அலுவலர், பென்னாகரம் ந.க.எண்.46/2022, நாள்  
27-05-2023.

~ ~ ~ ~ ~

பார்வையில் காணும் சுடிதங்களின் மீது தங்களின் கனிவான கவனம்  
வேண்டப்படுகிறது. அதில் பார்வை 1இல் மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு  
ஆணையத்தின் தடையின்மை சான்று பெரும்பொருட்டு குவாரி பணி செய்பவர்கள்  
புலத்திலிருந்து 25 கி.மீ தொலைவில் அமைந்துள்ள காப்புக்காடுகள், தேசிய பூங்காக்கள்,  
புலிகள் காப்பகம், வனஉயிரினச் சரணாலயம், சூழல் உணர்திறன் மண்டலம் (Eco  
Sensitive Zone), பாதுகாக்கப்பட்ட பகுதி மற்றும் யானை வழிதடம் போன்ற விவரங்கள்  
கோரப்பட்டதை தொடர்ந்து பார்வை (2)இல் வனச்சரக அலுவலர், பென்னாகரம்  
27-05-2023 ஆம் தேதியன்று உரிய புலத்தை களத்தணிக்கை மேற்கொண்டு  
பின்வருமாறு விவரங்கள் அறிக்கையாக சமர்ப்பித்துள்ளார்.

சு. பி. பி.

வனச்சரக அலுவலரின் அறிக்கையினை பரிசீலனை செய்ததில் குவாரி பணி செய்ய உள்ள தருமபுரி மாவட்டம், பென்னாகரம் வட்டம், அஜ்ஜனஅள்ளி கிராமம், புல எண். 824/3 பரப்பு 2.11.5 ஹெக்டர் மற்றும் 823 (பகுதி) பரப்பு 2.38.5 ஹெக்டர் அருகாமையில் தேசிய பூங்காக்கள், பாதுகாக்கப்பட்ட பகுதி மற்றும் யானை வழித்தடம் ஏதும் இல்லை என்பதை தெரிவித்துக்கொள்வதோடு 25 கி.மீ சுற்றளவில் உள்ள காப்புக்காடுகள் மற்றும் வன உயிரின சரணாலயத்தின் தொலைவு விவரம் பின்வருமாறு.

| வ. எண். | குவாரியின் புல எண்                   | குவாரியின் புல எண்ணிற்கும் காப்புக்காட்டிற்கும் உள்ள சுற்றளவு (கிலோ மீட்டர்) | காப்புக்காடு மற்றும் வனஉயிரின சரணாலயத்தின் தொலைவு விவரம் |
|---------|--------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------|
| 1.      | அஜ்ஜனஅள்ளி புல எண் 824/3 மற்றும் 823 | 1.57 கிலோ மீட்டர்                                                            | பேவனூர் காப்புக்காடு                                     |
|         |                                      | 3.34 கிலோ மீட்டர்                                                            | மசக்கல் காப்புக்காடு                                     |
|         |                                      | 1.00 கிலோ மீட்டர்                                                            | பதுளவாடி காப்புக்காடு                                    |
|         |                                      | 8.74                                                                         | காவேரி தெற்கு வனஉயிரின சரணாலயம்                          |
|         |                                      | 7.89 கிலோ மீட்டர்                                                            | கர்நாடக மாநில காவேரி வனஉயிரின சரணாலயம்                   |

ஓம்./ கே.வி.அப்பால நாயுடு,  
மாவட்ட வன அலுவலர்,  
தருமபுரி வனக்கோட்டம்,  
தருமபுரி.

// உத.உ.ப. //

கண்காணிப்பாளர்  
12/06/2023 12062023



Tel: 04432 24275

Tel: 04432 24275

04432 24275

## GRANITES

111, Mathurage-Mathur Road, Opp. F.O. Office, MATHUR - 635 203

www.mathuragranites.com

Date

25

### EXPERIENCE CERTIFICATE

This is to certify that **Mr. Karuppanan Sundaram** has been worked as a "Senior Geologist" in our company from 11<sup>th</sup> October 2010 to 11<sup>th</sup> October 2011. During this period, he has been involved in the Quality Control for Granite block extraction from quarry. Involvement of his work is highly appreciated and have been efficiently worked in our company. The duties connected with his work has continuous attendance at the quarry.

I wish him all the best in all his future endeavors.



*[Signature]*  
**DEPUTY DIRECTOR  
DEPARTMENT OF GEOLOGY AND MINING  
DHARMAPURI**



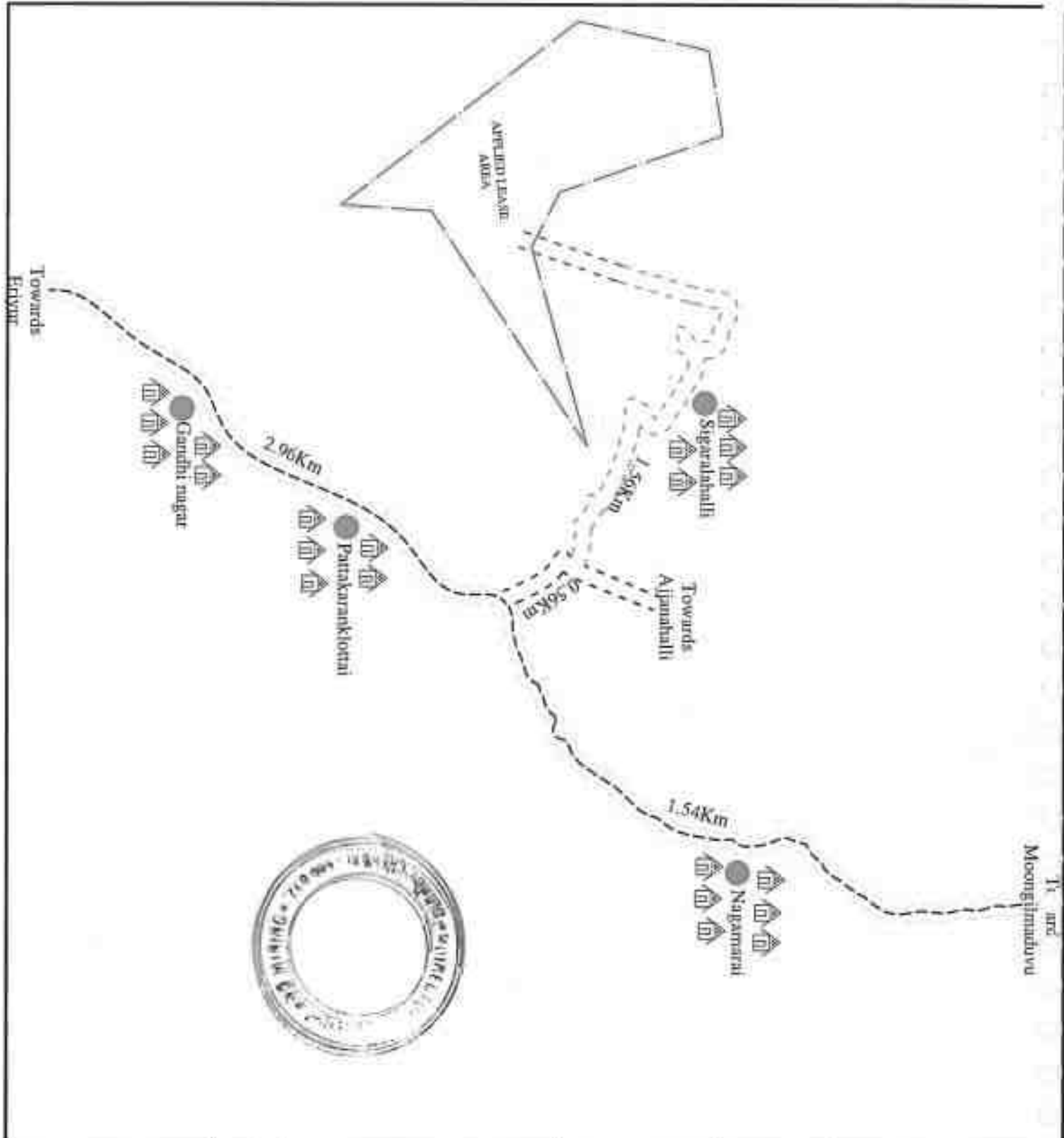


**PLATE No-1**

**APPLICANT:**  
**TALKMB TRADING COMPANY**  
**3/50, BANGALORE MAIN ROAD,**  
**FIVE ROADS,**  
**SALEM DISTRICT-636 004**

**LOCATION:**  
**EXTENT : 4.50.0Hect**  
**S.F No : 823(Part) & 824/3**  
**VILLAGE : AJJANAHALLI,**  
**TALUK : PENNAGARAM,**  
**DISTRICT : DHARMAPURI**

**INDEX**

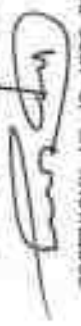
- MINE LEASE AREA 
- APPROACH ROAD 
- CART ROAD 
- VILLAGE ROAD 
- MDR-654 ROAD 
- HABITATION 

**KEY MAP**

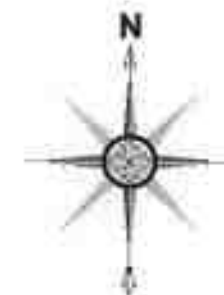
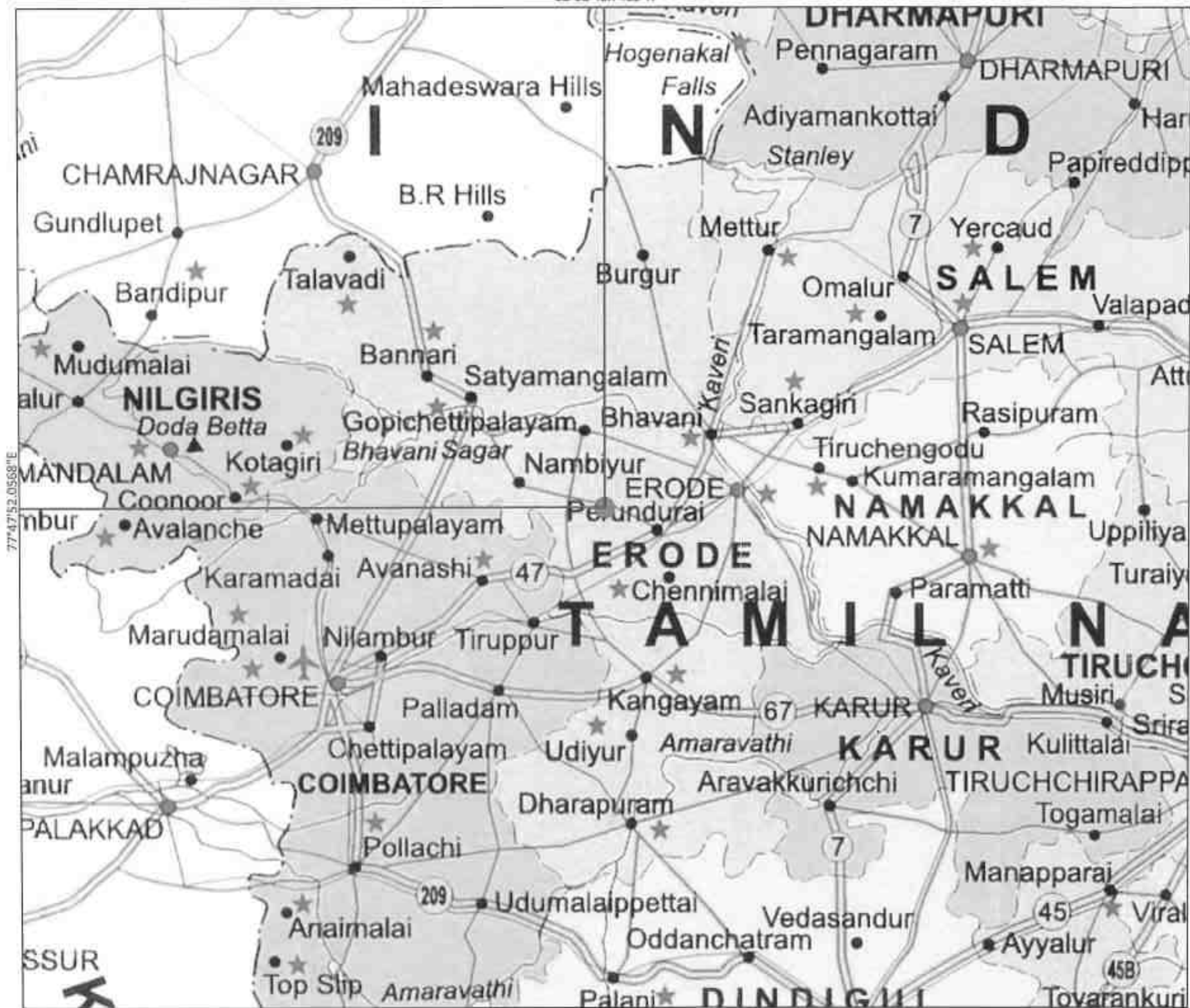
Not to Scale

**Prepared by:**

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE



Dr. S. KARUPPANNAM, M.Sc., Ph.D.  
 QUALIFIED PERSON

**PLATE No-IA****APPLICANT:**

T.V.K.M.B. TRADING COMPANY  
3/50, BANGALORE MAIN ROAD,  
FIVE ROADS,  
SALEM DISTRICT-636 004

**LOCATION:**

EXTENT : 4.50.0 Hect  
S.F.No : 823(Part) & 824/3  
VILLAGE : AJJANAHALLI,  
TALUK : PENNAGARAM,  
DISTRICT : DHARMAPURI

**INDEX**

MINE LEASE AREA : ●

TOPO SHEET NO : 58-H/16

LATITUDE : 12°02'36.9302"N to 12°02'48.7413"N

LONGITUDE : 77°47'52.0568"E to 77°48'05.2343"E

**LOCATION PLAN**

NOT TO SCALE

**Prepared By:**

I DO HEREBY CERTIFY THAT THE PLATE HAS  
BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

Dr. S. KARUPPANNAN, M.Sc., Ph.D.  
QUALIFIED PERSON





**APPLICANT:**  
Tvkmb TRADING COMPANY  
3/50,BANGALORE MAIN ROAD,  
FIVE ROADS,  
SALEM DISTRICT-636 004

EXTENT : 4.50.0Hect  
S.F.No : 823(Part) & 824/3  
VILLAGE : AJJANAHALLI,  
TALUK : PENNAGARAM,  
DISTRICT : DHARMAPURI

MINE LEASE AREA : 

TOPO SHEET NO : 38-H/16

LATITUDE: 12°02'36.9302"N to 12°02'48.7413"N

LONGITUDE : 77°47'52.0568"E to 77°48'05.2343"E

MINE LEASE AREA

10KM RADIUS

[illegible]

TOPOSHEET MAP

SCALE- 1:1,00,000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS  
BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

*[Signature]*

Dr.S.KARUPPANNAN,M.Sc.,Ph.D.  
QUALIFIED PERSON



12°02'48.7413"N

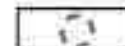
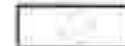


PLATE No-IC

**APPLICANT:**  
Tvl.KMB TRADING COMPANY  
3/50,BANGALORE MAIN ROAD,  
FIVE ROADS,  
SALEM DISTRICT-636 004

**LOCATION:**  
EXTENT : 4.50.0Hect  
S.F.No : 823(Part) & 824/3  
VILLAGE : AJJANAHALLI  
TALUK : PENNAGARAM,  
DISTRICT : DHARMAPURI

**INDEX**

MINE LEASE AREA :   
500m RADIUS :   
300m RADIUS :   
TOPO SHEET NO : 58-H/16

LATITUDE : 12°02'36.9302"N to 12°02'48.7413"N

LONGITUDE : 77°47'52.0568"E to 77°48'05.2343"E

**SATELLITE IMAGE**  
(500m RADIUS)  
SCALE- 1:5000

Prepared By:  
I DO HEREBY CERTIFY THAT THE PLATE HAS  
BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

Dr.S.KARUPPANNAN,M.Sc.,Ph.D.  
QUALIFIED PERSON

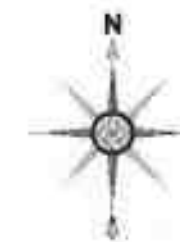
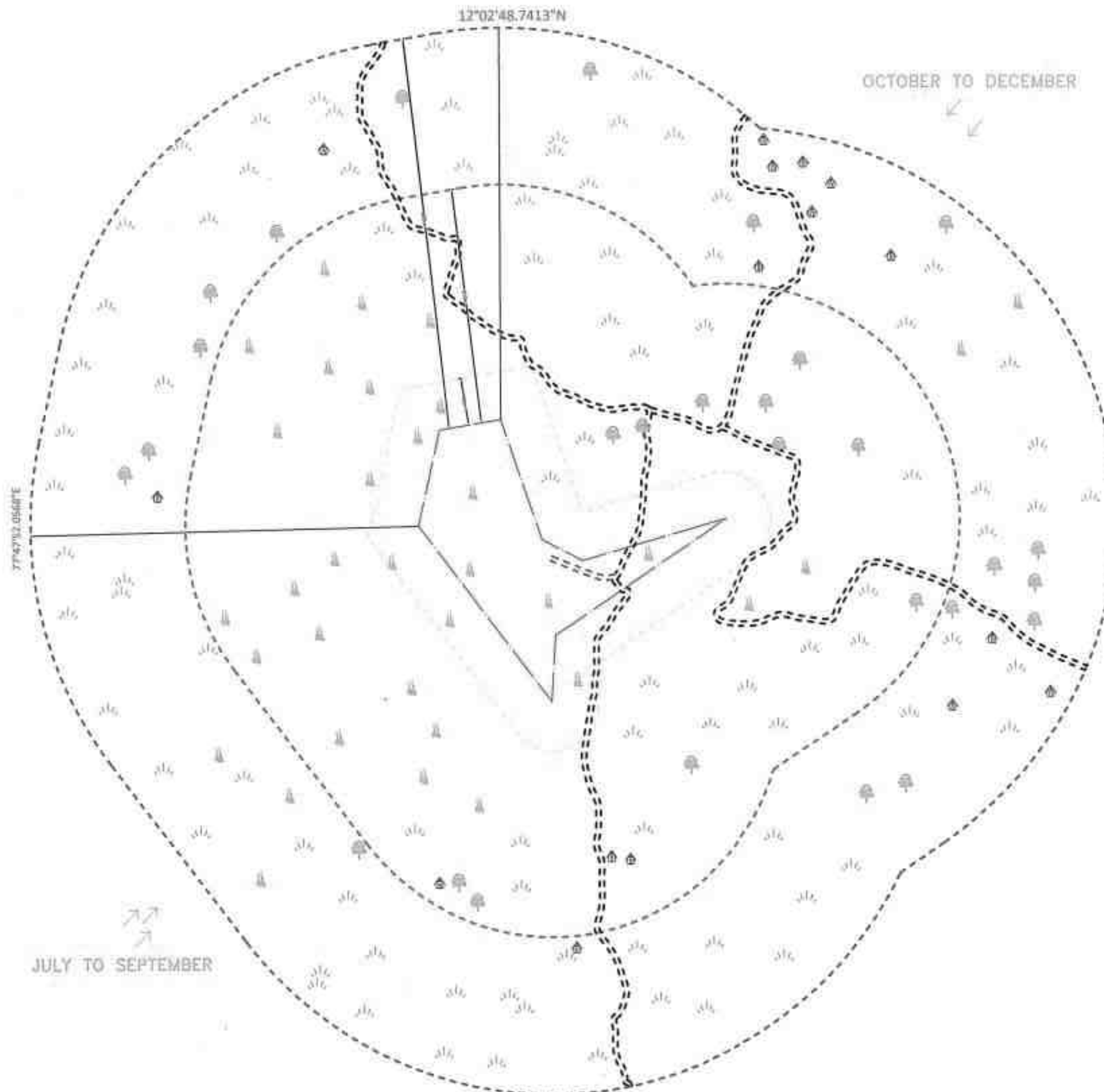


PLATE No- ID

APPLICANT:

Tvl.KMB TRADING COMPANY  
3/50, BANGALORE MAIN ROAD,  
FIVE ROADS,  
SALEM DISTRICT-636 004.

LOCATION:

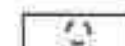
EXTENT : 4.50.0 Hect  
S.F.No : 823(Part) & 824/3  
VILLAGE : AJJANAHALLI,  
TALUK : PENNAGARAM,  
DISTRICT : DHARMAPURI

INDEX

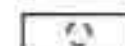
LEASE BOUNDARY



500m RADIUS



300m RADIUS



60m RADIUS



APPROACH ROAD



QUARRY ROAD



TREES



SHRUB



INFRASTRUCTURE



DRY AGRICULTURE LAND



WIND DIRECTION



ENVIRONMENTAL PLAN

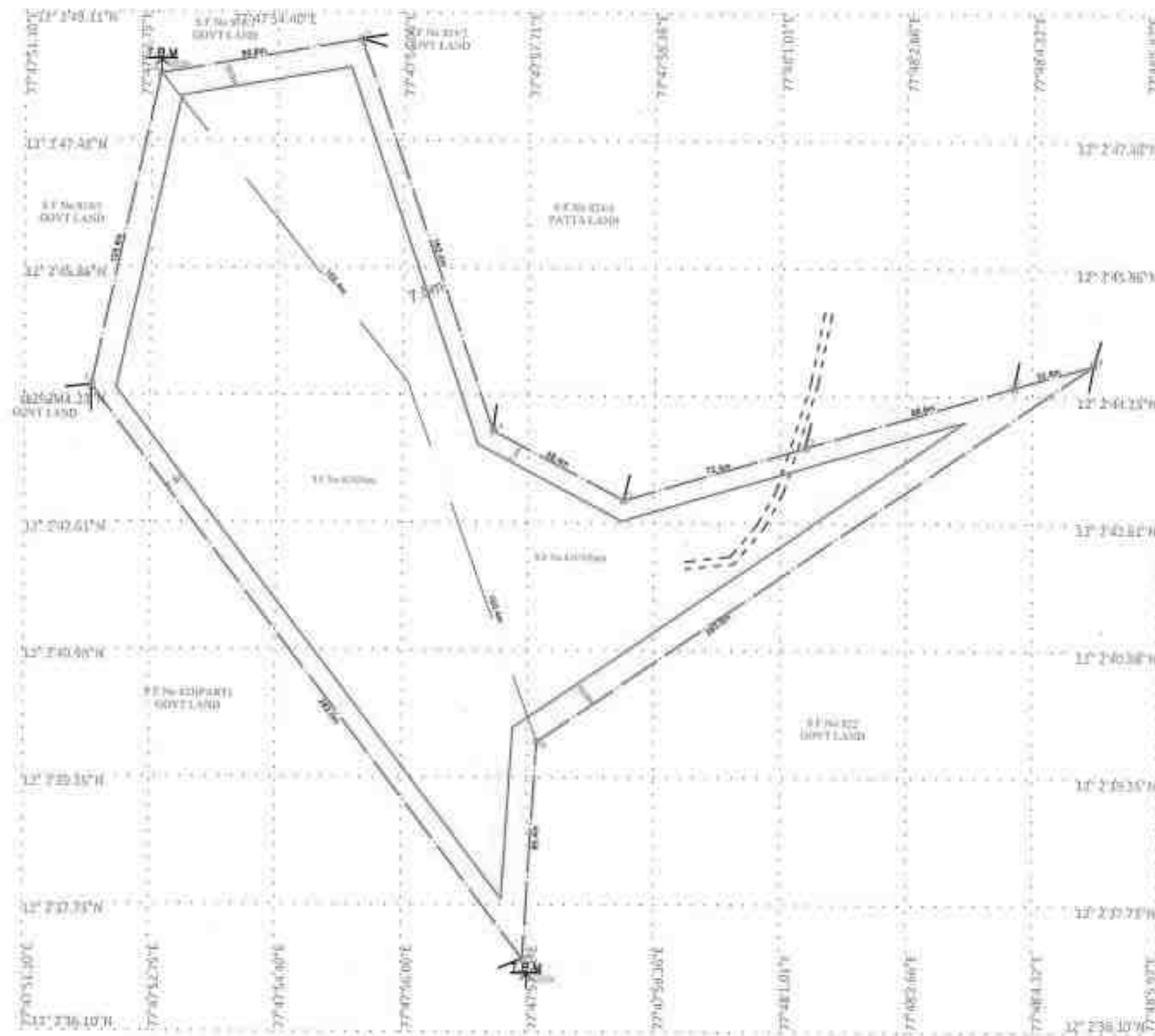
SCALE 1:5000

Prepared By:

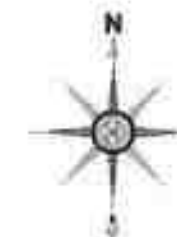
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BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

Dr.S.KARUPPANNAN, M.Sc., Ph.D.  
QUALIFIED PERSON





| PILLAR No | LATITUDE          | LONGITUDE        |
|-----------|-------------------|------------------|
| 1         | 12°02'44.3356" N  | 77°47'52.0568"E  |
| 2         | 12°02'48.3253" N  | 77°47'52.9547"E  |
| 3         | 12°02'48.7413" N  | 77°47'55.7122"E  |
| 4         | 12°02'43.7631" N  | 77°47'57.3776"E  |
| 5         | 12°02'42.8893" N  | 77°47'59.0373"E  |
| 6         | 12°02'43.5471" N  | 77°48'01.3070"E  |
| 7         | 12°02' 44.3090" N | 77°48'04.1131"E  |
| 8         | 12°02'44.5198" N  | 77°48'05.2343"E  |
| 9         | 12°02'39.6314" N  | 77° 47'57.9847"E |
| 10        | 12°02'36.9302" N  | 77° 47'57.6795"E |



# **PLATE No- II**

**APPLICANT:**  
**TvLKMB TRADING COMPANY**  
**3/50, BANGALORE MAIN ROAD,**  
**FIVE ROADS,**  
**SALEM DISTRICT-636 004**

**LOCATION:**  
**EXTENT : 4.50.0Hect**  
**S.F.No : 823(Part) & 824/3**  
**VILLAGE : AJJANAHALLI,**  
**TALUK : PENNAGARAM,**  
**DISTRICT : DHARMAPURI**

## **INDEX**

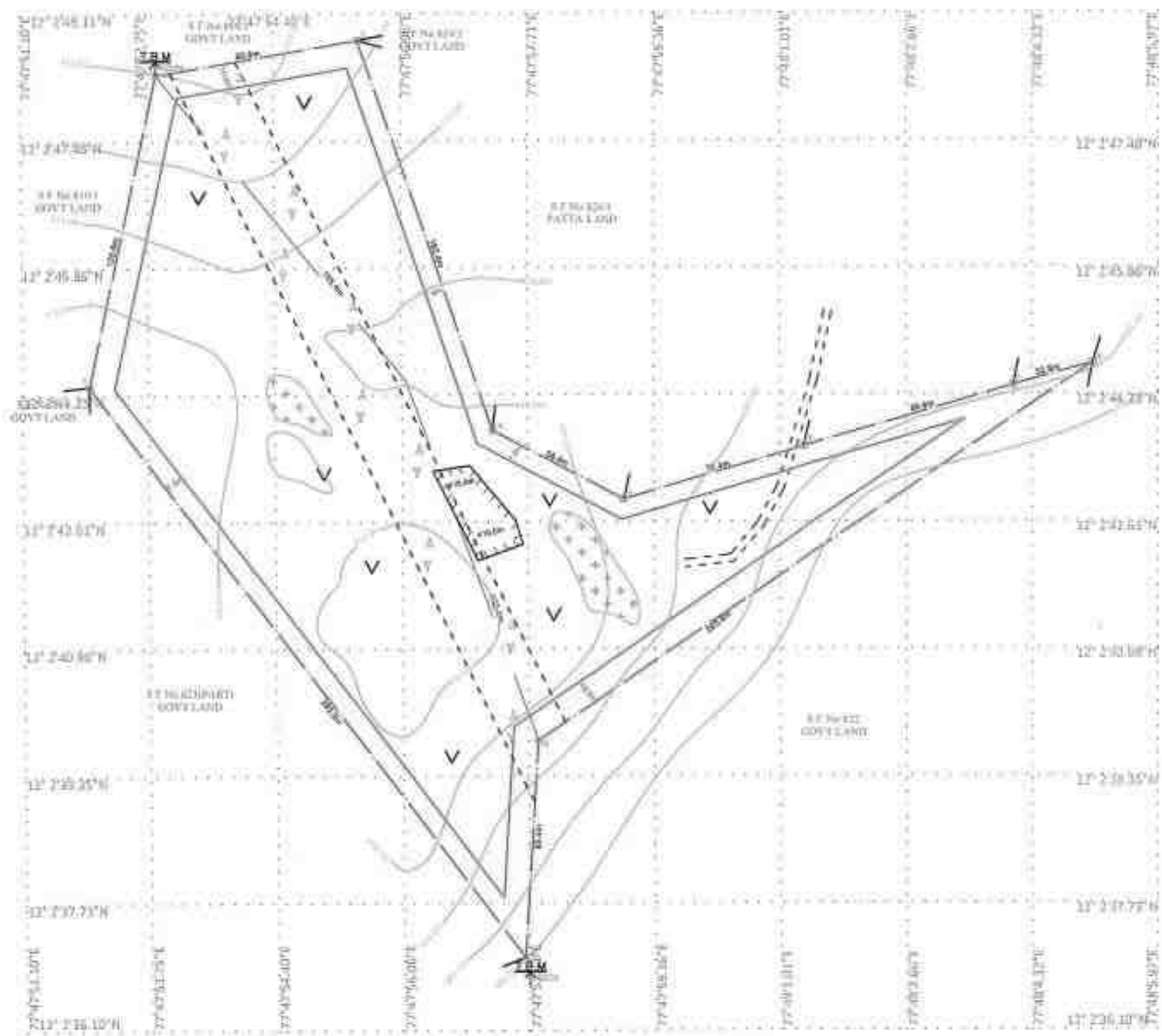
|                      |  |
|----------------------|--|
| LEASE BOUNDARY       |  |
| SAFETY DISTANCE      |  |
| APPROACH ROAD        |  |
| PILLAR STONES        |  |
| TEMPORARY BENCH MARK |  |

## **MINE LEASE PLAN** **SCALE 1:2000**

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS  
 BEEN CHECKED BY ME AND IS CORRECT  
 TO THE BEST OF MY KNOWLEDGE

**Dr.S.KARUPPANNAN, M.Sc., Ph.D.**  
**QUALIFIED PERSON**



| PILLAR No | LATITUDE         | LONGITUDE       |
|-----------|------------------|-----------------|
| 1         | 12°02'44.3356" N | 77°47'52.0568"E |
| 2         | 12°02'48.3253" N | 77°47'52.9547"E |
| 3         | 12°02'48.7413"N  | 77°47'55.7122"E |
| 4         | 12°02'43.7631" N | 77°47'57.3776"E |
| 5         | 12°02'42.8893"N  | 77°47'59.0373"E |
| 6         | 12°02'43.5471"N  | 77°48'01.3070"E |
| 7         | 12°02'44.3090"N  | 77°48'04.1131"E |
| 8         | 12°02'44.5198" N | 77°48'05.2343"E |
| 9         | 12°02'39.6314" N | 77°47'57.9847"E |
| 10        | 12°02'36.9302" N | 77°47'57.6795"E |



PLATE No- III

APPLICANT:  
Tvl.KMB TRADING COMPANY  
3/50, BANGALORE MAIN ROAD,  
FIVE ROADS,  
SALEM DISTRICT-636 004

LOCATION:

EXTENT : 4.50.0 Hect  
S.F.No : 823(Part) & 824/3  
VILLAGE : AJJANAHALLI,  
TALUK : PENNAGARAM,  
DISTRICT : DHARMAPURI

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| LEASE BOUNDARY           |  |
| SAFETY DISTANCE          |  |
| APPROACH ROAD            |  |
| PILLAR STONES            |  |
| TEMPORARY BENCH MARK     |  |
| TOP SOIL                 |  |
| BLACK GRANITE (DOLERITE) |  |
| OLD QUARRY PIT           |  |
| MINERAL CONTACT LINE     |  |
| GRANITE GNEISS           |  |
| SHRUB                    |  |
| CONTOUR LINE             |  |

SURFACE PLAN  
SCALE 1:2000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS  
BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

Dr. S. KARUPPANNAN, M.Sc., Ph.D.  
QUALIFIED PERSON

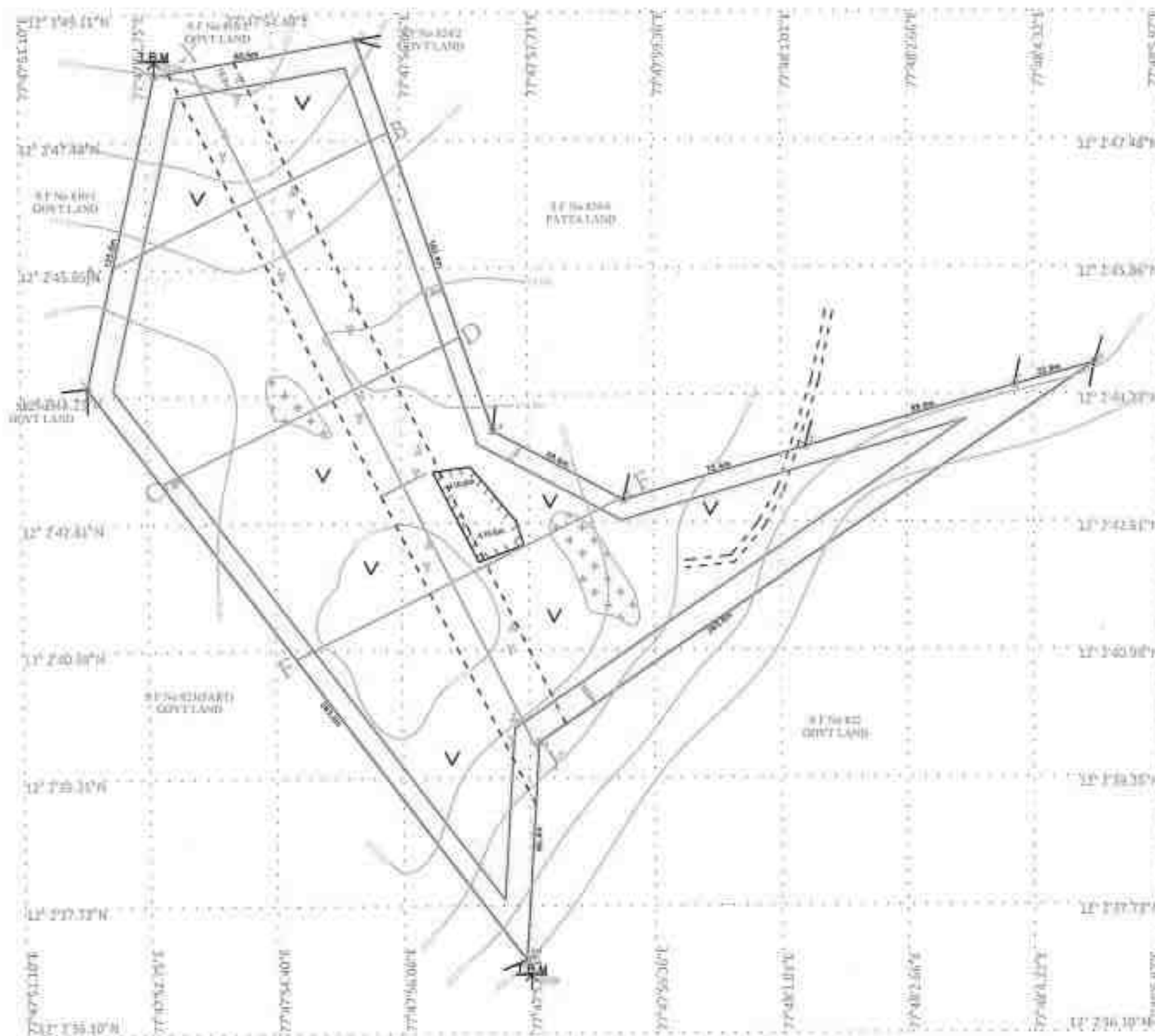


PLATE No- IV

APPLICANT:  
TALKMB TRADING COMPANY  
3/50, BANGALORE MAIN ROAD,  
FIVE ROADS,  
SALEM DISTRICT-636 004

LOCATION:  
EXTENT : 4.50 Hect  
S.F.No : 823(Part) & 824/3  
VILLAGE : AJJANAHALLI,  
TALUK : PENNAGARAM,  
DISTRICT : DHARMAPURI

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| SAFETY DISTANCE          |  |
| APPROACH ROAD            |  |
| PILLAR STONES            |  |
| TEMPORARY BENCH MARK     |  |
| TOP SOIL                 |  |
| BLACK GRANITE (DOLERITE) |  |
| OLD QUARRY PIT           |  |
| MINERAL CONTACT LINE     |  |
| GRANITE GNEISS           |  |
| SHRUB                    |  |
| CONTOUR LINE             |  |

GEOLOGICAL PLAN  
SCALE 1 : 2000

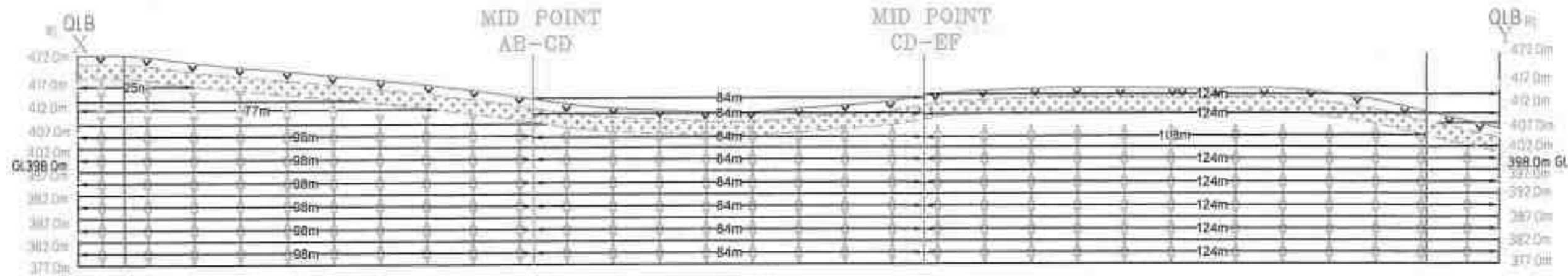
Prepared By:

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TO THE BEST OF MY KNOWLEDGE

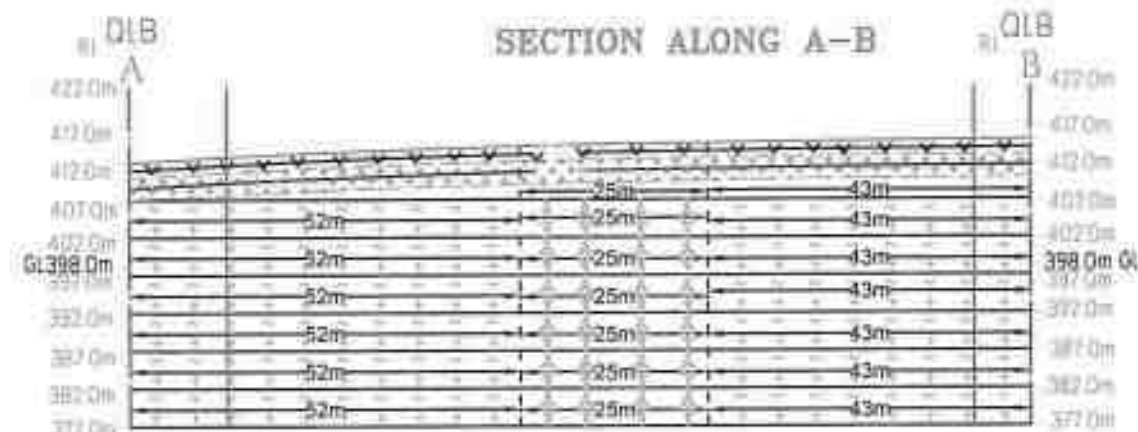
Dr. S. KARUPPANNAN, M.Sc., Ph.D.  
QUALIFIED PERSON



# SECTION ALONG X-Y

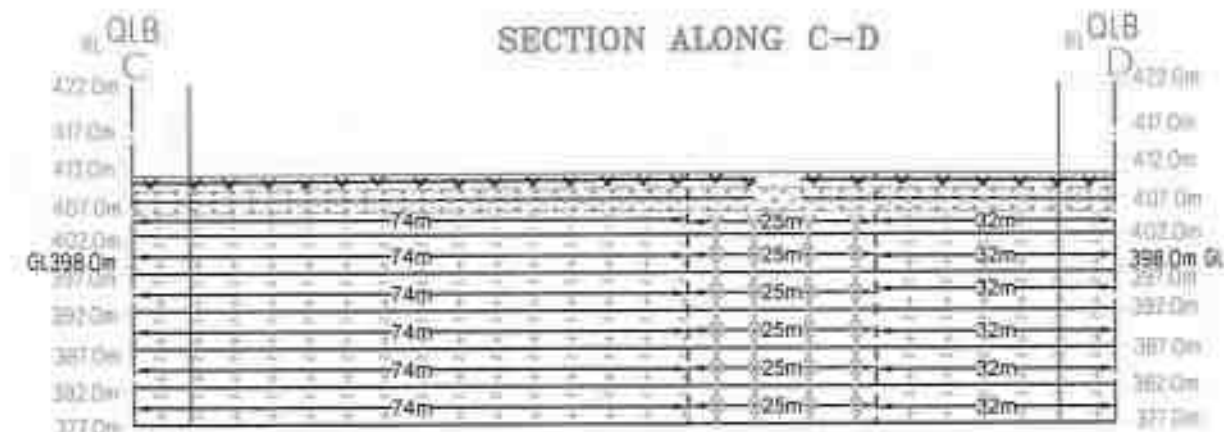


## SECTION ALONG A-B

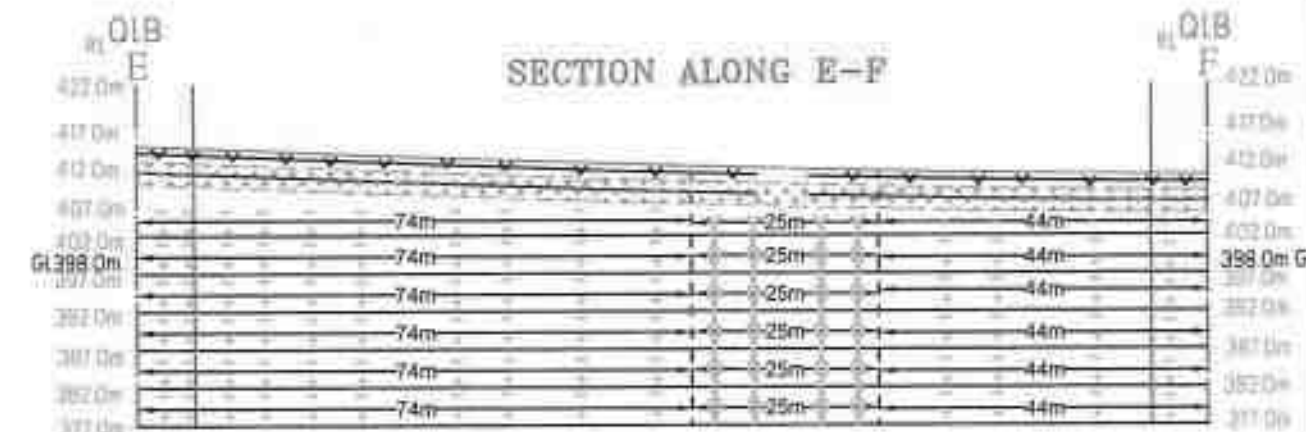


Ground Level (G.L) - 398.0m

## SECTION ALONG C-D



## SECTION ALONG E-F



| GEOLOGICAL RESOURCES |             |               |              |              |             |              |             |                                  |                       |                |                      |                   |
|----------------------|-------------|---------------|--------------|--------------|-------------|--------------|-------------|----------------------------------|-----------------------|----------------|----------------------|-------------------|
| Section              | Bench       | Length in (m) | Width in (m) | Depth in (m) | RoM in (m³) | Bulk Density | RoM in (MT) | Black Granite 20% Recovery in MT | Grass Waste 80% in MT | Top Soil in MT | Weathered rock in MT | Side Burden in MT |
| XY-AB                | I           | 98            | 120          | 2            | 23320       | 2            | 47040       |                                  |                       | 47040          |                      |                   |
|                      | II          | 98            | 120          | 2            | 23320       | 2            | 47040       |                                  |                       |                | 70560                |                   |
|                      | IV          | 77            | 43           | 5            | 16555       | 2.75         | 45326       |                                  |                       |                |                      | 43520             |
|                      | V           | 98            | 95           | 5            | 46550       | 2.75         | 128013      |                                  |                       |                |                      | 128013            |
|                      | VI          | 98            | 95           | 5            | 46550       | 2.75         | 128013      |                                  |                       |                |                      | 128013            |
|                      | VII         | 98            | 95           | 5            | 46550       | 2.75         | 128013      |                                  |                       |                |                      | 128013            |
|                      | VIII        | 98            | 95           | 5            | 46550       | 2.75         | 128013      |                                  |                       |                |                      | 128013            |
|                      | IX          | 98            | 95           | 5            | 46550       | 2.75         | 128013      |                                  |                       |                |                      | 128013            |
|                      | X           | 98            | 95           | 5            | 46550       | 2.25         | 128013      |                                  |                       |                |                      | 128013            |
|                      | TOTAL       |               |              |              | 440905      |              | 1189768     | 45717                            | 182848                | 47040          | 70560                | 812604            |
| XY-CD                | I           | 84            | 121          | 2            | 22088       | 2            | 44176       |                                  |                       | 44176          |                      |                   |
|                      | II          | 84            | 121          | 2            | 22088       | 2            | 44176       |                                  |                       |                | 60224                |                   |
|                      | Y           | 84            | 106          | 2            | 26712       | 2.75         | 73478       |                                  |                       |                |                      | 73478             |
|                      | VI          | 84            | 106          | 5            | 44520       | 2.75         | 122430      |                                  |                       |                |                      | 122430            |
|                      | VII         | 84            | 106          | 5            | 44520       | 2.75         | 122430      |                                  |                       |                |                      | 122430            |
|                      | VIII        | 84            | 106          | 5            | 44520       | 2.75         | 122430      |                                  |                       |                |                      | 122430            |
|                      | IX          | 84            | 106          | 5            | 44520       | 2.75         | 122430      |                                  |                       |                |                      | 122430            |
|                      | X           | 84            | 106          | 5            | 44520       | 2.75         | 122430      |                                  |                       |                |                      | 122430            |
|                      | TOTAL       |               |              |              | 262122      |              | 693468      | 31164                            | 124556                | 44176          | 60224                | 685608            |
|                      | Y           | 124           | 143          | 2            | 35464       | 2            | 70928       |                                  |                       | 70928          |                      |                   |
| XY-EF                | I           | 124           | 143          | 2            | 35464       | 2            | 70928       |                                  |                       |                | 106392               |                   |
|                      | Y           | 108           | 118          | 5            | 61720       | 2.75         | 172230      |                                  |                       |                |                      | 172230            |
|                      | VI          | 124           | 118          | 5            | 73160       | 2.75         | 201190      |                                  |                       |                |                      | 201190            |
|                      | VII         | 124           | 118          | 5            | 73160       | 2.75         | 201190      |                                  |                       |                |                      | 201190            |
|                      | VIII        | 124           | 118          | 5            | 73160       | 2.75         | 201190      |                                  |                       |                |                      | 201190            |
|                      | IX          | 124           | 118          | 5            | 73160       | 2.75         | 201190      |                                  |                       |                |                      | 201190            |
|                      | X           | 124           | 118          | 5            | 73160       | 2.75         | 201190      |                                  |                       |                |                      | 201190            |
|                      | TOTAL       |               |              |              | 609188      |              | 1899658     | 48230                            | 182928                | 70928          | 206392               | 1181180           |
|                      | GRAND TOTAL |               |              |              | 1413217     |              | 3710887     | 125111                           | 390424                | 163984         | 242976               | 2603392           |

## PLATE No- IV A

**APPLICANT:**  
TvlKMB TRADING COMPANY  
3/50, BANGALORE MAIN ROAD,  
FIVE ROADS,  
SALEM DISTRICT-636 004

**LOCATION:**  
EXTENT : 4.50.0 Hect  
S.F.No : 823(Part) & 824/3  
VILLAGE : AJJANAHALLI,  
TALUK : PENNAGARAM,  
DISTRICT : DHARMAPURI

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|                      |       |
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| MINE LEASE BOUNDARY  | ---   |
| SAFETY DISTANCE      | ---   |
| TOPSOIL              | V V V |
| WEATHERED ROCK       | ...   |
| BLACK GRANITE        | ◆◆◆   |
| BIOTITE GNISS        | ---   |
| MINERAL CONTACT LINR | ---   |

**GEOLOGICAL SECTIONS**  
SCALE SECTION - (H:V) 1:1000  
VER 1:1000

Prepared By:  
I DO HEREBY CERTIFY THAT THE PLATE HAS  
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TO THE BEST OF MY KNOWLEDGE

Dr.S.KARUPPANNAN,M.Sc.,Ph.D.  
QUALIFIED PERSON

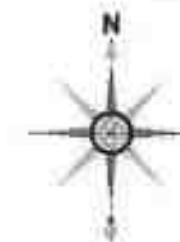
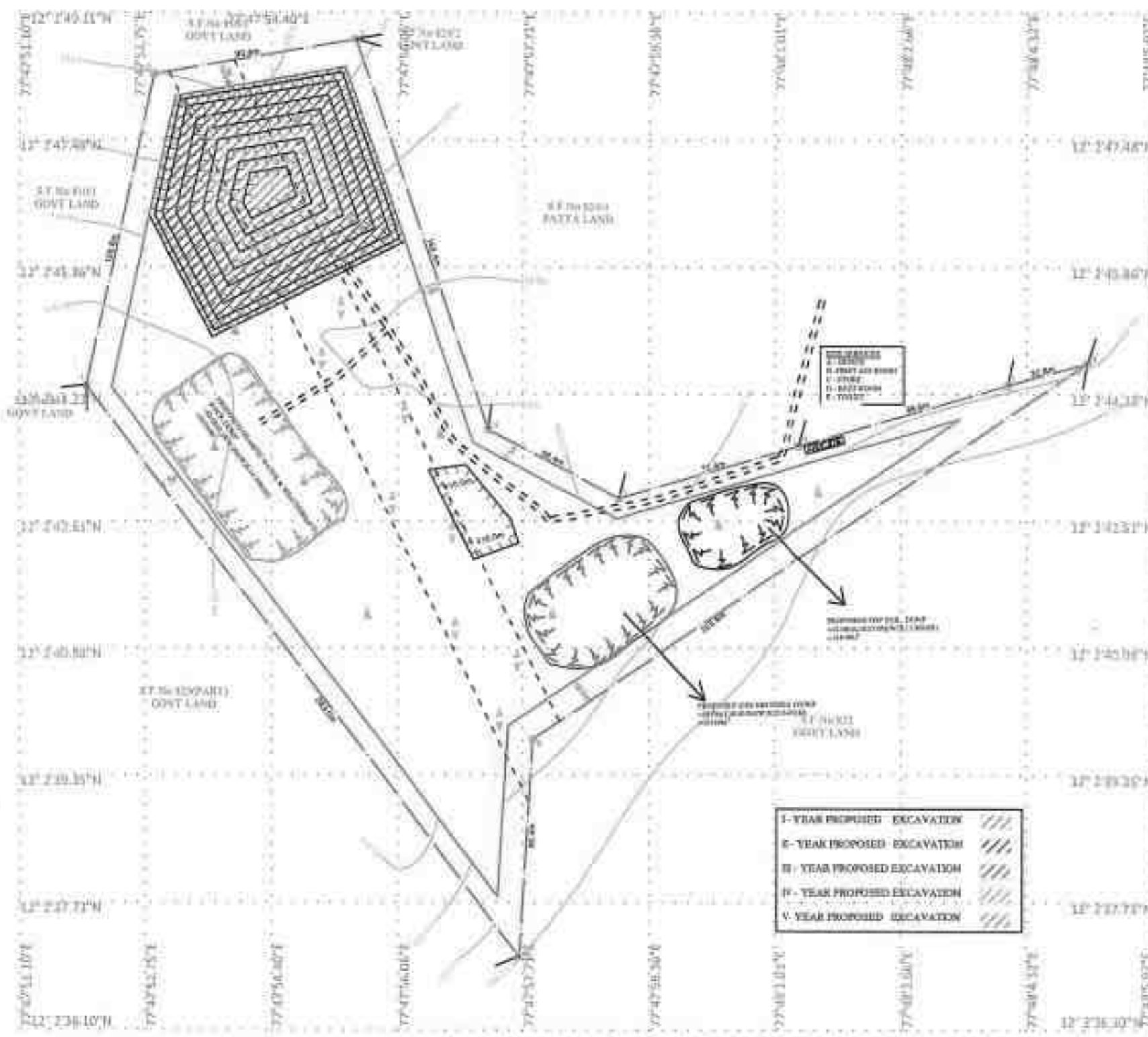


PLATE No- V

APPLICANT:  
T.V.K.M.B TRADING COMPANY  
3/50, BANGALORE MAIN ROAD,  
FIVE ROADS,  
SALEM DISTRICT-636 004

LOCATION:  
EXTENT : 4.50 Hect  
S.F.No : 823(Part) & 824/5  
VILLAGE : AJJANAHALLI,  
TALUK : PENNAGARAM,  
DISTRICT : DHARMAPURI

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| LEASE BOUNDARY                          |  |
| SAFETY DISTANCE                         |  |
| TEMPORARY BENCH MARK                    |  |
| TOP SOIL                                |  |
| BLACK GRANITE (DOLERITE)                |  |
| OLD QUARRY PIT                          |  |
| MINERAL CONTACT LINE                    |  |
| GRANITE GNEISS                          |  |
| SHRUB                                   |  |
| PROPOSED TOP SOIL DUMP                  |  |
| PROPOSED SIDE BURDEN DUMP               |  |
| PROPOSED GRANITE WASTE & WEATHERED ROCK |  |
| CONTOUR LINE                            |  |

## YEARWISE DEVELOPMENT AND PRODUCTION PLAN

SCALE 1:2000

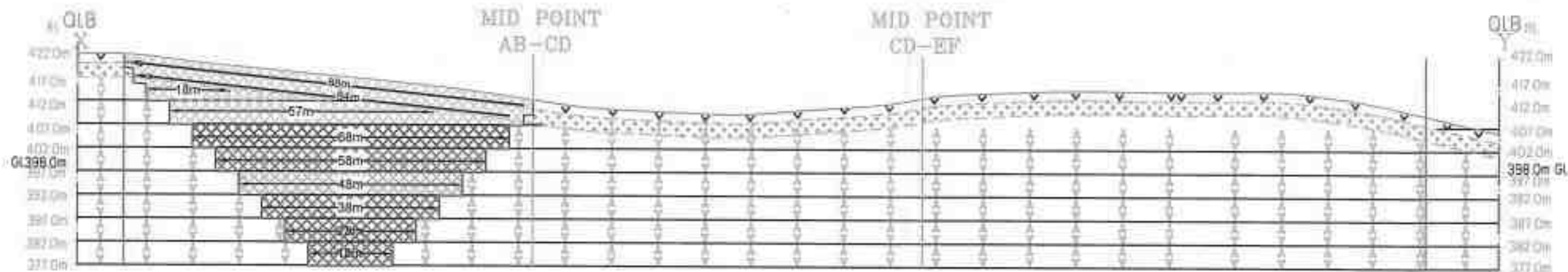
Prepared By:

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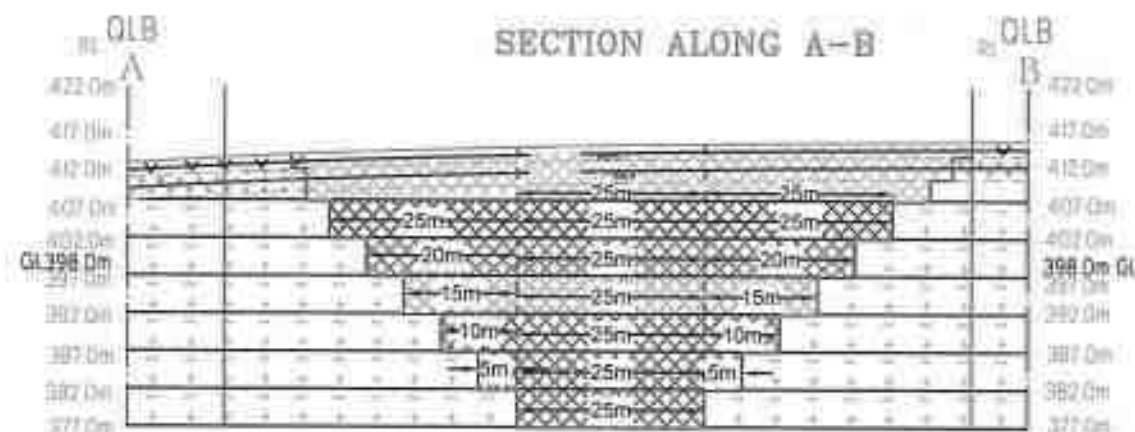
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QUALIFIED PERSON



# SECTION ALONG X-Y



## SECTION ALONG A-B



Ground Level (G.L.) — 398.0m

|                                |     |
|--------------------------------|-----|
| I - YEAR PROPOSED EXCAVATION   | XXX |
| II - YEAR PROPOSED EXCAVATION  | XXX |
| III - YEAR PROPOSED EXCAVATION | XXX |
| IV - YEAR PROPOSED EXCAVATION  | XXX |
| V - YEAR PROPOSED EXCAVATION   | XXX |

| YEARWISE DEVELOPMENT AND PRODUCTION |         |       |               |              |              |                          |              |             |                                  |                         |                |                      |                   |
|-------------------------------------|---------|-------|---------------|--------------|--------------|--------------------------|--------------|-------------|----------------------------------|-------------------------|----------------|----------------------|-------------------|
| Year                                | Section | Bench | Length in (m) | Width in (m) | Depth in (m) | RoM in (M <sup>3</sup> ) | Bulk Density | RoM in (MT) | Black Granite 20% Recovery in MT | Granite Waste 80% in MT | Top Soil in MT | Weathered rock in MT | Side Barden in MT |
| I-YEAR                              | XY-AB   | I     | 88            | 90           | 2            | 15840                    | 2            | 31680       | 31680                            | 31680                   | 31680          | 43344                | 23513             |
|                                     |         | II    | 84            | 86           | 3            | 21672                    | 2            | 43344       | 43344                            | 43344                   | 43344          | 43344                | 43344             |
|                                     |         | IV    | 57            | 30           | 5            | 8550                     | 2.75         | 23513       | 23513                            | 23513                   | 23513          | 23513                | 23513             |
|                                     |         | III   | 18            | 1            | 5            | 90                       | 2.65         | 239         | 48                               | 191                     | 191            | 191                  | 191               |
|                                     |         | VI    | 57            | 25           | 5            | 7125                     | 2.65         | 18881       | 3776                             | 15105                   | 15105          | 15105                | 15105             |
| TOTAL                               |         |       |               |              |              | 53277                    |              | 117657      | 3824                             | 15296                   | 31680          | 43344                | 23513             |
| II-YEAR                             | XY-AB   | V     | 68            | 50           | 5            | 17000                    | 2.75         | 46750       | 46750                            | 46750                   | 46750          | 46750                | 46750             |
|                                     |         | V     | 68            | 25           | 5            | 8500                     | 2.65         | 22525       | 4505                             | 18020                   | 18020          | 18020                | 18020             |
|                                     |         | TOTAL |               |              |              |                          |              | 25500       | 69275                            | 4505                    | 18020          | 0                    | 46750             |
| III-YEAR                            | XY-AB   | VI    | 58            | 40           | 5            | 11600                    | 2.75         | 31900       | 31900                            | 31900                   | 31900          | 31900                | 31900             |
|                                     |         | VI    | 58            | 25           | 5            | 7250                     | 2.65         | 19213       | 3843                             | 15370                   | 15370          | 15370                | 15370             |
|                                     |         | TOTAL |               |              |              |                          |              | 18850       | 51113                            | 3843                    | 15370          | 0                    | 31900             |
| IV-YEAR                             | XY-AB   | VII   | 48            | 30           | 5            | 7200                     | 2.75         | 19800       | 19800                            | 19800                   | 19800          | 19800                | 19800             |
|                                     |         | VII   | 48            | 25           | 5            | 6000                     | 2.65         | 15900       | 3180                             | 12720                   | 12720          | 12720                | 12720             |
|                                     |         | TOTAL |               |              |              |                          |              | 13200       | 35700                            | 3180                    | 12720          | 0                    | 19800             |
| V-YEAR                              | TOTAL   | VIII  | 38            | 20           | 5            | 3800                     | 2.75         | 10450       | 10450                            | 10450                   | 10450          | 10450                | 10450             |
|                                     |         | IX    | 28            | 10           | 5            | 1400                     | 2.75         | 3850        | 3850                             | 3850                    | 3850           | 3850                 | 3850              |
|                                     |         | VIII  | 38            | 25           | 5            | 4750                     | 2.65         | 12588       | 2518                             | 10070                   | 10070          | 10070                | 10070             |
|                                     |         | IX    | 28            | 25           | 5            | 3500                     | 2.65         | 9275        | 1855                             | 7420                    | 7420           | 7420                 | 7420              |
|                                     |         | X     | 18            | 25           | 5            | 2250                     | 2.65         | 5963        | 1193                             | 4770                    | 4770           | 4770                 | 4770              |
|                                     |         | TOTAL |               |              |              |                          |              | 15700       | 42126                            | 5566                    | 22260          | 0                    | 14300             |
| GRAND TOTAL                         |         |       |               |              |              | 126527                   |              | 315871      | 20918                            | 83666                   | 31680          | 43344                | 136263            |

PLATE No- V-A

**APPLICANT:**  
**TVLKMB TRADING COMPANY**  
 3/50, BANGALORE MAIN ROAD,  
 FIVE ROADS,  
 SALEM DISTRICT-636 004

**LOCATION:**  
**EXTENT** : 4.50 Hect  
**S.F.No** : 823(Part) & 824/3  
**VILLAGE** : AJJANAHALLI,  
**TALUK** : PENNAGARAM,  
**DISTRICT** : DHARMAPURI

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|                      |       |
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| MINE LEASE BOUNDARY  | ---   |
| SAFETY DISTANCE      | ---   |
| TOPSOIL              | V V V |
| WEATHERED ROCK       | ...   |
| BLACK GRANITE        | ...   |
| BIOTITE GNEISS       | ---   |
| MINERAL CONTACT LINR | ---   |

**YEARWISE DEVELOPMENT AND PRODUCTION SECTION**  
 SCALE SECTION - 1: 1000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

*[Signature]*

Dr.S.KARUPPANNAN, M.Sc., Ph.D.  
 QUALIFIED PERSON



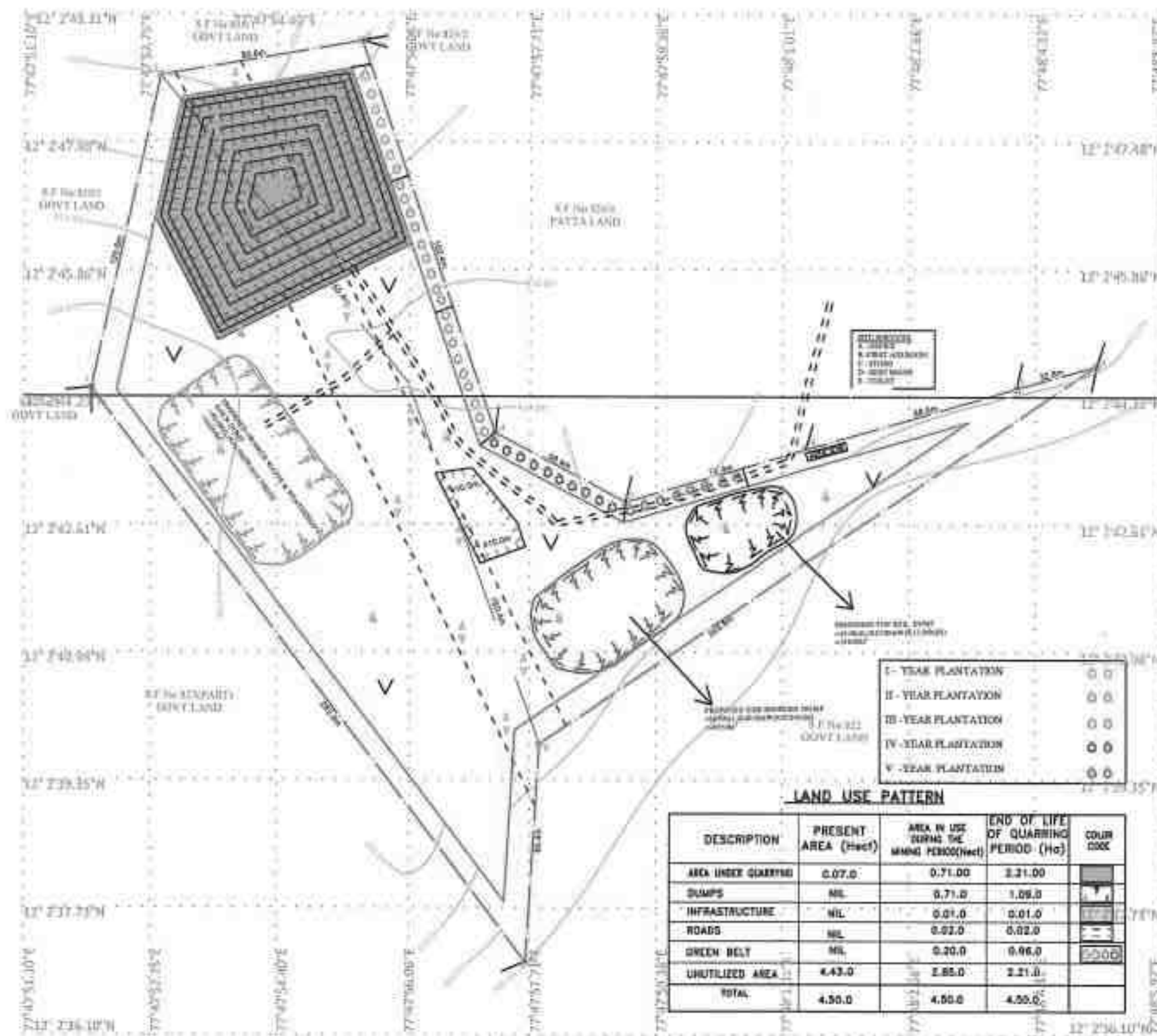
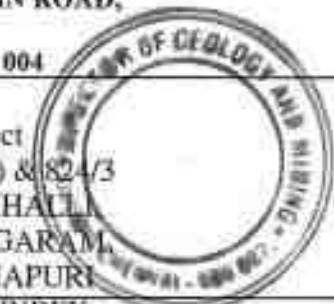


PLATE No- VI

APPLICANT:  
T.V.K.M.B. TRADING COMPANY  
3/50, BANGALORE MAIN ROAD,  
FIVE ROADS,  
SALEM DISTRICT-636 004

LOCATION:  
EXTENT : 4.50.0 Hect  
S.F.No : 823(Part) & 824/3  
VILLAGE : AJJANAHALLI  
TALUK : PENNAGARAM  
DISTRICT : DHARMAPUR



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|                                         |  |
|-----------------------------------------|--|
| LEASE BOUNDARY                          |  |
| SAFETY DISTANCE                         |  |
| TEMPORARY BENCH MARK                    |  |
| TOP SOIL                                |  |
| BLACK GRANITE (DOLERITE)                |  |
| OLD QUARRY PIT                          |  |
| MINERAL CONTACT LINE                    |  |
| GRANITE GNEISS                          |  |
| SHRUB                                   |  |
| PROPOSED TOP SOIL DUMP                  |  |
| PROPOSED SIDE BURDEN DUMP               |  |
| PROPOSED GRANITE WASTE & WEATHERED ROCK |  |
| CONTOUR LINE                            |  |
| MNE LAYOUT                              |  |

MINE LAYOUT & LANDUSE  
PATTERN PLAN  
SCALE 1:2000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS  
BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

Dr. S. KARUPPANNAN, M.Sc., Ph.D.  
QUALIFIED PERSON

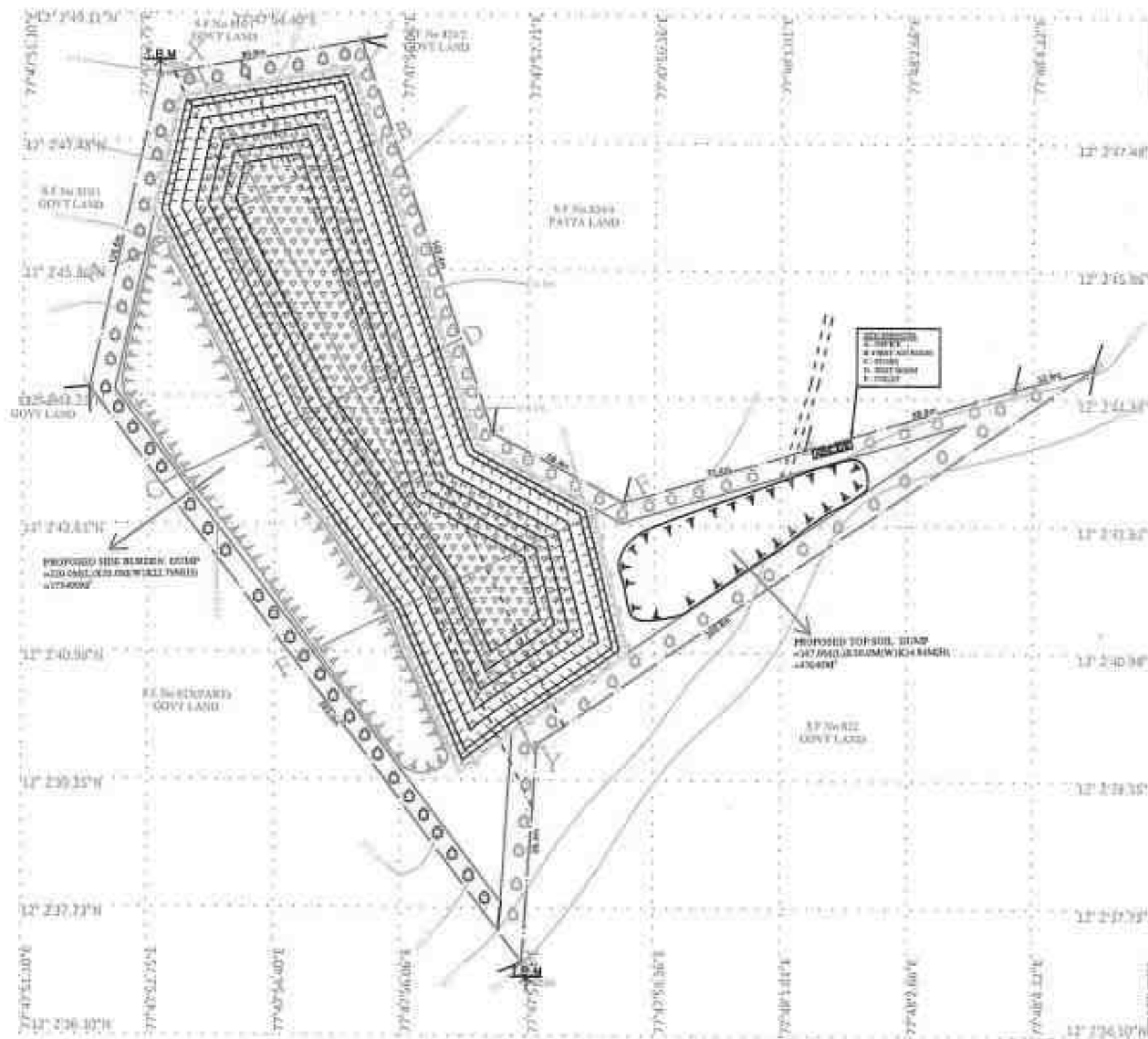


PLATE No- VIII

APPLICANT:

TvLKMB TRADING COMPANY  
3/50, BANGALORE MAIN ROAD,  
FIVE ROADS,  
SALEM DISTRICT-636 004

LOCATION:

EXTENT : 4.50.0 Hect  
S.F.No : 823(Part) & 824/3  
VILLAGE : AJANAHALLI,  
TALUK : PENNACARAM,  
DISTRICT : DHARMAPURI

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|----------------------------|--|
| LEASE BOUNDARY             |  |
| 7.5m & 10m SAFETY DISTANCE |  |
| TEMPORARY BENCH MARK       |  |
| TOP SOIL                   |  |
| BLACK GRANITE (DOLERITE)   |  |
| QUARRY PIT                 |  |
| QUARRY ROAD                |  |
| MINERAL CONTACT LINE       |  |
| FENCING                    |  |
| PARAPET WALL               |  |
| PROPOSED TOP SOIL DUMP     |  |
| PROPOSED SIDE BURDEN DUMP  |  |
| PROPOSED BACK FILLING AREA |  |
| CONTOUR LINE               |  |
| ULTIMATE PIT LIMIT         |  |

CONCEPTUAL PLAN

SCALE 1:2000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS  
BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

Dr.S.KARUPPANNAN, M.Sc., Ph.D.  
QUALIFIED PERSON

## SECTION ALONG X-Y

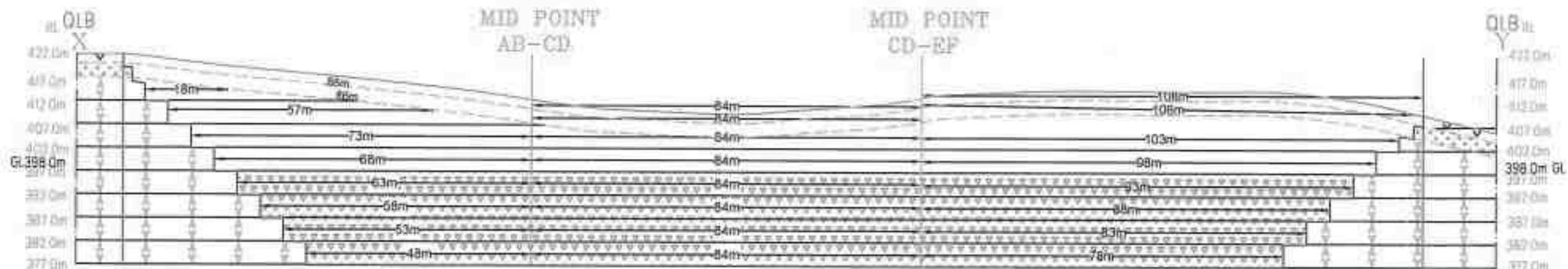


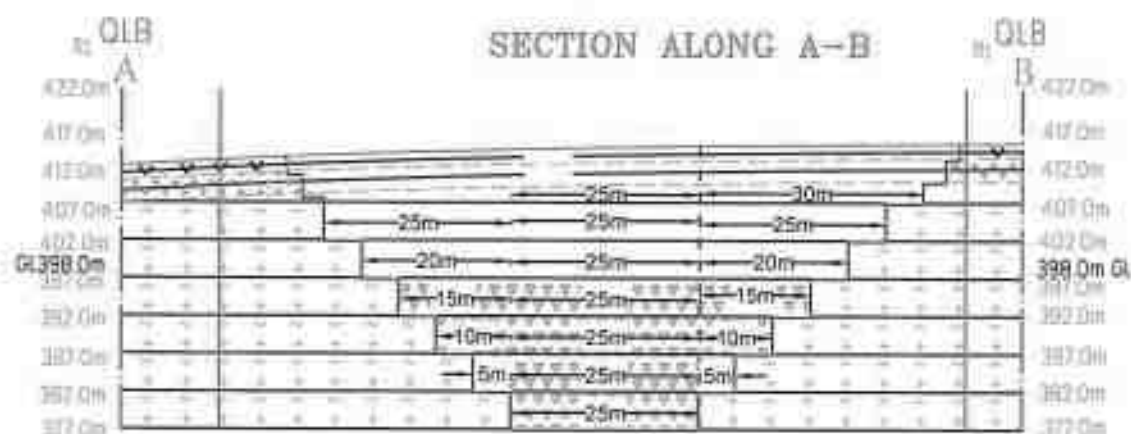
PLATE No- VIII-A

APPLICANT:

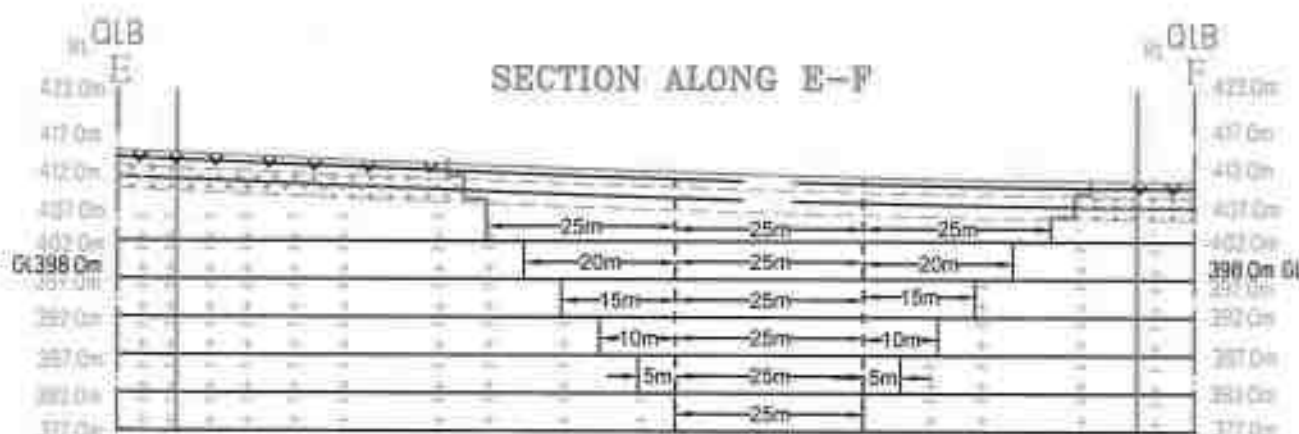
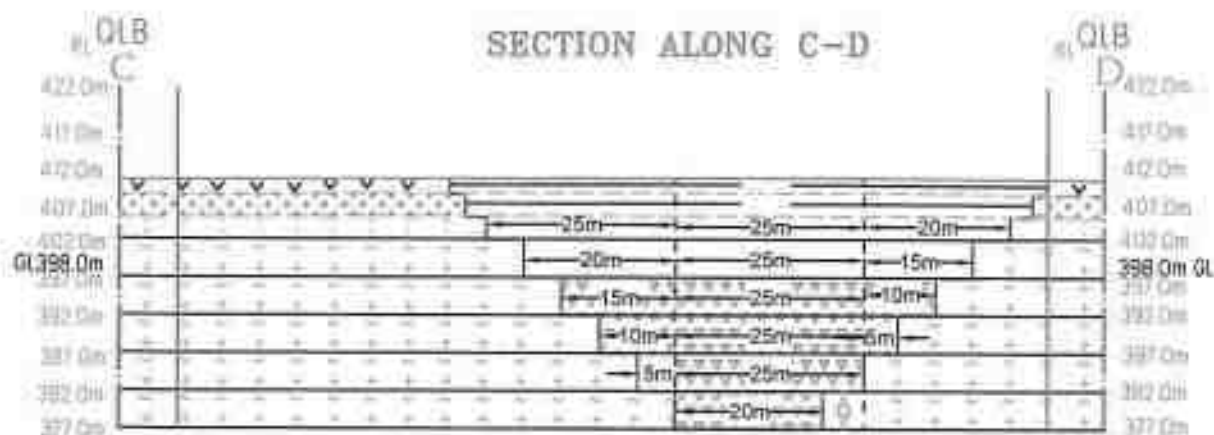
**TyLKMB TRADING COMPANY**  
3/50, BANGALORE MAIN ROAD,  
FIVE ROADS,  
SALEM DISTRICT-636 004

LOCATION:

EXTENT : 4.50.0Hect  
S.F.No : 823(Part) & 824/3  
VILLAGE : AJIANAHALLI,  
TALUK : PENNAGARAM,  
DISTRICT : DHARMAPURI



Ground Level (GL) — 398.0m



| GRANITE MINERAL RESOURCES |       |               |              |              |             |              |             |                                  |                         |                |                      |                  |
|---------------------------|-------|---------------|--------------|--------------|-------------|--------------|-------------|----------------------------------|-------------------------|----------------|----------------------|------------------|
| Section                   | Block | Length in (m) | Width in (m) | Depth in (m) | BuM in (MP) | Bulk Density | BuM in (MT) | Block Granite 20% Recovery in MT | Granite Waste 80% in MT | Top Soil in MT | Weathered rock in MT | Sub Burden in MT |
| XY-AH                     | I     | 88            | 90           | 3            | 18810       | 2            | 31080       | —                                | —                       | 31680          | —                    | —                |
|                           | II    | 88            | 86           | 3            | 22188       | 2            | 44376       | —                                | —                       | —              | 44376                | —                |
|                           | IV    | 33            | 30           | 3            | 8330        | 2.75         | 23513       | —                                | —                       | —              | —                    | 23513            |
|                           | V     | 23            | 30           | 3            | 18250       | 2.75         | 50188       | —                                | —                       | —              | —                    | 50188            |
|                           | VI    | 68            | 80           | 3            | 13600       | 2.75         | 37400       | —                                | —                       | —              | —                    | 37400            |
|                           | VII   | 103           | 30           | 3            | 9450        | 2.75         | 25988       | —                                | —                       | —              | —                    | 25988            |
|                           | VIII  | 88            | 20           | 3            | 3800        | 2.75         | 10500       | —                                | —                       | —              | —                    | 10500            |
|                           | IX    | 30            | 10           | 3            | 3630        | 3.75         | 7288        | —                                | —                       | —              | —                    | 7288             |
|                           | X     | 18            | 1            | 3            | 96          | 2.75         | 248         | 10                               | 198                     | —              | —                    | —                |
|                           | IV    | 37            | 23           | 3            | 7124        | 2.68         | 18881       | 3776                             | 15101                   | —              | —                    | —                |
|                           | V     | 73            | 23           | 3            | 9125        | 2.65         | 34181       | 4836                             | 19343                   | —              | —                    | —                |
|                           | VI    | 88            | 23           | 3            | 8380        | 2.63         | 22433       | 4305                             | 18020                   | —              | —                    | —                |
| XY-CD                     | I     | 84            | 88           | 3            | 13440       | 2            | 26880       | —                                | —                       | 26880          | —                    | —                |
|                           | II    | 84            | 78           | 3            | 18132       | 2            | 36264       | —                                | —                       | —              | 36264                | —                |
|                           | V     | 34            | 43           | 3            | 13340       | 2.73         | 31132       | —                                | —                       | —              | —                    | 31132            |
|                           | VI    | 84            | 35           | 3            | 14700       | 2.75         | 40625       | —                                | —                       | —              | —                    | 40625            |
|                           | VII   | 84            | 25           | 3            | 18010       | 2.75         | 28873       | —                                | —                       | —              | —                    | 28873            |
|                           | VIII  | 84            | 15           | 3            | 6300        | 2.74         | 17373       | —                                | —                       | —              | —                    | 17373            |
|                           | IX    | 84            | 8            | 3            | 2100        | 2.73         | 5773        | —                                | —                       | —              | —                    | 5773             |
|                           | V     | 84            | 25           | 3            | 8300        | 2.63         | 18855       | 3330                             | 13356                   | —              | —                    | —                |
|                           | VI    | 84            | 25           | 3            | 10500       | 2.63         | 27823       | 5503                             | 22206                   | —              | —                    | —                |
|                           | VII   | 84            | 25           | 3            | 10500       | 2.63         | 27823       | 5503                             | 22206                   | —              | —                    | —                |
|                           | VIII  | 84            | 25           | 3            | 10200       | 2.63         | 27023       | 5503                             | 22160                   | —              | —                    | —                |
|                           | IX    | 84            | 25           | 3            | 10500       | 2.63         | 27823       | 5503                             | 22206                   | —              | —                    | —                |
| XY-EF                     | I     | 108           | 83           | 2            | 18360       | 3            | 36720       | —                                | —                       | 36720          | —                    | —                |
|                           | II    | 108           | 83           | 3            | 23754       | 3            | 81516       | —                                | —                       | —              | 81516                | —                |
|                           | V     | 103           | 30           | 3            | 25756       | 2.73         | 90813       | —                                | —                       | —              | —                    | 90813            |
|                           | VI    | 88            | 40           | 3            | 18600       | 2.73         | 50900       | —                                | —                       | —              | —                    | 50900            |
|                           | VII   | 33            | 10           | 3            | 13996       | 2.73         | 38363       | —                                | —                       | —              | —                    | 38363            |
|                           | VIII  | 88            | 20           | 3            | 8805        | 2.73         | 24266       | —                                | —                       | —              | —                    | 24266            |
|                           | IX    | 43            | 10           | 3            | 4150        | 2.73         | 11413       | —                                | —                       | —              | —                    | 11413            |
|                           | V     | 103           | 23           | 3            | 12875       | 2.65         | 34110       | 6824                             | 27298                   | —              | —                    | —                |
|                           | VI    | 88            | 23           | 3            | 12230       | 2.63         | 32463       | 6403                             | 25970                   | —              | —                    | —                |
|                           | VII   | 83            | 23           | 3            | 11823       | 2.65         | 30806       | 6101                             | 24443                   | —              | —                    | —                |
|                           | VIII  | 88            | 23           | 3            | 11000       | 2.63         | 29150       | 5830                             | 23370                   | —              | —                    | —                |
|                           | IX    | 83            | 23           | 3            | 10773       | 2.63         | 27404       | 5499                             | 21991                   | —              | —                    | —                |
| TOTAL                     |       |               |              |              | 184243      |              | 466795      | 38975                            | 143888                  | 36728          | 51516                | 198680           |
| GRAND TOTAL               |       |               |              |              | 467593      |              | 1181575     | 30981                            | 376687                  | 94288          | 134196               | 482801           |

## INDEX

MINE LEASE BOUNDARY

### SAFETY DISTANCE

TOPSOIL

WEATHERED ROCK

BLACK GRANITE(DOLERITE)

## GRANITE GNEISS

MINEAL CONTACT LINE

PROPOSED BACKFILLING  
AREA

## ULTIMATE PIT BENCH

## CONCEPTUAL SECTION

SCALE SECTION - 1: 1000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS  
BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

Dr.S.KARUPPANNAN,M.Sc.,Ph.D.  
QUALIFIED PERSON



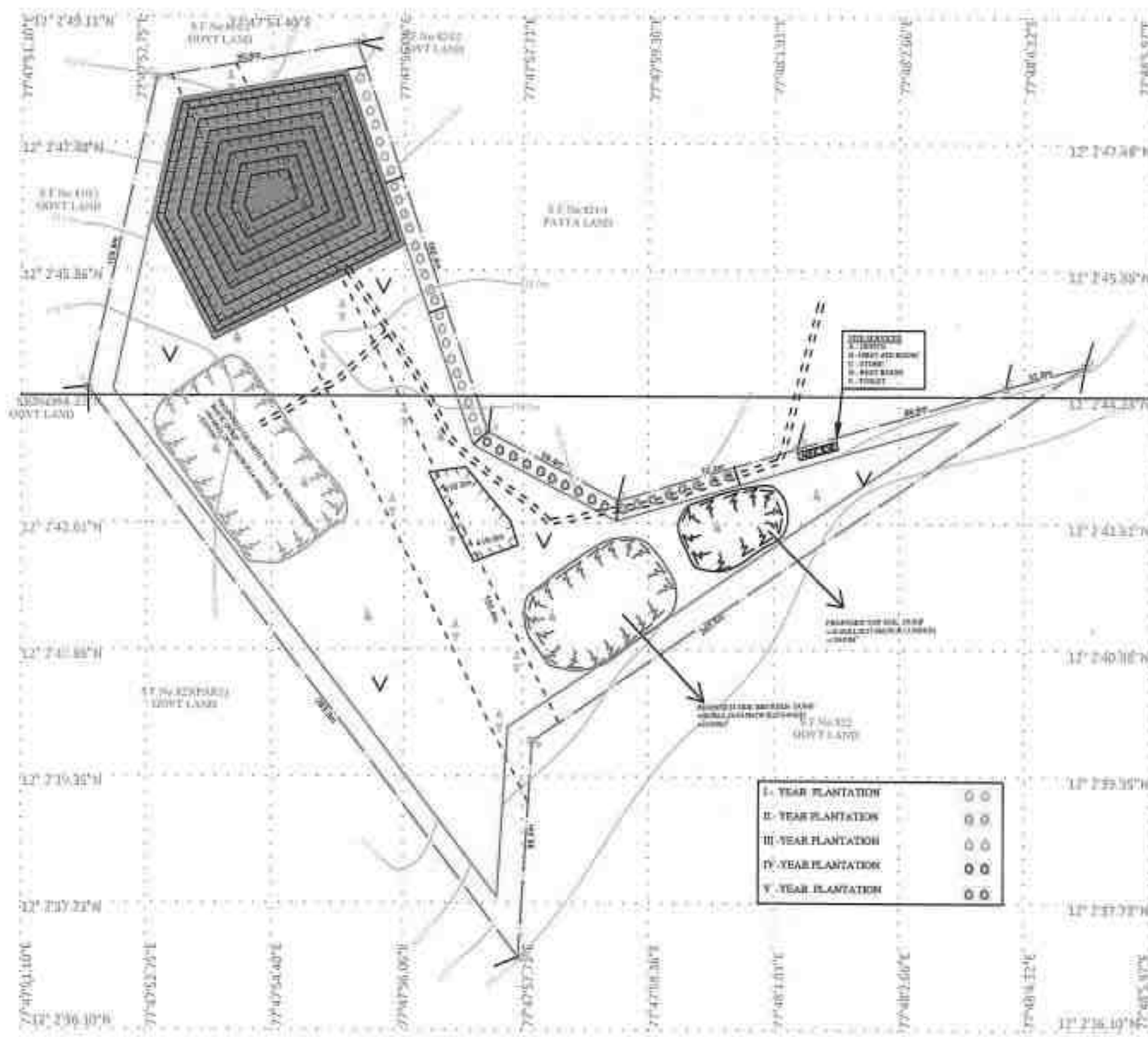


PLATE No-IX

APPLICANT:  
T.V.K.M.B. TRADING COMPANY  
3/50, BANGALORE MAIN ROAD,  
FIVE ROADS,  
SALEM DISTRICT-636 004

LOCATION:  
EXTENT : 4.50.0 Hect  
S.F.No : 823(Part) & 824/3  
VILLAGE : AJANARAI, I,  
TALUK : PENNAGARAM,  
DISTRICT : DHARMAPUR



INDEX

|                                         |  |
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| LEASE BOUNDARY                          |  |
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| TEMPORARY BENCH MARK                    |  |
| TOP SOIL                                |  |
| BLACK GRANITE (DOLERITE)                |  |
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| MINERAL CONTACT LINE                    |  |
| GRANITE GNEISS                          |  |
| SHRUB                                   |  |
| PROPOSED TOP SOIL DUMP                  |  |
| PROPOSED SIDE BURDEN DUMP               |  |
| PROPOSED GRANITE WASTE & WEATHERED ROCK |  |
| CONTOUR LINE                            |  |
| MNE LAYOUT                              |  |

PROGRESSIVE MINE CLOSURE PLAN  
SCALE 1 : 2000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS  
BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

Dr. S. KARUPPANNAN, M.Sc., Ph.D.  
QUALIFIED PERSON

Tvl. KMB Trading Company, Black Granite quarry in the S.F.No.823 (Part) & 824/3 over an extent of 4.50.0ha. in Ajjanahalli Village, Pennagaram Taluk, Dharmapuri District.

GENERAL VIEW OF THE APPLIED LEASE AREA



For Tvl. KMB Trading Company,

O. Y. mmmmmmmmm

10/09/2023  
கிராம நிர்வாக அலுவலர்  
30, கந்தையன் அலையி  
பென்னாகரம் (V.A.) தருமபுரி (D.P.)

சின்னம்

திருவாரூர் மாவட்டம் உயர்நீதிமன்றம் கீழே

சின்னம் கீழே உள்ள 030 சின்னம் உள்ள கிராம முன்னர்  
824/3 ல் பரம்பா 2.11.50 காலத்தில் மற்றும் முன்னர் 823  
பரம்பா 2.38.50 க்கு உட்பட பரம்பா 4.50.00 காலத்தில்  
நிலத்தில் அமைந்துள்ள K.M.B. Tracing Company  
சின்னம் 500 மீட்டர் சுற்றளவிற்கு குடியிருப்பு வீடுகள் உள்ளன  
எனவும் அமைந்துள்ள கிழக்கு 500 மீட்டர்  
சுற்றளவிற்கு கிராமத்திலுள்ள, சிவசுந்தரி, சுவாமிநாதன்,  
மகதி, கழிவாங்கு தளம் போன்ற, குடிசைகள், அச்சுபுரம், பள்ளி  
புறம், புறத்தெருக்கள், பறதன் சின்னங்கள்  
கிழக்கு உட்பட பரம்பா 4.50.00 காலத்தில்  
சின்னம் கீழே உள்ள 030 சின்னம் கீழே.

சின்னம்  
05/07/2023  
கிராம நிர்வாக அலுவலர்  
30, அண்ணா அள்ளி,  
வள்ளாரம் (Tk.), தருமபுரி (DL)

மின்னஞ்சல் - roobarmapuri@gmail.com  
 தொலைபேசி எண் - 94342 - 230063

## தமிழ்நாடு வனத்துறை

அனுப்புநர்

திரு. கே.வி.அப்பால நாயுடு, இ.வ.ப.,  
 மாவட்ட வன அலுவலர்,  
 தருமபுரி வனக்கோட்டம்,  
 தருமபுரி - 5.

பெறுநர்

உதவி இயக்குநர்,  
 புலியியல் மற்றும் சுரங்கத்துறை,  
 தருமபுரி.

ந.க.எண். 5132/ 2023 / வ, நாள்: 12-06-2023

அன்புடையீர்,

பொருள் : கனிமங்களும் குவாரிகளும் - சிறுகனிமம் - கருப்பு கிரானைட் தருமபுரி மாவட்டம் - பென்னாகரம் வட்டம் - அஜ்ஜனஅள்ளி கிராமம் - புல எண்.824/3 - பரப்பு 2.11.5 ஹெக்டர் மற்றும் 823 (பகுதி) பரப்பு 2.38.5 ஹெக்டர் அரசு நிலத்தில் அமைந்துள்ள கருப்பு கிரானைட் குவாரிக்கு அனுமதி வழங்க கோரிய Tvi.KMB Trading Company, Salam என்ற நிறுவனத்திற்கு குவாரி குத்தகை வழங்குதல் தொடர்பாக - இப்புல எண்ணை சுற்றிலும் 25 கி.மீ தூரத்தில் உள்ள காப்புக்காடுகள், தேசிய பூங்காக்கள், வனஉயிரின சரணாலயம், சூழல் உணர்திறன் மண்டலம் மற்றும் யானை வழிதடங்கள் குறித்து - அறிக்கை அனுப்புதல் - தொடர்பாக.

- பார்வை : 1) உதவி இயக்குநர், புலியியல் மற்றும் சுரங்கத்துறை, தருமபுரி ROC.No.176/2020 (கனிமம்) நாள். 18-05-2023.
- 2) வனச்சரக அலுவலர், பென்னாகரம் ந.க.எண்.46/2022, நாள் 27-05-2023.

~ \* ~ \* ~ \* ~ \*

பார்வையில் காணும் கடிதங்களின் மீது தங்களின் கனிவான கவனம் வேண்டப்படுகிறது. அதில் பார்வை 1இல் மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் தடையின்மை சான்று பெரும்பொருட்டு குவாரி பணி செய்யவுள்ள புலத்திலிருந்து 25 கி.மீ தொலைவில் அமைந்துள்ள காப்புக்காடுகள், தேசிய பூங்காக்கள், புலிகள் காப்பகம், வனஉயிரினச் சரணாலயம், சூழல் உணர்திறன் மண்டலம் (ECO Sensitive Zone), பாதுகாக்கப்பட்ட பகுதி மற்றும் யானை வழிதடம் போன்ற விவரங்கள் கோரப்பட்டதை தொடர்ந்து பார்வை (2)இல் வனச்சரக அலுவலர், பென்னாகரம் 27-05-2023 ஆம் தேதியன்று உரிய புலத்தை களத்தணிக்கை மேற்கொண்டு பின்வருமாறு விவரங்கள் அறிக்கையாக சமர்ப்பித்துள்ளார்.

ச. டி. லா

வனச்சரக அலுவலரின் அறிக்கையினை பரிசீலனை செய்ததில் குவாரி பணி செய்ய உள்ள தருமபுரி மாவட்டம், பென்னாகரம் வட்டம், அஜ்ஜனஅள்ளி கிராமம், புல எண். 824/3 பரப்பு 2.11.5 ஹெக்டர் மற்றும் 823 (பகுதி) பரப்பு 2.38.5 ஹெக்டர் அருகாமையில் தேசிய பூங்காக்கள், பாதுகாக்கப்பட்ட பகுதி மற்றும் யானை வழித்தடம் ஏதும் இல்லை என்பதை தெரிவித்துக்கொள்வதோடு 25 கி.மீ சுற்றளவில் உள்ள காப்புக்காடுகள் மற்றும் வன உயிரின சரணாலயத்தின் தொலைவு விவரம் பின்வருமாறு.

| வ. எண். | குவாரியின் புல எண்                   | குவாரியின் புல எண்ணிற்கும் காப்புக்காட்டிற்கும் உள்ள சுற்றளவு (கிலோ மீட்டர்) | காப்புக்காடு மற்றும் வனஉயிரின சரணாலயத்தின் தொலைவு விவரம் |
|---------|--------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------|
| 1.      | அஜ்ஜனஅள்ளி புல எண் 824/3 மற்றும் 823 | 1.57 கிலோ மீட்டர்                                                            | பேவனூர் காப்புக்காடு                                     |
|         |                                      | 3.34 கிலோ மீட்டர்                                                            | மசக்கல் காப்புக்காடு                                     |
|         |                                      | 1.00 கிலோ மீட்டர்                                                            | பதனவாடி காப்புக்காடு                                     |
|         |                                      | 8.74                                                                         | காவேரி தெற்கு வனஉயிரின சரணாலயம்                          |
|         |                                      | 7.89 கிலோ மீட்டர்                                                            | கர்நாடக மாநில காவேரி வனஉயிரின சரணாலயம்                   |

ஓம்./ கே.வி.அப்பால நாயுடு,  
மாவட்ட வன அலுவலர்,  
தருமபுரி வனக்கோட்டம்,  
தருமபுரி.

// உ.ந.உ.ப. //

  
கண்காணிப்பாளர்.  
12/06/2023





National Accreditation Board for Education and Training

## Certificate of Accreditation

**Geo Technical Mining Solutions, Dharmapuri**

**5/1485-3, Salem Main Road, Elakkiyampatty, Dharmapuri, Tamil Nadu**

*The organization is accredited as **Category-A** under the QCI-NABET Scheme for Accreditation of EIA Consultant Organization, Version 3: for preparing EIA/EMP reports in the following Sectors.*

| S. No | Sector Description                                             | Sector (as per) |           | Cat. |
|-------|----------------------------------------------------------------|-----------------|-----------|------|
|       |                                                                | NABET           | MoEFCC    |      |
| 1.    | Mining of minerals - including opencast and underground mining | 1               | 1 (a) (i) | A    |

*Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RAAC minutes dated January 24, 2024, posted on QCI-NABET website.*

*The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no QCI/NABET/ENV/ACO/24/3142 dated Feb 19, 2024. The accreditation needs to be renewed before the expiry date by Geo Technical Mining Solutions, Dharmapuri following due process of assessment.*

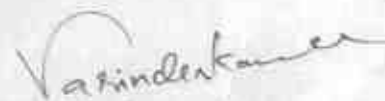
Issue Date  
Feb 19, 2024

Valid up to  
Dec 31, 2026



  
Mr. Ajay Kumar Jha  
Sr. Director, NABET

Certificate No.  
NABET/EIA/23-26/RA 0319

  
Prof (Dr) Varinder S Kanwar  
(CEO NABET)

*For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.*