

# Application Form (Draft EIA Report)

For

Thiru.S. Raghu

Proposed Rough stone Quarry – 1.30.0 Ha  
at

S.F.No. 381(Part-1) of Gopanapalli Village, Hosur Taluk,  
Krishnagiri District, Tamilnadu State

Sector No. 1(a) (Sector No. 1 as per NABET)

Category of the Project: B1 Cluster Mining

***Baseline Period: January, February & March 2023***

*Environmental Consultant  
& Laboratory details:*  
**Ecotech Labs Pvt Ltd,**



No 48, 2nd Main road,  
South extension Ram nagar,  
Pallikaranai, Chennai -600100.

*Proponent details:*

Thiru.S.Raghu,  
S/O. Sreeramaiya,  
D.No. 6/202,  
Anusonai village,  
Bommathathanur post,  
Denkanikottai Taluk,  
Krishnagiri District.



Thiru.S.Raghu,  
S/o. Sreeramaiya,  
D.No. 6/202,  
Anusonai Village,  
Bommathathanur Post,  
Denkanikottai Taluk,  
Krishnagiri District

---

## UNDERTAKING

I, Thiru.S.Raghu, undertaking that the Draft Environmental Impact Assessment (EIA) Report for Rough Stone Quarry over an extent of 1.30.0 Ha at S.F.No. 381(Part-1) of Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamilnadu State under project category B1 and Schedule S.No.1(a)

TOR issued by the State Expert Appraisal Committee, TN vide Letter No. SEIAA-TN/F. No. 9566/ SEAC/ToR-1326/2023 Dated: 10.02.2023.

I, hereby assure that all the information and data provided in the EIA report is accurate, true and correct and owns responsibility for the same.

Place: Krishnagiri

Date:

Yours faithfully

Thiru. S.Raghu

Plot No.48A, 2nd Main Road,  
Ram Nagar, South Extension,  
Pallikarznai, Chennai - 600 100  
GST NO. 33AADCE6103A22H  
PAN NO: AADCE6103A



**Eco Tech Labs Pvt Ltd**

Cell No: 98400 87542  
Email : info@ecotechlabs.in  
Website : www.ecotechlabs.in  
CIN : U74900TN2014PTC094895

## UNDERTAKING

I, Dr. A. Dhamodharan, Managing Director confirms that this Draft EIA Report of Rough Stone Quarry over an extent of 1.30.0 Ha at S.F.No. 381(Part-1) of Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamilnadu State has been prepared at M/s. Ecotech Labs Pvt. Ltd., Chennai.

I also confirm that I shall be fully accountable for any misleading information mentioned in this Report.

Signature:

Name: Dr. A. Dhamodharan

Designation: Managing Director

Name of the EIA Consultant Organization: M/s. Ecotech Labs Pvt Ltd., Chennai.

NABET Certificate No: NABET/EIA/2124/SA 0147

Date:

Place: Chennai

**Declaration by Experts contributing to the EIA of Existing Rough Stone Quarry- 2.50.0 Ha by Thiru.S.Raghu at S.F.No. (381Part-1) of Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamilnadu State** I, hereby, certify that I was a part of the EIA team in the following capacity that developed the above EIA.

**EIA Coordinator:** Dr. A. Dhamodharan





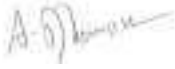


**Dr. A. DHAMODHARAN**  
(NABET APPROVED EIA COORDINATOR)  
NABET/EIA/2124/SA 0147  
Environmental Consultant  
Eco Tech Labs Pvt. Ltd  
Plot No.48A, 2nd Main Road, Ram Nagar South Extn.  
Pallikaranai, Chennai - 600 100.





**Signature:**

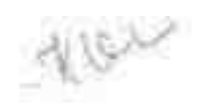

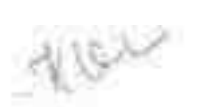
**Period of involvement:** 01.03.2022 to Till now

**Contact information:** M/s. Ecotech Labs Pvt Ltd.,  
No. 48, 2<sup>nd</sup> Main road, Ram Nagar South Extension,  
Pallikaranai

| S. No. | Functional areas | Name of the experts   | Involvement (period and task)  | Signature and date  |
|--------|------------------|-----------------------|--|---|
| 1      | AP               | Mrs. K. Vijayalakshmi | 1. Selection of Baseline Monitoring stations based on the wind direction<br>2. Interpretation of Baseline data by comparing it with standards prescribed by CPCB against the type of area<br>3. Identification of sources of air pollution and suggesting mitigation measures to minimize impact<br><i>Period: March 2022 – Till now</i> |  |

|   |     |                           |   |   |
|---|-----|---------------------------|---|---|
| 2 | WP  | Dr. A.<br>Dhamodhara<br>n | <p>1. Selection of baseline Monitoring Locations for Ground water analysis and also identifying nearest surface water to be studied.</p> <p>2. Interpretation of baseline data collected</p> <p>3. Identification of impacts based on the baseline study conducted and also to the ground water and nearby surface water due to the proposed project</p> <p>4. Preparation of suitable and appropriate mitigation plan.</p> <p><b>Period: March 2022 – Till now</b></p> |    |
| 3 | SHW | Dr. A.<br>Dhamodhara<br>n | <p>1. Identification of nature of solid waste generated</p> <p>2. Categorization of the generated waste and estimating the quantity of waste to be generated based on the per capita basis. Identification of impacts of SHW on Environment</p> <p>3. Suggesting suitable mitigation measures by recommending appropriate disposal method for each category of waste generated</p> <p>4. Top soil and refuse management</p> <p><b>Period: March 2022 – Till now</b></p> |    |
| 4 | SE  | Mr. S.<br>Pandian         | <p>1. Primary data collection through the census questionnaire</p> <p>2. Obtaining Secondary data from authenticated sources and incorporating the same in EIA report.</p> <p>3. Impact assessment &amp; proposing suitable mitigation plan</p> <p>4. CSR budget allocation by discussing with the local body and allotting the same for need based activity.</p> <p><b>Period: March 2022 – Till now</b></p> <p><b>*Involves Public Hearing</b></p>                    |  |
| 5 | EB  | Dr. A.<br>Dhamodhara<br>n | <p>1. Primary data collection through field survey and sheet observation for ecology and biodiversity</p> <p>2. Secondary Collection through various authenticated sources</p> <p>3. Prediction of anticipated impacts and suggesting appropriate mitigation measures.</p>  |  |

|   |     |                       |   |   |
|---|-----|-----------------------|---|---|
|   |     |                       | <b><i>Period: March 2022 – Till now</i></b>   |   |
| 6 | HG  | Dr. T. P. Natesan     | <p>1. Study of existing surface drainage arrangements in the core and buffer zone, impact due to mining on these drainage courses and suggestion of mitigative measures</p> <p>2. Determination of groundwater use pattern, development of rainwater harvesting program. Storm water management through garland drainage system.</p> <p><b><i>Period: March 2022 – Till now</i></b></p>   |    |
| 7 | GEO | Dr. T. P. Natesan     | <p>1. Field survey for assessing regional and local geology, aquifer distribution, Determination of groundwater use pattern, development of rainwater harvesting program.</p> <p><b><i>Period: March 2022 – Till now</i></b></p>  |    |
| 8 | SC  | Dr. A. Dhamodharan    | <p>1. Interpretation of baseline report</p> <p>2. Identification of possible impacts on soil, prediction of soil conservation and suggesting suitable mitigation measures.</p> <p><b><i>Period: March 2022 – Till now</i></b></p>   |  |
| 9 | AQ  | Mrs. K. Vijayalakshmi | <p>1. Collection of Meteorological data for the baseline study period</p> <p>2. Plotting wind rose plot and thereby selecting the monitoring locations based on the wind pattern</p> <p>3. Estimation of sources of air emissions and air quality modeling is done</p> <p>4. Interpretation of the results obtained</p> <p>5. Identification of the impacts and suggesting suitable mitigation measures.</p> <p><b><i>Period: March 2022 – Till now</i></b></p> |  |

|    |    |                       |   |   |
|----|----|-----------------------|---|---|
| 10 | NV | Mrs. K. Vijayalakshmi | <ol style="list-style-type: none"> <li>1. Selection of monitoring locations</li> <li>2. Interpretation of baseline data</li> <li>3. Prediction of impacts due to noise pollution and suggestion of appropriate mitigation measures</li> </ol> <p><b>Period: May 2022 – Till now</b></p>   |  |
| 11 | LU | Dr. T. P. Natesan     | <ol style="list-style-type: none"> <li>1. Collection of Remote sensing satellite data to study the land use pattern.</li> <li>2. Primary field survey and limited field verification for land categorization in the study area</li> <li>3. Preparation of Land use map using Satellite data for 10km radius around the project site.</li> </ol> <p><b>Period: March 2022 – Till now</b></p> |  |
| 12 | RH | Mrs. K. Vijayalakshmi | <ol style="list-style-type: none"> <li>1. Identification of the risk</li> <li>2. Interpreting consequence contours</li> <li>3. Suggesting risk mitigation measures</li> </ol> <p><b>Period: March 2022 – Till now</b></p>   |  |



**Declaration by the Head of the accredited consultant organization/ authorized person**

I, Dr. A. Dhamodharan, hereby, confirm that the above-mentioned experts prepared the EIA report of mining project at Survey Numbers. S.F.No. 381(Part-1) of Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamilnadu State. I also confirm that the consultant organization shall be fully accountable for any misleading information mentioned in this statement.

**Signature:**



**Name:** Dr. A. Dhamodharan

**Designation:** Managing Director

**Name of the EIA consultant organization:** M/s. Eco Tech Labs Private Limited

**NABET Certificate No. & Issue Date:** NABET/EIA/2124/SA 0147

|                          |   |                                    |
|--------------------------|---|------------------------------------|
| <b>Project</b>           | <b><i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i></b>       | <b><i>Draft EIA<br/>Report</i></b> |
| <b>Project Proponent</b> | <b><i>Thiru.S.Raghu</i></b>   |                                    |
| <b>Project Location</b>  | <b><i>Gopanapalli village, hosur taluk, kishnagiri district</i></b> |                                    |

## Contents

|          |  |           |
|----------|--|-----------|
|          | <i>EXECUTIVE SUMMARY</i> .....                       | 10        |
| <b>1</b> | <b>INTRODUCTION</b> .....                            | <b>26</b> |
| 1.1      | PREAMBLE.....  | 26        |
| 1.2      | GENERAL INFORMATION ON MINING OF MINERALS .....      | 26        |
| 1.3      | ENVIRONMENTAL CLEARANCE.....                         | 26        |
| 1.4      | TERMS OF REFERENCE (TOR).....                        | 27        |
| 1.5      | POST ENVIRONMENTAL CLEARANCE MONITORING .....        | 28        |
| 1.5.1    | <i>Methodology adopted</i> .....                     | 28        |
| 1.6      | GENERIC STRUCTURE OF THE EIA DOCUMENT.....           | 28        |
| 1.7      | DETAILS OF PROJECT PROPONENT.....                    | 30        |
| 1.8      | BRIEF DESCRIPTION OF THE PROJECT .....               | 30        |
| 1.8.1    | <i>Project Nature, Size &amp; Location</i> .....     | 30        |
| <b>2</b> | <b>PROJECT DESCRIPTION</b> .....                     | <b>32</b> |
| 2.1      | GENERAL .....  | 32        |
| 2.1.1    | <i>Need for the project:</i> .....                   | 34        |
| 2.2      | BRIEF DESCRIPTION OF THE PROJECT.....                | 34        |
| 2.2.1    | <i>Site Connectivity:</i> .....                      | 37        |
| 2.3      | LOCATION DETAILS: .....                              | 38        |
| 2.3.1    | <i>Site Photographs</i> .....                        | 41        |
| 2.3.2    | <i>Land Use Breakup of the Mine Lease Area</i> ..... | 42        |
| 2.3.3    | <i>Human Settlement</i> .....                        | 42        |
| 2.4      | LEASEHOLD AREA .....                                 | 42        |
| 2.5      | GEOLOGY.....   | 43        |
| 2.6      | QUALITY OF RESERVES: .....                           | 45        |
| 2.6.1    | <i>Geological Reserves</i> .....                     | 46        |
| 2.6.2    | <i>Mineable Reserves</i> .....                       | 46        |
| 2.6.3    | <i>Year wise Production Plan</i> .....               | 47        |

|                          |  |                             |
|--------------------------|--|-----------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</b>       | <b>Draft EIA<br/>Report</b> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>   |                             |
| <b>Project Location</b>  | <b>Gopanapalli village, hosur taluk, kishnagiri district</b> |                             |

|          |   |           |
|----------|---|-----------|
| 2.7      | TYPE OF MINING .....                          | 50        |
| 2.7.1    | <i>Method of Working:</i> .....               | 50        |
| 2.7.2    | <i>Overburden</i> .....                       | 50        |
| 2.7.3    | <i>Machineries to be used</i> .....           | 50        |
| 2.7.4    | <i>Blasting:</i> .....                        | 50        |
| 2.8      | MAN POWER REQUIREMENTS .....                  | 52        |
| 2.8.1    | <i>Water Requirement</i> .....                | 52        |
| 2.9      | PROJECT IMPLEMENTATION SCHEDULE .....         | 53        |
| 2.10     | SOLID WASTE MANAGEMENT .....                  | 53        |
| 2.11     | MINE DRAINAGE .....                           | 54        |
| 2.12     | POWER REQUIREMENT.....                        | 54        |
| 2.13     | PROJECT COST .....                            | 54        |
| 2.14     | GREENBELT.....                                | 54        |
| <b>3</b> | <b>DESCRIPTION OF THE ENVIRONMENT .....</b>   | <b>56</b> |
| 3.1      | GENERAL: .....                                | 56        |
| 3.1.1    | <i>Study Area:</i> .....                      | 56        |
| 3.1.2    | <i>Instruments Used</i> .....                 | 57        |
| 3.1.3    | <i>Baseline Data Collection Period:</i> ..... | 57        |
| 3.1.4    | <i>Frequency of Monitoring</i> .....          | 57        |
| 3.1.5    | <i>Secondary data Collection</i> .....        | 59        |
| 3.1.6    | <i>Study area details</i> .....               | 59        |
| 3.1.7    | <i>Site Connectivity:</i> .....               | 61        |
| 3.2      | LAND USE ANALYSIS.....                        | 61        |
| 3.2.1    | <i>Land Use Classification</i> .....          | 61        |
| 3.2.2    | <i>Methodology</i> .....                      | 62        |
| 3.2.3    | <i>Satellite Data</i> .....                   | 63        |
| 3.2.4    | <i>Scale of mapping</i> .....                 | 63        |
| 3.2.5    | <i>Interpretation Technique</i> .....         | 63        |
| 3.2.6    | <i>Field Verification</i> .....               | 64        |

|                          |  |                             |
|--------------------------|--|-----------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</b>       | <b>Draft EIA<br/>Report</b> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>   |                             |
| <b>Project Location</b>  | <b>Gopanapalli village, hosur taluk, kishnagiri district</b> |                             |

|       |  |     |
|-------|--|-----|
| 3.2.7 | <i>Description of the Land Use / land cover classes</i> .....  | 65  |
| 3.3   | WATER ENVIRONMENT .....  | 68  |
| 3.3.1 | <i>Contour &amp; Drainage</i> .....  | 68  |
| 3.3.2 | <i>Geomorphology</i> .....   | 68  |
| 3.3.3 | <i>Geology:</i> .....  | 69  |
| 3.3.4 | <i>Hydrogeology</i> .....  | 71  |
| 3.3.5 | <i>Ground water quality monitoring</i> .....   | 72  |
| 3.3.6 | <i>Interpretation of results:</i> .....  | 75  |
| 3.3.7 | <i>Surface Water Analysis</i> .....  | 77  |
| 3.3.8 | <i>Selection of Sampling Locations:</i> .....  | 80  |
| 3.4   | AMBIENT AIR QUALITY .....  | 81  |
| 3.4.1 | <i>Ambient Air Quality: Results &amp; Discussion</i> .....   | 81  |
| 3.4.2 | <i>Interpretation of ambient air quality:</i> .....  | 83  |
| 3.5   | NOISE ENVIRONMENT: .....   | 85  |
| 3.5.1 | <i>Day Noise Level (Leq day)</i> .....   | 86  |
| 3.5.2 | <i>Night Noise Level (Leq Night)</i> .....   | 86  |
| 3.6   | SOIL ENVIRONMENT .....   | 87  |
| 3.6.1 | <i>Baseline Data:</i> .....  | 87  |
| 3.7   | ECOLOGY AND BIODIVERSITY .....   | 90  |
| 3.7.1 | <i>Methods available for floral analysis:</i> .....  | 90  |
| 3.7.2 | <i>Field study &amp; Methodology adopted:</i> .....  | 91  |
| 3.7.3 | <i>Study outcome:</i> .....  | 91  |
| 3.7.4 | <i>Calculation of species diversity by Shannon – wiener Index, Evenness and richness by Margalef:</i> ....     | 97  |
| 3.7.5 | <i>Calculation of species diversity by Shannon – wiener Index, Evenness and richness by Margalef for trees</i> | 97  |
| 3.7.6 | <i>Floral study in the Buffer Zone:</i> .....  | 100 |
| 3.7.7 | <i>Faunal Communities</i> .....  | 100 |
| 3.8   | DEMOGRAPHY AND SOCIO ECONOMICS .....   | 103 |
| 3.9   | TRAFFIC IMPACT ASSESSMENT .....  | 105 |

|                          |   |                                |
|--------------------------|---|--------------------------------|
| <b>Project</b>           | <b><i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i></b>       | <b><i>Draft EIA Report</i></b> |
| <b>Project Proponent</b> | <b><i>Thiru.S.Raghu</i></b>   |                                |
| <b>Project Location</b>  | <b><i>Gopanapalli village, hosur taluk, kishnagiri district</i></b> |                                |

|          |   |            |
|----------|---|------------|
| <b>4</b> | <b>ANTICIPATED ENVIRONMENTAL IMPACTS &amp; MITIGATION MEASURES .....</b>                          | <b>108</b> |
| 4.1      | INTRODUCTION .....  | 108        |
| 4.2      | LAND ENVIRONMENT: .....   | 109        |
| 4.3      | WATER ENVIRONMENT: .....  | 110        |
| 4.4      | AIR ENVIRONMENT: .....  | 112        |
| 4.4.1    | <i>Source Characterization .....</i>  | <i>114</i> |
| 4.5      | NOISE ENVIRONMENT:.....   | 117        |
| 4.6      | BIOLOGICAL ENVIRONMENT:.....  | 118        |
| 4.7      | SOCIO ECONOMIC ENVIRONMENT:.....  | 119        |
| 4.8      | OTHER IMPACTS: .....  | 121        |
| <b>5</b> | <b>ANALYSIS OF ALTERNATIVES.....</b>  | <b>122</b> |
| 5.1      | GENERAL .....   | 122        |
| 5.1.1    | <i>Analysis for Alternative Sites and Mining Technology .....</i>                                 | <i>122</i> |
| <b>6</b> | <b>ENVIRONMENTAL MONITORING PROGRAM.....</b>  | <b>124</b> |
| 6.1      | GENERAL: .....  | 124        |
| <b>7</b> | <b>ADDITIONAL STUDIES.....</b>  | <b>128</b> |
| 7.1      | GENERAL .....   | 128        |
| 7.1.1    | <i>Public Hearing: .....</i>  | <i>128</i> |
| 7.1.2    | <i>Risk assessment: .....</i>   | <i>128</i> |
| 7.1.3    | <i>Identification of Hazard .....</i>   | <i>129</i> |
| 7.1.4    | <i>General Precautionary measures for the Risk involved in the proposed mine: .....</i>           | <i>131</i> |
| 7.1.5    | <i>Safety Team:.....</i>  | <i>131</i> |
| 7.1.6    | <i>Emergency Control Centre.....</i>  | <i>132</i> |
| 7.2      | DISASTER MANAGEMENT .....   | 132        |
| 7.2.1    | <i>Emergency Management Plan For Proposed Mines On Site- Offsite Emergency Preparedness Plan:</i> |            |
|          | <i>132</i>  |            |
| 7.2.1    | <i>Onsite off-site emergency Plan:.....</i>   | <i>133</i> |
| 7.2.2    | <i>Emergency Plan: .....</i>  | <i>133</i> |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                         |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                         |

|           |   |            |
|-----------|---|------------|
| 7.2.3     | <i>Emergency Control:</i> .....                       | 133        |
| 7.3       | NATURAL RESOURCE CONSERVATION .....                   | 134        |
| 7.4       | RESETTLEMENT AND REHABILITATION:.....                 | 134        |
| <b>8</b>  | <b>PROJECT BENEFITS .....</b>                         | <b>135</b> |
| 8.1       | GENERAL .....   | 135        |
| 8.1.1     | <i>Physical Benefits</i> .....                        | 135        |
| 8.2       | SOCIAL BENEFITS.....                                  | 135        |
| 8.3       | PROJECT COST / INVESTMENT DETAILS.....                | 136        |
| <b>9</b>  | <b>ENVIRONMENTAL MANAGEMENT PLAN .....</b>            | <b>140</b> |
| 9.1       | INTRODUCTION .....                                    | 140        |
| 9.2       | SUBSIDENCE .....                                      | 140        |
| 9.3       | MINE DRAINAGE .....                                   | 140        |
| 9.3.1     | <i>Storm water Management</i> .....                   | 140        |
| 9.3.2     | <i>Drainage</i> .....                                 | 140        |
| 9.3.3     | <i>Administrative and Technical Setup</i> .....       | 141        |
| <b>10</b> | <b>SUMMARY &amp; CONCLUSION.....</b>                  | <b>144</b> |
| 10.1      | INTRODUCTION .....                                    | 144        |
| 10.2      | PROJECT OVERVIEW .....                                | 144        |
| 10.3      | JUSTIFICATION OF THE PROPOSED PROJECT .....           | 146        |
| <b>11</b> | <b>DISCLOSURE OF CONSULTANT.....</b>                  | <b>149</b> |
| 11.1      | INTRODUCTION .....                                    | 149        |
| 11.2      | ECO TECH LABS PVT. LTD – ENVIRONMENT CONSULTANT ..... | 149        |

|                          |  |                             |
|--------------------------|--|-----------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA<br/>Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                             |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                             |

## List Of Tables:

|  |           |
|--|-----------|
| TABLE 1-1: POST ENVIRONMENTAL CLEARANCE MONITORING .....   | 28        |
| TABLE 2-1: QUARRY WITHIN 500M RADIUS .....   | 32        |
| TABLE 2-2 SALIENT FEATURES OF THE PROJECT .....  | 34        |
| TABLE 2-3: LOCATION DETAILS .....  | 38        |
| TABLE 2-4: LAND USE PATTERN.....   | 42        |
| TABLE 2-5: HABITATION.....   | 42        |
| TABLE 2-6: DETAILS OF MINING .....   | 45        |
| <b>TABLE 2-7: GEOLOGICAL RESERVES .....</b>  | <b>46</b> |
| TABLE 2-8: MINEABLE RESERVES.....  | 46        |
| TABLE 2-9: YEAR WISE PRODUCTION PLAN .....   | 47        |
| TABLE 2-10: LIST OF MACHINERIES USED .....   | 50        |
| TABLE 2-11: DRILLING AND BLASTING PARAMETERS.....  | 51        |
| TABLE 2-12: BLASTING DETAILS .....   | 51        |
| TABLE 2-13: MAN POWER REQUIREMENTS.....  | 52        |
| TABLE 2-14: WATER REQUIRMENT .....   | 53        |
| TABLE 2-15: SOLID WASTE MANAGEMENT.....  | 53        |
| TABLE 3-1: FREQUENCY OF SAMPLING AND ANALYSIS .....  | 57        |
| TABLE 3-2 STUDY AREA DETAILS .....   | 59        |
| TABLE 3-3 LAND USE PATTERN.....  | 67        |
| TABLE 3-4 GROUND WATER QUALITY ANALYSIS.....   | 72        |
| TABLE 3-5: STANDARD PROCEDURE .....  | 73        |
| TABLE 3-6 GROUND WATER SAMPLING RESULTS.....   | 74        |
| TABLE 3-7 SURFACE WATER SAMPLE RESULTS .....   | 77        |
| TABLE 3-8: SELECTION OF SAMPLING LOCATION.....   | 81        |
| <b>TABLE 3-9 AMBIENT AIR QUALITY.....</b>  | <b>82</b> |
| TABLE 3-10 NOISE ANALYSIS.....   | 85        |
| TABLE 3-11 DAY NOISE LEVEL (LEQ DAY).....  | 86        |
| TABLE 3-12 NIGHT NOISE LEVEL (LEQ NIGHT).....  | 86        |
| TABLE 3-13 SOIL QUALITY ANALYSIS.....  | 88        |
| TABLE 3-14 SOIL QUALITY ANALYSIS.....  | 88        |
| TABLE 3-15 CALCULATION OF DENSITY, FREQUENCY (%), DOMINANCE, RELATIVE DENSITY, RELATIVE FREQUENCY,<br>RELATIVE DOMINANCE & IMPORTANT VALUE INDEX ..... | 91        |
| TABLE 3-16 TREE SPECIES IN THE CORE ZONE .....   | 93        |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                         |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                         |

|   |            |
|---|------------|
| TABLE 3-17 SHRUBS IN THE CORE ZONE.....                               | 95         |
| TABLE 3-18 HERBS & GRASSES IN THE CORE ZONE.....                      | 96         |
| TABLE 3-19 CALCULATION OF SPECIES DIVERSITY .....                     | 97         |
| TABLE 3-20 LIST OF FAUNA SPECIES.....                                 | 102        |
| TABLE 3-21: DEMOGRAPHY SURVEY STUDY .....                             | 104        |
| <b>TABLE 3-22: NO. OF VEHICLES PER DAY .....</b>                      | <b>106</b> |
| <b>TABLE 3-23: EXISTING TRAFFIC SCENARIO AND LOS .....</b>            | <b>106</b> |
| <b>TABLE 4-1 EMISSION FACTORS FOR UNCONTROLLED MINING .....</b>       | <b>116</b> |
| TABLE 5-1: ALTERNATIVE FOR TECHNOLOGY AND OTHER PARAMETERS.....       | 122        |
| TABLE 6-1: ENVIRONMENTAL MONITORING PROGRAMME .....                   | 124        |
| TABLE 6-2: MONITORING SCHEDULE DURING MINING .....                    | 127        |
| TABLE 9-1: IMPACTS AND MITIGATION MEASURES .....                      | 142        |
| TABLE 10-1: PROJECT OVERVIEW.....                                     | 144        |
| TABLE 10-2: ANTICIPATE IMPACTS & APPROPRIATE MITIGATION MEASURES..... | 147        |



|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                         |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                         |

**LIST OF FIGURES:**

|  |     |
|--|-----|
| FIGURE 1.1: LOCATION MAP OF THE PROJECT SITE .....                                 | 31  |
| FIGURE 2.1: LOCATION MAP OF THE PROJECT SITE .....                                 | 36  |
| FIGURE 2.2: GOOGLE EARTH IMAGE AND COORDINATES OF THE PROJECT SITE.....            | 37  |
| FIGURE 2.3: SITE CONNECTIVITY .....  | 38  |
| FIGURE 2.4: TOPO MAP OF PROJECT SITE .....   | 39  |
| FIGURE 2.5: ENVIRONMENTAL SENSITIVITY WITHIN 15KM RADIUS .....                     | 40  |
| FIGURE 2.6: SITE PHOTOGRAPHS .....   | 41  |
| FIGURE 2.7: GEOMORPHOLOGY .....  | 44  |
| FIGURE 2.8 LITHOLOGY .....   | 45  |
| FIGURE 2.9 YEAR WISE PRODUCTION PLAN .....   | 49  |
| FIGURE 3.1: SITE CONNECTIVITY.....   | 61  |
| FIGURE 3.2 FLOW CHART SHOWING METHODOLOGY OF LAND USE MAPPING.....                 | 63  |
| FIGURE 3.3 LAND USE CLASSES AROUND 10 KM RADIUS FROM THE PROJECT SITE .....        | 67  |
| FIGURE 3.4 GEOMORPHOLOGY WITHIN 10KM FROM THE PROJECT SITE .....                   | 69  |
| FIGURE 3.5 GEOLOGY WITHIN 10KM FROM THE PROJECT SITE .....                         | 70  |
| FIGURE 3.6 GROUND WATER PROSPECTS WITHIN 5 KM RADIUS OF THE PROJECT SITE .....     | 72  |
| FIGURE 3.7 WIND ROSE .....   | 80  |
| FIGURE 3.8 CONCENTRATION OF PM10 ( $\mu\text{G}/\text{M}^3$ ) IN STUDY AREA .....  | 83  |
| FIGURE 3.9 CONCENTRATION OF PM2.5 ( $\mu\text{G}/\text{M}^3$ ) IN STUDY AREA ..... | 84  |
| FIGURE 3.10 CONCENTRATION OF SOX ( $\mu\text{G}/\text{M}^3$ ) IN STUDY AREA.....   | 84  |
| FIGURE 3.11 CONCENTRATION OF NOX ( $\mu\text{G}/\text{M}^3$ ) IN STUDY AREA .....  | 85  |
| FIGURE 3.12 SOIL EROSION PATTERN WITHIN 5 KM RADIUS OF THE PROJECT SITE.....       | 87  |
| FIGURE 3.13 SOCIO ECONOMIC MAP SURROUNDING THE PROJECT SITE.....                   | 104 |
| FIGURE 3.14: SITE CONNECTIVITY .....   | 106 |

|                          |  |                             |
|--------------------------|--|-----------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA<br/>Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                             |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                             |

## **ABBREVIATION**

- LU –Land use
- AP – Air Pollution monitoring, prevention and control
- AQ- Meteorology, Air quality modeling and prediction
- WP – Water pollution monitoring, prevention and control
- EB- Ecology and Biodiversity
- NV- Noise & Vibration
- SE- Socio-economics
- HG- Hydrology, ground water and water conservation
- GEO –Geology
- RH – Risk assessment and hazards management
- SHW –Solid and Hazardous waste management
- SC- Soil conservation

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                         |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                         |

## EXECUTIVE SUMMARY

### **1.Project Background:**

The Proposed project total extent area is 1.30.00 Ha, It is a government Poramboke land in S.F.No.381 (part-1) of Gopanapalli Village, Hosur Taluk, and Krishnagiri District. The category of project is B1, It is a Rough stone quarry in Gopanapalli village. The area is situated on hilly terrain area sloping towards western side covered with Rough Stone which does not sustain any type of vegetation.

The quarry operation is proposed to carry out with conventional open cast mechanized method using shot-hole drilling and smooth blasting. Roughstone is removed by using hydraulis excavators. proposed bench height is 7 m and bench width is 5 m. The thickness of topsoil in this area is 2.0 m .

The quarry operation is proposed up to depth of 51 m-topsoil 2.0 m + Rough stone 49 m (surface ground level above height is 8 m and surface ground level below depth is 43 m ). The total Geological Resources is about 616028 m<sup>3</sup> of Rough stone.The Mineable Reserves and proposed yearwise production is carried out 231,238 m<sup>3</sup> of Roughstone to be mined for ten years. The precise area letter and relevant mining laws in force. Mining Plan was approved by The Deputy Director, Department of Geology & Mining,Krishnagiri district vide letter Rc.No.539/2022/Mines dated 04.05.2022. Precise area communication letter received from the district collector, Krishnagiri district vide letter Rc.No.539/2022/Mines,dated 04.05.2022.

The project area does not fall in Hill Area Conservation Authority region. There is no interstate boundary, CRZ zone, Western Ghats, notified Bird sanctuaries, wild life sanctuaries as per Wild life protection Act 1972, within the radius of 15Km.

|                          |  |                             |
|--------------------------|--|-----------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</b>       | <i>Draft EIA<br/>Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>   |                             |
| <b>Project Location</b>  | <b>Gopanapalli village, hosur taluk, kishnagiri district</b> |                             |

## 2. NATURE & SIZE OF THE PROJECT

The Existing Rough Stone Quarry over an extent of 1.30.00 Hectares land is located at Gopanapalli Village, Hosur Taluk, Krishnagiri District.

|                           |                      |
|---------------------------|----------------------|
| Mineral intends to quarry | : Rough stone Quarry |
| District                  | : krishnagiri        |
| Taluk                     | : Hosur              |
| Village                   | : Krishnagiri        |
| S. F. Nos.                | :381 (part-1)        |
| Extent                    | : 1.30.00 Hectares   |

**Table 1: Brief Description of the Project**

| S. No | Particulars              | Details   |
|-------|--------------------------|---|
| 1     | Latitude                 | Latitude : 12° 38' 05.49" N to 12° 38' 03.12" N   |
| 2     | Longitude                | Longitude : 77° 48' 43.41" E to 77° 48' 37.72" E  |
| 3     | Site Elevation above MSL | 840 m from MSL  |
| 4     | Topography               | Hilly terrain topography  |
| 5     | Land use of the site     | Government Poramboke  |
| 6     | Extent of lease area     | 1.30.00 Ha  |
| 7     | Nearest highway          | SH17 A , Hosur-Denkanikottai, 2.88 km, W  |
| 8     | Nearest railway station  | Kelamangalam Railway Station – 6.15 km, SE  |
| 9     | Nearest airport          | Kampegowda International Airport – 61.49 km, NNW  |
| 10    | Nearest town / city      | <ul style="list-style-type: none"> <li>• Town - Hosur - 11.54 Km, N</li> <li>• City - Hosur – 11.54 Km, N</li> <li>• District -Krishnagiri – 45.47Km, SE</li> </ul>   |
| 11    | Rivers / Canal           | <ul style="list-style-type: none"> <li>• Ponnaiyar River, 11.86 km, NE</li> </ul>   |
| 12    | Lake                     | <ul style="list-style-type: none"> <li>❖ Devaganapalli Lake, 1.71 km, NW</li> <li>❖ Nagondapalli Lake, 4.48km, NW</li> <li>❖ Achettapalli Lake, 5.61 km, N</li> <li>❖ Nanjappan Kodigai Eri, 5.80km, SE</li> <li>❖ Bynakanahalli kere, 5.63 km ,W</li> <li>❖ Mathukur kere,6.57 km, W</li> <li>❖ Uliveeranahally Kere,7.10 km ,WNW</li> <li>❖ Poonapalli Lake, 7.35 km, NW</li> <li>❖ Chinnatti Dam, 7.10 km ,SSE</li> <li>❖ Mathigiri lake, 7.36 km, N</li> <li>❖ NB Agraharam lake, 8.82 km, NNE</li> <li>❖ Gokul nagar Lake, 8.07 km, NNE</li> </ul> |

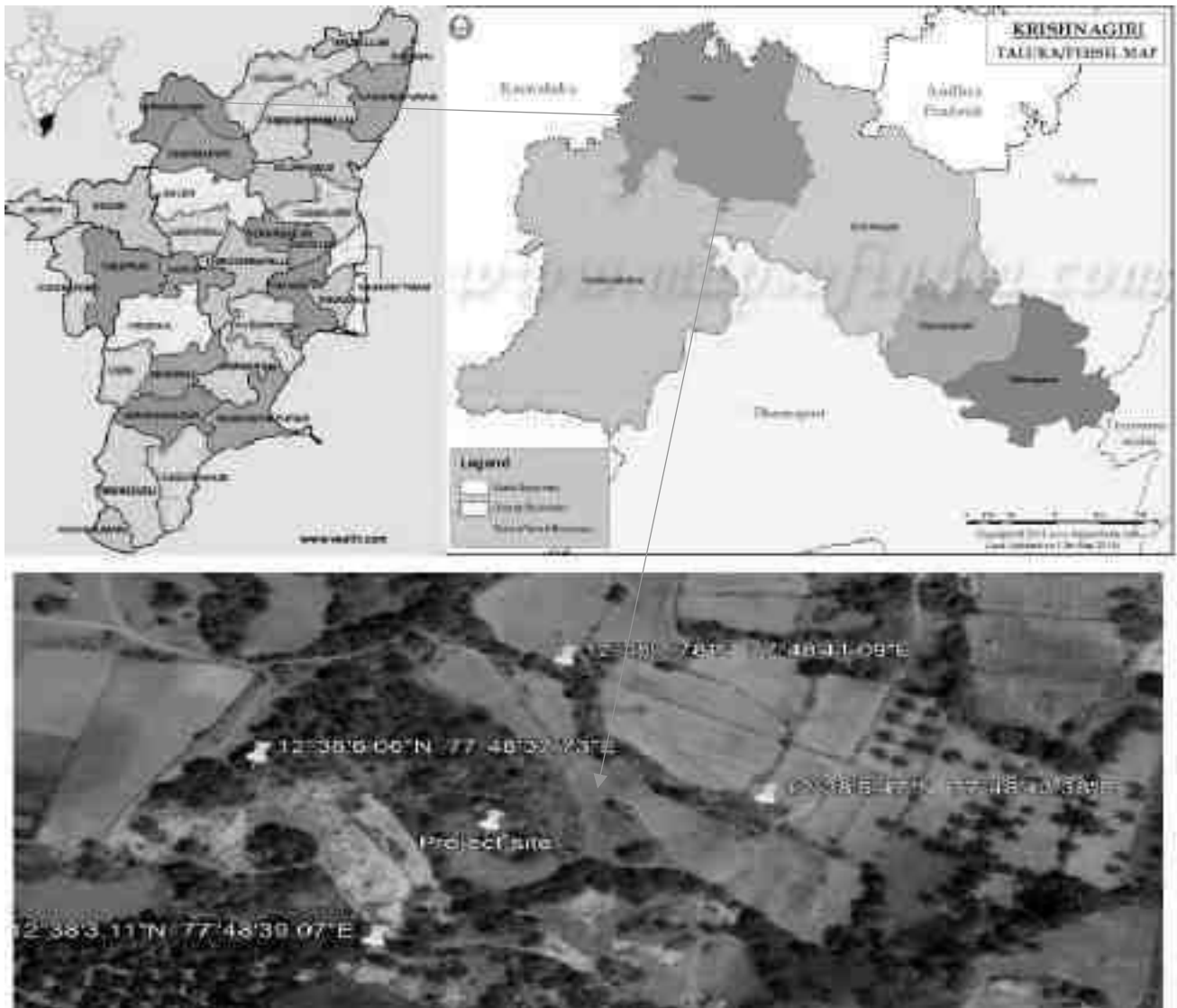
|                          |  |                             |
|--------------------------|--|-----------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA<br/>Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                             |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                             |

|    |                                       |   |
|----|---------------------------------------|---|
|    |                                       | ❖ Karapalli Lake, 8.89 km, NNE  |
| 13 | Hills / valleys                       | Nil in 15 km radius   |
| 14 | Archaeologically places               | Nil in 15 km radius   |
| 15 | National parks / Wildlife Sanctuaries | Nil in 15 km radius   |
| 16 | Reserved / Protected Forests          | ❖ Sanamavu Reserve Forest, 8.17 km, E<br>❖ Denkanikotta Reserve Forest, 13.75 km, S |
| 17 | Seismicity                            | Proposed Lease area comes under Seismic zone-II                                     |
| 18 | Defense Installations                 | Nil   |

## **2.NEED FOR THE PROJECT**

- ❖ Rough stone is quarried for producing crusher aggregates to the nearby building contractors, road contractors and nearby villagers.
- ❖ After the entire reserves mined out, the area will be used as water reservoir to have an artificial recharge to the nearby wells.
- ❖ The rough stone is hard and compact in nature. It can be crushed only in crushers for producing aggregates.
- ❖ As the mining continues, no reclamation or back filling is required.

|                          |  |                         |
|--------------------------|--|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</b>       | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>   |                         |
| <b>Project Location</b>  | <b>Gopanapalli village, hosur taluk, kishnagiri district</b> |                         |



**Figure 1: Location Map of the Project Site**

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                         |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                         |



**Figure 2: Google Image of the Project Site**

#### **4. CHARNOCKITE**

Generally, the Charnockite is grey to greenish colored, coarse to medium grained, greasy nature with or without garnet. Because of the limited outcrops, the quarry sections are studied to infer the various interrelationships between the litho units. Charnockite is interbanded nature with crystalline carbonate rocks are observed in most of the quarry in Pandalgudi, Lakshmipuram, Gopalapuram, Sundakottai chinnakamanpatti, Weathering of the Charnockite on the surface gives a deceptive look of gneiss and in the quarry sections at depth the fresh charnockite is exposed, which are well exemplified in almost all the Charnockite quarry sections.

|                          |  |                             |
|--------------------------|--|-----------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA<br/>Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                             |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                             |

## 5. GEOLOGICAL RESOURCES

Table 2. Geological resources

| GEOLOGICAL RESERVES |       |                  |                 |                 |                      |  |                                 |
|---------------------|-------|------------------|-----------------|-----------------|----------------------|--|---------------------------------|
| Section             | Bench | Length<br>in (m) | Width<br>in (m) | Depth<br>in (m) | Volume<br>in (Cu.m.) | Recoverable<br>Reserve<br>in<br>Cu.m(100%) | Topsoil<br>(Gravel)<br>in Cu.m. |
| XY-AB               | I     | 131              | 98              | 2               |                      |  | 25676                           |
|                     | II    | 100              | 98              | 5               | 49000                | 49000                                      |                                 |
|                     | III   | 131              | 98              | 5               | 64190                | 64190                                      |                                 |
|                     | IV    | 131              | 98              | 5               | 64190                | 64190                                      |                                 |
|                     | V     | 131              | 98              | 5               | 64190                | 64190                                      |                                 |
|                     | VI    | 131              | 98              | 5               | 64190                | 64190                                      |                                 |
|                     | VII   | 131              | 98              | 5               | 64190                | 64190                                      |                                 |
|                     | VIII  | 131              | 98              | 5               | 64190                | 64190                                      |                                 |
| Total=              |       |                  |                 |                 | 434140               | 434140                                     | 25676                           |

Table 3. Mineable Resources

| MINABLE RESERVES |       |                  |                 |                 |                      |   |                              |
|------------------|-------|------------------|-----------------|-----------------|----------------------|---|------------------------------|
| Section          | Bench | Length<br>in (m) | Width<br>in (m) | Depth<br>in (m) | Volume<br>in (Cu.m.) | Recoverable<br>Reserve<br>in Cu.m(100%) | Topsoil<br>(Gravel)<br>Cu.m. |
| XY-AB            | I     | 111              | 78              | 2               |                      |   | 17316                        |
|                  | II    | 88               | 76              | 5               | 33440                | 33440                                   |                              |
|                  | III   | 104              | 71              | 5               | 36920                | 36920                                   |                              |
|                  | IV    | 94               | 61              | 5               | 28670                | 28670                                   |                              |
|                  | V     | 84               | 51              | 5               | 21420                | 21420                                   |                              |
|                  | VI    | 74               | 41              | 5               | 15170                | 15170                                   |                              |
|                  | VII   | 64               | 31              | 5               | 9920                 | 9920                                    |                              |
|                  | VIII  | 54               | 21              | 5               | 5670                 | 5670                                    |                              |
| Total            |       |                  |                 |                 | 151210               | 151210                                  | 17316                        |



|                          |  |                             |
|--------------------------|--|-----------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA<br/>Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                             |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                             |

**Table 4. Year wise Production Plan**

| <b>YEARWISE DEVELOPMENT AND PRODUCTION</b> |                |              |                          |                         |                         |                                      |  |                                   |
|--|----------------|--------------|--------------------------|-------------------------|-------------------------|--------------------------------------|--|-----------------------------------|
| <b>YEAR</b>                                | <b>Section</b> | <b>Bench</b> | <b>Length<br/>in (m)</b> | <b>Width<br/>in (m)</b> | <b>Depth<br/>in (m)</b> | <b>Volume<br/>in (m<sup>3</sup>)</b> | <b>Recoverable<br/>Reserve<br/>in m<sup>3</sup> (100%)</b> | <b>Top Soil<br/>m<sup>3</sup></b> |
| I-YEAR                                     | XY-AB          | I            | 111                      | 78                      | 2                       |                                      |  | 17316                             |
|  |                | II           | 88                       | 76                      | 5                       | 33440                                | 33440  |                                   |
| TOTAL                                      |                |              |                          |                         |                         | 33440                                | 33440  | 17316                             |
| II-YEAR                                    | XY-AB          | III          | 52                       | 71                      | 5                       | 18460                                | 18460  |                                   |
| TOTAL                                      |                |              |                          |                         |                         | 18460                                | 18460  |                                   |
| III-YEAR                                   | XY-AB          | III          | 52                       | 71                      | 5                       | 18460                                | 18460  |                                   |
| TOTAL                                      |                |              |                          |                         |                         | 18460                                | 18460  |                                   |
| IV-YEAR                                    | XY-AB          | IV           | 52                       | 61                      | 5                       | 15860                                | 15860  |                                   |
| TOTAL                                      |                |              |                          |                         |                         | 15860                                | 15860  |                                   |
| V-YEAR                                     | XY-AB          | IV           | 42                       | 61                      | 5                       | 12810                                | 12810  |                                   |
|  |                | V            | 32                       | 51                      | 5                       | 8160                                 | 8160   |                                   |
| TOTAL                                      |                |              |                          |                         |                         | 20970                                | 20970  |                                   |
| GRAND TOTAL                                |                |              |                          |                         |                         | 107190                               | 107190   | 17316                             |

The proposed rate of production of Rough stone is estimated as 66801m<sup>3</sup> for next five (I-V) years.

The average proposed rate of production of Rough stone about 13360m<sup>3</sup>.

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                         |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                         |

### YEARWISE DEVELOPMENT AND PRODUCTION

| YEAR      | Section | Bench | Length in (m) | Width in (m) | Depth in (m) | Volume in (m <sup>3</sup> ) | Recoverable Reserve in m <sup>3</sup> (100%) |
|-----------|---------|-------|---------------|--------------|--------------|-----------------------------|--|
| VI-YEAR   | XY-AB   | V     | 52            | 51           | 5            | 13260                       | 13260  |
| VII-YEAR  |         | VI    | 37            | 41           | 5            | 7585                        | 7585   |
| VIII-YEAR |         | VI    | 37            | 41           | 5            | 7585                        | 7585   |
| IX-YEAR   |         | VII   | 64            | 31           | 5            | 9920                        | 9920   |
| X-YEAR    |         | VIII  | 54            | 21           | 5            | 5670                        | 5670   |
|           |         | TOTAL |               |              |              |                             | 44020  |

## 6. MINING

### Opencast mining

Opencast method of semi mechanized mining is adopted to extract Rough Stone. However, as far as the quarrying of Rough stone is concerned, observance of the provisions of Regulation 106 (2) (b) as above is seldom [possible due to various inherent petro genetic factors coupled with mining difficulties. Hence it is proposed to obtain relaxation to the provisions of the above regulation from the Director of mines safety for which necessary provision is available with the regulation 106 (2) (b) of MMR-1961, under Mine Act-1952.

### Process Description

- The reserves and resource are arrived based upon the Geological investigation
- Removal of Rough Stone by Excavators by Drilling and Blasting.
- Shallow Drilling With Jackhammer 25.5mm Dia.
- Minimum Blasting With Class 3 Explosives.

|                          |  |                             |
|--------------------------|--|-----------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA<br/>Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                             |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                             |

## 7. Water Requirement

This Rough stone quarry project does not require huge water and electricity for the project.

**Table 5. Water Balance**

| <b>Purpose</b>   | <b>Quantity</b> | <b>Sources</b>  |
|------------------|-----------------|---|
| Drinking Water   | 0.5 KLD         | Packaged Drinking water vendors available in Goolisandram Village which is about 0.37 km from NNW side of the area. |
| Green belt       | 0.75 KLD        | From Hired Water Tanker.  |
| Dust suppression | 0.75 KLD        | From Hired Water Tanker.  |
| <b>Total</b>     | <b>2.0 KLD</b>  |   |

## 8. Manpower

The nearby villagers will be getting employment benefits in the proposed working quarry.

**Table 6. Man Power**

|              |                                  |                   |               |
|--------------|----------------------------------|-------------------|---------------|
| 1            | Skilled                          | Operator          | 2             |
|              |                                  | Mechanic          | 1             |
|              |                                  | Blaster/Mat       | 1             |
| 2            | Semi-skilled                     | Driver            | 2             |
| 3            | Unskilled                        | Musdoor/Labours   | 5             |
|              |                                  | Unskilled-helpers | 4             |
| 4            | Management and Supervisory staff |                   | 3             |
| <b>Total</b> |                                  |                   | <b>18 Nos</b> |

## 9. Solid Waste Management

**Table 7 Solid Waste Management**

| <b>S. No</b> | <b>Type</b> | <b>Quantity</b> | <b>Disposal Method</b>             |
|--------------|-------------|-----------------|------------------------------------|
| 1            | Organic     | 2.8 kg/day      | Municipal bin including food waste |
| 2            | Inorganic   | 4.32 kg/day     | TNPCB authorized recyclers         |

As per CPCB guidelines: MSW per capita/day =0.45 kg/day

|                          |  |                             |
|--------------------------|--|-----------------------------|
| <b>Project</b>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA<br/>Report</i> |
| <b>Project Proponent</b> | <i>Thiru.S.Raghu</i>   |                             |
| <b>Project Location</b>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                             |

**Table 8. 500m Radius Cluster Mine**

**1) Existing other quarries:**

| S. No.        | Name of the Owner | Village & Taluk | S.F.Nos. | Extent in Hect. | Lease Period |
|---------------|-------------------|-----------------|----------|-----------------|--------------|
| .....Nil..... |                   |                 |          |                 |              |

**2) Details of abandoned /Old Quarries**

| S. No.        | Name of the Owner | Village & Taluk | S.F.Nos. | Extent in Hect. | Lease Period |
|---------------|-------------------|-----------------|----------|-----------------|--------------|
| .....Nil..... |                   |                 |          |                 |              |

**3) Details of Present Proposed quarries**

| S. No. | Name of the Owner  | Village & Taluk                   | S.F.Nos.      | Extent in Hect. | Lease Period       |
|--------|--------------------|-----------------------------------|---------------|-----------------|--------------------|
| 1      | Thiru.S.Raghu      | Gopanapallai village, Hosur taluk | 381(Part-1)   | 1.30.0          | Instant Proposal   |
| 2      | M/s.Natural stone  | Gopanapallai village, Hosur taluk | 220/1(Part-1) | 3.00.0          | Precise area given |
| 3      | Thiru.Nithin Reddy | Gopanapallai village, Hosur taluk | 220/1(Part-2) | 3.00.0          | Precise area given |
| 4      | Thiru.Sri Krish    | Gopanapallai village, Hosur taluk | 220/1(Part-3) | 3.00.0          | Precise area given |
| 5      | Thiru.Vijayakumar  | Gopanapallai village, Hosur taluk | 220/1(Part-4) | 2.00.0          | Precise area given |
| 6      | Thiru.Dhivakar     | Gopanapallai village, Hosur taluk | 381/1(Part-2) | 1.50.0          | Precise area given |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                         |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                         |

## 10. Land Requirement

The total extent area of the project is 1.30.00 Ha, government Poramboke Land in Village of Gopanapalli, Hosur Taluk, and Krishnagiri District.

**Table 9 Land Use Breakup**

| SL. NO. | LAND USE             | PRESENT AREA (HECT) | AREA IN USE DURING THE QUARRYING PERIOD (HECT) |
|---------|----------------------|---------------------|--|
| 1.      | Area under Quarrying | Nil                 | 0.87.0   |
| 2.      | Infrastructure       | Nil                 | 0.01.0   |
| 3.      | Roads                | Nil                 | 0.01.0   |
| 4.      | Green Belt           | Nil                 | 0.41.0   |
| 5.      | Unutilized           | 1.30.0              | Nil  |
|         | <b>Total</b>         | <b>1.30.0Ha</b>     | <b>1.30.0Ha</b>                                |

## 11. Human Settlement

There are no habitations within 300m radius. There are villages located in this area within 15 km radius of the quarry.

**Table 10 Habitation**

| SL. NO | DIRECTION | VILLAGE            | POPULATION | DISTANCE |
|--------|-----------|--------------------|------------|----------|
| 1      | North     | Goolisandram       | 163        | 1.5      |
| 2      | East      | Bennikkal          | 260        | 6.0      |
| 3      | South     | Nagappan Agraharam | 370        | 2.5      |
| 4      | West      | Agraharam          | 310        | 3.0      |

## 12. Power Requirement

The Electricity for Mines office and Lights only at nights (working is restricted on day time only between 9 Am to 5 Pm). Diesel (HSD) will be used for quarrying machineries around **187882 litres of HSD** will be used for the entire project life. Diesel will be brought from nearby diesel pumps. No power is required for the project. Lightings on the Night time the power will be taken from nearby electric poles after obtaining permission from concerned authorities.

|                          |  |                             |
|--------------------------|--|-----------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA<br/>Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                             |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                             |

### 13. Scope of the Baseline Study

This chapter contains information on existing environmental scenario on the following parameters.

1. Micro – Meteorology
2. Water Environment
3. Air Environment
4. Noise Environment
5. Soil / Land Environment
6. Biological Environment
7. Socio-economic Environment

#### 13.1 Micro – Meteorology

Meteorology plays a vital role in affecting the dispersion of pollutants, once discharged into the atmosphere. Since meteorological factors show wide fluctuations with time, meaningful interpretation can be drawn only from long-term reliable data.

- i) Average Minimum Temperature : 18° C
- ii) Average Maximum Temperature. : 38°Celsius
- iii) Average Annual Rainfall of the area: 800 mm-900 mm

#### 13.2 Air Environment

Ambient air monitoring was carried out on monthly basis in the surrounding areas of the Mine Lease area to assess the ambient air quality at the source. To know the ambient air quality at a larger distance i.e. in the study area of 5 km. radius, air quality survey has been conducted at 5 locations. Major air pollutants like Particulate Matter (PM<sub>10</sub>), Sulphur Dioxide (SO<sub>2</sub>), and Nitrogen Dioxide (NO<sub>2</sub>) were monitored and the results are summarized below.

The baseline levels of PM<sub>10</sub> (39- 66 µg/m<sup>3</sup>), PM<sub>2.5</sub> ( 15- 34 µg/m<sup>3</sup>), SO<sub>2</sub> (6-21 µg/m<sup>3</sup>), NO<sub>2</sub> (10- 37 µg/m<sup>3</sup>), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from January to March 2023.

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                         |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                         |

### **13.3 Noise Environment**

The maximum Day noise and Night noise were found to be 65 dB(A) and 49 dB(A) respectively in Pattalama Temple. The minimum Day Noise and Night noise were 46 dB(A) and 36 dB(A) respectively which was observed in Anjaneya Temple. The observed values are all well within the Standards prescribed by CPCB.

### **13.4 Water Environment**

- The average pH ranges from 6.98 – 7.82.
- TDS value varied from 505 mg/l to 975 mg/l
- Hardness varied from 236 to 634 mg/l
- Chloride varied from 33.3 to 286 mg/l

### **13.5 Land Environment**

The analysis results shows that the majority of soil in the project and surrounding area is slightly alkaline in nature and pH value ranges from 4.7 to 8.32 with organic matter 0.59 to 1.25 %. The concentration of Nitrogen, Phosphorus & Potassium has been found to be in good amount in the soil samples.

### **13.6 Biological Environment**

The proposed Mining lease area is mostly dry barren ground with small shrubs and bushes. No specific endangered flora & fauna exist within the mining lease area.

## **14. Rehabilitation/ Resettlement**

The overall land of the mine is a Government Poramboke land. There is no hutment in the lease area. No human being will be displaced from the project area so no person will be affected contrary local people will get job opportunities and better facilities. There is no rehabilitation & resettlement of people is required.

## **15. Greenbelt Development**

1. The development of greenbelt in the peripheral buffer zone of the mine area.

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                         |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                         |

2. Green belt has been recommended as one of the major component of Environmental Management Plan, which will improve ecology, environment and quality of the surrounding area.

3. Local trees like Neem, Vilvam, Panai, etc will be planted along the lease boundary and avenues as well as over Non-active dumps at a rate of 650 trees per annum with interval 5m.

4. The rate of survival expected to be 80% in this area

**Table.11. Plantation/ Afforestation Program**

| <b>Name of species proposed</b>   | <b>Survival</b> | <b>No of species</b> |
|---|-----------------|----------------------|
| Neem, Vilvam, Vaagai, Eachai, Naval, Mantharai, Magizha Maram, Vila Maram, Poo Marudhu, Panai, Marudha maram, Thandri, Sengondrai, Poovarasu, Thethankottai Maram, Pungam | 80%             | 650                  |
| <b>Total</b>  |                 | <b>650</b>           |

## **16. Anticipated Environmental Impacts**

### **16.1 Air Environment and Mitigation Measures**

1. Water sprinkling will be done on the roads & unpaved roads.
2. Proper mitigation measures like water sprinkling will be adopted to control dust emissions.
3. Plantation will be carried out on approach roads, solid waste site & nearby mine premises.
4. To control the emissions regular preventive maintenance of equipments will be carried out.

### **16.2 Noise Environment and Mitigation Measures**

1. Periodical monitoring of ambient noise will be done as per CPCB guidelines.
2. No other equipment except the transportation vehicles and excavator for loading will be allowed.
3. Noise generated by these equipments shall be intermittent and does not cause much adverse impact



|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                         |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                         |

### 17. Responsibilities for Environmental Management Cell (EMC)

The responsibilities of the EMC include the following:

- I. Environmental Monitoring of the surrounding area
- II. Developing the green belt/Plantation
- III. Ensuring minimal use of water
- IV. Proper implementation of pollution control measures

### 18. Environmental Monitoring Program

A monitoring schedule with respect to Ambient Air Quality, Water & Wastewater Quality, Noise Quality as per Tamil Nadu State Pollution Control Board (TNPCB), shall be maintained.

### 19. Project Cost

The total project cost is **Rs 161,90,000/-** for deployment of machinery and creation of infrastructural facilities like approach road, mine office / Workers Shed, First Aid Room etc., including electrifications and water supply

**Table .12 Project Cost details**

| <b>S. No.</b> | <b>Description</b> | <b>Cost (Rs.)</b> |
|---------------|--------------------|-------------------|
| 1             | Fixed cost         | Rs.1,31,90,000/-  |
| 2             | Operational cost   | Rs.30,00,000/-    |
| 3             | EMP cost           | Rs.169,70,946     |

### 20. Corporate Environmental Responsibility

The Corporate Environment Responsibility (CER) fund will be provided to the below activity.

**Table 13 CER Cost**

| <b>S.No.</b> | <b>CER Activity</b> | <b>CER value (Rs)</b> |
|--------------|---------------------|-----------------------|
|              |                     |                       |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                         |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                         |

|              |  |                 |
|--------------|--|-----------------|
| 1.           | Panchayat Union Middle School, H.Settipalli<br>Provision of <ul style="list-style-type: none"> <li>➤ Infrastructure, additional class room</li> <li>➤ Environmental books for library (in Tamil language),</li> <li>➤ Greenbelt facilities and</li> <li>➤ Bench and desks</li> <li>➤ Basic amenities such as safe drinking water, Hygienic Toilets facilities, furniture.</li> </ul> | 5,00,000        |
| <b>Total</b> |  | <b>5,00,000</b> |

## 21. Benefits of the Project

- There is positive impact on socio-economics of people living in the villages. Mining operations in the subject area has positive impact by providing direct and indirect jobs opportunities
- The project is environmentally compatible, financially viable and would be in the interest of construction industry thereby indirectly benefiting the masses.
- Quarrying in this area is not going to have any negative impact on the social or cultural life of the villagers in the near vicinity.

|                          |  |                             |
|--------------------------|--|-----------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA<br/>Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                             |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                             |

## **1 Introduction**

### **1.1 PREAMBLE**

Environment Impact Assessment (EIA) is a process used to identify the environmental, social & economic impacts of a project prior to decision making. It aims to predict environmental impacts at an early stage of project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment and present the prediction options to the proponent. By using EIA, both environmental & economic benefits can be achieved. By considering environmental effects - prediction & mitigation, early benefits in project planning, protection of the environment, optimum utilization of resources, thus saving overall time & cost of the project.

### **1.2 GENERAL INFORMATION ON MINING OF MINERALS**

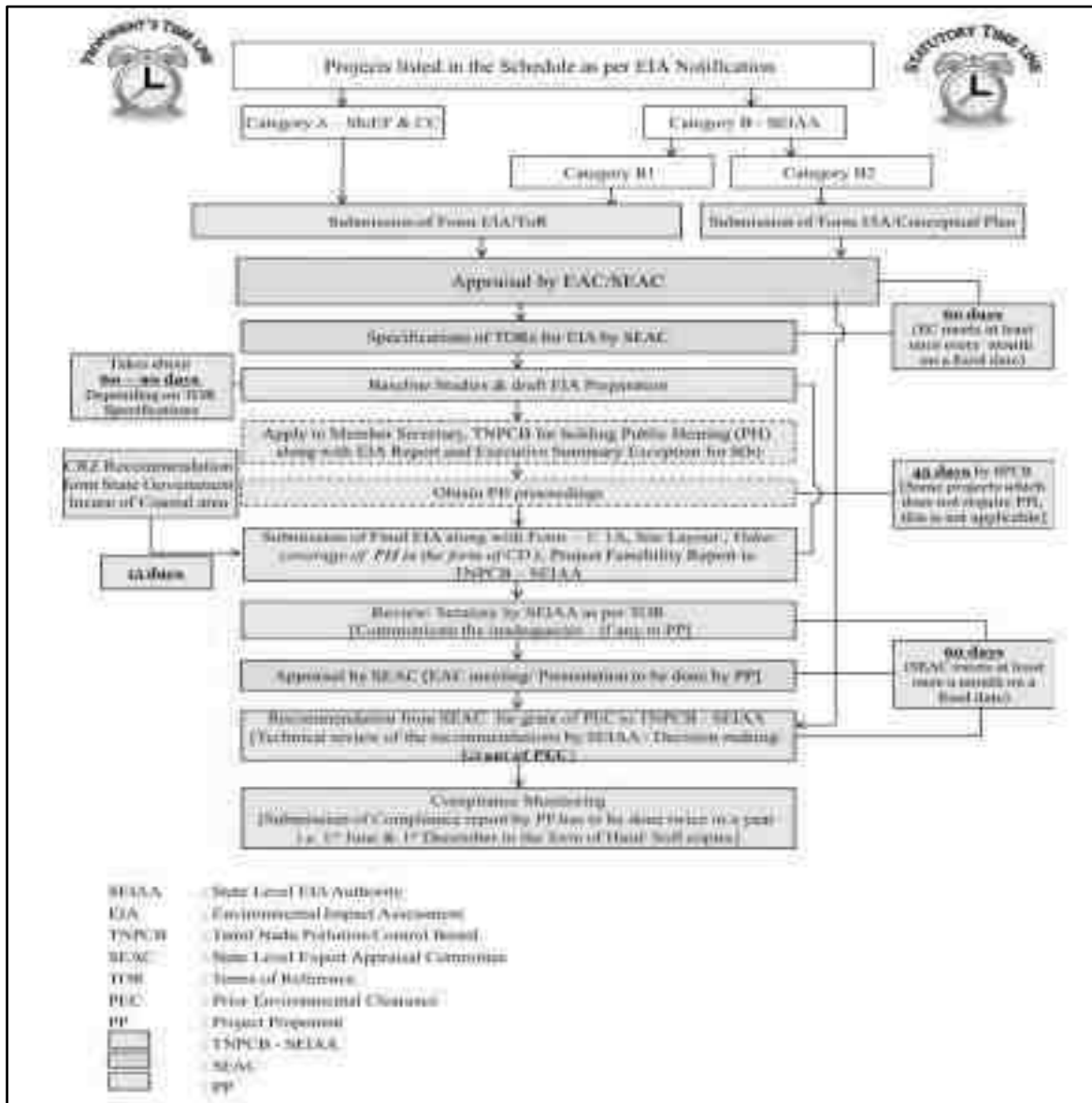
Minerals of Economic importance found in Krishnagiri District are mainly Apatite, Corundum Copper, Gold, Iron Ore, Limestone, Kankar, Vermiculite and Dimensional Stones. For good dimensional stones, this district is unique in possessing both Multi Coloured and black granite occurrences. The Multi Coloured granite named as “Paradiso” is extensively quarried in Chendarapalli - Sulamalai- Modikuppam-Velampatti belt. The Hosur- Denkanikottai belt is endowed with Multi Coloured granite deposits. The black granite deposits of Krishnagiri, Hosur and Denkanikottai taluks contains potential deposits of black granite.

### **1.3 ENVIRONMENTAL CLEARANCE**

As per EIA Notification, 2006 and its subsequent amendments (O.M vide No.F.No.L-11011/175/2018-IA-II(M) Govt of India MOEF&CC on December 12th 2018) project comes under category B1 cluster & schedule 1(a) under item 1

The proposed project is categorized under Category “B1” 1(a) (Cluster) - {Mining of Minerals} as the 500m radius area is more than 5 Ha including the mine lease area. Hence, the project will be considered at SEAC, Tamil Nadu.

|                   |   |                  |
|-------------------|---|------------------|
| Project           | Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu       | Draft EIA Report |
| Project Proponent | Thiru.S.Raghu   |                  |
| Project Location  | Gopanapalli village, hosur taluk, kishnagiri district |                  |



#### 1.4 TERMS OF REFERENCE (TOR)

The Terms of Reference have been issued by SEAC TN vide Letter No. SEIAA-TN/F. No. 9566/SEAC/ToR-1326/2023 Dated: 10.02.2023. 45 additional ToR points were recommended by SEAC TN in addition to the Standard ToR Points. The replies for the same were addressed in this report.

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                         |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                         |

## **1.5 POST ENVIRONMENTAL CLEARANCE MONITORING**

### **1.5.1 Methodology adopted**

Post project monitoring will be carried out as per conditions stipulated in environmental clearance letter issued by SEIAA, consent issued by SPCB as well as according to CPCB guidelines. The lease area is considered as core zone and the area lying within 10 km radius from the lease boundary is considered as buffer zone, where some impacts may be observed on physical and biological environment. In the buffer zone slight impact may be observed and that too is occasional.

**Table 1-1: Post Environmental Clearance Monitoring**

| <b>S. No.</b> | <b>Description</b>               | <b>Frequency of Monitoring</b> |
|---------------|----------------------------------|--------------------------------|
| 1.            | Ambient Air Quality Monitoring   | Quarterly/ Half Yearly         |
| 2.            | Water level & Quality Monitoring | Quarterly/ Half Yearly         |
| 3.            | Noise Level Monitoring           | Quarterly/ Half Yearly         |
| 4.            | Soil Quality Monitoring          | Yearly                         |
| 5.            | Medical Check-up                 | Yearly                         |

## **1.6 GENERIC STRUCTURE OF THE EIA DOCUMENT**

**Chapter 1: Introduction.** This chapter contains the general information on the mining of minerals, major sources of environmental impacts in respect of mining projects and details of environmental clearance process.

**Chapter 2: Project Description.** In this chapter the proponent should also furnish detailed description of the proposed project, such as the type of the project, need for the project, project location, layout, project activities during construction and operational phases, capacity of the project, project operation i.e., land availability, utilities (power and water supply) and infrastructure facilities such as roads, railways, housing and other requirements. If the project site is near a sensitive area it is to be mentioned clearly why an alternative site could not be considered. The project implementation schedule, estimated cost of development as well as operation etc. should be also included.

**Chapter 3: Analysis of Alternatives (Technology and Site).** This chapter gives details of various alternatives both in respect of location of site and technologies to be deployed, in case the initial scoping exercise considers such a need.

|                          |  |                             |
|--------------------------|--|-----------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA<br/>Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                             |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                             |

**Chapter 4: Description of Environment.** This chapter should cover baseline data in the project area and study area.

**Chapter 5: Impact Analysis and mitigation measures.** This chapter describes the anticipated impacts on the environment and mitigation measures. The method of assessment of impacts including studies carried out, modelling techniques adopted to assess the impacts where pertinent should be elaborated in this chapter. It should give the details of the impacts on the baseline parameters, both during the construction and operational phases and suggests the mitigation measures to be implemented by the proponent.

**Chapter 6: Environmental Monitoring Program.** This chapter should cover the planned environmental monitoring program. It should also include the technical aspects of monitoring the effectiveness of mitigation measures.

**Chapter 7: Additional Studies.** This chapter should cover the details of the additional studies required in addition to those specified in the ToR and which are necessary to cater to more specific issues applicable to the particular project.

**Chapter 8: Project Benefits.** This chapter should cover the benefits accruing to the locality, neighborhood, region and nation as a whole. It should bring out details of benefits by way of improvements in the physical infrastructure, social infrastructure, employment potential and other tangible benefits.

**Chapter 9: Environmental Cost Benefit Analysis.** This chapter should cover on Environmental Cost Benefit Analysis of the project.

**Chapter 10: Environmental Management Plan.** This chapter should comprehensively present the Environmental Management Plan (EMP), which includes the administrative and technical setup, summary matrix of EMP, the cost involved to implement the EMP, both during the construction and operational phase and provisions made towards the same in the cost estimates of project construction and operation. This chapter should also describe the proposed post-monitoring scheme as well as inter-organizational arrangements for effective implementation of the mitigation measures.

**Chapter 11: Summary and Conclusions.** This chapter gives the summary of the full EIA report condensed to ten A-4 size pages at the maximum. It should provide the overall justification for implementation of the project and should explain how the adverse effects have been mitigated.

**Chapter 12: Disclosure of Consultants.** This chapter should include the names of the consultants engaged with their brief resume and nature of consultancy rendered.

|                          |  |                             |
|--------------------------|--|-----------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>       | <i>Draft EIA<br/>Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                             |
| <i>Project Location</i>  | <i>Gopanapalli village, hosur taluk, kishnagiri district</i> |                             |

## **1.7 DETAILS OF PROJECT PROPONENT**

Project Proponent : Thiru.S.Raghu  
Status of the Proponent : Individual  
Proponent's name & address : S/o. Sreeramaiya,  
D.No.6/202,  
Anusonai village,  
Bommathathanur Post,  
Denkanikottai Taluk,  
Krishnagiri District -635113.

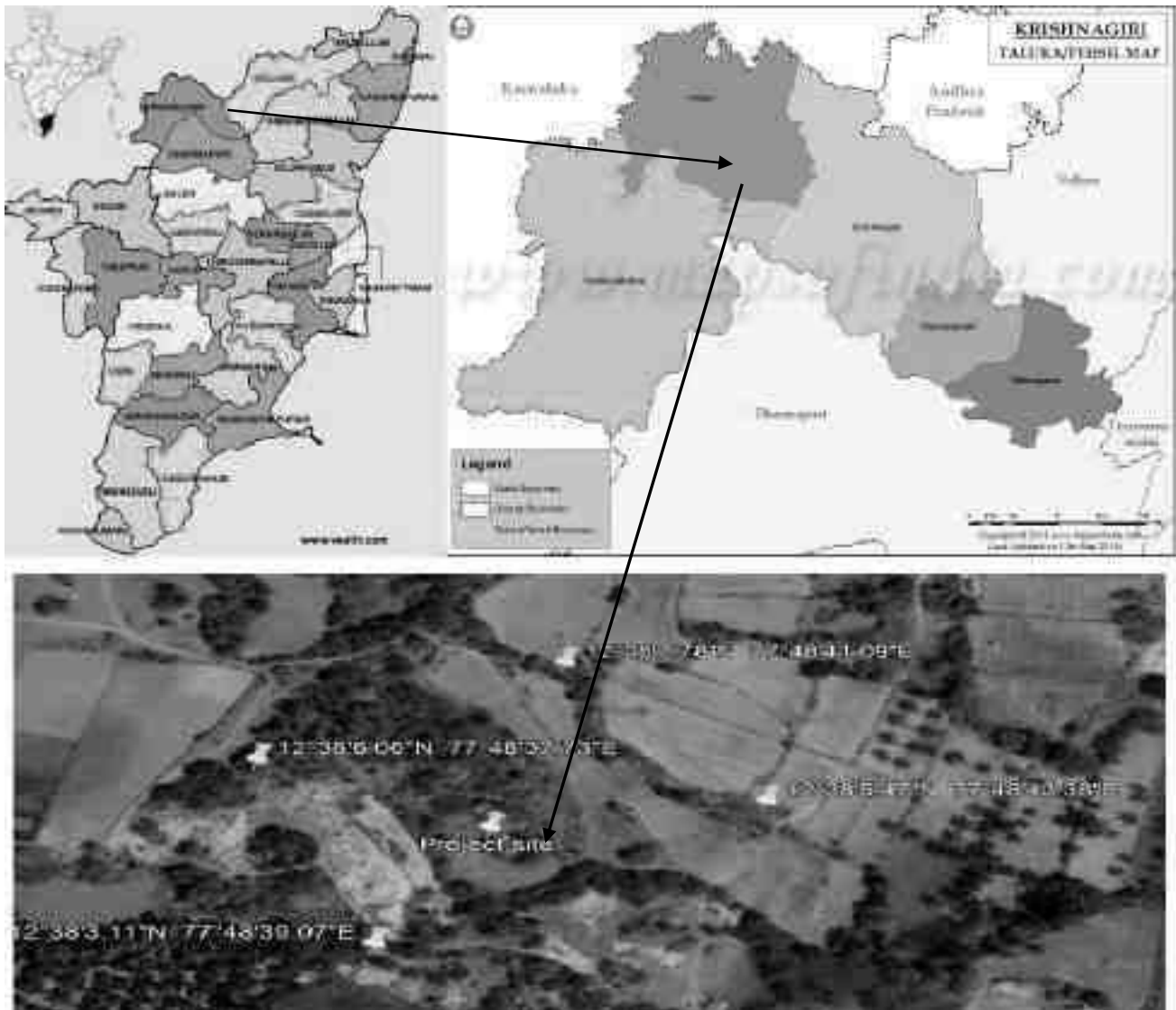
## **1.8 BRIEF DESCRIPTION OF THE PROJECT**

### ***1.8.1 Project Nature, Size & Location***

As per EIA Notification, 2006 and its subsequent amendments (O.M vide No.F.No.L-11011/175/2018-IA-II (M) Government of India MoEF & CC on December 12th 2018) project comes under category B1 cluster & schedule 1(a) under item 1.

Proposed proposal pertains to Rough stone mining project by opencast mechanised method on allotted mine lease area at Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu. It is a hilly terrain area. The total allotted mine lease for the proposed project is 1.30.00 Ha with their maximum production capacity i.e., 23124 m<sup>3</sup> of Rough stone for the period of Five years only.

|                          |  |                         |
|--------------------------|--|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</b>       | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>   |                         |
| <b>Project Location</b>  | <b>Gopanapalli village, hosur taluk, kishnagiri district</b> |                         |



**Figure 1.1: Location Map of the Project site**



|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

## 2 Project Description

This chapter furnishes detailed description of the proposed project, such as the type of the project, need for the project, project location, layout, project activities during mining, capacity of the project, project operation i.e., land availability, utilities (power and water supply) and infrastructure facilities such as roads, railways, housing and other requirements. The project implementation schedule estimated cost for carrying out entire mining activity is included.

### 2.1 GENERAL

Proposed proposal pertains to Rough stone mining project by open cast mechanized method on allotted mine lease area at Gopanapalli Village, Hosur Taluk of Krishnagiri District, Tamil Nadu. It is a hilly terrain area. We have obtained fresh mining plan from 2022 to 2027 from Department of Geology and Mining, Krishnagiri District for 1.30.00 Ha land area in the S.F.Nos. 381(Part-1) for a proposed mining depth of 51 m below ground level and five years production of 23,12,38 m<sup>3</sup> of Rough stone.

#### **Type of the project:**

As per EIA Notification, 2006 and its subsequent amendments (O.M vide No.F.No.L-11011/175/2018-IA-II (M) Government of India MoEF & CC on December 12th 2018) project comes under category B1 cluster & schedule 1(a) under item 1. The project required to be appraised at state level by State Environment Impact Assessment Authority, Tamil Nadu. Environment Clearance study will involve preparation of draft EIA report on the basis of baseline & impact assessment study is carried out. Also, before appraisal, under 7(III) of EIA notification 2006, the project involves the Public Consultation and the same will be conducted under SPCB (TN) in Krishnagiri District. The proceedings of the same will be incorporated in the Final EIA Report. The mines within 500m radius from the project site is listed below.

**Table 2-1: Quarry within 500m Radius**

#### **1) Existing other quarries:**

| <b>S. No.</b> | <b>Name of the Owner</b> | <b>Village &amp; Taluk</b> | <b>S.F.Nos.</b> | <b>Extent in Hect.</b> | <b>Lease Period</b> |
|---------------|--------------------------|----------------------------|-----------------|------------------------|---------------------|
|---------------|--------------------------|----------------------------|-----------------|------------------------|---------------------|

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</b>         | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |

.....Nil.....

**2) Details of abandoned /Old Quarries**

| S. No.        | Name of the Owner | Village & Taluk | S.F.Nos. | Extent in Hect. | Lease Period |
|---------------|-------------------|-----------------|----------|-----------------|--------------|
| .....Nil..... |                   |                 |          |                 |              |

**3) Details of Present Proposed quarries**

| S. No. | Name of the Owner  | Village & Taluk                   | S.F.Nos.      | Extent in Hect. | Lease Period       |
|--------|--------------------|-----------------------------------|---------------|-----------------|--------------------|
| 1      | Thiru.S.Raghu      | Gopanapallai village, Hosur taluk | 381(Part-1)   | 1.30.0          | Instant Proposal   |
| 2      | M/s.Natural stone  | Gopanapallai village, Hosur taluk | 220/1(Part-1) | 3.00.0          | Precise area given |
| 3      | Thiru.Nithin Reddy | Gopanapallai village, Hosur taluk | 220/1(Part-2) | 3.00.0          | Precise area given |
| 4      | Thiru.Sri Krish    | Gopanapallai village, Hosur taluk | 220/1(Part-3) | 3.00.0          | Precise area given |
| 5      | Thiru.Vijayakumar  | Gopanapallai village, Hosur taluk | 220/1(Part-4) | 2.00.0          | Precise area given |
| 6      | Thiru.Dhivakar     | Gopanapallai village, Hosur taluk | 381/1(Part-2) | 1.50.0          | Precise area given |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

### 2.1.1 Need for the project:

The said project plays a significant role in the domestic as well as infrastructural market. To achieve a huge infrastructure being envisaged by Government of India, particularly in road and housing sector, there is a need for basic building materials, the rough stone form the primary building material.

Rough stone is one of the most valuable natural building materials. Aggregates are mostly used for building roads and footpaths. Aggregates – stone used for its strong physical properties – crushed and sorted into various sizes for use in concrete, coated with bitumen to make asphalt or used 'dry' as bulk fill in construction.

Mostly used in roads, concrete and building products. Aggregates represent about 98% of quarry output, most of which is used in road construction, maintenance and repair. Much of this goes to the production of asphalt; the remainder is used 'dry' without the addition of other materials to provide a sturdy base for roads.

Rocks and minerals of economic importance found to occur in Krishnagiri District are Rough stone deposits suitable for the production of Jelly, Cut stones and Pillar Stones.

As a result of developmental activities and market demand for minor minerals, mining of minor mineral is vital. In addition to that, geological reserves of rough stone is abundant in the project area which is evident from the mine activities carried out in the nearby sites.

## 2.2 BRIEF DESCRIPTION OF THE PROJECT

**Table 2-2 Salient Features of the Project**

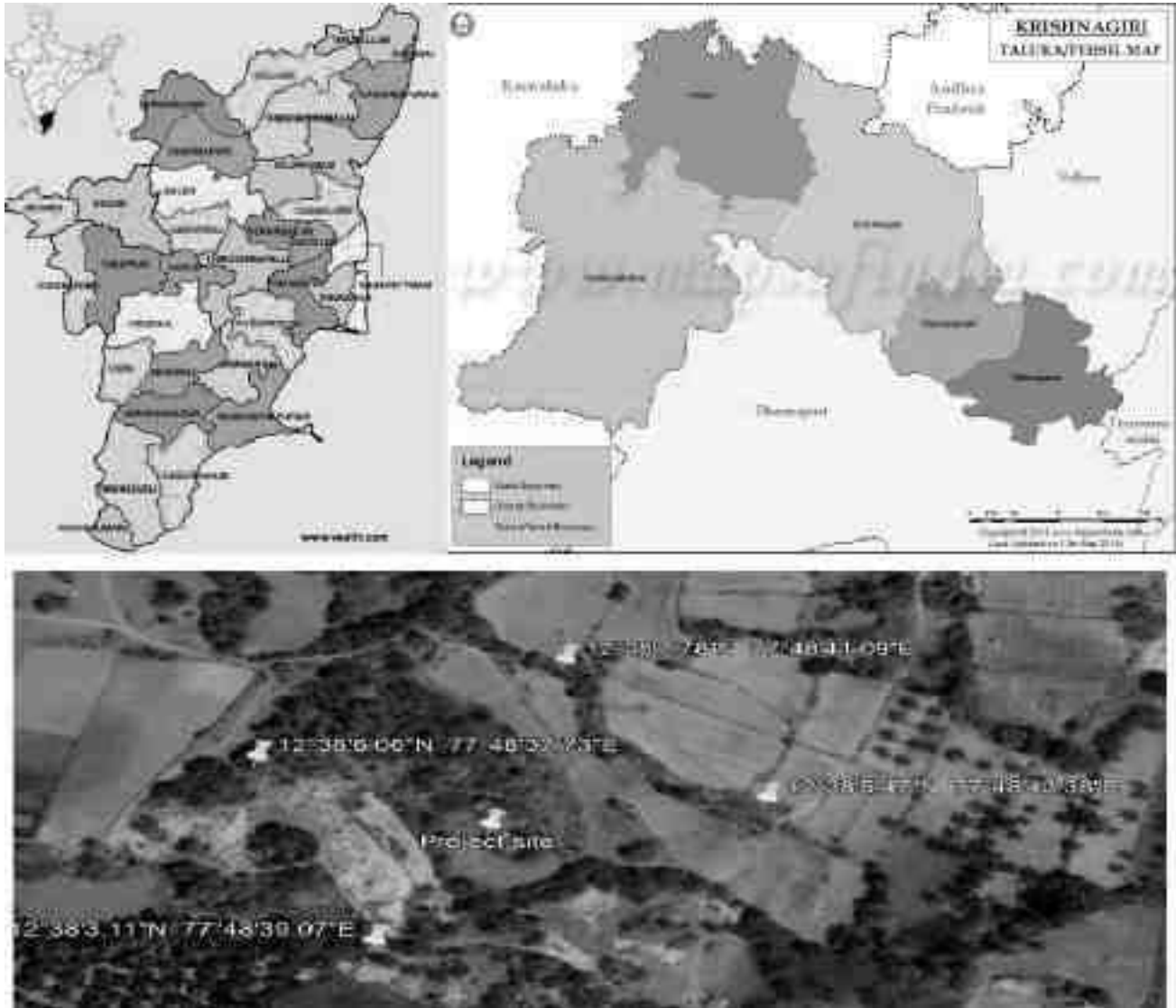
| <b>S. No.</b> | <b>Description</b>       | <b>Details</b>                                  |
|---------------|--------------------------|---|
| 1             | Project Name             | Thiru.S.Raghu Rough stone Quarry                |
| 2             | Proponent                | Thiru.S.Raghu                                   |
| 3             | Mining Lease Area Extent | 1.30.00 Ha                                      |
| 4             | Location                 | S.F.No.381(Part-1)                              |
| 5             | Latitude                 | Latitude : 12° 38' 05.49" N to 12° 38' 03.12" N |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</b>         | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |

|    |  |  |
|----|--|--|
| 6  | Longitude  | Longitude : 77° 48' 43.41" E to 77° 48' 37.72" E   |
| 7  | Topography   | Hilly terrain topography   |
| 8  | Site Elevation above MSL                           | 840 m from MSL   |
| 9  | Topo sheet No.                                     | 57-H/14  |
| 10 | Minerals of Mine                                   | Rough Stone Quarry   |
| 11 | Proposed production of Mine                        | Proposed Capacity of reserves – Rough stone :<br>I-V years -107190 m <sup>3</sup><br>VI-X years-44020  |
| 12 | Ultimate depth of Mining                           | 31 m below ground level  |
| 13 | Method of Mining                                   | Open cast mechanized mining  |
| 14 | Water demand                                       | 2.0 KLD  |
| 15 | Source of water                                    | Water will be supplied through tankers supply  |
| 16 | Man power  | 18Nos.   |
| 17 | Mining Plan Approval                               | Mining Plan was approved by The Deputy Director (i/c), Department of Geology and Mining, Krishnagiri District vide letter Roc.No.539/2022 dated 24.06.2022   |
| 18 | Precise area communication letter                  | Precise area communication letter received from the District Collector, Krishnagiri District vide letter Rc.No.539/2022, dated 04.05.2022.   |
| 19 | Production details                                 | Geological reserves: 4,34,140 m <sup>3</sup> of Rough stone<br>Proposed year wise reserves-(I-V years)= 1,07,190 m <sup>3</sup> of Rough stone<br>(VI-X years)=44,020 m <sup>3</sup> of Rough stone                                |
| 20 | Boundary Fencing                                   | 7.5 m barrier all along the boundary for adjacent patta lands and 10 m safety distance for Govt. Lands.<br>Fencing will be provided.   |
| 21 | Disposal of overburden                             | Top soil formation will be removed and transported to the needy end user only after obtaining permission and paying necessary seigniorage fees to the Government.  |
| 22 | Ground water                                       | The ground water table is reported as 88m BGL in nearby open wells and bore wells of this area. Mining depth taken as 51m . Now, proposed quarry depth is above the water table. Hence, quarrying may not affect the ground water. |
| 23 | Habitations within 300m radius of the Project Site | There is no Habitation within 300m radius of the project site.   |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</b>         | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |

|    |                |  |
|----|----------------|--|
| 24 | Drinking water | Water will be supplied through tankers from Goolisandram village which is 0.37 Km. |
|----|----------------|--|



**Figure 2.1: Location Map of the Project Site**

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |



**Figure 2.2: Google Earth Image and Coordinates of the Project Site**

### 2.2.1 *Site Connectivity:*

The site is connected to the roadways as follows.

SH 17A – Hosur to Denkanikottai – 2.88 km, W

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</b>         | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |



**Figure 2.3: Site Connectivity**

### **2.3 LOCATION DETAILS:**

**Table 2-3: Location Details**

| <b>S. No</b> | <b>Particulars</b>       | <b>Details</b>                       |
|--------------|--------------------------|--------------------------------------|
| 1.           | Latitude                 | 12° 38' 05.49" N to 12° 38' 03.12" N |
| 2.           | Longitude                | 77° 48' 43.41" E to 77° 48' 37.72" E |
| 3.           | Site Elevation above MSL | 840 m from MSL                       |
| 4.           | Topography               | Hilly terrain topography             |
| 5.           | Land use of the site     | Government Poramboke                 |
| 6.           | Extent of lease area     | 1.30.00 Ha                           |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</b>         | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |

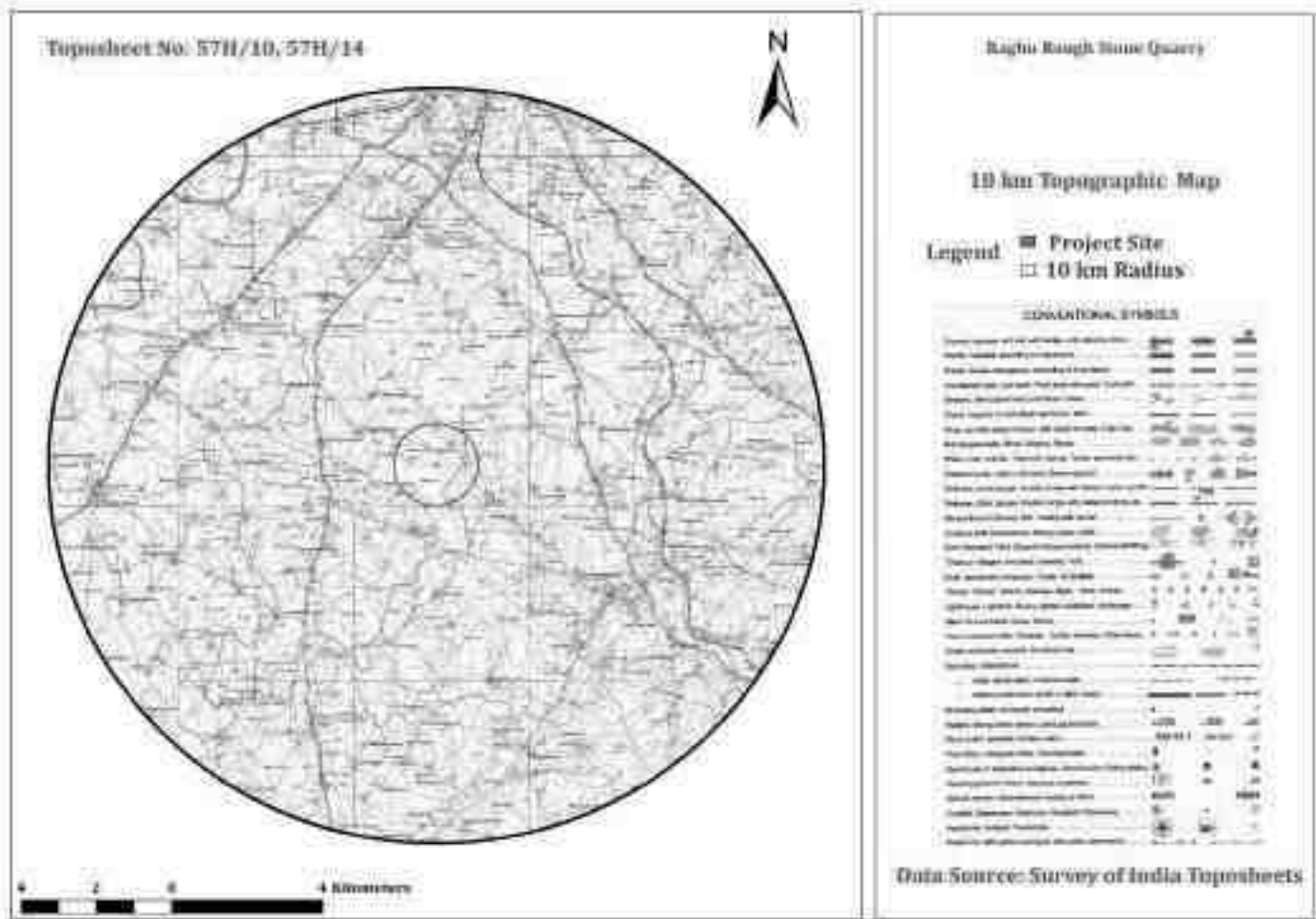
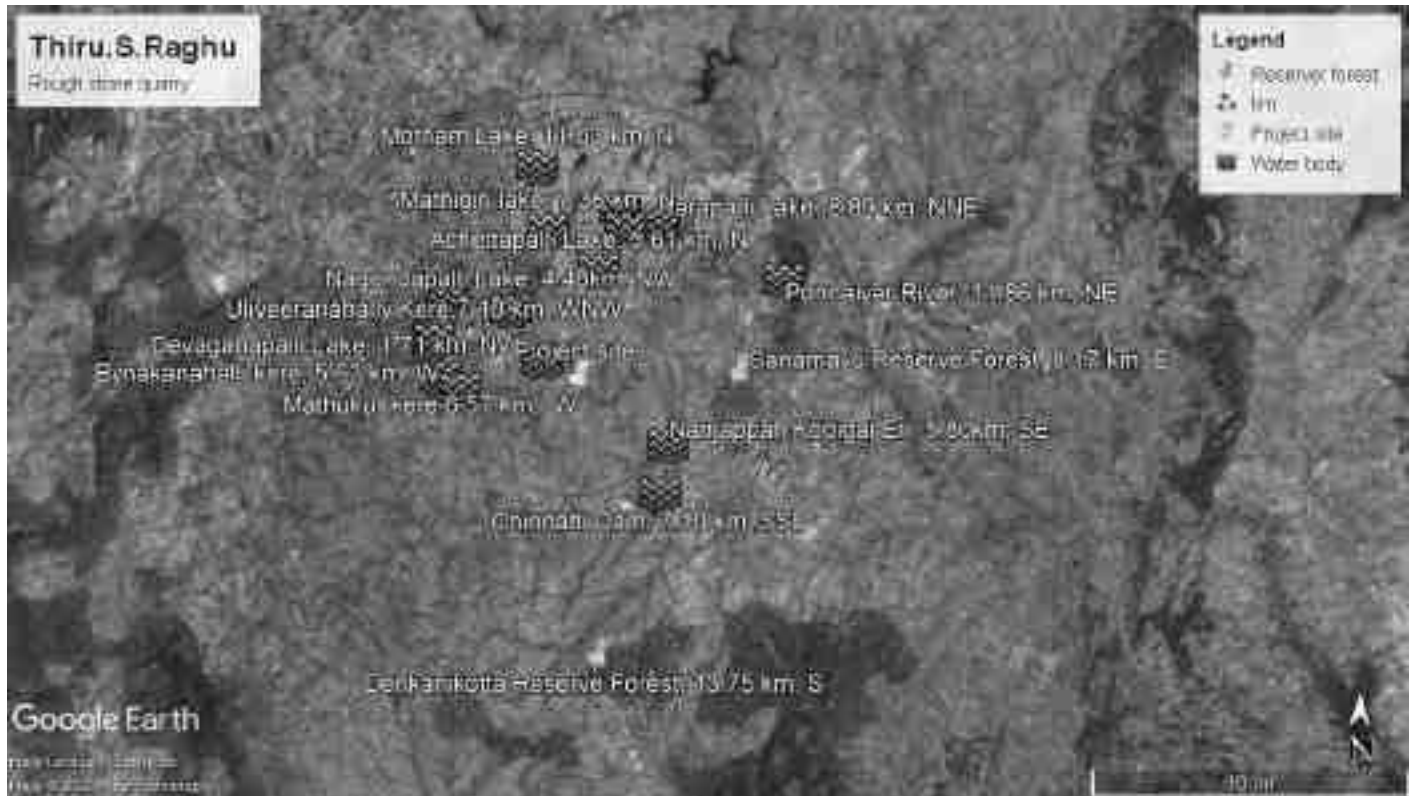


Figure 2.4: Topo Map of Project Site



|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</b>         | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |



**Figure 2.5: Environmental Sensitivity within 15km radius**

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

### 2.3.1 Site Photographs

The site photographs of the project site are as follows

North: 12°38'5.47"N 77°48'43.38"E

Krishnagiri, Tamilnadu



South: 12°38'3.11"N 77°48'39.07"E

Krishnagiri, Tamilnadu



East:12°38'6.06"N 77°48'37.73"E

Krishnagiri, Tamilnadu



West: 12°38'7.78"N 77°48'41.09"E

Krishnagiri, Tamilnadu



**Figure 2.6: Site Photographs**

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

### 2.3.2 Land Use Breakup of the Mine Lease Area

The Mine Lease area is Plain terrain. The land use pattern of the mine lease area as follows.

**Table 2-4: Land use pattern**

| SL. NO. | LAND USE             | PRESENT AREA (HECT) | AREA IN USE DURING THE QUARRYING PERIOD (HECT) |
|---------|----------------------|---------------------|--|
| 1.      | Area under Quarrying | Nil                 | 0.87.0   |
| 2.      | Infrastructure       | Nil                 | 0.01.0   |
| 3.      | Roads                | Nil                 | 0.01.0   |
| 4.      | Green Belt           | Nil                 | 0.41.0   |
| 5.      | Unutilized           | 1.30.0              | Nil  |
|         | <b>Total</b>         | <b>1.30.0Ha</b>     | <b>1.30.0Ha</b>                                |

### 2.3.3 Human Settlement

There are no habitations within the radius of 300m. The nearby habitations are as follows

**Table 2-5: Habitation**

| SL. NO | DIRECTION | VILLAGE            | POPULATION | DISTANCE |
|--------|-----------|--------------------|------------|----------|
| 1      | North     | Goolisandram       | 163        | 1.5      |
| 2      | East      | Bennikkal          | 260        | 6.0      |
| 3      | South     | Nagappan Agraharam | 370        | 2.5      |
| 4      | West      | Agraharam          | 310        | 3.0      |

## 2.4 LEASEHOLD AREA

The Rough Stone Quarry mine of 1.30.0 Ha is a Government Poromboke land . The lease area falls in S.F No: 381(Part-1) of Gopanapalli Village, Hosur Taluk, Krishnagiri District. There is no reserve forest or protected forest land within the lease area. There is neither human settlement within 300m radius from the lease area.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

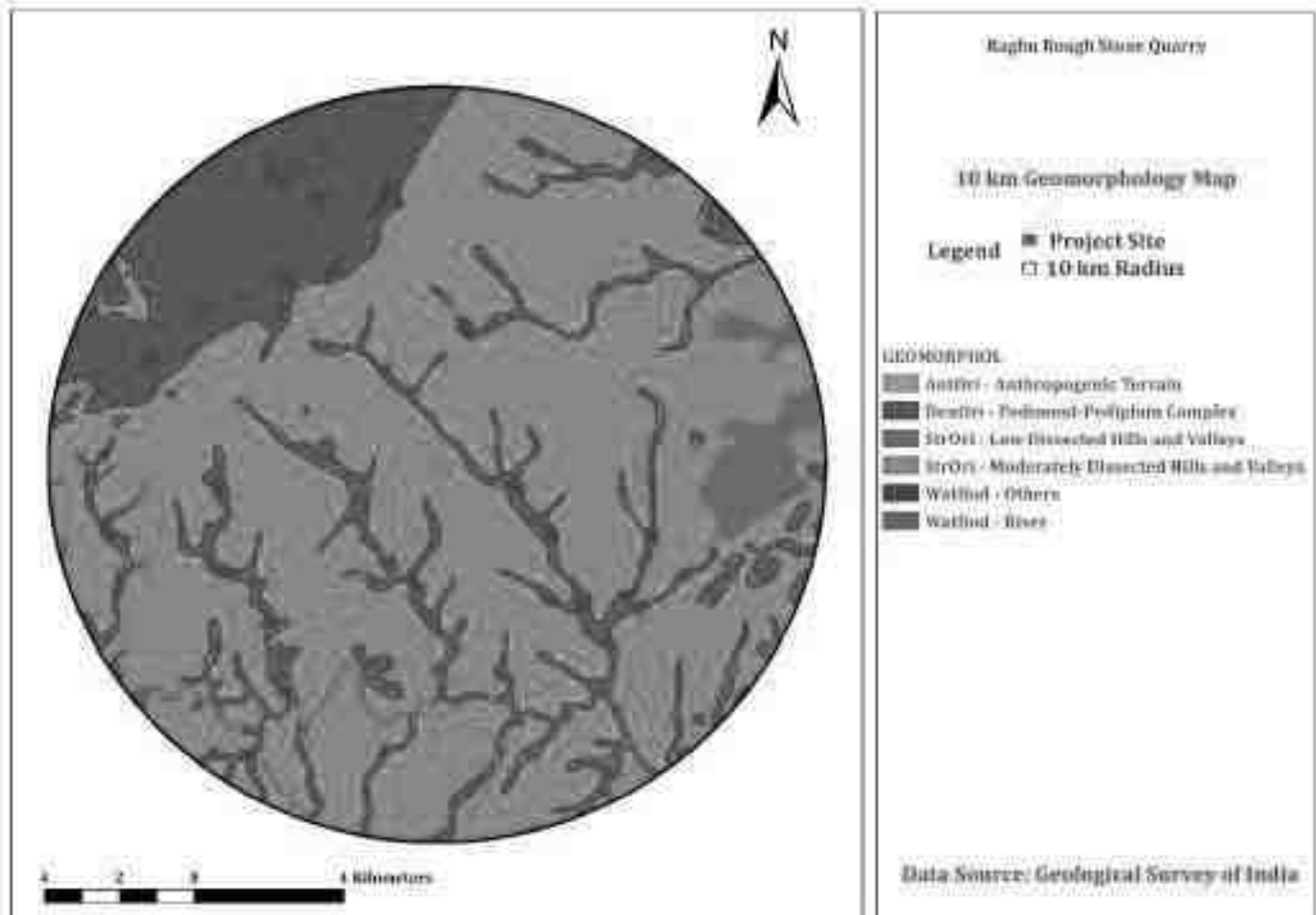
## **2.5 GEOLOGY**

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, Migmatites Complex, Sathyamangalam Group of rocks, while the latter is represented by Alkaline rocks. The Khondalite Group includes garnet sillimanite gneiss and quartzite which occur as small patches. The migmatite complex includes garnet ferrous quartzofeldspathic gneiss and horn blends biotite gneiss, the former exposed on the western part of the district. The Sathyamangalam Group includes fuchsite quartzite, sillimanite mica schist and amphibolites. The Bhavani Group in this area includes fissile hornblende-biotite gneiss, granitoid gneiss and pink migmatite. Amphibolites with barbed ferruginous quartzite and associated quartzo-feldspathic rocks (Champion Gneiss) represent the Kolar group and are found west and southwest of Veppanapalli. Following this there are basic intrusions occurring as dykes.

The Charnockite Group occupies a major part of the south-west portion of this district with small bands of garnetiferous quartzo-feldspathic gneiss, Granite gneiss and dolerite dykes. The North-East and Northern part of the District mainly consist of granite gneiss with small patches of Pink Migmatite, hornblende-biotite gneiss and dolerite dykes. The Eastern part of the district consists of Epidote-Hornblende Gneiss, Ultra Mafics, Syenite and Carbonatite.

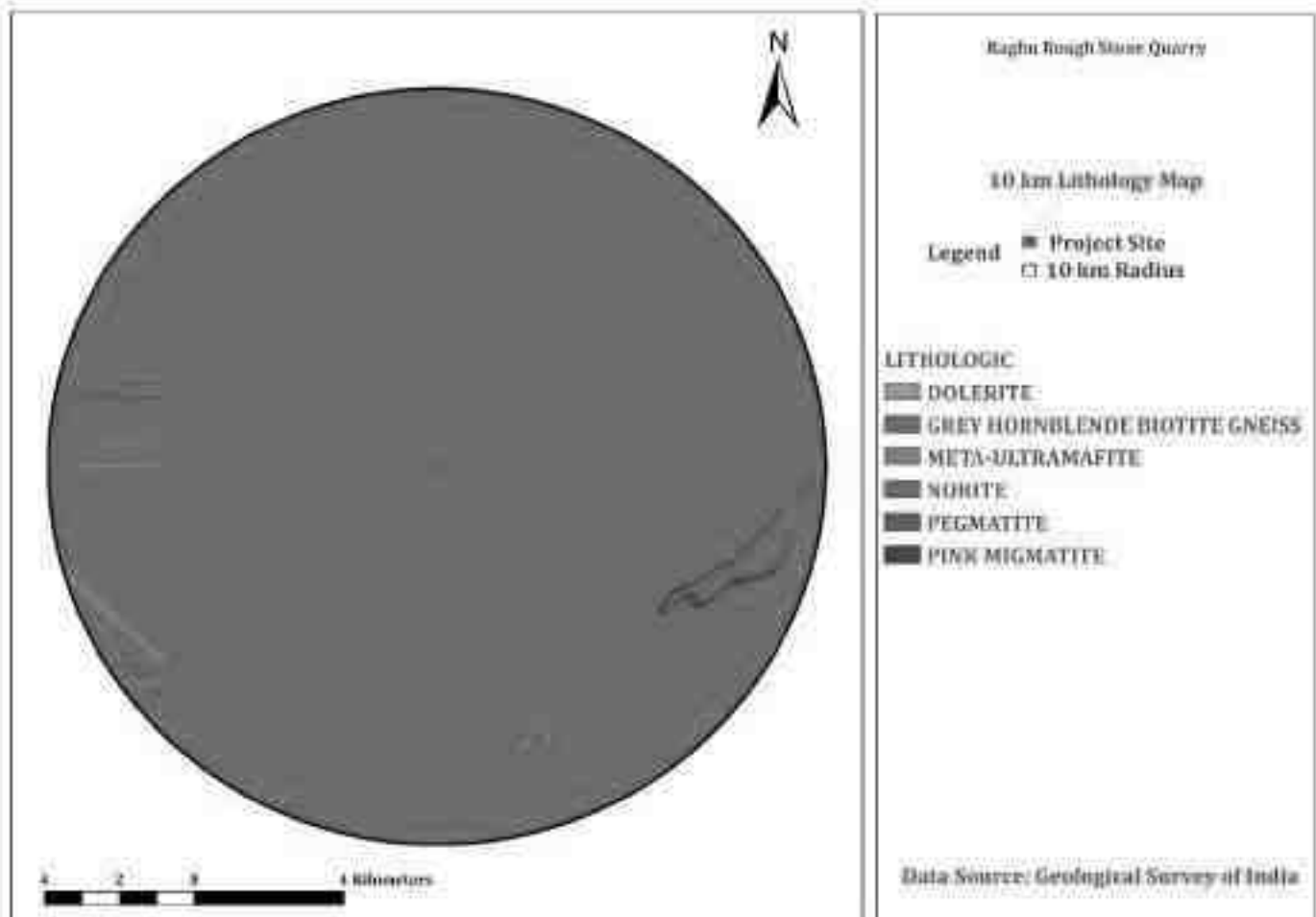
The Alkaline Complex is represented by epidote-horn blende gneiss, ultramafics, syenite and carbonatite and these are distributed in the eastern part of the district. Innumerable basic dykes and felsites, quartz, barites and pegmatite veins form part of the Alkali Complex.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</b>         | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |



**Figure 2.7: Geomorphology**

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</b>         | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |



**Figure 2.8 Lithology**

## **2.6 QUALITY OF RESERVES:**

The mining lease area is of 1.30.0 Ha, with production capacity of 231238 m<sup>3</sup> of Rough Stone. Due to significant role in the domestic as well as infrastructural market, making the mining of Stone and gravel along with associated minor minerals is economically viable.

**Table 2-6: Details of Mining**

| <b>S. No</b> | <b>Particulars</b>  | <b>Details</b>                       |
|--------------|---------------------|--------------------------------------|
| 1            | Method of Mining    | Open Cast mechanized                 |
| 2            | Geological Reserves | 616028 m <sup>3</sup> of Rough stone |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|   |                                  |                                      |
|---|----------------------------------|--------------------------------------|
| 3 | Recoverable Reserves             | 231238 m <sup>3</sup> of Rough stone |
| 4 | Proposed Production              | 231238 m <sup>3</sup> of Rough stone |
| 5 | Elevation Range of the Mine Site | 840 m AMSL                           |

### 2.6.1 Geological Reserves

**Table 2-7: Geological Reserves**

| <b>GEOLOGICAL RESERVES</b> |              |              |              |              |                          |  |                                  |
|----------------------------|--------------|--------------|--------------|--------------|--------------------------|--|----------------------------------|
| <b>Section</b>             | <b>Bench</b> | <b>L (m)</b> | <b>W (m)</b> | <b>D (m)</b> | <b>Volume in (Cu.m.)</b> | <b>Recoverable Reserve in Cu.m(100%)</b> | <b>Topsoil (Gravel) in Cu.m.</b> |
| XY-AB                      | I            | 131          | 98           | 2            |                          |  | 25676                            |
|                            | II           | 112          | 98           | 7            | 76832                    | 76832                                    |                                  |
|                            | III          | 131          | 98           | 7            | 89866                    | 89866                                    |                                  |
|                            | IV           | 131          | 98           | 7            | 89866                    | 89866                                    |                                  |
|                            | V            | 131          | 98           | 7            | 89866                    | 89866                                    |                                  |
|                            | VI           | 131          | 98           | 7            | 89866                    | 89866                                    |                                  |
|                            | VII          | 131          | 98           | 7            | 89866                    | 89866                                    |                                  |
|                            | VIII         | 131          | 98           | 7            | 89866                    | 89866                                    |                                  |
| <b>Total=</b>              |              |              |              |              | <b>616028</b>            | <b>616028</b>                            | <b>25676</b>                     |

### 2.6.2 Mineable Reserves

**Table 2-8: Mineable Reserves**

| <b>MINABLE RESERVES</b> |              |              |              |              |                          |  |                                  |
|-------------------------|--------------|--------------|--------------|--------------|--------------------------|--|----------------------------------|
| <b>Section</b>          | <b>Bench</b> | <b>L (m)</b> | <b>W (m)</b> | <b>D (m)</b> | <b>Volume in (Cu.m.)</b> | <b>Recoverable Reserve in Cu.m(100%)</b> | <b>Topsoil (Gravel) in Cu.m.</b> |
| XY-AB                   | I            | 111          | 78           | 2            |                          |  | 17316                            |
|                         | II           | 102          | 78           | 7            | 55692                    | 55692                                    |                                  |
|                         | III          | 106          | 73           | 7            | 54166                    | 54166                                    |                                  |
|                         | IV           | 96           | 63           | 7            | 42336                    | 42336                                    |                                  |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|              |      |    |    |   |               |               |              |
|--------------|------|----|----|---|---------------|---------------|--------------|
|              | V    | 86 | 53 | 7 | 31906         | 31906         |              |
|              | VI   | 76 | 43 | 7 | 22876         | 22876         |              |
|              | VII  | 66 | 33 | 7 | 15246         | 15246         |              |
|              | VIII | 56 | 23 | 7 | 9016          | 9016          |              |
| <b>Total</b> |      |    |    |   | <b>231238</b> | <b>231238</b> | <b>17316</b> |

### 2.6.3 Year wise Production Plan

**Table 2-9: Year wise Production Plan**

| <b>YEARWISE DEVELOPMENT AND PRODUCTION(First Five(I-V)Years)</b> |                |              |              |              |              |                       |   |                       |
|--|----------------|--------------|--------------|--------------|--------------|-----------------------|---|-----------------------|
| <b>YEAR</b>  | <b>Section</b> | <b>Bench</b> | <b>L (m)</b> | <b>W (m)</b> | <b>D (m)</b> | <b>Volume in (m3)</b> | <b>Recoverable Reserve in m3 (100%)</b> | <b>Top Soil in m3</b> |
| I-YEAR   | XY-AB          | I            | 111          | 78           | 2            |                       |   | 17316                 |
|  |                | II           | 102          | 78           | 7            | 55692                 | 55692                                   |                       |
| <b>TOTAL</b>   |                |              |              |              |              | <b>55692</b>          | <b>55692</b>                            | <b>17316</b>          |
| II-YEAR  | XY-AB          | III          | 53           | 73           | 7            | 27083                 | 27083                                   |                       |
| <b>TOTAL</b>   |                |              |              |              |              | <b>27083</b>          | <b>27083</b>                            |                       |
| III-YEAR   | XY-AB          | III          | 53           | 73           | 7            | 27083                 | 27083                                   |                       |
| <b>TOTAL</b>   |                |              |              |              |              | <b>27083</b>          | <b>27083</b>                            |                       |
| IV-YEAR  | XY-AB          | IV           | 53           | 63           | 7            | 23373                 | 23373                                   |                       |
| <b>TOTAL</b>   |                |              |              |              |              | <b>23373</b>          | <b>23373</b>                            |                       |
| V-YEAR   | XY-AB          | IV           | 43           | 63           | 7            | 18963                 | 18963                                   |                       |
|  |                | V            | 33           | 53           | 7            | 12243                 | 12243                                   |                       |
| <b>TOTAL</b>   |                |              |              |              |              | <b>31206</b>          | <b>31206</b>                            |                       |

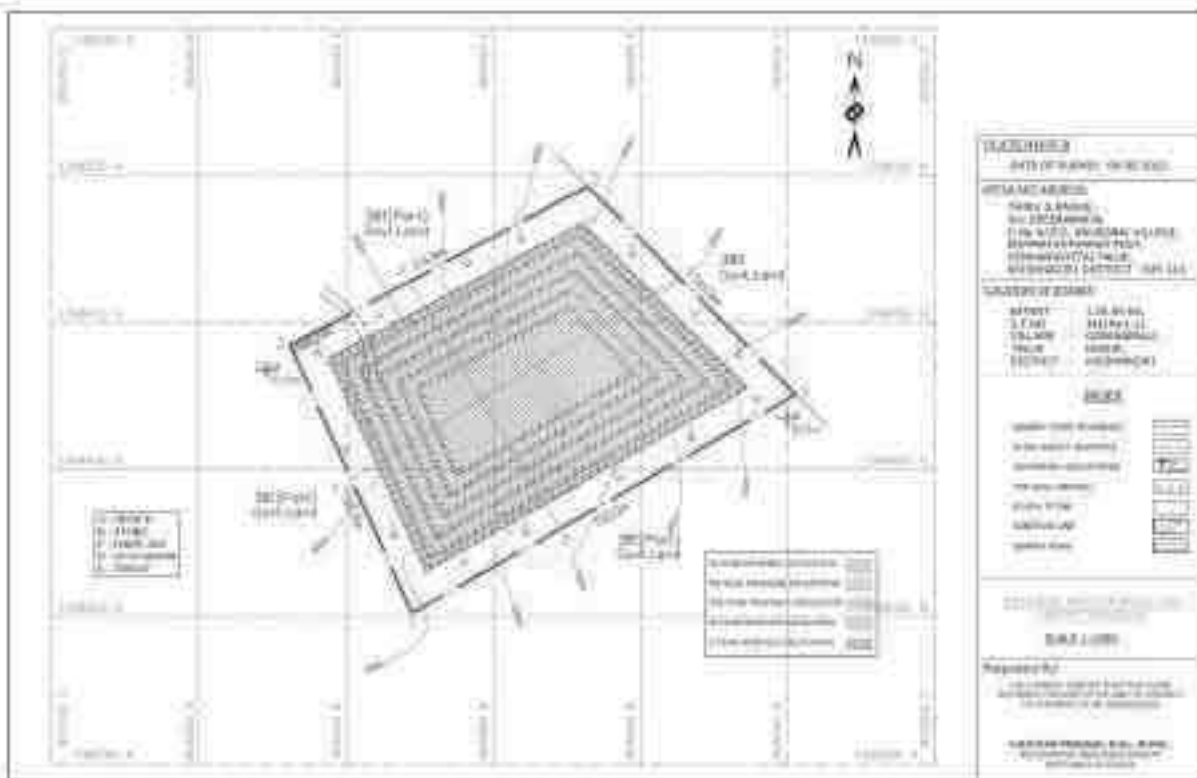
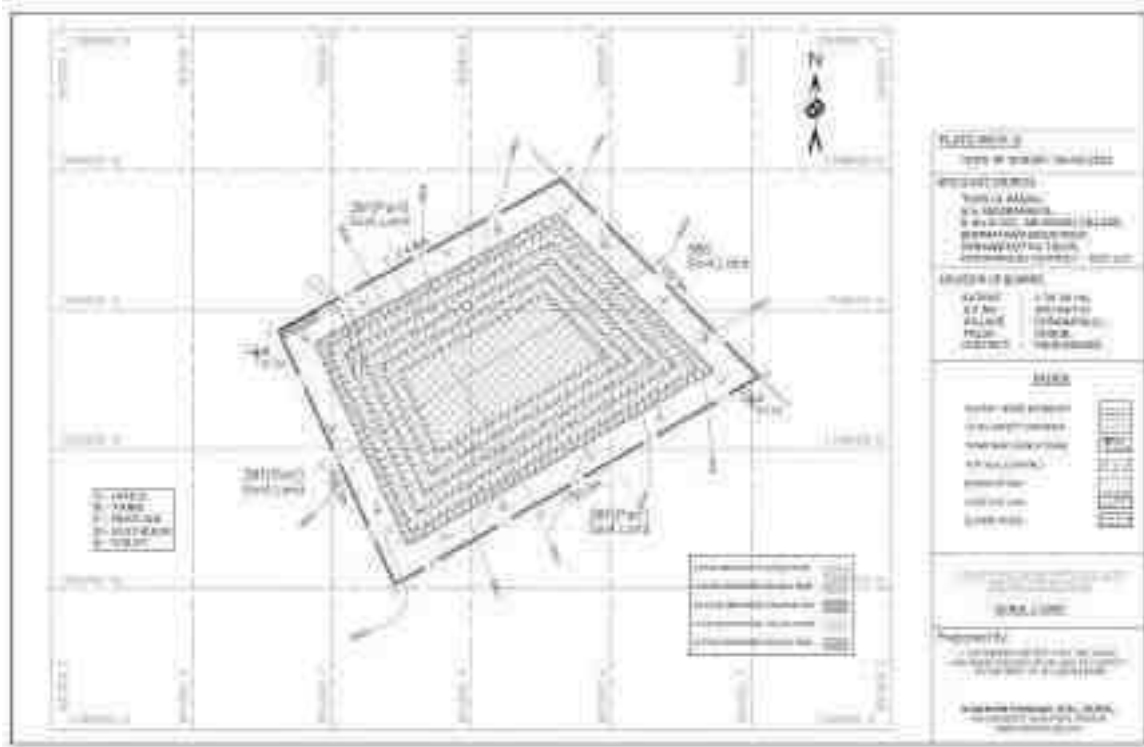


|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|                               |          |               |               |              |
|-------------------------------|----------|---------------|---------------|--------------|
| <b>GRAND TOTAL(I-V years)</b> | <b>=</b> | <b>164437</b> | <b>164437</b> | <b>17316</b> |
|-------------------------------|----------|---------------|---------------|--------------|

| <b>YEARWISE DEVELOPMENT AND PRODUCTION(VI-X) Years)</b> |         |       |          |          |          |                   |  |
|---|---------|-------|----------|----------|----------|-------------------|--|
| YEAR  | Section | Bench | L<br>(m) | W<br>(m) | D<br>(m) | Volume<br>in (m3) | Recoverable<br>Reserve<br>in m3 (100%) |
| VI-<br>YEAR   | XY-AB   | V     | 53       | 53       | 7        | 19663             | 19663                                  |
| VII-<br>YEAR  |         | VI    | 38       | 43       | 7        | 11438             | 11438                                  |
| VIII-<br>YEAR   |         | VI    | 38       | 43       | 7        | 11438             | 11438                                  |
| IX-<br>YEAR   |         | VII   | 66       | 33       | 7        | 15246             | 15246                                  |
| X-YEAR  |         | VIII  | 56       | 23       | 7        | 9016              | 9016                                   |
| <b>Total (VI-X years) =</b>                             |         |       |          |          |          | <b>66801</b>      | <b>66801</b>                           |
| <b>Grand Total (I-X Years) =</b>                        |         |       |          |          |          | <b>231238</b>     | <b>231238</b>                          |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 4.24.0 Ha by Thiru.S.Marimuthu</b>           | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>Thiru.S.Marimuthu</b>  |                         |
| <b>Project Location</b>  | <b>Kottaiyur Village, Virudhunagar Taluk, Virudhunagar District</b> |                         |



**Figure 2.9 Year wise Production Plan**

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                         |
| <i>Project Location</i>  | <i>Gopanapalli village, Hosur tehsil, Krishnagiri district</i> |                         |

## **2.7 TYPE OF MINING**

The proposed project is an open cast mechanized mining with one with 7.0 meter vertical bench with a bench width of 5.0 meter. However, as far as the quarrying of Rough Stone is concerned, observance of the provisions of regulations 106(2) (b) as above is seldom possible due to various inherent petro genetic factors coupled with mining difficulties. Hence, it is proposed to obtain relaxation to the provisions of the above regulation from the Director of Mines Safety for which necessary provision is available with the Regulation 106(2) (b) of MMR-1961, under Mines Act- 1952.

### **2.7.1 Method of Working:**

The Rough stone is proposed to quarry at 7m bench height & 5m width with conventional Open cast mechanized method. The quarrying operation will be carried out in conjunction with conventional method of mining using Jack hammer drilling and blasting for shattering effect and loosen the Rough stone.

### **2.7.2 Overburden**

The entire lease area is covered 2.0m of Top Soil(Gravel) and the estimated quantity of Top soil(Gravel) is 17316m<sup>3</sup>. Top Soil(Gravel) formation will be removed and transported to the needy end user, only after obtaining permission and paying necessary seigniorage fees to the Government.

### **2.7.3 Machineries to be used**

Type of machineries proposed for quarrying operation for the entire project is listed below.

**Table 2-10: List of Machineries used**

|                      |   |
|----------------------|---|
| For Mining operation | Excavator of 0.9 Cu.m bucket capacity<br>Jack Hammer (30-32 mm dia)<br>Tractor mounted compressor |
| Loading Equipment    | Excavator of 0.9 Cu.m bucket capacity   |
| Transportation       | Tipper 1No. of 10/20 M.T capacity   |

### **Blasting:**

#### **2.7.3.1 Blasting Pattern:**

The quarrying operation will be carried out in conjunction with conventional method of mining using Jack hammer drilling and blasting for shattering effect and loosen the Rough stone.

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                         |
| <i>Project Location</i>  | <i>Gopanapalli village, Hosur tehsil, Krishnagiri district</i> |                         |

### 2.7.3.2 Drilling & Blasting:

Drilling and Blasting Parameters are as follows

**Table 2-11: Drilling and Blasting Parameters**

|    |                                  |   |
|----|----------------------------------|---|
| 1  | Diameter of the hole             | 32-36 mm  |
| 2  | Spacing                          | 60 Cms  |
| 3  | Depth                            | 1 to 1.5 m  |
| 4  | Charge / Hole                    | D.Cord with water or 70gms of gun powder or Gelatine. |
| 5  | Pattern of hole                  | Zig Zag   |
| 6  | Inclination of hole              | 70° from the horizontal.                              |
| 7  | Quantity of rock broken          | 0.45 MT x 2.6 = 1.17 MT                               |
| 8  | Quantity of rock broken per day  | 362.8m <sup>3</sup>                                   |
| 9  | Control Blasting efficiency @90% | 1.17 x 90% = 1.05MT / hole                            |
| 10 | Charge per hole                  | 140 gms of 25mm dia cartridge                         |

### 2.7.3.3 Types of Explosives to be used:

Slurry Class 3 explosives, type of nitro compound are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling or primary blasting is proposed. Detonators of Class 3 and Safety fuse of Class 6 are used.

### 2.7.3.4 Measures to minimize ground vibration due to blasting:

The quarry is situated more than 1 km from the nearby villages. Controlled blasting measures will be adopted for minimizing the ground vibration and fly of rocks. Shallow depths jackhammer drilling & blasting is proposed to be carried out with minimum use of explosive mainly to give shattering effect in rough stone for easy excavation and to control fly of rock.

**Table 2-12: Blasting Details**

|   |                      |            |
|---|----------------------|------------|
| 1 | Diameter of the hole | 32-36 mm   |
| 2 | Spacing              | 60 Cms     |
| 3 | Depth                | 1 to 1.5 m |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                         |
| <i>Project Location</i>  | <i>Gopanapalli village, Hosur tehsil, Krishnagiri district</i> |                         |

|    |                                  |   |
|----|----------------------------------|---|
| 4  | Charge / Hole                    | D.Cord with water or 70gms of gun powder or Gelatine. |
| 5  | Pattern of hole                  | Zig Zag   |
| 6  | Inclination of hole              | 70 <sup>0</sup> from the horizontal.                  |
| 7  | Quantity of rock broken          | 0.45 MT x 2.6 = 1.17 MT                               |
| 8  | Quantity of rock broken per day  | 362.8m <sup>3</sup>                                   |
| 9  | Control Blasting efficiency @90% | 1.17 x 90% = 1.05MT / hole                            |
| 10 | Charge per hole                  | 140 gms of 25mm dia cartridge                         |

### 2.7.3.5 Storage & Safety measures taken during blasting:

The project proponent “Thiru S.Raghu” will engage an authorized explosive agency to carry out the small amount of blasting and it will be supervised by Permit Mines Manager. The copy of the explosive certificate is attached as *Annexure*.

## 2.8 MAN POWER REQUIREMENTS

The manpower requirement to meet out the production Schedule and the machinery strength envisaged in the mining plan and to comply with the statutory provisions of the Mines Safety Regulations is as follows.

**Table 2-13: Man Power Requirements**

|              |                                  |                   |               |
|--------------|----------------------------------|-------------------|---------------|
|              | Skilled                          | Operator          | 2             |
|              |                                  | Mechanic          | 1             |
|              |                                  | Blaster/Mat       | 1             |
| 2            | Semi skilled                     | Driver            | 2             |
| 3            | Unskilled                        | Musdoor/Labours   | 5             |
|              |                                  | Unskilled-helpers | 4             |
| 4            | Management and Supervisory staff |                   | 3             |
| <b>Total</b> |                                  |                   | <b>18 Nos</b> |

No child less than 18 years will be entertained during quarrying operations.

### 2.8.1 *Water Requirement*

Total water requirement for the mining project is 2.0 KLD. Domestic water will be sourced from nearby Goolisandram village and other water will be source from nearby road tankers supply.

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                         |
| <i>Project Location</i>  | <i>Gopanapalli village, Hosur tehsil, Krishnagiri district</i> |                         |

**Table 2-14: Water Requirement**

| <b>Purpose</b>   | <b>Quantity</b> | <b>Sources</b>  |
|------------------|-----------------|---|
| Drinking Water   | 0.5 KLD         | Packaged Drinking water vendors available in Goolisandram which is about 0.37km NNW of the area |
| Green belt       | 0.75KLD         | Other domestic activities through road tankers supply   |
| Dust suppression | 0.75KLD         | From road tankers supply  |
| <b>Total</b>     | <b>2.0 KLD</b>  |   |

**2.9 PROJECT IMPLEMENTATION SCHEDULE**

The implementation schedule of the proposed Mine Lease of Thiru S.Raghu (1.30.0 ha) is as follows.

**Table 2-15: Mining Schedule**

| <b>MINING SCHEDULE</b>  |         |        |        |        |        |
|---|---------|--------|--------|--------|--------|
| Activity  | Feb -24 | Feb-25 | Feb-26 | Feb-27 | Feb-28 |
| Site Clearance  |         |        |        |        |        |
| Excavation – Rough stone/Overburden                           |         |        |        |        |        |
| I Year Production – Cum – 55,692Rough Stone and 17,316 Gravel |         |        |        |        |        |
| II Year Production – Cum – 27,083Rough Stone                  |         |        |        |        |        |
| III Year Production – Cum – 27,083Rough Stone                 |         |        |        |        |        |
| IV Year Production - Cum – 23,373Rough Stone                  |         |        |        |        |        |
| V Year Production – Cum – 31,206Rough Stone                   |         |        |        |        |        |

**2.10 SOLID WASTE MANAGEMENT**

**Table 2-15: Solid Waste Management**

| <b>S. No</b> | <b>Type</b> | <b>Quantity</b> | <b>Disposal Method</b> |
|--------------|-------------|-----------------|------------------------|
|--------------|-------------|-----------------|------------------------|

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                         |
| <i>Project Location</i>  | <i>Gopanapalli village, Hosur tehsil, Krishnagiri district</i> |                         |

|   |           |             |                                    |
|---|-----------|-------------|------------------------------------|
| 1 | Organic   | 2.8 kg/day  | Municipal bin including food waste |
| 2 | Inorganic | 4.32 kg/day | TNPCB authorized recyclers         |

As per CPCB guidelines: MSW per capita/day =0.45 kg/day

## **2.11 MINE DRAINAGE**

The quarry operation is proposed up to a depth of 51 m below ground level. The water table is below 88 m from the ground level which is observed from the nearby bore wells and bore wells of this area. Hence the ground water will not be affected in any manner due to the quarrying operation during the entire lease period.

## **2.12 POWER REQUIREMENT**

This Rough stone quarry project does not require huge water and electricity for the project.

**16 Litre** diesel per hour for excavator for mining and loading for Rough Stone needed and **10 Litre** diesel per hour for excavation of Top soil needed.

## **2.13 PROJECT COST**

|                     |                  |
|---------------------|------------------|
| Cost of the Project |                  |
| Fixed cost          | Rs.1,31,90,000/- |
| Operational cost    | Rs.30,00,000/-   |
| EMP cost            | Rs.169,70,946/-  |

## **2.14 GREENBELT**

1. The development of greenbelt in the peripheral buffer zone of the mine area.
2. Green belt has been recommended as one of the major components of Environmental Management plan, which will improve ecology, environment and quality of the surrounding area.
3. Local trees like, Neem, Vilvam Vaagai, Naval etc will be planted along the lease boundary and avenues as well as over non-active dumps at a rate of 700 trees per annum with interval 5m.
4. The rate of survival expected to be 80% in this area

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                         |
| <i>Project Location</i>  | <i>Gopanapalli village, Hosur tehsil, Krishnagiri district</i> |                         |

**Table. 2-17 Plantation/ Afforestation Program**

| <b>Name of species proposed</b>   | <b>Survival</b> | <b>No of species</b> |
|---|-----------------|----------------------|
| Neem, Vilvam Vaagai, Eachai, Naval, Mantharai, Magizha Maram, Vila maram, Poo Marudhu, Panai Maram, Marudha Maram, Thandri, Sengondrai, Poovarasu, Therthag kottai , Pungam | 80%             | 700                  |
| <b>Total</b>  |                 | <b>700</b>           |



|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>        | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

### 3 Description of the Environment

#### 3.1 GENERAL:

The method of mining for extracting rough stone quarry and gravel is required to be selected in such a manner to ensure sustainable development. Mining activities invariably affect the existing environmental status of the site. It has both adverse and beneficial effects. 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 and sustainable resource extraction.

To understand the existing environmental scenario, Baseline data helps in identification, prediction and evaluation of impacts in Environmental Impact assessment. Through field study, baseline data are collected considering various factors of the project. This includes-

- Physical- the area, the soil properties, the geological characteristics, the topography, etc
- Chemical- water, air, noise and soil pollution levels, etc.
- Biological- the biodiversity of the area, types of flora and fauna, species richness, species distribution, types of ecosystems, presence or absence of endangered species and/or sensitive ecosystems etc.
- Socioeconomic- demography, social structure, economic conditions, developmental capabilities, displacement of locals, etc.

#### 3.1.1 *Study Area:*

The study area for the mining projects is as follows:

- Mine lease area as the “core zone”
- A study area of 10 km radius from the project boundary is designated as buffer Zone and for the study of Socio-economic status, 10 km radius from the boundary limits of the mine lease area has been selected.

We have obtained Terms of Reference from SEIAA vide Letter No. SEIAA-TN/ F. No. 9566/ ToR-1326/2023 Dated: 10.02.2023. The baseline monitoring is carried out in January to March 2023 and the

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>        | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

analysis is briefed in the EIA report. The proponent has engaged M/s. Ecotech labs Pvt. Ltd for carrying out the existing baseline study.

### 3.1.2 *Instruments Used*

The following instruments were used at the site for baseline data collection.

1. Respirable Dust Sampler with attachment for gaseous Pollutants, Envirotech APM 460, APM411.
2. Fine Particulate Matter (FPM) Sampler, APM 550
4. Sound Level Meter Model SL-4010
5. 2000 series watchdog automatic weathering monitoring station

### 3.1.3 *Baseline Data Collection Period:*

The baseline data is collected in accordance with the CPCB Guidelines. The Baseline study is carried out from January to March 2023.

### 3.1.4 *Frequency of Monitoring*

**Table 3-1: Frequency of Sampling and Analysis**

| <b>Attributes</b>  | <b>Sampling</b> | <b>Frequency</b>   |
|--|-----------------|--|
| Air environment – Meteorological<br>(wind speed, wind direction,<br>rainfall, humidity, temperature) | Project site    | 1 hourly continuous  |
| Air environment – Pollutants<br>PM 10<br>PM 2.5<br>SO <sub>2</sub><br>NO <sub>x</sub><br>Lead in PM  | 5 locations     | 24 hourly twice a week<br>4 hourly.<br>Twice a week, One non-monsoon season<br>8 hourly, twice a week<br>24 hourly, twice a week |
| Noise  | 5 locations     | 24 hourly Once in 5 locations  |
| Water (Ground water)   | 5 locations     | Once in 5 locations  |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>        | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|   |                                  |                     |
|---|----------------------------------|---------------------|
| pH, Temperature, Turbidity, Magnesium Hardness, Total Alkalinity, Chloride, Sulphate, Fluoride, Nitrate, Sodium, Potassium, Salinity, Total nitrogen, Total Coliforms, Fecal Coliforms                          |                                  |                     |
| Water (surface water)<br>pH, Temperature, Turbidity, Magnesium Hardness, Total Alkalinity, Chloride, Sulphate, Fluoride, Nitrate, Sodium, Potassium, Salinity, Total nitrogen, Total Coliforms, Fecal Coliforms | Sample from nearby lakes/river   | One-time Sampling   |
| Soil<br>(Organic matter, Texture, pH, Electrical Conductivity, Permeability, Water holding capacity, Porosity)  | 5 locations                      | Once in 5 locations |
| Ecology and biodiversity Study  | Study area covering 10 km radius | One-time Sampling   |
| Socio- Economic study<br>(Population, Literacy Level, employment, Infrastructure like school, hospitals & commercial establishments)  | Villages around 10 km radius     | One-time Sampling   |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>        | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

### 3.1.5 Secondary data Collection

Apart from the primary data, Secondary data is also used for the collection; collation; synthesis and interpretation

- Flora & Faunal Study
- Land use study
- Demography and socio-economic analysis
- Meteorological data, from Indian Meteorological Department (IMD)

### 3.1.6 Study area details

**Table 3-2 Study area details**

| S. No   | Description                | Details   | Source                    |
|---|----------------------------|---|---------------------------|
| 1.  | Project Location           | S.F.No. 381(Part-1) - 1.30.0 Ha, Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu State | Field Study               |
| 2.  | Latitude & Longitude       | Latitude : 12° 38' 05.49" to 12° 38' 03.12" N<br>Longitude : 77° 48' 43.41" to 77° 48' 37.72" E           | Topo Sheet                |
| 3.  | Topo Sheet No.             | 57 H/14   | Survey of India Toposheet |
| 4.  | Mine Lease Area            | 1.30.0 Ha   | --                        |
| Demography in the study area (as per Census 2011) |                            |   |                           |
| 5.  | Total Population           | 2764  | Census Survey of India    |
| 6.  | Total Number of Households | 605   |                           |
| 7.  | Maximum Temperature (°C)   | 36  | IMD                       |
| 8.  | Minimum Temperature (°C)   | 21  |                           |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</b>        | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |

| 9.                            | Ecological Sensitive Areas - Wetlands, watercourses or other waterbodies, coastal zone, biospheres, mountains, forests | <ul style="list-style-type: none"> <li>❖ Devaganapalli Lake, 1.71 km, NW</li> <li>❖ Nagondapalli Lake, 4.48km, NW</li> <li>❖ Achettapalli Lake, 5.61 km, N</li> <li>❖ Nanjappan Kodigai Eri, 5.80km, SE</li> <li>❖ Bynakanahalli kere, 5.63 km ,W</li> <li>❖ Mathukur kere,6.57 km, W</li> <li>❖ Uliveeranahally Kere,7.10 km ,WNW</li> <li>❖ Poonapalli Lake, 7.35 km, NW</li> <li>❖ Chinnatti Dam, 7.10 km ,SSE</li> <li>❖ Mathigiri lake, 7.36 km, N</li> <li>❖ NB Agraharam lake, 8.82 km, NNE</li> <li>❖ Gokul nagar Lake, 8.07 km, NNE</li> <li>❖ Karapalli Lake, 8.89 km, NNE</li> <li>❖ Ponnaiyar River, 11.86 km, NE</li> </ul>   | Google Earth/Field Study |        |                         |                               |  |  |   |                             |              |   |                        |              |   |                               |             |                  |  |  |   |   |             |   |                   |             |                          |
|-------------------------------|--|--|--------------------------|--------|-------------------------|-------------------------------|--|--|---|-----------------------------|--------------|---|------------------------|--------------|---|-------------------------------|-------------|------------------|--|--|---|---|-------------|---|-------------------|-------------|--------------------------|
| 10.                           | Densely Populated area   | Hosur - 11.66 Km -N  |                          |        |                         |                               |  |  |   |                             |              |   |                        |              |   |                               |             |                  |  |  |   |   |             |   |                   |             |                          |
| 11.                           | Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)           | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">S. No</th> <th style="text-align: center;">Places</th> <th style="text-align: center;">Dist. From Project Site</th> </tr> </thead> <tbody> <tr> <td colspan="3" style="text-align: center;"><b>Schools &amp; Colleges</b></td> </tr> <tr> <td style="text-align: center;">1</td> <td>Sishya International school</td> <td>1.20 km, SSW</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Government high school</td> <td>3.61 km, ENE</td> </tr> <tr> <td style="text-align: center;">3</td> <td>Kundhumaranapalli high school</td> <td>4.21 km ESE</td> </tr> <tr> <td colspan="3" style="text-align: center;"><b>Hospitals</b></td> </tr> <tr> <td style="text-align: center;">1</td> <td>Government primary health care hospital</td> <td>3.30 km, NW</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Sri balaji clinic</td> <td>4.48 km, NE</td> </tr> </tbody> </table> | S. No                    | Places | Dist. From Project Site | <b>Schools &amp; Colleges</b> |  |  | 1 | Sishya International school | 1.20 km, SSW | 2 | Government high school | 3.61 km, ENE | 3 | Kundhumaranapalli high school | 4.21 km ESE | <b>Hospitals</b> |  |  | 1 | Government primary health care hospital | 3.30 km, NW | 2 | Sri balaji clinic | 4.48 km, NE | Google Earth/Field Study |
| S. No                         | Places   | Dist. From Project Site  |                          |        |                         |                               |  |  |   |                             |              |   |                        |              |   |                               |             |                  |  |  |   |   |             |   |                   |             |                          |
| <b>Schools &amp; Colleges</b> |  |  |                          |        |                         |                               |  |  |   |                             |              |   |                        |              |   |                               |             |                  |  |  |   |   |             |   |                   |             |                          |
| 1                             | Sishya International school  | 1.20 km, SSW   |                          |        |                         |                               |  |  |   |                             |              |   |                        |              |   |                               |             |                  |  |  |   |   |             |   |                   |             |                          |
| 2                             | Government high school   | 3.61 km, ENE   |                          |        |                         |                               |  |  |   |                             |              |   |                        |              |   |                               |             |                  |  |  |   |   |             |   |                   |             |                          |
| 3                             | Kundhumaranapalli high school  | 4.21 km ESE  |                          |        |                         |                               |  |  |   |                             |              |   |                        |              |   |                               |             |                  |  |  |   |   |             |   |                   |             |                          |
| <b>Hospitals</b>              |  |  |                          |        |                         |                               |  |  |   |                             |              |   |                        |              |   |                               |             |                  |  |  |   |   |             |   |                   |             |                          |
| 1                             | Government primary health care hospital  | 3.30 km, NW  |                          |        |                         |                               |  |  |   |                             |              |   |                        |              |   |                               |             |                  |  |  |   |   |             |   |                   |             |                          |
| 2                             | Sri balaji clinic  | 4.48 km, NE  |                          |        |                         |                               |  |  |   |                             |              |   |                        |              |   |                               |             |                  |  |  |   |   |             |   |                   |             |                          |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>        | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

### 3.1.7 *Site Connectivity:*

The site is connected to (SH17A Hosur-Denkanikottai road) – 2.88km, W



**Figure 3.1: Site Connectivity**

## **3.2 LAND USE ANALYSIS**

### *3.2.1 Land Use Classification*

Land Use / Land Cover - Land Use refers to man's activity and the various uses, which are carried on land. Land Cover refers to natural vegetation, water bodies, rock/soil, artificial cover and others, resulting due to land transformation. The present Land Use/Land Classification map is developed with following objectives. The main objective of the study is to classify the different land use within 10 km from the project boundary.

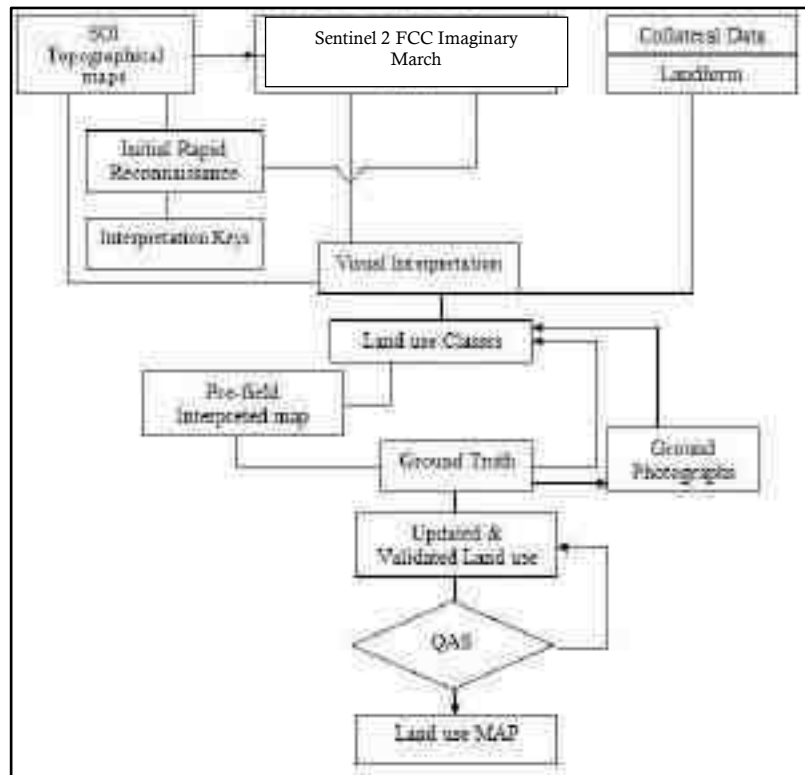
|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>        | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

### 3.2.2 Methodology

Information of land use and land cover is important for many planning and management activities concerning the surface of the earth (Agarwal and Garg, 2000). Land use refers to man's activities on land, which are directly related to land (Anderson et al., 1976). The land use and the land cover determine the infiltration capacity. Barren surfaces are poor retainers of water as compared to grasslands and forests, which not only hold water for longer periods on the surface, but at the same time allow it to percolate down.

The terms 'land use' and 'land cover' (LULC) are often used to describe maps that provide information about the types of features found on the earth's surface (land cover) and the human activity that is associated with them (land use). Satellite remote sensing is being used for determining different types of land use classes as it provides a means of assessing a large area with limited time and resources. However, satellite images do not record land cover details directly and they are measured based on the solar energy reflected from each area on the land. The amount of multi spectral energy in multi wavelengths depends on the type of material at the earth's surface and the objective is to associate particular land cover with each of these reflected energies, which is achieved using either visual or digital interpretation. In the present study the task is to study in detail the land use and land cover in and around the project site. The study envisages different LULC around the proposed project area and the procedure adopted is as below.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</b>        | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |



**Figure 3.2 Flow Chart showing Methodology of Land use mapping**

### 3.2.3 *Satellite Data*

Sentinal 2 multispectral satellite data of 2020 was utilized for the present study. Details of satellite data is given below. The rectification of imagery was carried out on to bring the digital data on the earth coordinate system by means of ground control point (GCP) assignments/SOI topo sheets.

### 3.2.4 *Scale of mapping*

Considering the user defined scale of mapping, 1:50000 Sentinal 2 data was used for Land use / Land cover mapping of 10 km radius for proposed site. The description of the land use categories for 10 km radius and the statistics are given for 10 km radius.

### 3.2.5 *Interpretation Technique*

Standard on screen visual interpretation procedure was followed. The various Land use / Land cover classes interpreted along with the SOI topographical maps during the initial rapid reconnaissance of the



|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>        | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

study area. The physiognomic expressions conceived by image elements of color, tone, texture, size, shape, pattern, shadow, location and associated features are used to interpret the FCC imagery. Image interpretation keys were developed for each of the LU/LC classes in terms of image elements.

June 2016 FCC imagery (Digital data) of the study area was interpreted for the relevant land use classes. On screen visual interpretation coupled with supervised image classification techniques are used to prepare the land use classification.

1. Digitization of the study area (10 km radius from the proposed site) from the topo maps
2. In the present study the sentinel satellite image and SOI topo sheets of 58J/10, 58J/11, 58J/14, 58J/15 have been procured and interpreted using the ERDAS imaging and ARC-GIS software adopting the necessary interpretation techniques.
3. Satellite data interpretation and vectorization of the resulting units
4. Adopting the available guidelines from manual of LULC mapping using Satellite imagery (NRSA, 1989)
5. Field checking and ground truth validation
6. Composition of final LULC map

The LULC Classification has been done at three levels where level -I being the broad classification about the land covers that is Built-up land, agriculture land, waste land, wet lands, and water bodies. These are followed by level –II where built-up land is divided into towns/cities as well villages. The Agriculture land is divided into different classes such as cropland, Fallow, Plantation, while wastelands are broadly divided into, Land with scrub and without Scrub and Mining and Industrial wasteland. The wetlands are classified into inland wetlands, coastal wetlands and islands. The water bodies are classified further into River/stream, Canal, Tanks and bay. In the present study level II classification has been undertaken. The SOI Topo map is presented in Annexure and Satellite imagery of 10 km radius from the project site is presented Annexure

### 3.2.6 *Field Verification*

Field verification involved collection, verification and record of the different surface features that create specific spectral signatures / image expressions on FCC. In the study area, doubtful areas identified in course of interpretation of imagery is systematically listed and transferred on to the corresponding SOI topographical maps for ground verification. In addition to these, traverse routes were

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>        | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

planned with reference to SOI topographical maps to verify interpreted LU/LC classes in such a manner that all the different classes are covered by at least 5 sampling areas, evenly distributed in the area. Ground truth details involving LU/LC classes and other ancillary information about crop growth stage, exposed soils, landform, nature and type of land degradation are recorded and the different land use classes are taken the Land use map is presented in Annexure

### *3.2.7 Description of the Land Use / land cover classes*

#### **3.2.7.1 Water**

Areas where water was predominantly present throughout the year; may not cover areas with sporadic or ephemeral water; contains little to no sparse vegetation, no rock outcrop nor built up features like docks; examples: rivers, ponds, lakes, oceans, flooded salt plains.

#### **3.2.7.2 Trees**

Any significant clustering of tall (~15-m or higher) dense vegetation, typically with a closed or dense canopy; examples: wooded vegetation, clusters of dense tall vegetation within savannas, plantations, swamp or mangroves (dense/tall vegetation with ephemeral water or canopy too thick to detect water underneath).

#### **3.2.7.3 Grass**

Open areas covered in homogenous grasses with little to no taller vegetation; wild cereals and grasses with no obvious human plotting (i.e., not a plotted field); examples: natural meadows and fields with sparse to no tree cover, open savanna with few to no trees, parks/golf courses/lawns, pastures.

#### **3.2.7.4 Flooded vegetation**

Mix of small clusters of plants or single plants dispersed on a landscape that shows exposed soil or rock; scrub-filled clearings within dense forests that are clearly not taller than trees; examples: moderate to

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>        | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

sparse cover of bushes, shrubs and tufts of grass, savannas with very sparse grasses, trees or other plants.

### **3.2.7.5 Crops**

Human planted/plotted cereals, grasses, and crops not at tree height; examples: corn, wheat, soy, fallow plots of structured land.

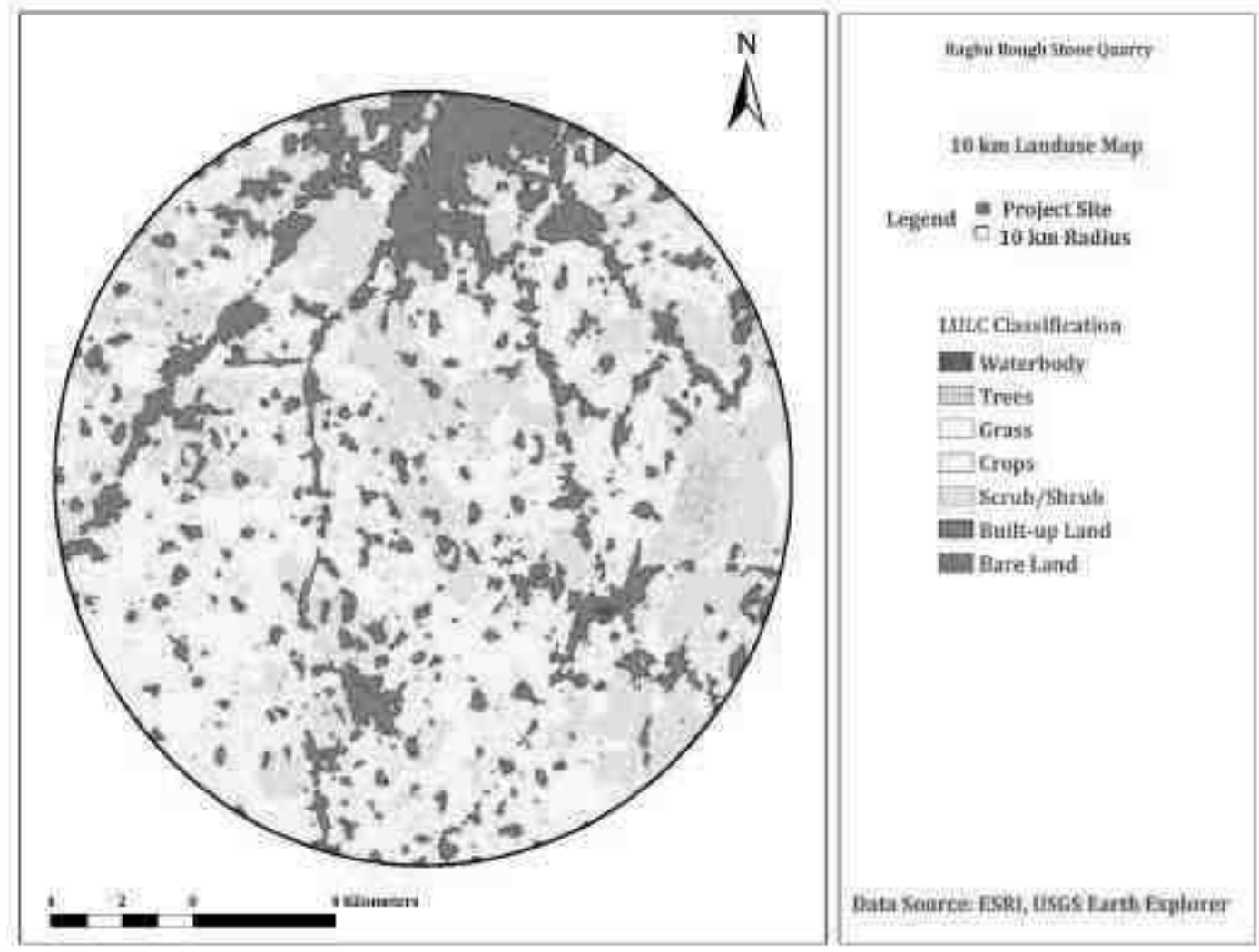
### **3.2.7.6 Scrub/Shrub**

Mix of small clusters of plants or single plants dispersed on a landscape that shows exposed soil or rock; scrub-filled clearings within dense forests that are clearly not taller than trees; examples: moderate to sparse cover of bushes, shrubs and tufts of grass, savannas with very sparse grasses, trees or other plants

### **3.2.7.7 Built Area**

Human made structures; major road and rail networks; large homogenous impervious surfaces including parking structures, office buildings and residential housing; examples: houses, dense villages / towns / cities, paved roads, asphalt.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</b>        | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |



**Figure 3.3 Land use classes around 10 km radius from the project site**

### 3.2.7.8 Different Land use classes around 10 km radius from the project site

**Table 3-3 Land use pattern**

| Sl.No | Categories    | Area in Sq.m |
|-------|---------------|--------------|
| 1     | Water Body    | 0.33         |
| 2     | Trees         | 3.14         |
| 3     | Grass         | 0.69         |
| 4     | Crops         | 168.18       |
| 5     | Scrub/Shrub   | 80.5         |
| 6     | Built-up Area | 66.85        |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>        | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|   |             |      |
|---|-------------|------|
| 7 | Barren Land | 0.16 |
|---|-------------|------|

### **3.3 WATER ENVIRONMENT**

#### *3.3.1 Contour & Drainage*

The project site is 840 m AMSL.

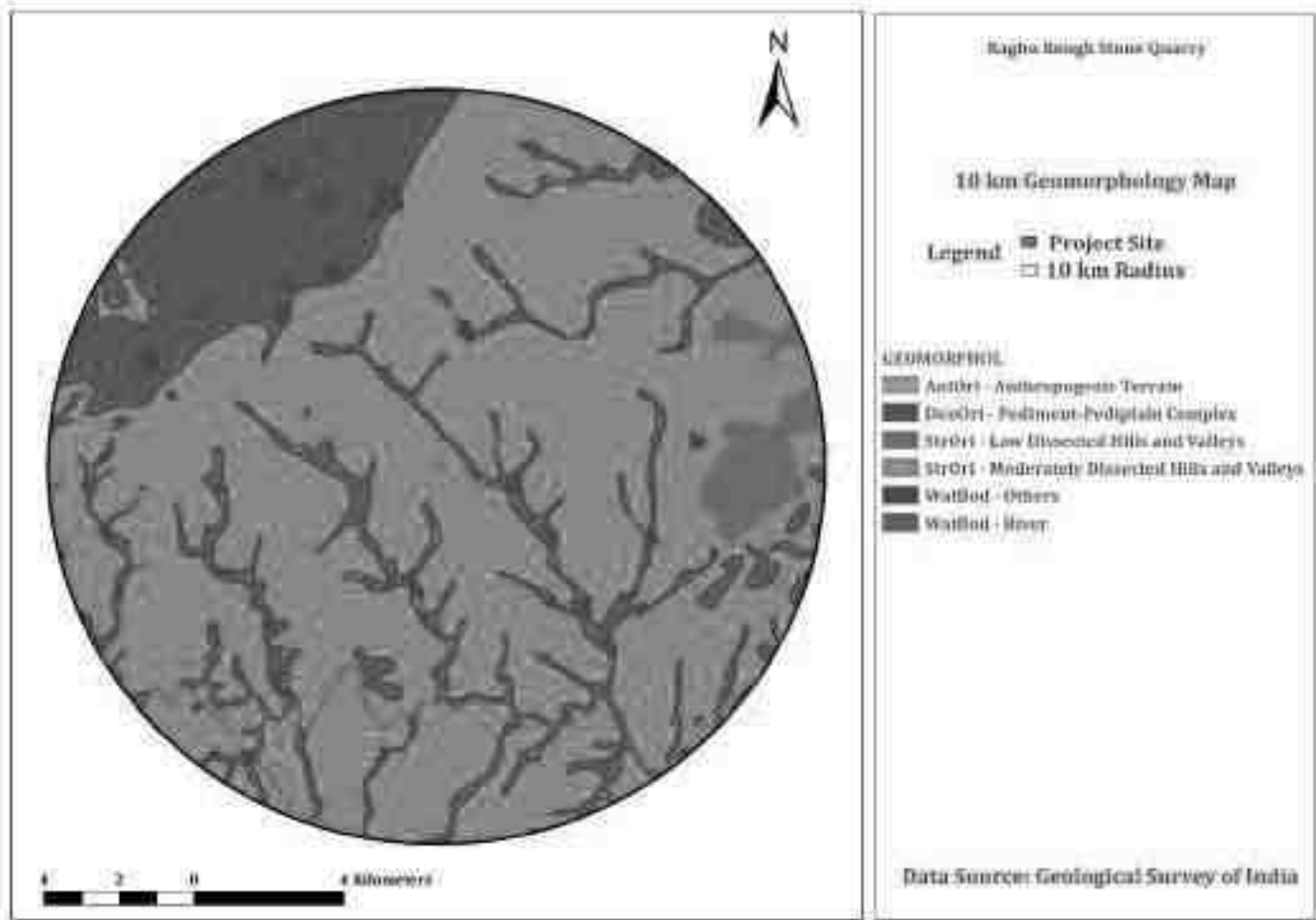
#### *3.3.2 Geomorphology*

The prominent geomorphic units identified in the district through interpretation of satellite imagery are structural hills in the southwestern part of the district, denudational land forms like buried pediments in the plains and inselbergs and plateaus represented by conical hills aligned with major lineaments. Krishnagiri district forms part of the upland plateau region with many hill ranges and undulating plains. The western part of the district has hill ranges of Mysore plateau with a chain of undulating hills and deep valleys extending in NNE-SSW direction. The plains of the district have an average elevation of 488 m amsl. The plateau region along the western boundary and the northwestern part of the district has an average elevation of 914 m amsl. The Guthrayan Durg with an elevation of 1395 m amsl is the highest peak in the district.

#### **Soils**

Soils have been classified into Black soil, mixed soil, red loamy soil, gravelly and sandy soils. Red loamy and sandy soils are predominant in Hosur taluk. Vast stretches of loam soils and black soils occur in Krishnagiri district.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</b>        | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |



**Figure 3.4 Geomorphology within 10km from the project site**

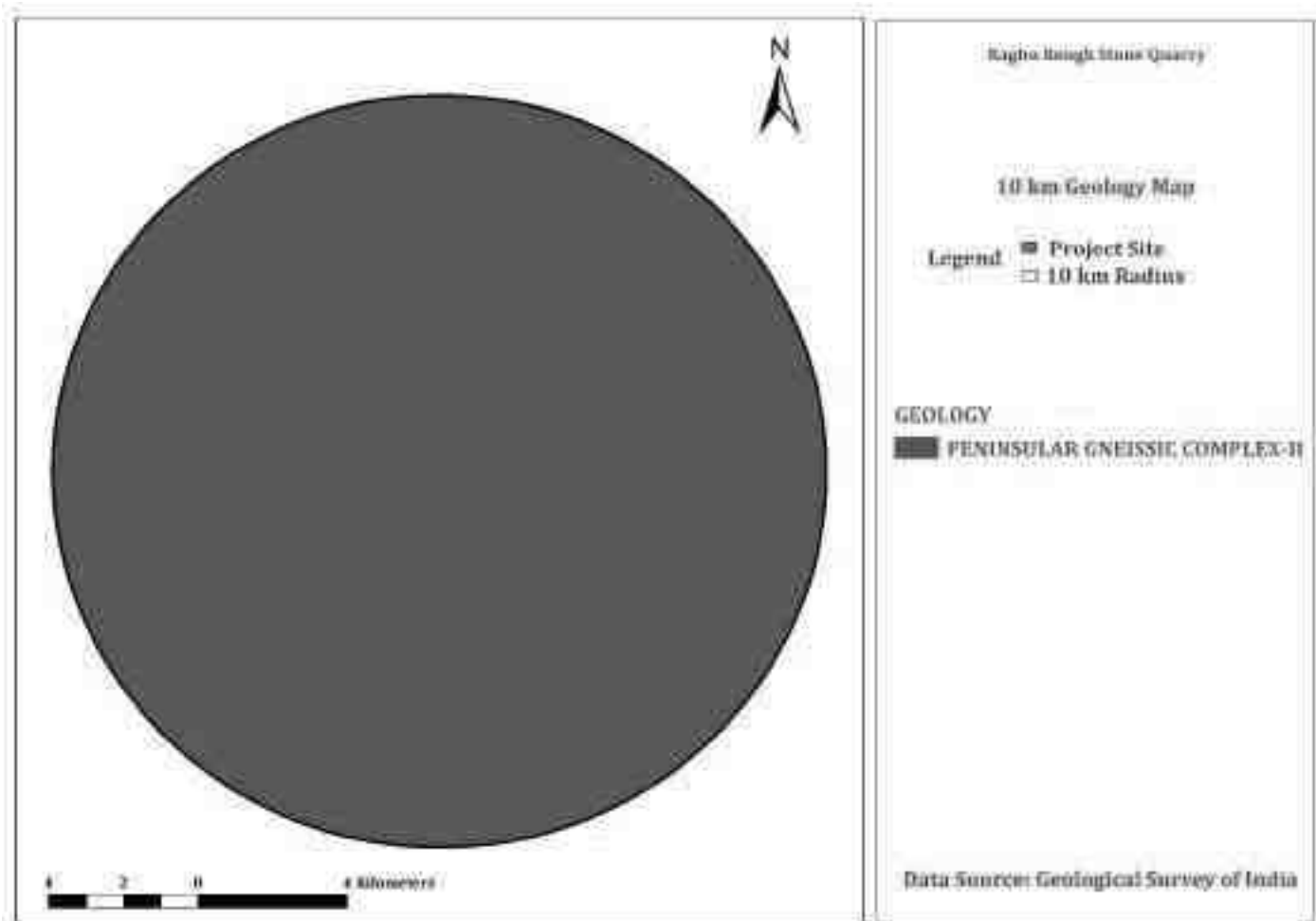
### 3.3.3 *Geology:*

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, Migmatites Complex, Sathyamangalam Group of rocks, while the latter is represented by Alkaline rocks. The Khondalite Group includes garnet sillimanite gneiss and quartzite which occur as small patches. The migmatite complex includes garnet ferrous quartzofeldspathic gneiss and horn blends biotite gneiss, the former exposed on the western part of the district. The Sathyamangalam Group includes fuchsite quartzite, sillimanite mica schist and amphibolites. The Bhavani Group in this area includes fissile hornblende-biotite gneiss, granitoid gneiss and pink migmatite. Amphibolites with barbed ferruginous

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</b>        | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |

quartzite and associated quartzo-feldspathic rocks (Champion Gneiss) represent the Kolar group and are found west and southwest of Veppanapalli. Following this there are basic intrusions occurring as dykes. The Charnockite Group occupies a major part of the south-west portion of this district with small bands of garnetiferous quartzo-feldspathicgneiss, Granite gneiss and dolerite dykes. The North-East andNorthernpartof the District mainly consist of granite gneiss with small patches of Pink Migmatite, hornblende-biotite gneiss and dolerite dykes. The Eastern part of the district consists of Epidote-Hornblende Gneiss, Ultra Mafics, Syenite and Carbonatite.

The Alkaline Complex is represented by epidote-horn blende gneiss, ultramafics, syenite and carbonatite and these are distributed in the eastern part of the district. Innumerable basic dykes and felsites, quartz, barites and pegmatite veins form part of the Alkali Complex.



**Figure 3.5 Geology within 10km from the project site**

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>        | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

### 3.3.4 Hydrogeology

Krishnagiri district is underlain by Archaean crystalline formations with Recent alluvial deposits of limited areal extent and thickness along the courses of major rivers (Plate-II). The occurrence and movement of ground water are controlled by various factors such as physiography, climate, geology and structural features. Weathered, and fractured crystalline rocks constitute the important aquifer systems in the district.

Ground water generally occurs under phreatic conditions in the weathered mantle and under semi-confined conditions in the fractured zones at deeper levels. The thickness of weathered zones in the district ranges from less than a meter to more than 15 m. The yield of large diameter dug wells in the district, tapping the weathered mantle of crystalline rocks ranges from 100 to 500 lpm. These wells normally sustain in pumping for 2 to 6 hours per day, depending upon the local topography and characteristics of the weathered mantle.

The depth to water level (DTW) during pre monsoon (May 2006) ranged between 0.5 and 9.9 m bgl (Plate-III) in the district. In major part of the district the DTW is more than 5mbgl. Whereas it ranged between 2 and 9.9 m bgl (Plate-IV) during post monsoon, in the district and the DTW is in the range of 5 – 10 m bgl in the entire district except a few isolated pockets.

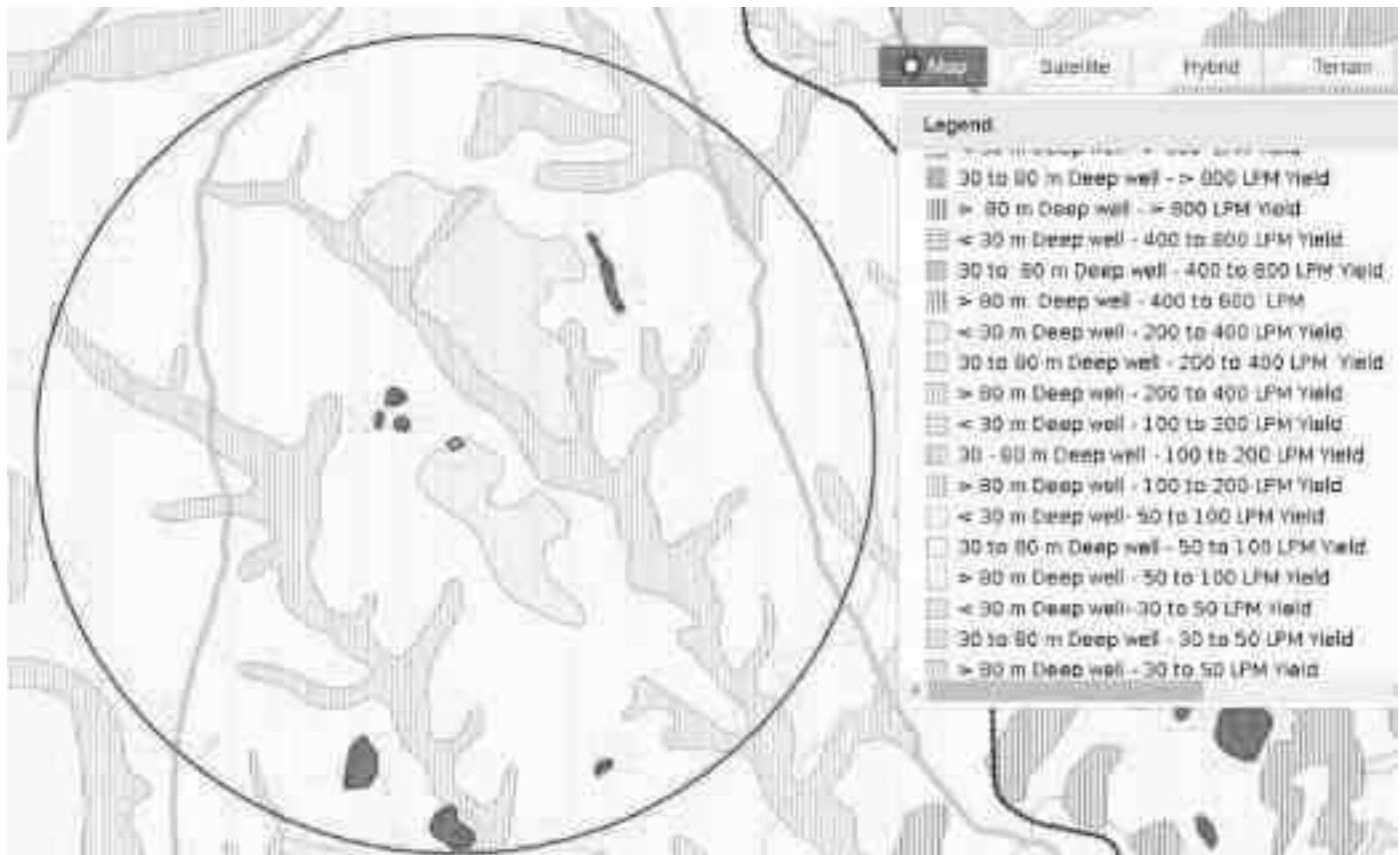
The yield of successful exploratory wells drilled in the district ranged from 0.78 lps to 26 lps. As per the studies the wells drilled in granitic gneiss have higher yields than the wells drilled in charnockites. The specific capacity of the wells ranged from 1.2 to 118.0 lpm/m/dd. The piezometric head of fracture zones varied between 0.50 and 18.45 m bgl.

#### **Aquifer Parameters:**

The transmissivity values of fracture zones ranged from 1 to 188 m<sup>2</sup> /day with low to very low permeability values.



|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</b>        | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |



**Figure 3.6 Ground water prospects within 5 km radius of the project site**

### 3.3.5 Ground water quality monitoring

Ground water quality monitoring is done in the following locations and analysis will be done for physical, chemical & Biological parameters.

**Table 3-4 Ground water Quality Analysis**

|   |   |
|---|---|
| Environmental Parameters: Ground water Quality Analysis |   |
| Monitoring Period                                       | January to March 2023   |
| Design Criteria   | Based on the Environmental settings in the study area   |
| Monitoring Locations                                    | Project Site -GW 1<br>Pups Barandur school -GW2<br>Pattalama Temple - GW 3<br>Poonapalli Govt Primary school - GW 4<br>Anjaneya Temple - GW 5 |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</b>        | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |

|                         |  |
|-------------------------|--|
| Methodology             | Water Samples were collected in 5 Litre fresh cans as per IS 3025 Part I and transported to the laboratory in Iceboxes |
| Frequency of Monitoring | Once in a season   |

### 3.3.5.1 Sampling Procedure

Quality of ground water was compared with IS: 10500: 1991 (Reaffirmed 1993 With Amendment NO -3 July 2010) for drinking purposes. Water samples were collected as Grab sample from five sampling locations in a 5-liter plastic jerry can and 250 ml sterilized clean glass/pet bottle for complete physico-chemical and bacteriological tests respectively. The samples were analyzed as per standard procedure / method given in IS: 3025 (Revised Part) and standard method for examination of water and wastewater Ed. 21st, published jointly by APHA.

**Table 3-5: Standard Procedure**

| S. No | Parameters                            | Test Method  |
|-------|---------------------------------------|--|
| 1     | pH (at 25°C)                          | IS:3025(P -11)1983 RA: 2012  |
| 2     | Electrical Conductivity               | IS:3025(P -14) 2013  |
| 3     | Colour                                | IS:3025 (P -4)1983 RA: 2012  |
| 4     | Turbidity                             | IS:3025(P -10)1984 RA: 2012  |
| 5     | Total Dissolved Solids                | APHA 22 <sup>nd</sup> Edn.2012-2540-C                                |
| 6     | Total Suspended Solids                | IS:3025(P-17)-1984 RA:2012   |
| 7     | Total Hardness as CaCO <sub>3</sub>   | APHA 22 <sup>nd</sup> Edn.2012-2340-C                                |
| 8     | Calcium as Ca                         | APHA 22 <sup>nd</sup> Edn2012.3500 Ca-B                              |
| 9     | Magnesium as Mg                       | APHA 22 <sup>nd</sup> Edn.2012-3500 Mg-B                             |
| 10    | Chloride as Cl                        | IS:3025(P -32)-1988 RA: 2014   |
| 11    | Sulphate as SO <sub>4</sub>           | APHA 22 <sup>nd</sup> Edn.2012-4500 SO <sub>4</sub> <sup>-2</sup> -E |
| 12    | Total Alkalinity as CaCO <sub>3</sub> | APHA 22 <sup>nd</sup> Edn.2012-2320-B                                |
| 13    | Iron as Fe                            | IS:3025(P -53):2003 RA: 2014   |
| 14    | Silica as SiO <sub>2</sub>            | IS:3025(P -35)1988 RA: 2014  |
| 15    | Fluoride as F                         | APHA 22 <sup>nd</sup> Edn.2012-4500-F-D                              |
| 16    | Nitrate as NO <sub>3</sub>            | IS:3025(P -34):1988 RA: 2014   |
| 17    | Sodium as Na                          | IS:3025(P -45):1993 RA: 2014   |
| 18    | Potassium as K                        | IS:3025(P -45):1993 RA: 2014   |
| 19    | Coliform                              | IS:1622:1981:RA:2014   |
| 20    | E.coli                                | IS:1622:1981:RA:2014   |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</b>        | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |

**Table 3-6 Ground water sampling results**

| <b>S. No</b> | <b>Parameters</b>                     | <b>Units</b> | <b>Project Site – GW 1</b> | <b>Pups Barandur school GW 2</b> | <b>Pattalama Temple GW 3</b> | <b>Poonapalli Govt Primary school GW 4</b> | <b>Anjaneya Temple GW 5</b> |
|--------------|---------------------------------------|--------------|----------------------------|----------------------------------|------------------------------|--|-----------------------------|
| 1            | pH (at 25°C)                          | -            | 7.04                       | 7.82                             | 6.98                         | 7.75                                       | 7.28                        |
| 2            | Electrical Conductivity               | µS/cm        | 884                        | 1377                             | 1773                         | 645  | 1339                        |
| 3            | Colour                                | Hazen Unit   | 1                          | 2                                | 3                            | 2  | 2                           |
| 4            | Turbidity                             | NTU          | BQL(LOQ:1)                 | BQL(LOQ:1)                       | BQL(LOQ:1)                   | BQL(LOQ:1)                                 | BQL(LOQ:1)                  |
| 5            | Total Dissolved Solids                | mg/L         | 505                        | 912                              | 975                          | 355  | 832                         |
| 6            | Total Suspended Solids                | mg/L         | BQL(LOQ:2)                 | BQL(LOQ:2)                       | BQL(LOQ:2)                   | BQL(LOQ:2)                                 | BQL(LOQ:2)                  |
| 7            | Total Hardness as CaCO <sub>3</sub>   | mg/L         | 275                        | 566                              | 634                          | 236  | 461                         |
| 8            | Calcium as Ca                         | mg/L         | 85                         | 147                              | 159                          | 61.5                                       | 108                         |
| 9            | Magnesium as Mg                       | mg/L         | 15.2                       | 48.1                             | 57.5                         | 20.1                                       | 46.2                        |
| 10           | Chloride as Cl                        | mg/L         | 33.3                       | 90                               | 286                          | 60.6                                       | 153                         |
| 11           | Sulphate as SO <sub>4</sub>           | mg/L         | 103                        | 303                              | 170                          | 38.6                                       | 187                         |
| 12           | Total Alkalinity as CaCO <sub>3</sub> | mg/L         | 345                        | 311                              | 299                          | 234  | 261                         |
| 13           | Iron as Fe                            | mg/L         | BQL(LOQ:0.1)               | BQL(LOQ:0.1)                     | BQL(LOQ:0.1)                 | BQL(LOQ:0.1)                               | BQL(LOQ:0.1)                |
| 14           | Silica as SiO <sub>2</sub>            | mg/L         | 16.3                       | 15.1                             | 20.7                         | 14.4                                       | 15.9                        |
| 15           | Potassium as K                        | mg/L         | 2.1                        | 6.2                              | 15.2                         | 3.9  | 8.5                         |
| 16           | Sodium as Na                          | mg/L         | 30.1                       | 80.4                             | 221                          | 55.8                                       | 115                         |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>        | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

### 3.3.6 Interpretation of results:

#### 3.3.6.1 Physical parameters of water:

The basic physical parameters of water include

##### **Colour:**

Value observed in Project Site (True/Apparent Color): 1 Hazen unit.

Acceptable and permissible limits: 5 Hazen units and 15 Hazen units respectively. The value in the project site is as same as the acceptable limits prescribed by IS 10500: 2012 (referred as “Standards” from herein).

##### **pH:**

Value observed in the Project Site: 7.04

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 slightly neutral in nature.

##### **Turbidity:**

Value observed in the Project Site: <1

Acceptable and permissible limits: 1 NTU & 5 NTU respectively. The value of turbidity generally indicates the presence of phytoplanktons and other sediments. The value in the project site indicates the water is slightly turbid.

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

Value observed in the Project Site: 505 mg/L.

Acceptable and permissible limits: 500 mg/L and 2000 mg/L respectively.

The TDS is the presence of the inorganic salts and small amounts of organic matter present in the water. This is mainly due to the result of surface runoff as the cations and anions in the top soil is carried away by the water. The value in the project site indicates the water is less turbid.

#### 3.3.6.2 Chemical parameters of water:

The chemical parameters of the drinking water include,

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>        | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

**Calcium:**

Value observed in the Project Site: 85 mg/L.

Acceptable and permissible limits: 75mg/L and 200 mg/L respectively.

Calcium is the 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 the Project Site: 15.2 mg/L.

Acceptable and permissible limits: 30 mg/L and 100 mg/L respectively.

The value of Magnesium in the project site is higher than acceptable limit and less than the permissible limit. The increase in the level of magnesium will cause diarrhea and vomiting in children.

**Chloride**

Value observed in the project site: 33.3 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 the project site: 345 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 in the project site, which will impart soda taste to the water.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>        | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

### **Hardness:**

Value observed in the Project Site: 275 mg/L.

Acceptable and permissible limits:200 mg/L and 600 mg/L respectively.

The value of Hardness in the project site is higher than acceptable limit but within the permissible 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.

### **3.3.7 Surface Water Analysis**

Surface water samples were taken from **Devaganapalli Lake** . The results are summarized below.

**Table 3-7 Surface Water Sample Results**

| <b>S. No</b> | <b>Parameters</b>                     | <b>Units</b> | <b>Devaganapalli Lake</b> |
|--------------|---------------------------------------|--------------|---------------------------|
| 1            | pH (at 25°C)                          | -            | 7.03                      |
| 2            | Electrical Conductivity               | µS/cm        | 204                       |
| 3            | Colour                                | Hazen Unit   | 25.2                      |
| 4            | Turbidity                             | NTU          | 9                         |
| 5            | Total Dissolved Solids                | mg/L         | 122                       |
| 6            | Total Suspended Solids                | mg/L         | 14                        |
| 7            | Total Hardness as CaCO <sub>3</sub>   | mg/L         | 67.3                      |
| 8            | Calcium as Ca                         | mg/L         | 21.8                      |
| 9            | Magnesium as Mg                       | mg/L         | 3.11                      |
| 10           | Chloride as Cl                        | mg/L         | 25.4                      |
| 11           | Sulphate as SO <sub>4</sub>           | mg/L         | 19.3                      |
| 12           | Total Alkalinity as CaCO <sub>3</sub> | mg/L         | 56.6                      |
| 13           | Iron as Fe                            | mg/L         | 1.06                      |
| 14           | Silica as SiO <sub>2</sub>            | mg/L         | 2.28                      |
| 15           | Potassium as K                        | mg/L         | 1.2                       |
| 16           | Sodium as Na                          | mg/L         | 20.5                      |
| 17           | BOD                                   | mg/L         | 8.5                       |
| 18           | COD                                   | mg/L         | 40.3                      |
| 19           | DO                                    | mg/L         | 5.64                      |

**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 the both the water does not fit Class A

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>        | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

(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.

### **3.3.7.1 Climatology & Meteorology:**

Climate and meteorology of a place can play an important role in the implementation of any developmental project. Meteorology is also the key to understand local air quality as there is an essential relationship between meteorology and atmospheric dispersion involving wind in the broadest sense of the term.

The year may broadly be divided into four seasons:

|                     |   |                      |
|---------------------|---|----------------------|
| Winter season       | : | December to February |
| Pre-monsoon season  | : | March to May         |
| Monsoon season      | : | June to September    |
| Post-monsoon season | : | October to November  |

#### **i) Climate**

Eastern part of the district experiences hot climate and Western part has a contrasting pleasant cold climate. The district is hot and dry in summer i.e., from March to June. From July to November is rainy season and between December to February winter prevails with very cold and misty.

#### **ii) Temperature**

The maximum temperature is around 36°C and minimum temperature is 28°C.

#### **iii) Rainfall**

Krishnagiri receives rainfall from both the northeast and the southwest monsoons. Monsoon season is from the months of July to November. During this time, temperature is mild and pleasant. Heavy rainfall is expected in short intervals during this period. December to February are winter months.

This district gets maximum rainfall in November (274.7mm).

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>        | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

**KRISHNAGIRI DISTRICT -NORMAL AND ACTUAL RAINFALL**

**Unit in mm.**

| Year        | Jan  | Feb | Mar  | Apr  | May   | Jun  | Jul   | Aug   | Sep   | Oct   | Nov   | Dec  |
|-------------|------|-----|------|------|-------|------|-------|-------|-------|-------|-------|------|
|             | R/F  | R/F | R/F  | R/F  | R/F   | R/F  | R/F   | R/F   | R/F   | R/F   | R/F   | R/F  |
| <b>2017</b> | 5.7  | 0   | 48.7 | 37.9 | 198.6 | 19.1 | 24.6  | 189.7 | 291.7 | 219   | 54.5  | 56.2 |
| <b>2018</b> | 0    | 1.3 | 34.9 | 14.4 | 114.5 | 41.1 | 10.5  | 18.5  | 152.1 | 85.2  | 33.2  | 4.8  |
| <b>2019</b> | 13.2 | 1.2 | 4.5  | 47.2 | 96.5  | 33.6 | 34.6  | 94.7  | 138.6 | 177.7 | 48.7  | 39.5 |
| <b>2020</b> | 0.3  | 0   | 6.9  | 61.7 | 57.9  | 59   | 147.2 | 66.8  | 142.1 | 142   | 77    | 42.6 |
| <b>2021</b> | 40.1 | 5.8 | 0    | 46.6 | 75.7  | 32.4 | 137.7 | 70.2  | 134.9 | 140.4 | 282.6 | 19.1 |

Source: District survey report

**Meteorological Data**

The meteorological data – Temperature, rainfall, Wind Speed, Wind direction are recorded through AWS by setting it up in the site.

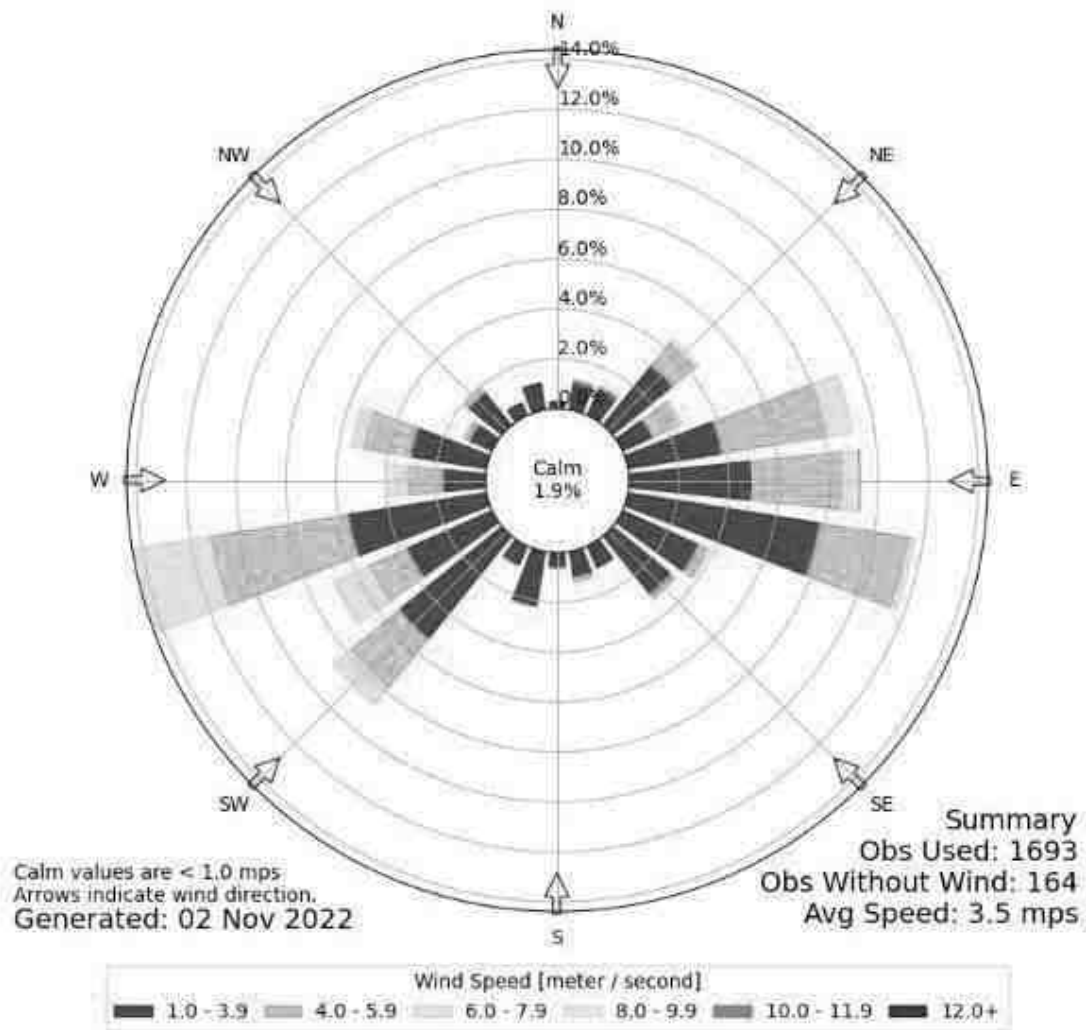
**vi) Wind Rose Diagram**

The wind rose denotes a class of diagrams designed to display the distribution of wind direction at a given location over a period of time. Wind roses are also useful as they project a large quantity of data in a simple graphical plot.

The wind speed & wind direction data are taken and wind rose is plotted for January to March 2023.



|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</b>        | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |



**Figure 3.7 Wind rose**

**3.3.8 Selection of Sampling Locations:**

Four Monitoring locations along with the project site is selected based on Wind Direction & Wind Speed. All the monitoring locations are chosen in the downwind direction.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.00 Ha by Thiru.S.Raghu</i>        | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

### 3.4 AMBIENT AIR QUALITY

**Table 3-8: Selection of Sampling Location**

|  |   |                      |                  |
|--|---|----------------------|------------------|
| Environmental Parameters: <i>Ambient Air</i> |   |                      |                  |
| Monitoring Period                            | January 2023 to March 2023  |                      |                  |
| Design Criteria                              | The monitoring stations are selected based on factors like topography/terrain, prevailing meteorological conditions like predominant wind direction (January 2023 to March 2023), etc, play a vital role in the selection of air sampling stations. Based on these criteria, 5 air sampling station were selected in the area as shown below. |                      |                  |
| Monitoring Locations                         | <b>Location &amp; Code</b>  | <b>Distance (km)</b> | <b>Direction</b> |
|  | Project Site  | --                   | --               |
|  | Pups Barandur school  | 1.66Km               | Upwind WSW       |
|  | Pattalama Temple  | 2.86 Km              | Downwind ENE     |
|  | Poonapalli Govt Primary school  | 7.11 Km              | Crosswind NNW    |
|  | Anjaneya Temple   | 6.70 Km              | Crosswind SSE    |
| Methodology                                  | Respirable Particulate Matter (PM10) - Gravimetric (IS 5182: Part 23:2006)<br>Particulate Matter PM2.5 - Gravimetric (Fine particulate matter)<br>Sulphur Dioxide - Calorimetric (West & Gaeke Method) (IS 5182: Part 02: 2001)<br>Nitrogen Dioxide - Calorimetric (Modified Jacob & Hocheiser Method) (IS 5182: Part 06:2006)                |                      |                  |
| Frequency of Monitoring                      | 2 days in a week, 4 weeks in a month for 3 months in a season.  |                      |                  |

#### 3.4.1 *Ambient Air Quality: Results & Discussion*

The test results of the ambient air quality monitored in project site and other four locations is summarized below.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 4.24.0 Ha by Thiru.S.Marimuthu</i>           | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Marimuthu</i>  |                         |
| <i>Project Location</i>  | <i>Kottaiyur Village, Virudhunagar Taluk, Virudhunagar District</i> |                         |

**Table 3-9 Ambient Air Quality**

| Code                              | Location                       | PM 10 ( $\mu\text{g}/\text{m}^3$ ) |     |     |               | PM 2.5 ( $\mu\text{g}/\text{m}^3$ ) |     |     |               | SO2 ( $\mu\text{g}/\text{m}^3$ ) |     |     |               | NOx ( $\mu\text{g}/\text{m}^3$ ) |     |     |               |
|-----------------------------------|--------------------------------|------------------------------------|-----|-----|---------------|-------------------------------------|-----|-----|---------------|----------------------------------|-----|-----|---------------|----------------------------------|-----|-----|---------------|
|                                   |                                | Min                                | Max | Avg | 98 percentile | Min                                 | Max | Avg | 98 percentile | Min                              | Max | Avg | 98 percentile | Min                              | Max | Avg | 98 percentile |
| AAQ 1                             | Project Site                   | 48                                 | 59  | 55  | 59            | 20                                  | 28  | 25  | 28            | 9                                | 16  | 13  | 16            | 16                               | 29  | 22  | 29            |
| AAQ 2                             | Pups Barandur school           | 39                                 | 53  | 45  | 52            | 15                                  | 22  | 19  | 22            | 5                                | 9   | 7   | 9             | 10                               | 19  | 15  | 19            |
| AAQ 3                             | Pattalama Temple               | 54                                 | 66  | 60  | 65            | 25                                  | 34  | 29  | 33            | 13                               | 21  | 16  | 21            | 22                               | 37  | 29  | 37            |
| AAQ 4                             | Poonapalli Govt Primary school | 54                                 | 64  | 58  | 63            | 22                                  | 32  | 26  | 31            | 11                               | 20  | 15  | 20            | 21                               | 34  | 26  | 33            |
| AAQ 5                             | Anjaneya Temple                | 44                                 | 56  | 51  | 56            | 18                                  | 26  | 22  | 26            | 6                                | 12  | 9   | 12            | 13                               | 25  | 18  | 25            |
| NAAQ Standards - Residential Area |                                | 100 ( $\mu\text{g}/\text{m}^3$ )   |     |     |               | 60( $\mu\text{g}/\text{m}^3$ )      |     |     |               | 80 ( $\mu\text{g}/\text{m}^3$ )  |     |     |               | 80 ( $\mu\text{g}/\text{m}^3$ )  |     |     |               |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</b>         | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |

### 3.4.2 Interpretation of ambient air quality:

To assess the impact, AAQ were monitored in project site and four locations.

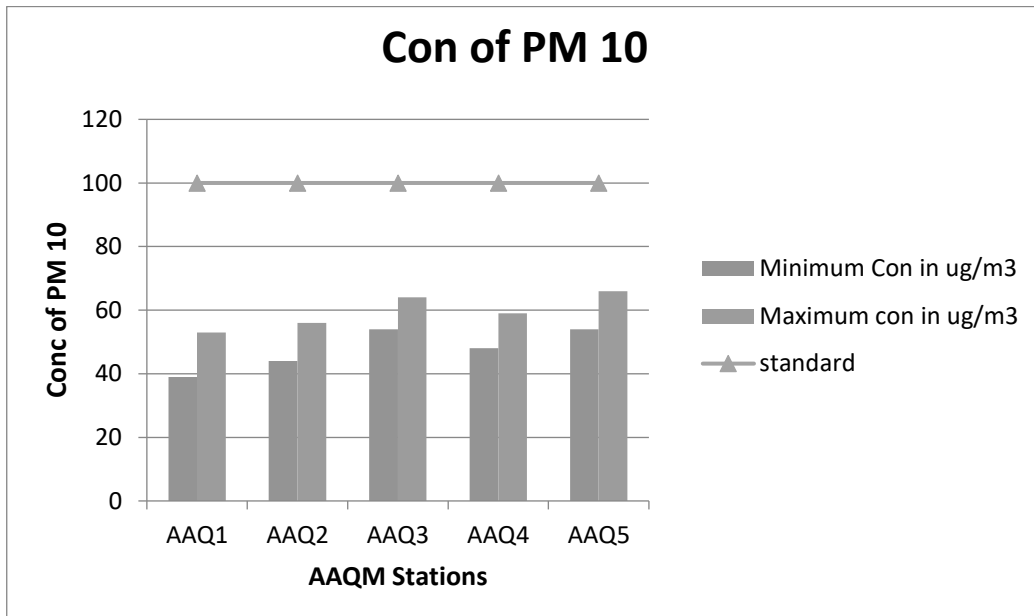
#### Observation:

The Maximum value of PM10 ( 66( $\mu\text{g}/\text{m}^3$ ), PM 2.5 (34 ( $\mu\text{g}/\text{m}^3$ ), SOx ( 20( $\mu\text{g}/\text{m}^3$ ), NOx ( 37( $\mu\text{g}/\text{m}^3$ ) is observed in different places.

#### Inference:

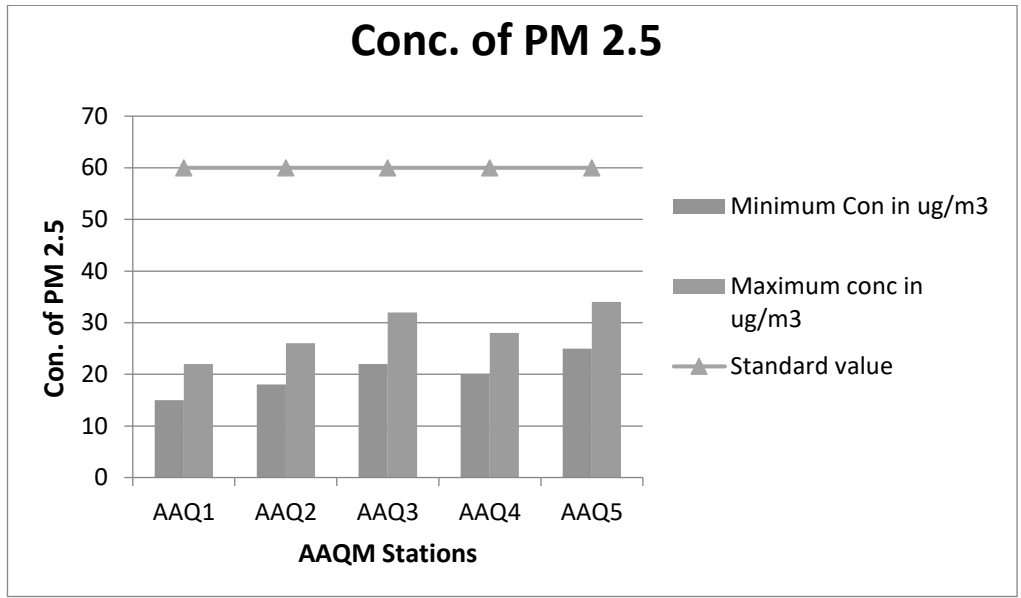
The monitoring results for PM10, PM2.5, Sox, NOx was found to be high in Pattalama Temple which is due to the movement of vehicles .

The observed values are all well within the Standards prescribed by NAAQ.

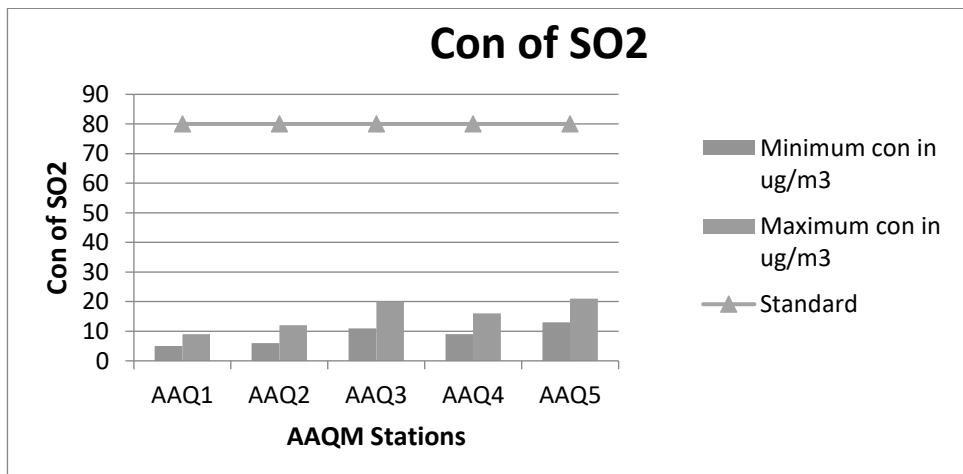


**Figure 3.8 Concentration of PM10 ( $\mu\text{g}/\text{m}^3$ ) in Study Area**

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</b>         | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |

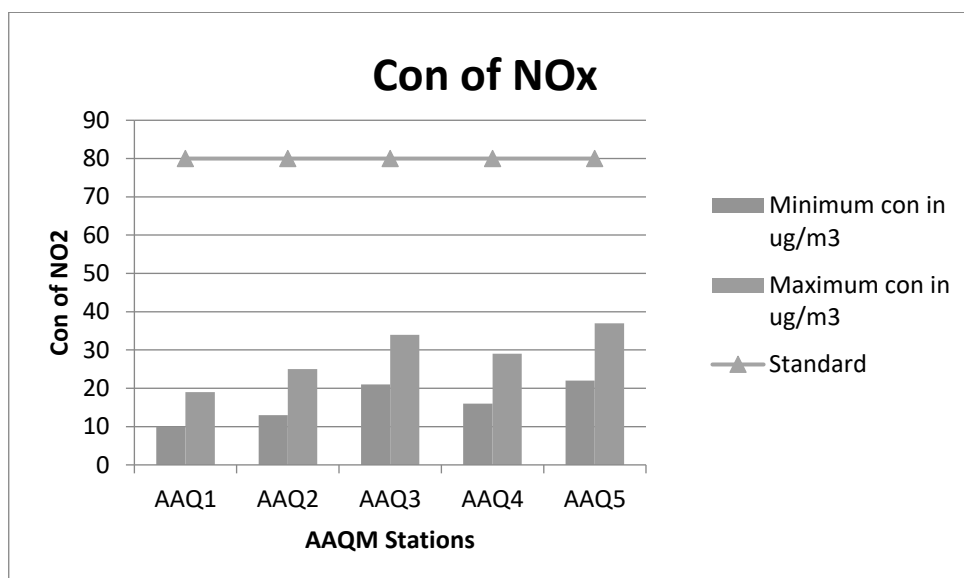


**Figure 3.9 Concentration of PM<sub>2.5</sub> (µg/m<sup>3</sup>) in Study Area**



**Figure 3.10 Concentration of SO<sub>x</sub> (µg/m<sup>3</sup>) in Study Area**

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</b>         | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |



**Figure 3.11 Concentration of NOx (µg/m<sup>3</sup>) in Study Area**

### 3.5 NOISE ENVIRONMENT:

**Table 3-10 Noise Analysis**

|   |   |
|---|---|
| <i>Environmental Parameters: Noise Analysis</i> |   |
| Monitoring Period                               | January to March 2023   |
| Design Criteria                                 | Based on the Sensitivity of the area  |
| Monitoring Locations                            | Project Site – N 1<br>Pups Barandur school-N2<br>Pattalama Temple-N3<br>Poonapalli Govt Primary school-N4<br>Anjaneya Temple-N5   |
| Methodology                                     | Noise level measurements were taken at the selected locations using noise level meter both during day and night time. Noise level measurements were taken continuously for 24 hours at hourly intervals |
| Frequency of Monitoring                         | Noise samples were collected from 5 locations - Once in a season  |

Ambient Noise Levels are monitored in the chosen 5 Locations including the project Site and the monitoring results are summarized below

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

### 3.5.1 Day Noise Level (Leq day)

**Table 3-11 Day Noise Level (Leq day)**

| Location                       | Leq day in dB(A) |     |         |
|--------------------------------|------------------|-----|---------|
|                                | Max              | Min | Average |
| Project Site                   | 56               | 46  | 52      |
| Pups Barandur school           | 60               | 46  | 55      |
| Pattalama Temple               | 65               | 50  | 60      |
| Poonapalli Govt Primary school | 63               | 51  | 58      |
| Anjaneya Temple                | 53               | 42  | 49      |

### 3.5.2 Night Noise Level (Leq Night)

**Table 3-12 Night Noise Level (Leq Night)**

| Location                       | Leq Night in dB(A) |     |         |
|--------------------------------|--------------------|-----|---------|
|                                | Max                | Min | Average |
| Project Site                   | 44                 | 37  | 41      |
| Pups Barandur school           | 44                 | 36  | 40      |
| Pattalama Temple               | 49                 | 41  | 46      |
| Poonapalli Govt Primary school | 48                 | 39  | 44      |
| Anjaneya Temple                | 44                 | 36  | 39      |

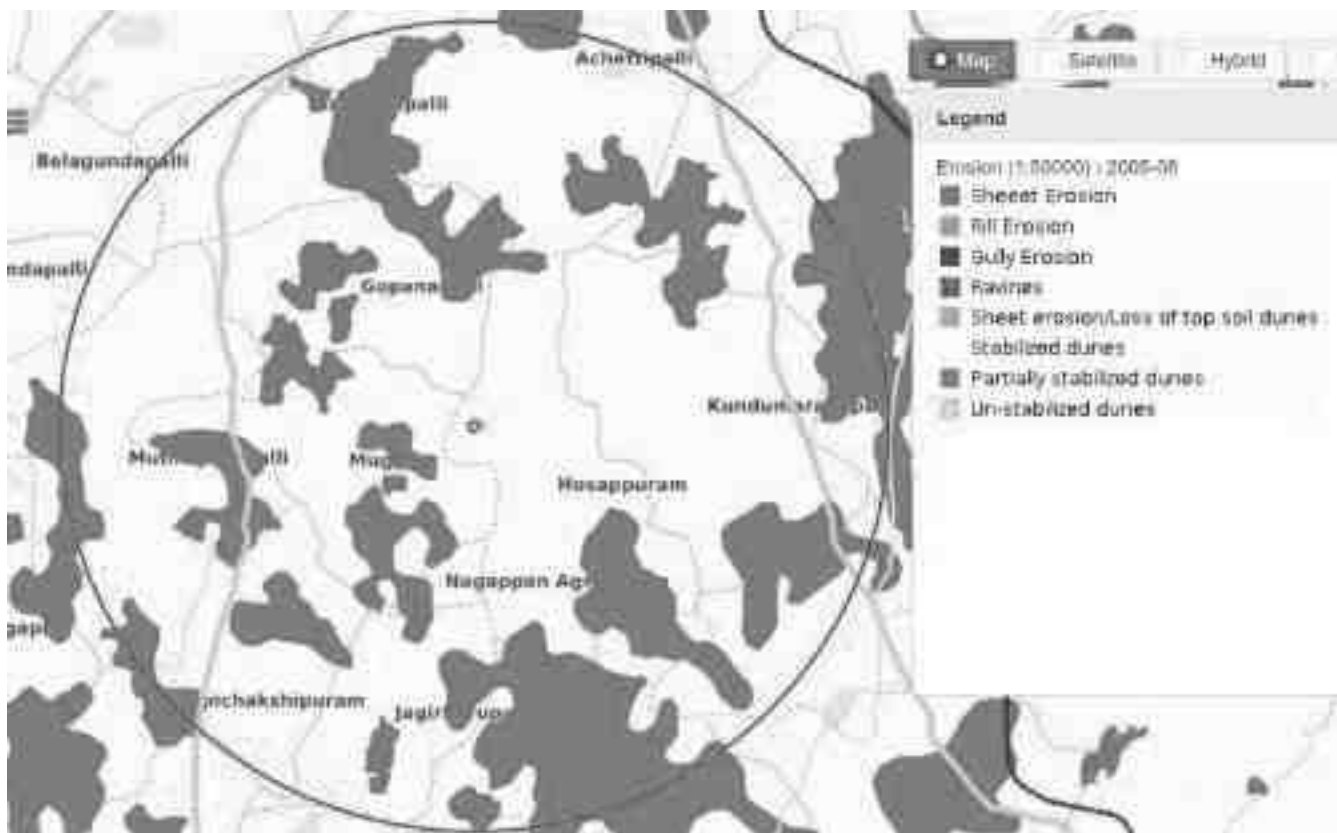
#### **Observation:**

The maximum Day noise and Night noise were found to be 65 dB(A) and 49 dB(A) respectively in Pattalama temple. The minimum Day Noise and Night noise were 42 dB (A) and 36 dB(A) respectively which was observed in Anjaneya Temple. The observed values are all well within the Standards prescribed by CPCB.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</b>         | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |

### 3.6 SOIL ENVIRONMENT

Soil environment is studied for 10 km radius from the project site. The 5 km radius image shows that the soil is not affected by any kind of erosion.



**Figure 3.12 Soil Erosion pattern within 5 km radius of the project site**

#### 3.6.1 *Baseline Data:*

The present study of the soil quality establishes the baseline characteristics which will help in future in identifying the incremental concentrations if any, due to the operation Phase of the proposed project. The sampling locations have been identified with the following objectives:



|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

- To determine the impact of proposed project on soil characteristics and
- To determine the impact on soils more importantly from agricultural productivity point of view.

**Table 3-13 Soil Quality Analysis**

|  |  |
|--|--|
| Environmental Parameters: <i>Soil Quality Analysis</i> |  |
| Monitoring Period                                      | January to March 2023  |
| Design Criteria  | Based on the environmental settings of the study area  |
| Monitoring Locations                                   | Project Site – SQ 1<br>Pups Barandur school -SQ 2<br>Pattalama Temple –SQ 3<br>Poonapalli Govt Primary school - SQ 4<br>Anjaneya Temple - SQ 5 |
| Methodology  | Composite soil samples using sampling augers and field capacity apparatus  |
| Frequency of Monitoring                                | Soil samples were collected from 5 locations Once in a season  |

To assess the soil quality of the study area, 5 monitoring stations were selected and the results are summarized below.

**Table 3-14 Soil Quality Analysis**

| Parameters                       | Unit  | Project Site SQ 1 | Pups Barandur school SQ 2 | Pattalama Temple SQ 3 | Poonapalli Govt Primary school SQ 4 | Anjaneya Temple -SQ5 |
|----------------------------------|-------|-------------------|---------------------------|-----------------------|-------------------------------------|----------------------|
| pH (at 25°C)                     | -     | 8.32              | 7.79                      | 4.7                   | 7.75                                | 6.49                 |
| Specific Electrical Conductivity | mS/cm | 0.13              | 0.32                      | 0.27                  | 0.52                                | 0.09                 |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|                          |                   |       |       |       |      |       |
|--------------------------|-------------------|-------|-------|-------|------|-------|
| Water Holding Capacity   | ml/l              | 8.9   | 10.1  | 10.5  | 7.9  | 9.5   |
| Chloride                 | g/cm <sup>3</sup> | 110   | 51.3  | 68.9  | 107  | 185   |
| Soluble Calcium          | mg/kg             | 81.2  | 86.8  | 97.6  | 98.9 | 98.1  |
| Soluble Sodium           | mg/kg             | 959   | 857   | 517   | 841  | 1449  |
| Soluble Potassium        | mg/kg             | 1064  | 977   | 343   | 862  | 1654  |
| Organic matter           | %                 | 1.25  | 0.89  | 0.59  | 0.75 | 0.89  |
| Soluble Magnesium        | mg/kg             | 15.4  | 23.6  | 29.2  | 21.5 | 55.6  |
| Total Soluble Sulphates  | %                 | 145   | 168   | 91.5  | 141  | 245   |
| Cation Exchange Capacity | mg/kg             | 11.5  | 12.9  | 10.4  | 11.2 | 14.2  |
| Total Nitrogen           | %                 | 0.405 | 0.385 | 0.352 | 0.41 | 0.415 |
| Bulk Density             | meq/100g          | 1.34  | 1.05  | 1.18  | 1.24 | 1.13  |
| Phosphorous              | meq/kg            | 685   | 486   | 385   | 628  | 542   |
| Sand                     | %                 | 62    | 54    | 57    | 52   | 58    |
| Clay                     | mg/kg             | 9     | 7     | 6     | 3    | 8     |
| Silt                     | mg/kg             | 29    | 39    | 37    | 45   | 34    |
| SAR                      | mg/kg             | 27.3  | 22.9  | 12.9  | 21.4 | 33.3  |
| Silicon                  | %                 | 0.98  | 0.85  | 0.95  | 0.92 | 0.91  |

### 3.6.1.1 Physical Properties:

Regular cultivation practices increase the bulk density of soils thus inducing compaction. This results in reduction in water percolation rate and penetration of roots through soils. The soils with low bulk density have favorable physical conditions whereas those with high bulk density exhibit poor physical conditions for agriculture crops. The bulk density of the soil in the study area ranged between

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

1.05 to 1.34 meq/100g which indicates favorable physical condition for plant growth. The water holding capacity was found in the range of 7.9 ml/l to 10.50 ml/l.

### **3.6.1.2 Chemical Properties:**

Chemical characteristics of soils include pH, exchangeable cations and fertility status in the form of NPK values and organic matter. The value of the pH ranges from 4.7 to 8.32, which it indicates majority of pH of the soil is slightly alkaline. The soil in the project site is sodic in nature, which challenges because they tend to have very poor structure which limits or prevents water infiltration and drainage. The organic matter varies from 0.59 to 1.25 %, which indicates the soil is slightly unfertile.

## **3.7 ECOLOGY AND BIODIVERSITY**

Ecology and Biodiversity is studied for 10 km radius around the project site. Project site and 2 km around the project site is considered as core zone and from 2 km to 10 km radius, it is considered as buffer zone.

- Primary field survey is carried out for the assessment of flora and fauna in the core zone
- Secondary data from Journals/Literature were studied and compiled to understand the species present in the buffer zone

### **3.7.1 *Methods available for floral analysis:***

#### **3.7.1.1 Plot Sampling Methods**

- Quadrat – 2D shape (e.g. square or rectangle, or other shape) used as a sampling unit
- Transect
  - Line transects feature only a length dimension, usually defined by a tape stretched across the area to be sampled.
  - Belt transects have a width as well as length.
  - Pace-transects are established when the observer strides along an imaginary line across the sample site and uses their foot placement to determine specific sampling points.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

### 3.7.1.2 Plot less Sampling Methods

- Closest individual method - Distance is measured from each random point to the nearest individual.
- Nearest neighbour method - Distance is measured from an individual to its nearest neighbour.
- Random pairs method - Distance is measured from one individual to another on the opposite side of the sample point.
- Point-centered quarter (PCQ) method - Distance is measured from the sampling point to the nearest individual in each quadrat.

### 3.7.2 Field study & Methodology adopted:

To assess the suitability of the methodology, random field survey was done. Field survey was conducted around 2 km radius from the project site and five locations were chosen based on the species density. Quadrat method is chosen for the proposed study as compared to other sampling methods, because they are relatively simple to use. Quadrat plots are uniform in size and shape and distributed randomly throughout the sample area, which makes the study design straightforward. They are also one of the most affordable techniques because they require very few materials.

### 3.7.3 Study outcome:

Phyto-sociological parameters, such as *Density, Frequency, Basal Area, Abundance and Importance Value Index* of individual species (Trees) were determined in randomly placed quadrates of different sizes in the study area. Relative frequency, relative basal area and relative density were calculated and the sum of these three represented Importance Value Index (IVI) for various species. For shrubs, herbs and grasses, *Density, Frequency, Relative Density & Relative Frequency were found.*

Sample plots were selected in such a way to get maximum representation of different types of vegetation and plots were laid out in different part of the study area of 2 km radius. Analysis of the vegetation will help in determining the relative importance of each species in the study area and to reveal if any economically valuable species is threatened in the process.

**Table 3-15 Calculation of Density, Frequency (%), Dominance, Relative Density, Relative Frequency, Relative Dominance & Important Value Index**

| <b>Parameters</b> | <b>Formula</b>  |
|-------------------|---|
| Density           | Total No. of individuals of species/ Total No. of Quadrats used in sampling |

|                          |  |                                |
|--------------------------|--|--------------------------------|
| <b>Project</b>           | <b><i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i></b>         | <b><i>Draft EIA Report</i></b> |
| <b>Project Proponent</b> | <b><i>Thiru.S.Raghu</i></b>  |                                |
| <b>Project Location</b>  | <b><i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i></b> |                                |

|                       |   |
|-----------------------|---|
| Frequency (%)         | (Total No. of Quadrats in which species occur/ Total No. of Quadrats studied) * 100                 |
| Dominance             | Total Basal Area /Total area sampled  |
| Abundance             | Total No. of individuals of species/ No. of Quadrats in which they occur                            |
| Relative Density      | (Total No. of individuals of species/Sum of all individuals of all species) * 100                   |
| Relative Frequency    | (Total No. of Quadrats in which species occur/ Total No. of Quadrats occupied by all species) * 100 |
| Relative Dominance    | Dominance of a given species/Total Dominance of all species   |
| Important Value Index | Relative Density + Relative Frequency + Relative Dominance  |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.30.0 Ha by Thiru.S.Raghu</b> | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>   |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b>    |                         |

**Table 3-16 Tree Species in the core Zone**

| S. No. | Scientific Name       | Local Name   | Total No. of species | Total of Quadrants with species | Total No. of Quadrants | Density | Frequency (%) | Abundance | Dominance | Relative Density | Relative Frequency | Relative Dominance | IVI   | IUCN Conservation Status |
|--------|-----------------------|--------------|----------------------|---------------------------------|------------------------|---------|---------------|-----------|-----------|------------------|--------------------|--------------------|-------|--------------------------|
| 1      | Ficus Carica          | Athi Maram   | 2                    | 2                               | 6                      | 0.33    | 33.33         | 1         | 0.28      | 1.68             | 2.17               | 4.45               | 8.31  | Least Concern            |
| 2      | Cocos nucifera        | Thennai      | 10                   | 6                               | 6                      | 1.67    | 100.0         | 1.67      | 0.15      | 8.40             | 6.52               | 2.39               | 17.32 | Not assessed             |
| 3      | Azadirachta indica    | Veppam       | 17                   | 6                               | 6                      | 2.83    | 100.0         | 2.83      | 0.13      | 14.29            | 6.52               | 1.98               | 22.79 | Not assessed             |
| 4      | Tamarindus indica     | Puli         | 10                   | 6                               | 6                      | 1.67    | 100.0         | 1.66      | 0.20      | 8.40             | 6.52               | 3.09               | 18.02 | Not assessed             |
| 5      | Mangifera indica      | Mamaram      | 7                    | 6                               | 6                      | 1.17    | 100.0         | 1.16      | 0.07      | 5.88             | 6.52               | 1.11               | 13.52 | Data insufficient        |
| 6      | Morinda pubescens     | Nuna         | 6                    | 6                               | 6                      | 1.00    | 100.0         | 1         | 0.24      | 5.04             | 6.52               | 3.74               | 15.31 | Not assessed             |
| 7      | Couroupita guianensis | Nagalingam   | 5                    | 3                               | 6                      | 0.83    | 50.00         | 1.67      | 0.14      | 4.20             | 3.26               | 2.18               | 9.64  | Not assessed             |
| 8      | Bombax ceiba          | Sittan       | 4                    | 4                               | 6                      | 0.67    | 66.67         | 1         | 0.08      | 3.36             | 4.35               | 1.27               | 8.98  | Not assessed             |
| 9      | Acacia nilotica       | Karuvelai    | 4                    | 4                               | 6                      | 0.67    | 66.67         | 1         | 0.28      | 3.36             | 4.35               | 4.45               | 12.16 | Least Concern            |
| 10     | Bambusa vulgaris      | Moongil      | 4                    | 4                               | 6                      | 0.67    | 66.67         | 1         | 0.50      | 3.36             | 4.35               | 7.92               | 15.63 | Not assessed             |
| 11     | Syzygium cumini       | naval        | 5                    | 1                               | 6                      | 0.83    | 16.67         | 5         | 0.11      | 4.20             | 1.09               | 1.79               | 7.07  | Not assessed             |
| 12     | Carica papaya         | Papaya       | 3                    | 3                               | 6                      | 0.50    | 50.00         | 1         | 0.09      | 2.52             | 3.26               | 1.43               | 7.21  | Not assessed             |
| 13     | Psidium guajava       | Guava        | 3                    | 3                               | 6                      | 0.50    | 50.00         | 1         | 0.23      | 2.52             | 3.26               | 3.61               | 9.39  | Not assessed             |
| 14     | Cassia siamea         | ManjalKonrai | 3                    | 2                               | 6                      | 0.50    | 33.33         | 1.5       | 0.07      | 2.52             | 2.17               | 1.11               | 5.81  | Least Concern            |
| 15     | Ficus religiosa       | Arasa maram  | 3                    | 3                               | 6                      | 0.50    | 50.00         | 1         | 0.09      | 2.52             | 3.26               | 1.35               | 7.13  | Not assessed             |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.30.0 Ha by Thiru.S.Raghu</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>   |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i>    |                         |

|       |                          |              |     |    |   |      |       |   |      |      |      |      |      |               |
|-------|--------------------------|--------------|-----|----|---|------|-------|---|------|------|------|------|------|---------------|
| 16    | Musa paradise            | Vaazhai      | 3   | 3  | 6 | 0.50 | 50.00 | 1 | 0.08 | 2.52 | 3.26 | 1.19 | 6.97 | Not assessed  |
| 17    | Prosopis juliflora       | Vaelikaruvai | 3   | 3  | 6 | 0.50 | 50.00 | 1 | 0.21 | 2.52 | 3.26 | 3.34 | 9.13 | Not assessed  |
| 18    | Tectona grandis          | Thekku       | 3   | 3  | 6 | 0.50 | 50.00 | 1 | 0.12 | 2.52 | 3.26 | 1.88 | 7.66 | Not assessed  |
| 19    | Thespesia populnea       | Poovarasam   | 3   | 3  | 6 | 0.50 | 50.00 | 1 | 0.15 | 2.52 | 3.26 | 2.39 | 8.18 | Not assessed  |
| 20    | Causuarina equisetifolia | Savukku      | 2   | 2  | 6 | 0.33 | 33.33 | 1 | 0.21 | 1.68 | 2.17 | 3.34 | 7.20 | Not assessed  |
| 21    | Alstonia scholaris       | Elilaipalai  | 2   | 2  | 6 | 0.33 | 33.33 | 1 | 0.27 | 1.68 | 2.17 | 4.31 | 8.16 | Least Concern |
| 22    | Anacardium occidentale   | Cashew       | 1   | 1  | 6 | 0.17 | 16.67 | 1 | 0.44 | 0.84 | 1.09 | 6.96 | 8.88 | Not assessed  |
| 23    | Artocarpus heterophyllus | Palaa        | 2   | 2  | 6 | 0.33 | 33.33 | 1 | 0.18 | 1.68 | 2.17 | 2.85 | 6.70 | Not assessed  |
| 24    | Aegle marmelos           | Vilvam       | 1   | 1  | 6 | 0.17 | 16.67 | 1 | 0.16 | 0.84 | 1.09 | 2.50 | 4.43 | Not assessed  |
| 25    | Delonix elata            | Perungondrai | 1   | 1  | 6 | 0.17 | 16.67 | 1 | 0.17 | 0.84 | 1.09 | 2.62 | 4.54 | Least Concern |
| 26    | Pithecellobium dulce     | Kodukapuli   | 1   | 1  | 6 | 0.17 | 16.67 | 1 | 0.14 | 0.84 | 1.09 | 2.18 | 4.11 | Not assessed  |
| 27    | Citrus medica            | Elumichai    | 2   | 2  | 6 | 0.33 | 33.33 | 1 | 0.23 | 1.68 | 2.17 | 3.61 | 7.46 | Not assessed  |
| Total |                          |              | 110 | 83 |   |      |       |   | 5.02 |      |      |      |      |               |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.30.0 Ha by Thiru.S.Raghu</b> | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>   |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b>    |                         |

**Table 3-17 Shrubs in the Core Zone**

| <b>S. No.</b> | <b>Scientific Name</b>    | <b>Local Name</b> | <b>Total No. of species</b> | <b>Total of Quadrants with species</b> | <b>Total No. of Quadrants</b> | <b>Density</b> | <b>Frequency (%)</b> | <b>Abundance</b> | <b>Relative Density</b> | <b>Relative Frequency</b> | <b>IUCN Conservation Status</b> |
|---------------|---------------------------|-------------------|-----------------------------|--|-------------------------------|----------------|----------------------|------------------|-------------------------|---------------------------|---------------------------------|
| 1             | Jatropagossypifolia       | Kaatamanaku       | 32                          | 17                                     | 24                            | 1.17           | 0.71                 | 1.65             | 14.43                   | 17.17                     | Not Assessed                    |
| 2             | Calotropis gigantea       | Erukam            | 16                          | 12                                     | 24                            | 0.58           | 0.50                 | 1.17             | 7.22                    | 12.12                     | Not Assessed                    |
| 3             | Tabernaemontanadivaricata | Crepe Jasmine     | 4                           | 3                                      | 24                            | 0.13           | 0.13                 | 1                | 1.55                    | 3.03                      | Not Assessed                    |
| 4             | Catharanthus roseus       | Nithyakalyani     | 4                           | 3                                      | 24                            | 0.13           | 0.13                 | 1                | 1.55                    | 3.03                      | Not Assessed                    |
| 5             | Datura metal              | Ummattangani      | 7                           | 4                                      | 24                            | 0.21           | 0.17                 | 1.25             | 2.58                    | 4.04                      | Not Assessed                    |
| 6             | Robiniapseudoacacia       | Black locust      | 15                          | 5                                      | 24                            | 0.71           | 0.21                 | 3.4              | 8.76                    | 5.05                      | Least Concern                   |
| 7             | Acalypha indica           | Kuppaimeni        | 18                          | 8                                      | 24                            | 0.83           | 0.33                 | 2.5              | 10.31                   | 8.08                      | Not Assessed                    |
| 8             | Stachytarpeaurticifolia   | Rat tail          | 13                          | 9                                      | 24                            | 0.63           | 0.38                 | 1.67             | 7.73                    | 9.09                      | Not Assessed                    |
| 9             | Woodfordiafruiticosa      | Velakkai          | 4                           | 3                                      | 24                            | 0.13           | 0.13                 | 1                | 1.55                    | 3.03                      | Least Concern                   |
| 10            | Hibiscus rosa sinensis    | Sembaruthi        | 3                           | 2                                      | 24                            | 0.13           | 0.08                 | 1.5              | 1.55                    | 2.02                      | Not Assessed                    |
| 11            | Lantana camara            | Unnichedi         | 8                           | 6                                      | 24                            | 0.38           | 0.25                 | 1.5              | 4.64                    | 6.06                      | Not Assessed                    |
| 12            | Parthenium hysterophorous | Vishapoondu       | 45                          | 13                                     | 24                            | 2.08           | 0.54                 | 3.85             | 25.77                   | 13.13                     | Not Assessed                    |
| 13            | Euphorbia geniculata      | Amman Pacharisi   | 5                           | 3                                      | 24                            | 0.13           | 0.13                 | 1                | 1.55                    | 3.03                      | Not Assessed                    |



|                          |  |                         |
|--------------------------|--|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.30.0 Ha by Thiru.S.Raghu</b> | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>   |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b>    |                         |

**Table 3-18 Herbs & Grasses in the core zone**

| S. No. | Scientific Name      | Local Name             | Total No. of species | Total of Quadrants with species | Total No. of Quadrants | Density | Frequency (%) | Abundance | Relative Density | Relative Frequency | IUCN Conservation status |
|--------|----------------------|------------------------|----------------------|---------------------------------|------------------------|---------|---------------|-----------|------------------|--------------------|--------------------------|
| 1      | Helicteresisora      | Valampuri              | 4                    | 2                               | 30                     | 0.07    | 0.07          | 1         | 0.79             | 2.15               | Not assessed             |
| 2      | Tridax procumbens    | Vettukaayathalai       | 7                    | 4                               | 30                     | 0.17    | 0.13          | 1.25      | 1.98             | 4.30               | Not assessed             |
| 3      | Heraculem spondylium | Hog Weed               | 19                   | 10                              | 30                     | 0.67    | 0.33          | 2         | 7.94             | 10.75              | Not assessed             |
| 4      | Tridax procumbens    | Cuminipachai           | 18                   | 4                               | 30                     | 0.50    | 0.13          | 3.75      | 5.95             | 4.30               | Not assessed             |
| 5      | Senna occidentalis   | Nattamsakarai          | 30                   | 4                               | 30                     | 0.83    | 0.13          | 6.25      | 9.92             | 4.30               | Not assessed             |
| 6      | Plumbago zeylanica   | Chittiramoolam         | 12                   | 3                               | 30                     | 0.10    | 0.10          | 1         | 1.19             | 3.23               | Not assessed             |
| 7      | Scrophularia nodosa  | Sarakkothini           | 18                   | 7                               | 30                     | 0.50    | 0.23          | 2.14      | 5.95             | 7.53               | Not assessed             |
| 8      | Viburnum dentatum    | Viburnum               | 7                    | 5                               | 30                     | 0.17    | 0.17          | 1         | 1.98             | 5.38               | Least concern            |
| 9      | Cynodondactylon      | Arugu                  | 15                   | 6                               | 30                     | 0.40    | 0.20          | 2         | 4.76             | 6.45               | Not assessed             |
| 10     | Euphorbia hirta      | Amman Pacharisi        | 7                    | 4                               | 30                     | 0.17    | 0.13          | 1.25      | 1.98             | 4.30               | Not assessed             |
| 11     | Sida cordifolia      | Maanikham              | 50                   | 4                               | 30                     | 1.50    | 0.13          | 11.25     | 17.86            | 4.30               | Not assessed             |
| 12     | Sida acuta           | Malaidangi             | 12                   | 3                               | 30                     | 0.33    | 0.10          | 3.33      | 3.97             | 3.23               | Not assessed             |
| 13     | Laportea canadensis  | Peruganchori           | 28                   | 20                              | 30                     | 1.00    | 0.67          | 1.5       | 11.90            | 21.51              | Not assessed             |
| 14     | Sporobolus fertilis  | Giant Parramatta Grass | 10                   | 4                               | 30                     | 0.30    | 0.13          | 2.25      | 3.57             | 4.30               | Not assessed             |
| 15     | Tephrosia purpurea   | Kavali                 | 23                   | 4                               | 30                     | 0.67    | 0.13          | 5         | 7.94             | 4.30               | Not assessed             |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

### 3.7.4 Calculation of species diversity by Shannon – wiener Index, Evenness and richness by Margalef:

Biodiversity index is a quantitative measure that reflects how many different type 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 are equally abundant. Interpretation of Vegetation results in the study area is given below.

**Table 3-19 Calculation of species diversity**

| <b>Description</b>                         | <b>Formula</b>   |
|--|--|
| Species diversity – Shannon – Wiener Index | $H = \sum [(p_i) * \ln(p_i)]$<br>Where $p_i$ : Proportion of total sample represented by species<br>$i$ : number of individuals of species $i$ / total number of samples |
| Evenness                                   | $H/H_{max}$<br>$H_{max} = \ln(s) =$ maximum diversity possible<br>$S =$ No. of species   |
| Species Richness by Margalef               | $RI = S - 1 / \ln N$<br>Where $S =$ Total Number of species in the community<br>$N =$ Total Number of individuals of all species in the community                        |

### 3.7.5 Calculation of species diversity by Shannon – wiener Index, Evenness and richness by Margalef for trees

#### i. Species Diversity

| <b>Scientific Name</b> | <b>Common Name</b> | <b>No. of Species</b> | <b>Pi</b> | <b>ln (Pi)</b> | <b>Pi x ln (Pi)</b> |
|------------------------|--------------------|-----------------------|-----------|----------------|---------------------|
| Ficus Carica           | Athi Maram         | 2                     | 0.018182  | -4.00733       | -0.07286            |
| Cocos nucifera         | Thennai            | 10                    | 0.090909  | -2.3979        | -0.21799            |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|                          |              |     |          |          |             |
|--------------------------|--------------|-----|----------|----------|-------------|
| Azadirachta indica       | Veppam       | 17  | 0.154545 | -1.86727 | -0.28858    |
| Tamarindus indica        | Puli         | 10  | 0.090909 | -2.3979  | -0.21799    |
| Mangifera indica         | Mamaram      | 7   | 0.063636 | -2.75457 | -0.17529    |
| Morinda pubescens        | Nuna         | 6   | 0.054545 | -2.90872 | -0.15866    |
| Couroupita guianensis    | Nagalingam   | 5   | 0.045455 | -3.09104 | -0.1405     |
| Bombax ceiba             | Sittan       | 4   | 0.036364 | -3.31419 | -0.12052    |
| Acacia nilotica          | Karuvelai    | 4   | 0.036364 | -3.31419 | -0.12052    |
| Bambusa vulgaris         | Moongil      | 4   | 0.036364 | -3.31419 | -0.12052    |
| Syzygium cumini          | naval        | 5   | 0.045455 | -3.09104 | -0.1405     |
| Carica papaya            | Papaya       | 3   | 0.027273 | -3.60187 | -0.09823    |
| Psidium guajava          | Guava        | 3   | 0.027273 | -3.60187 | -0.09823    |
| Cassia siamea            | ManjalKonrai | 3   | 0.027273 | -3.60187 | -0.09823    |
| Ficus religiosa          | Arasa maram  | 3   | 0.027273 | -3.60187 | -0.09823    |
| Musa paradise            | Vaazhai      | 3   | 0.027273 | -3.60187 | -0.09823    |
| Prosopis juliflora       | Vaelikaruvai | 3   | 0.027273 | -3.60187 | -0.09823    |
| Tectona grandis          | Thekku       | 3   | 0.027273 | -3.60187 | -0.09823    |
| Thespesia populnea       | Poovarasam   | 3   | 0.027273 | -3.60187 | -0.09823    |
| Causuarina equisetifolia | Savukku      | 2   | 0.018182 | -4.00733 | -0.07286    |
| Alstonia scholaris       | Elilaipalai  | 2   | 0.018182 | -4.00733 | -0.07286    |
| Anacardium occidentale   | Cashew       | 1   | 0.009091 | -4.70048 | -0.04273    |
| Artocarpus heterophyllus | Palaa        | 2   | 0.018182 | -4.00733 | -0.07286    |
| Aegle marmelos           | Vilvam       | 1   | 0.009091 | -4.70048 | -0.04273    |
| Delonix elata            | Perungondrai | 1   | 0.009091 | -4.70048 | -0.04273    |
| Pithecellobium dulce     | Kodukapuli   | 1   | 0.009091 | -4.70048 | -0.04273    |
| Citrus medica            | Elumichai    | 2   | 0.018182 | -4.00733 | -0.07286    |
| Total                    |              | 110 |          |          | -3.02215005 |

H (Shannon Diversity Index) =3.02

### Shrubs

| Scientific Name           | Common Name   | No. of Species | Pi       | ln (Pi)  | Pi x ln (Pi) |
|---------------------------|---------------|----------------|----------|----------|--------------|
| Jatropagossypifolia       | Kaatamanaku   | 32             | 0.183908 | -1.69332 | -0.31142     |
| Calotropis gigantea       | Erukam        | 16             | 0.091954 | -2.38647 | -0.21945     |
| Tabernaemontanadivaricata | Crepe Jasmine | 4              | 0.022989 | -3.77276 | -0.08673     |
| Catharanthus roseus       | Nithyakalyani | 4              | 0.022989 | -3.77276 | -0.08673     |
| Datura metal              | Ummattangani  | 7              | 0.04023  | -3.21315 | -0.12926     |
| Robiniapseudoacacia       | Black locust  | 15             | 0.086207 | -2.45101 | -0.21129     |
| Acalypha indica           | Kuppaimeni    | 18             | 0.103448 | -2.26868 | -0.23469     |
| Stachytarpheaurticifolia  | Rat tail      | 13             | 0.074713 | -2.59411 | -0.19381     |
| Woodfordiafruticosa       | Velakkai      | 4              | 0.022989 | -3.77276 | -0.08673     |
| Hibiscus rosa sinensis    | Sembaruthi    | 3              | 0.017241 | -4.06044 | -0.07001     |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|                           |                 |     |          |          |          |
|---------------------------|-----------------|-----|----------|----------|----------|
| Lantana camara            | Unnichi         | 8   | 0.045977 | -3.07961 | -0.14159 |
| Parthenium hysterophorous | Vishapoonda     | 45  | 0.258621 | -1.35239 | -0.34976 |
| Euphorbia geniculata      | Amman Pacharisi | 5   | 0.028736 | -3.54962 | -0.102   |
| Total                     |                 | 174 |          |          | -2.2234  |

H (Shannon Diversity Index) =2.22

### Herbs

| Scientific Name      | Common Name            | No. of Species | Pi       | ln (Pi)  | Pi x ln (Pi) |
|----------------------|------------------------|----------------|----------|----------|--------------|
| Helicteresisora      | Valampuri              | 4              | 0.015385 | -4.17439 | -0.06422     |
| Tridax procumbens    | Vettukaayathalai       | 7              | 0.026923 | -3.61477 | -0.09732     |
| Heraculem spondylium | Hog Weed               | 19             | 0.073077 | -2.61624 | -0.19119     |
| Tridax procumbens    | Cuminipachai           | 18             | 0.069231 | -2.67031 | -0.18487     |
| Senna occidentalis   | Nattamsakarai          | 30             | 0.115385 | -2.15948 | -0.24917     |
| Plumbago zeylanica   | Chittiramoolam         | 12             | 0.046154 | -3.07577 | -0.14196     |
| Scrophularia nodosa  | Sarakkothini           | 18             | 0.069231 | -2.67031 | -0.18487     |
| Viburnum dentatum    | Viburnum               | 7              | 0.026923 | -3.61477 | -0.09732     |
| Cynodondactylon      | Arugu                  | 15             | 0.057692 | -2.85263 | -0.16457     |
| Euphorbia hirta      | Amman Pacharisi        | 7              | 0.026923 | -3.61477 | -0.09732     |
| Sida cordifolia      | Maanikham              | 50             | 0.192308 | -1.64866 | -0.31705     |
| Sida acuta           | Malaidangi             | 12             | 0.046154 | -3.07577 | -0.14196     |
| Laportea canadensis  | Peruganchori           | 28             | 0.107692 | -2.22848 | -0.23999     |
| Sporobolus fertilis  | Giant Parramatta Grass | 10             | 0.038462 | -3.2581  | -0.12531     |
| Tephrosia purpurea   | Kavali                 | 23             | 0.088462 | -2.42519 | -0.21454     |
| Total                |                        | 260            |          |          | -2.51        |

H (Shannon Diversity Index) =2.51

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

### **i. Species diversity calculation**

| <b>Details</b> | <b>H</b> | <b>Hmax</b> | <b>Evenness</b> | <b>Species Richness (Margalef)</b> |
|----------------|----------|-------------|-----------------|------------------------------------|
| Trees          | 3.02     | 3.36        | 0.89            | 5.95                               |
| Shrubs         | 2.22     | 2.56        | 0.86            | 2.32                               |
| Herbs          | 2.51     | 2.70        | 0.92            | 2.51                               |

From the above, it can be interpreted that herb community has higher diversity. While the tree community shows less diversity. It is also observed that most of the quadrates have controlled generation of plant species with older strands. Higher herb species diversity can be interpreted as a greater number of successful species and a more stable ecosystem where more ecological niches are available, environmental change is less likely to be damaging to the ecosystem. Species richness is high for herb community when compared with tree and shrubs.

#### **3.7.6 Floral study in the Buffer Zone:**

Economically important Flora of the study area

**Agricultural crops:** The important crops of this district are Paddy, Maize, Ragi, Banana, Sugarcane, Cotton, Tamarind, Coconut, Mango, Groundnut, Vegetables and Flowers also grown by the local people.

**Medicinal species:** The nearby area is also endowed with the several medicinal species which are commonly available in the shrub forest and waste lands. The common medicinal species of the region are *Asparagus racemosus* (satamulli), *Azadirachta indica* (Neem) etc.

**Rare and endangered floral species:** There are no rare or endangered or threatened (RET) species of in the study area. During the vegetation survey, there are no any species which are endangered or threatened under IUCN (International Union for Conservation of Nature and Natural resources) guidelines.

#### **3.7.7 Faunal Communities**

Both direct and indirect observation methods were used to survey the fauna.

- Point Survey Method: Observations were made in each site for 15 minutes duration.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

Roadside Counts: The observer traveled by motor vehicles from site to site, all sightings were recorded (this was done both in the day and night time). An index of abundance of each species was also established.

Pellet and Track Counts: All possible animal tracks and pellets were identified and recorded (South Wood, 1978).

Additionally, survey of relevant literature was also done to consolidate the list of fauna distributed in the buffer zone.

Based on the Wildlife Protection Act, 1972 (WPA 1972, Anonymous. 1991, Upadhyay 1995, Chaturvedi and Chaturvedi 1996) species were short-listed as Schedule II or I and considered herein as endangered species. Species listed in Ghosh (1994) are considered as Indian Red List species.

#### **Methodology Adopted:**

Point Survey method was adopted for this development project where observations were made in each site for 15 minutes duration (10 times).

#### **Study in the core zone:**

Point Survey method was adopted for the study within 2 km radius and the following species were observed.

**Mammals:** No wild mammalian species was directly sighted during the field survey. Discussion with local villagers located around the study area also could not confirm presence of any wild animal in that area. Three striped Palm Squirrel, Common Indian Hare, Common mongoose, Common Mouse etc were observed during primary survey.

**Avifauna:** Since birds are considered to be the indicators for monitoring and understanding human impacts on ecological systems (Lawton, 1996) attempt was made to gather quantitative data on the avifauna by walk through survey within the entire study area and surrounding areas. From the primary survey, a total of 26 species of avifauna were identified and recorded in the study area. The diversity of avifauna from this region was found to be quite high and encouraging.

The list of fauna species found in the study area is mentioned in Table below.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</b>         | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |

**Table 3-20 List of fauna species**

| <b>Scientific Name</b>   | <b>Common Name</b>           | <b>Schedule of wild life protection act</b> | <b>IUCN conservation status</b> |
|--------------------------|------------------------------|---|---------------------------------|
| <b>Mammals</b>           |                              |   |                                 |
| Funambulus pennanti      | Palm Squirrel                | IV  | Least Concern                   |
| Mus rattus               | Indian rat                   | IV  | Not listed                      |
| Bandicota bengalensis    | Indian mole rat              | IV  | Least Concern                   |
| Funambulus palmarum      | Three stripped palm squirrel | IV  | Least Concern                   |
| Herestes edwardsii       | Common Mongoose              | IV  | Not listed                      |
| Mus musculus             | Common Mouse                 | IV  | Least Concern                   |
| Bandicota indica         | Rat                          | IV  | Least Concern                   |
| Lepus nigricollis        | Indian Hare                  | IV  | Least Concern                   |
| Felis catus              | Cat                          | Not listed                                  | Not listed                      |
| Canis lupus familiaris   | Indian dog                   | Not listed                                  | Not listed                      |
| Bos Indicus              | Indian Cow                   | Not listed                                  | Not listed                      |
| Bubalus bubalis          | Buffalo                      | I   | Not listed                      |
| Sus scrofa domesticus    | Domestic pig                 | Not listed                                  | Not listed                      |
| <b>Birds</b>             |                              |   |                                 |
| Milvus migrans           | Black kite                   | IV  | Least concern                   |
| Saxicoloides fulicatus   | Indian Robin                 | IV  | Least concern                   |
| Pycnonotus cafer         | Red vented Bulbul            | IV  | Least concern                   |
| Phragamaticola aedon     | Thick billed warbler         | IV  | Least concern                   |
| Pericrocotus cinnamomeus | Small Minivet                | IV  | Least concern                   |
| Eudynamys scolopaceus    | Koel                         | IV  | Least concern                   |
| Psittacula krameni       | Rose ringed parakeet         | IV  | Least concern                   |
| Dicrurus marcocercus     | Black drongo                 | IV  | Least concern                   |
| Columba livia            | Rock pigeon                  | IV  | Least concern                   |
| Corvus splendens         | House crow                   | IV  | Least concern                   |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

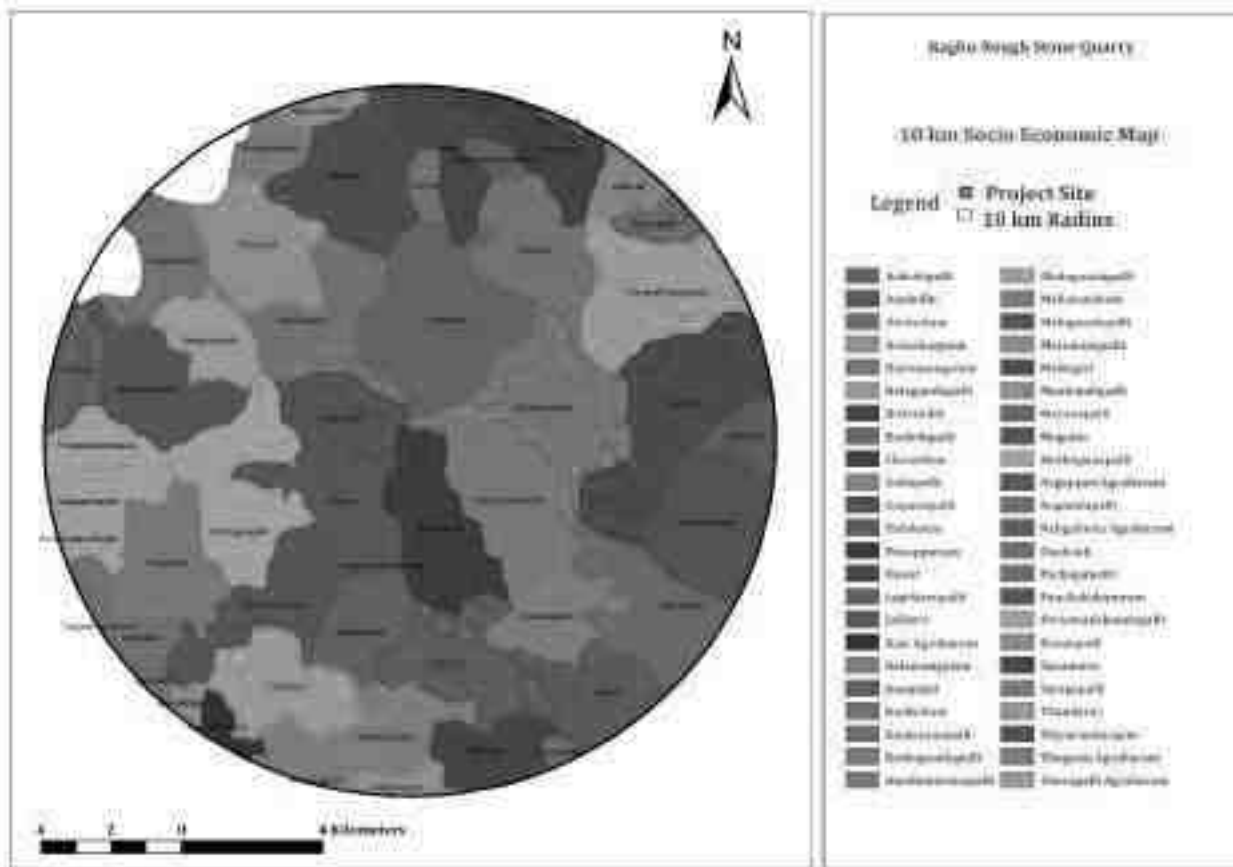
|                        |                       |    |               |
|------------------------|-----------------------|----|---------------|
| Alcedo atthis          | Small blue kingfisher | IV | Least concern |
| Cuculus canorus        | Common Cukoo          | IV | Least concern |
| Reptiles & Amphibians  |                       |    |               |
| Chameleon zeylanicum   | Chameleon             | IV | Not listed    |
| Calotes versicolor     | Common garden lizard  | II | Not listed    |
| Bungarus caeruleus     | Common krait          | IV | Not listed    |
| Ophisops leschenaultia | Snake eyed lizard     | -- | Not listed    |
| Bufo melanostictus     | Toad                  | IV | Least concern |
| Ptyas mucosa           | Rat snakes            | IV | Least concern |
| Hemidactylus sp.       | House lizard          | -- | Not listed    |
| Butterflies            |                       |    |               |
| Danaus chrysippus      | Plain Tiger           | -- | Not listed    |
| Papilio demoleus       | Common lime           | -- | Not listed    |
| Euploea core           | Common crow           | -- | Least concern |
| Danaus genutia         | Common tiger          | -- | Not listed    |
| Eurema brigitta        | Small grass yellow    | -- | Least concern |

### **3.8 DEMOGRAPHY AND SOCIO ECONOMICS**

The demography survey study is done within 10km radius from the project site.



|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</b>         | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |



**Figure 3.13 Socio Economic map surrounding the project site.**

The population, Household, Sex ratio, Literacy rate, SC, ST details for all the villages in the study area is listed below:

**Table 3-21: Demography Survey Study**

Source: Census of India, 2011

| Villages    | Household | Population | Sex Ratio |        | Literacy Rate |        | SC   | ST  |
|-------------|-----------|------------|-----------|--------|---------------|--------|------|-----|
|             |           |            | Male      | Female | Male          | Female |      |     |
| Kodiyalam   | 211       | 829        | 405       | 424    | 282           | 225    | 146  | 0   |
| Poonapalli  | 738       | 3061       | 1542      | 1519   | 1111          | 889    | 544  | 9   |
| Chenathur   | 3458      | 15826      | 8925      | 6901   | 6809          | 4381   | 1154 | 110 |
| Moranapalli | 2174      | 9160       | 4855      | 4305   | 3403          | 2439   | 1503 | 13  |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|                    |       |        |       |       |       |       |      |     |
|--------------------|-------|--------|-------|-------|-------|-------|------|-----|
| Onalvadi           | 1607  | 6656   | 3411  | 3245  | 2475  | 1968  | 1360 | 0   |
| Achettipalli       | 697   | 3066   | 1562  | 1504  | 1056  | 805   | 910  | 0   |
| Nagondapalli       | 674   | 2929   | 1513  | 1416  | 1110  | 808   | 1096 | 0   |
| Gopanapalli        | 342   | 1388   | 716   | 672   | 478   | 358   | 276  | 2   |
| Sanamavu           | 925   | 4248   | 2182  | 2066  | 1487  | 1062  | 659  | 183 |
| Halekotta          | 707   | 2990   | 1535  | 1455  | 1071  | 760   | 209  | 83  |
| Mugalur            | 609   | 2593   | 1352  | 1241  | 862   | 609   | 1023 | 0   |
| Hosur (M)          | 29255 | 116821 | 59351 | 57470 | 47353 | 42240 | 9438 | 200 |
| Mathigiri (TP)     | 5627  | 23129  | 11725 | 11404 | 9165  | 8192  | 5128 | 33  |
| Mookondapalli (CT) | 10624 | 39245  | 20488 | 18757 | 16302 | 13841 | 3158 | 66  |
| Gollapalli         | 121   | 534    | 291   | 243   | 158   | 83    | 0    | 0   |
| Komaranapalli      | 511   | 2174   | 1106  | 1068  | 719   | 558   | 577  | 0   |
| Belagundapalli     | 1018  | 4092   | 2073  | 2019  | 1575  | 1249  | 686  | 0   |
| Anniyalam          | 614   | 2558   | 1308  | 1250  | 890   | 671   | 823  | 0   |
| Thandarai          | 605   | 2664   | 1349  | 1315  | 784   | 605   | 363  | 4   |
| Kundumaranapalli   | 863   | 3867   | 1972  | 1895  | 1342  | 901   | 1157 | 0   |
| Bairamangalam      | 1207  | 4932   | 2569  | 2363  | 1940  | 1436  | 1213 | 11  |
| Jakkeri            | 914   | 3957   | 1989  | 1968  | 1337  | 1010  | 844  | 127 |
| Anekollu           | 628   | 2858   | 1471  | 1387  | 861   | 621   | 136  | 1   |
| Mallasandram       | 907   | 4062   | 2130  | 1932  | 1349  | 923   | 343  | 26  |
| Thogarai Agraharam | 114   | 484    | 253   | 231   | 183   | 120   | 179  | 0   |
| Kempatti           | 535   | 2062   | 1038  | 1024  | 667   | 503   | 568  | 0   |
| Arasakuppam        | 988   | 4196   | 2148  | 2048  | 1378  | 1027  | 313  | 87  |

### **3.9 TRAFFIC IMPACT ASSESSMENT**

Traffic data collected 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 each of the two directions for counting the traffic. At the

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</b>         | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |

end of each hour, fresh counting and recording was undertaken. Total numbers of vehicles per hour under the three categories were determined.



**Figure 3.14: Site Connectivity**

**Table 3-22: No. of Vehicles per Day**

| S. No        | Vehicles Distribution | Number of Vehicles Distribution/Day | Passenger Car Unit (PCU) | Total Number of Vehicle in PCU |
|--------------|-----------------------|-------------------------------------|--------------------------|--------------------------------|
|              |                       | <b>SH-17A</b>                       | -                        | <b>SH-17A</b>                  |
| 1            | Cars                  | 453                                 | 1                        | 453                            |
| 2            | Buses                 | 247                                 | 3                        | 741                            |
| 3            | Trucks                | 159                                 | 3                        | 477                            |
| 4            | Two wheelers          | 428                                 | 0.5                      | 214                            |
| 5            | Three wheelers        | 186                                 | 1.5                      | 279                            |
| <b>Total</b> |                       | <b>1473</b>                         | -                        | <b>2164</b>                    |

**Table 3-23: Existing Traffic Scenario and LOS**

| Road | V (Volume in | C (Capacity in PCU/hr) | Existing V/C Ratio | LOS |
|------|--------------|------------------------|--------------------|-----|
|------|--------------|------------------------|--------------------|-----|

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|       |                |     |      |          |
|-------|----------------|-----|------|----------|
|       | <b>PCU/hr)</b> |     |      |          |
| SH17A | 2164/24=90     | 237 | 0.38 | <b>B</b> |

**Note:** The existing level may be "Very Good" for SH17A=237.

| <b>V/C</b> | <b>LOS</b> | <b>Performance</b>  |
|------------|------------|---------------------|
| 0.0-0.2    | A          | Excellent           |
| 0.2-0.4    | B          | Very Good           |
| 0.4-0.6    | C          | Good/ Average/ Fair |
| 0.6-0.8    | D          | Poor                |
| 0.8-1.0    | E          | Very Poor           |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.48.0 Ha by Thiru V Sekaran</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru V Sekaran</i>   |                         |
| <i>Project Location</i>  | <i>Perumanadu Village, Iluppur Taluk, Pudukkottai District</i>     |                         |

## 4 Anticipated Environmental Impacts & Mitigation Measures

This chapter describes the anticipated impacts on the environment and mitigation measures. The method of assessment of impacts including studies carried out, modeling techniques adopted to assess the impacts where pertinent should be elaborated in this chapter. It should give the details of the impacts on the baseline parameters, both during the construction and operational phases and suggests the mitigation measures to be implemented by the proponent.

### 4.1 INTRODUCTION

An environmental impact is defined as any change to the environment, whether adverse or beneficial, resulting from a facility's activities, products, or services. The anticipation of the possible & potential Environmental impact due to the proposed project is a key step in EIA. Based on the impacts assessed, appropriate mitigation measures should be adopted to maintain the environment with less or no damage.

Environmental Impacts can be group into Primary impacts & Secondary Impacts

**Primary Impacts:** These impacts are directly attributed by the project

**Secondary Impacts:** These are those which are induced by primary impacts and include the associated investments and changed patterns of the social and economic activities by the action.

Assessment of impacts is done for the following Environmental Parameters:

- Land Environment
- Water Environment
- Air Environment
- Noise Environment
- Biological Environment
- Socio Economic Environment

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

#### 4.2 LAND ENVIRONMENT:

| Aspect   | Impact  | Mitigation Measures     |                             |   |
|--|---|-------------------------|-----------------------------|---|
| <p><i>Mining of rough stone and Gravel</i></p> | <p>The proposed 1.30.0 Ha mine located in Gopanapalli Village having 151210 m<sup>3</sup> of Rough stone. The quarry operation is proposed to carry out with conventional open cast mechanized mining with 6.0 meter vertical bench and bench width of 5.0 meter. At the end of 5 years, mining lease area will be converted into ultimate pit.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">Ultimate Pit Dimensions</td> </tr> <tr> <td style="text-align: center;">111.0m(L) X78.0m(W) X 37.0m</td> </tr> </table> <p>The main impact of open cast mining on land-use is land degradation. The land is bound to be excavated for mining of Rough Stone Quarry.</p> <p>Impact on soil of the study area will be minimal as there are no wastewater generated, heavy metal infusion, stack emissions.</p> | Ultimate Pit Dimensions | 111.0m(L) X78.0m(W) X 37.0m | <p>The proposed project site is not prone to any kind of soil erosion (<b>Source: Bhuvan</b>).</p> <p>In addition, garland drainage of 1m x 1m will be provided to avoid storm water run-off.</p> <p>It is proposed to plant 700 No's of local tree species (Neem, Vilvam Vaagai, Pungam, Magizha maram, Eachai, etc.,) along the roads, outer periphery of the mining area which enhances the binding property of the soil.</p> <p>It is proposed to improve the affected land wherever possible for better land use, so as to support vegetation and creation of water reservoir in the ultimate pit after quarrying.</p> <p>The source of dust generation is majorly due to drilling, blasting, loading &amp; unloading of the mined out mineral, the impact will be mitigated by water sprinkling regularly once in 3hrs.</p> |
| Ultimate Pit Dimensions                        |   |                         |                             |   |
| 111.0m(L) X78.0m(W) X 37.0m                    |   |                         |                             |   |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|  |   |   |
|--|---|---|
|  | <p>Impact due to transformation of terrain characteristics over the large area results in soil degradation.</p> <p>Solid waste will be generated from the mining activity as there will be refuse also generation of domestic waste. If it is not properly managed, may cause odor and health problem to the workers.</p> | <p>The proposed mining activity is carried out in hilly terrain.</p> <p>After removal of minerals, undulating portion will be created. Excavated area or ultimate pit at the end of the mine period will be converted into water reservoir. Two tier tree belts will be planted along the safety distance.</p> <p>The 100% recovery is achieved by extracting the entire mineable reserve. Hence there will be no refuse generation due to the mining activity. Apart from that, a very meagre quantity of domestic waste will be generated in the project, which will be handed over to the local body on daily basis.</p> |
|--|---|---|

#### **4.3 WATER ENVIRONMENT:**

| <b>Aspect</b>  | <b>Impact</b>   | <b>Mitigation Measures</b>   |
|--|---|--|
| <i>Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.</i> | The mining in the area may cause ground water contamination due to intersection of the water table and mine runoff. | The water table will not be intersected during mining, as the ultimate depth is limited upto 37 m (below ground level), whereas the ground water table is at 88 m below the ground level. The municipal wastewater will be disposed into |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|  |  |   |
|--|--|---|
|  | <p>The ground water depletion may occur due to mining activity</p> <p>Chemicals consisting of nitrate used for blasting may pollute the surface run off.</p> <p>Improper management of Domestic wastewater in the Mine lease may create unhygienic conditions in the site thereby causing health impacts to the labours.</p> | <p>septic tanks of 5 cum and soak pit. No chemicals consisting of toxic elements will be used for carrying out mining activity.</p> <p>The ground water table is at a depth of 88 m BGL, the mining operation will not affect the aquifer. The ultimate pit at the end of the mining operation will be used for rain water storage, the stored water will be used for green belt development and further the stored water will be used for domestic purposes (other than drinking) after proper treatment.</p> <p>Further, the run-off water will be stored in sumps and after proper treatment; water will be used in the mining operation for dust suppression.</p> <p>Provision of urinals/Latrines along with septic tank followed by soak pit arrangement will be provided in the Mine Lease area for the proper management of wastewater.</p> |
|--|--|---|



|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

#### **4.4 AIR ENVIRONMENT:**

| <b>Aspect</b>   | <b>Impact</b>   | <b>Mitigation Measures</b>  |
|---|---|---|
| <p><i>Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.</i></p> | <p><i>Impacts during Operation Phase</i></p> <p>During mining operation, fugitive dust and other air pollutants like particulate matter (PM10 &amp; PM 2.5) will be generated.</p> <p>The main source of pollutants arises due to drilling and blasting. 10 Nos of Tipper will be used for loading and unloading, 4 Nos of Excavator (0.90 m<sup>3</sup> bucket capacity, and 4 Nos Jack Hammer will be used for excavation of the mineral which contributes to the generation of fugitive dust. In addition, blasting will be done using explosives leading to the generation of dust.</p> | <p><i>Mitigation Measures during Operation Phase</i></p> <p>It is proposed to plant 700 Nos of local species along the haul roads, outer periphery within the lease area to prevent the impact of dust in consultation with Forest department for the plantation of trees (Neem, Magizham, Tamarind, Elandhai and Vilvam) in two tier to combat air pollution and with herbs (Nerium) in between the tree species.</p> <p>Planning transportation routes of the mined out mineral, so as to reach the nearest paved roads (an approach road) by shortest route connecting to SH 17A.</p> <p>Alternatively, gravelled road may be constructed between mine lease area and nearest paved road connectivity. The speed of trucks plying on the haul road will be limited to 20km/hr to avoid generation of dust.</p> |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|  |   |   |
|--|---|---|
|  | <p><u><i>Effect on Human</i></u></p> <ul style="list-style-type: none"> <li>• Adverse effect on human health of working labourers and neighbouring villagers like effect on breathing and respiratory system, damage to lung tissue, influenza or asthma.</li> <li>• Dust generation due to loading and unloading of mineral and due to transportation can also affect the workers as well as nearby villagers.</li> </ul> <p><u><i>Effect on Plants</i></u></p> <ul style="list-style-type: none"> <li>• Stomatal index may be minimized due to dust deposit on leaf.</li> </ul> | <p>The trucks will be covered by tarpaulin.</p> <p>Overloading will be avoided.</p> <p>Personal Protective Equipments (PPEs) like eye goggles, dust mask, leather gloves, safety shoes &amp; boots will be provided to the workers engaged at dust generation points like excavation and loading points.</p> <p>0.5 KLD of water will be proposed for sprinkling on unpaved roads to avoid dust generation during transportation.</p> |
|--|---|---|

### **Air Quality Modeling:**

The AERMOD is actually a modeling system with three separate components:

- AERMOD (AERMIC Dispersion Model),
- AERMAP (AERMOD Terrain Preprocessor)
- AERMET (AERMOD Meteorological Preprocessor)

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

#### 4.4.1 Source Characterization

A detailed listing of all emission sources and their corresponding modelling input release parameters and emission rates is listed in this report. A general description of how each source type was treated is presented below.

The emission Sources from the proposed operation are

##### **Point Sources:**

Point sources for mining operations typically include dust collectors, hot water heaters, and emergency generator(s). Since at the present project the following sources are anticipated.

1. Hydraulic excavator – 0.90 Cum Bucket Capacity (with Rock Breaker Attachment)
2. Jack Hammer 32 mm Dia
3. Tipper
4. Tractor Mounted - Compressor
5. Drilling and excavation with Accessories

##### **Road Sources:**

A road network was developed to depict the anticipated haul truck routes and truck discharge locations during the mine operations. The anticipated emissions from the road sources and corresponding anticipated impact during the monitoring period of January to March 2023 emissions were estimated. Emissions due to haul road and general plant traffic on the unpaved road network were modelled as volume sources. The model volume source parameter for the haul roads initially utilized USEPA developed emission factors for hauling trucking. The haul road sources utilized source to source spacing of 6 meters along the simulated haul roads. The initial lateral dimension of the sources were set to 3 m were used as an input to replicate a 2 truck travel adjacent for a typical mining scenario.

The parameters considered for the hauling operation include the following,

- size of haul trucks commonly used
- degree of dust control/compaction of permanent haul roads

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

### **Other fugitive particulate emission sources:**

Other fugitive particulate emission sources that were modelled as volume sources include the following:

- Fugitive emissions from trucks unloading at the primary crusher were represented by a single volume source. The release height was set to 0 meters (dump pocket is at grade level).
- Fugitive emissions due to wind erosion is not considered as the mining area is predominately rocky surface with minimal wind erosion. If an wind erosion is anticipated to occur, it would be localized.
- Fugitive emissions from transfer points were represented by single volume sources. The release heights for these sources were set to the actual height of the truck transfer process.

### **Post Project Scenario**

Emissions from operations will result from process equipment and mining operations. Process equipment was modeled at maximum capacity. Emissions from mining were based upon the mining rate and haul truck travel necessary to transport the stones and waste from the pit to the storage area.

Predicted maximum ground level concentrations considering micro meteorological data of June to August 2022 are superimposed on the maximum baseline concentrations obtained during the study period to estimate the post project scenario, which would prevail at the post operational phase. The overall scenario with predicted concentrations over the maximum baseline concentrations is shown in the following table along with isopleths.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

**Table 4-1 Emission Factors for uncontrolled mining**

| Activity           | Emission Factor |   | References   |   |
|--------------------|-----------------|---|--|---|
| Topsoil handling   | Scraper         | 0.029<br>Kg TSPM/<br>average time between<br>spray application      | <b>USEPA (2008)</b><br><br>Jose I. Huertas & Dumar A. Camacho & Maria E. Huertas, Standardized emissions inventory methodology for open-pit mining areas, Environmental Science Pollution Research, 2012.  |   |
|                    | Bulldozing      | 15.048<br>kg PM10/<br>Hr excavation                                 |  | <b>USEPA (2008)</b>                           |
|                    | Loading         | 2.3237E-04<br>kg PM10/<br>average time between<br>spray application |  | <b>USEPA (2006a)</b>                          |
|                    | Haulage         | 0.69718<br>kg PM10/VKT  |  | <b>USEPA (2006a)</b><br><b>Cowherd (1988)</b> |
| Rough stone mining | Wet drilling    | 8.00E-5 lbs PM10/<br>Ton produce                                    | <b>EPA. August, 2004. Section 11.19.2, Crushed Stone Processing and Pulverized Mineral Processing. In: Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources, Fifth Edition, AP-42. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. Research Triangle Park, North Carolina.</b> |   |
|                    | Loading         | 1.00E-4 lbs PM10/<br>Ton produce                                    |  |   |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

#### 4.5 NOISE ENVIRONMENT:

| <b>Aspect</b>  | <b>Impact</b>  | <b>Mitigation Measures</b>  |
|--|--|---|
| <i>Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.</i> | <p>Usage of Equipments (Excavator, Tipper, Jack Hammer), Machinery and trucks used for transportation will generate noise.</p> <p>Noise from the machinery can cause hypertension, high stress level, hearing loss, sleep disturbance etc due to prolonged exposure.</p> <p>Number of vehicles will be increased due to the proposed mining activity hence vehicle may collide which may result in unwanted sound and can also cause impact on human health like breathing and respiratory system, damage to lung tissue, influenza or asthma.</p> | <ul style="list-style-type: none"> <li>• The machinery will be maintained in good running condition so that noise will be reduced to minimum possible level.</li> <li>• Awareness will be imparted to the workers once in six months about the permissible noise level and effect of maximum exposure to those levels. Adequate silencers will be provided in all the diesel engines of vehicles.</li> <li>• It will be ensured that all transportation vehicles carry a valid PUC Certificates.</li> <li>• Speed of trucks entering or leaving the mine will be limited to moderate speed (20km/hr) to prevent undue noise from empty vehicles.</li> </ul> <p>The noise generated by the machinery will be reduced by proper lubrication of the machinery and other equipments.</p> <ul style="list-style-type: none"> <li>• It is proposed to plant 700 Nos. of local species (Neem, Mandharai, Athi, Tamarind, Ashoka, Casuarinas and Villam) to reduce the</li> </ul> |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|  |  |   |
|--|--|---|
|  |  | <p>impact of noise in the study area. The development of green belts around the periphery of the mine will be implemented to attenuate noise.</p> <ul style="list-style-type: none"> <li>• The trucks will be diverted on two roads viz. SH 17A and a District Road to avoid traffic congestion.</li> <li>• Health check-up camps will be organized once in six month.</li> <li>• Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas.</li> <li>• Provision of quiet areas, where employees can get relief from workplace noise.</li> </ul> |
|--|--|---|

#### **4.6 BIOLOGICAL ENVIRONMENT:**

| <b>Aspect</b>  | <b>Impacts</b>  | <b>Mitigation Measures</b>   |
|----------------|---|--|
| Site Clearance | Loss of habitat due to site clearance which may lead to ecological disturbance. | The proposed mining lease is already a dry land hence no site clearance is required. Only few shrubs and herbs like parthenium sp., prosopis juliflora were present. |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|                   |   |   |
|-------------------|---|---|
| Planting of trees | Development of afforestation in the mine lease area will have a positive impact as the land was initially a barren. | safety distance will be provided all along the boundary of the mine lease area and safety. Around 0.41.0 Ha of land is utilized for greenbelt development (650 Nos – 5 years). This will attract avifauna thus enhancing the existing ecological environment. |
|-------------------|---|---|

#### **4.7 SOCIO ECONOMIC ENVIRONMENT:**

| <b>Aspect</b>   | <b>Impact</b>   | <b>Mitigation Measures</b>  |
|---|---|---|
| Proposed implementation of Mining activity                              | Land acquisition for the implementation of the project may result in loss of assets, which in return will make the PAP to shift, losing their normal routine and livelihood | The proposed project is a Government poromboke land of <b>Thiru S.Raghu</b> and the land is vacant where there are no human settlement within 300m radius. Hence the project does not involve Rehabilitation and resettlement |
| Drilling, Blasting, Loading and Transportation of the mined out mineral | The mining activities may cause dust emission, noise pollution thereby causing disturbance to the local habitat   | No human activity is envisaged near the project site. The nearest human settlement is observed in Goolisandram village which is 0.37 km, N from site  |
| Grazing and Rearing activities in the nearby villages                   | The Grazing and rearing of local animals like Sheep, Goat and cows is observed in the nearby villages, which may be affected due to the project as the                      | It is proposed to use gravelled road and nearest paved road and preferred not to use unpaved roads. In addition to that, the speed of trucks will be limited to 20km/hr to avoid any accidents.                               |



|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|  |   |  |
|--|---|--|
|  | movement of the vehicles may affect/injure the animals  |  |
| Employment opportunity                 | The project will improve the livelihood of the local people                                       | After the development of the proposed mine, it will improve the livelihood of local people and also provide the direct and indirect employment opportunities. The rough stone for the infrastructural development in the area will be made available from the local markets at reasonably lower price. |
| Corporate Environmental Responsibility | The proposed project will help in natural resource augmentation & Community resource development. | As a part of CER i.e, 5 Lakhs will be allocated. Developing sports facilities, providing hygienic toilet, R.O Water facilities to Panchayat Union Middle School, H.Settipalli.   |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

#### **4.8 OTHER IMPACTS:**

| <b>S. No</b> | <b>Aspect</b>                   | <b>Impact</b>  | <b>Mitigation measure</b>  |
|--------------|---------------------------------|--|--|
| 1.           | Risk due to the proposed mining | Accidents may occur in the mine area   | Proper PPE kit (Safety jacket, Helmet, Safety Shoes, Gloves) etc will be provided to each and every employee in the mine lease concerning the safety of each labour  |
| 2.           | Blasting                        | Injury to the labours due to the blasting activity                                   | Alarm system in the form of Siren will be engaged in the project site to caution the blasting activity. In addition to that, the blasting activity will be scheduled at particular time – 5 P.M to 6 P.M (or whenever required) so that the employees will be aware of the activity. Smoking will be banned in the site and sign boards will be displayed in various places at site. |
| 3.           | Screening of Labors             | Labors will be checked for health condition before employing them in mining activity | All the labors will be checked and screened for health before employing them.<br>After employing them, periodical medical checkups will be held once in every six months.  |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

## 5 Analysis Of Alternatives

### 5.1 GENERAL

Analysis of alternative is a significant aspect in planning and designing any project. Cost benefit analysis should be work out along with other parameters while choosing an alternative in such a way that the production is maximum and the mining operation is environment friendly and cost effective. The mine plan and mine closure plan Mining Plan was approved by The Assistant Director , Geology & Mining, Krishnagiri District prior to submission of the Form-1 and PFR. ToR issued by the SEIAA-TN vide Letter No. SEIAA-TN/ F. No. 9566/ ToR-1326/2023 Dated: 10.02.2023. The study for alternative analysis involves in-depth examination of site and technology.

#### 5.1.1 *Analysis for Alternative Sites and Mining Technology*

##### 5.1.1.1 **Alternative Site**

The proposed project is the mining of Rough Stone Quarry and is proposed after prospecting the area. In other words, these can be implemented in the mineral available zone. Since the mining block has been allotted in principal by the State Government, there is no case for studying and exploring any other site as an alternative.

##### 5.1.1.2 **Alternative Technology**

The open cast mining could be manual/mechanized depending upon the geological and topographical setup of the mineral (ROM) to be won and the daily/annual targeted production.

**Table 5-1: Alternative for Technology and other Parameters**

| S. No. | Particular | Alternative<br>Option 1 | Alternative<br>Option 2 | Remarks |
|--------|------------|-------------------------|-------------------------|---------|
|        |            |                         |                         |         |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|    |                         |                                 |                            |   |
|----|-------------------------|---------------------------------|----------------------------|---|
| 1. | Technology              | Opencast semi mechanized mining | Opencast mechanized mining | Opencast semi mechanized<br>Involving drilling and blasting are preferred.<br>Benefits:<br>Material is hard so to make it loose and to bring it to                                      |
| 2. | Employment              | Local employment.               | Outsource employment       | Local employment is preferred<br>Benefits:<br>Provides employment to local people along with financial benefits<br>No residential building/   |
| 3. | Labour transportation   | Public transport                | Private transport          | Local labours will be deployed from Goolisandram village so they will either reach mine site by bicycle or by foot.<br>Benefits:<br>Cost of transportation of labors will be negligible |
| 4. | Material transportation | Public transport                | Private transport          | Material will be transported through trucks/trolleys on the contract basis<br>Benefits:<br>It will give indirect employment.  |
| 5. | Water                   | Tanker supplier                 | Ground water/              | Tanker supply will be preferred.<br>Water will be sourced from Goolisandram village which is 0.37 km, NNW from site.  |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

## 6 Environmental Monitoring Program

### 6.1 GENERAL:

This chapter covers the planned environmental monitoring program. It also includes the technical aspects of monitoring the effectiveness of mitigation measures.

Monitoring is important to measure the efficiency of control measures. Post project monitoring of environmental parameters is of key importance to assess the status of environment. The monitoring program will serve as an indicator for identifying environmental degradation due to operation of the project and help in selection of appropriate mitigation measures to safeguard the environment.

Regular monitoring is as important as control of pollution since the efficacy of control measures can only be determined by monitoring. The project proponent has awarded **M/s. Ecotech Labs Pvt Ltd** for carrying out the post project environmental monitoring (PPM) and timely compliance report submission to various regulatory authorities.

Therefore, regular monitoring programme of the environmental parameters is essential to take into account the changes in the environmental quality. The objectives of monitoring are to:-

- Verify effectiveness of planning decisions;
- Measure effectiveness of operational procedures;
- Confirm statutory and corporate compliance; and
- Identify unexpected changes.

**Table 6-1: Environmental Monitoring Programme**

| <b>Parameters</b>   | <b>Sampling</b> | <b>Frequency</b>  | <b>Location</b>   |
|---|-----------------|---|---|
| Air environment –<br>Pollutants<br>PM 10<br>PM 2.5<br>SO <sub>2</sub> | 5 locations     | 24 hourly twice a<br>week<br>4 hourly.<br>Twice a week, One<br>non monsoon season | Project Site,<br>Pups Barandur school,<br>Pattalama Temple<br>Poonapalli Govt Primary school<br>Anjaneya Temple |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|  |             |   |   |
|--|-------------|---|---|
| NO <sub>x</sub>  |             | 8 hourly, twice a week<br>24 hourly, twice a week |   |
| Noise  | 5 locations | 24 hourly Once in 5 locations                     | Project Site,<br>Pups Barandur school,<br>Pattalama Temple<br>Poonapalli Govt Primary school<br>Anjaneya Temple |
| Water (Ground water)<br><ul style="list-style-type: none"> <li>• pH</li> <li>• Temperature</li> <li>• Turbidity</li> <li>• Magnesium Hardness</li> <li>• Total Alkalinity</li> <li>• Chloride</li> <li>• Sulphate</li> <li>• Fluoride</li> <li>• Nitrate</li> <li>• Sodium</li> <li>• Potassium</li> <li>• Salinity</li> <li>• Total nitrogen</li> <li>• Total Coliforms</li> <li>• Fecal Coliforms</li> </ul> | 5 locations | Once in 5 locations                               | Project Site,<br>Pups Barandur school,<br>Pattalama Temple<br>Poonapalli Govt Primary school<br>Anjaneya Temple |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|   |                                 |                     |  |
|---|---------------------------------|---------------------|--|
| Water (surface water)<br><ul style="list-style-type: none"> <li>• pH</li> <li>• Temperature</li> <li>• Turbidity</li> <li>• Magnesium Hardness</li> <li>• Total Alkalinity</li> <li>• Chloride</li> <li>• Sulphate</li> <li>• Fluoride</li> <li>• Nitrate</li> <li>• Sodium</li> <li>• Potassium</li> <li>• Salinity</li> <li>• Total nitrogen</li> <li>• Total Coliforms</li> <li>• Fecal Coliforms</li> </ul> | Sample from nearby lakes/river  | One time Sampling   | Devaganapalli river  |
| Soil (Organic matter, Texture, pH, Electrical Conductivity, Permeability, Water holding capacity, Porosity)   | 5 locations                     | Once in 5 locations | Project Site,<br>Pups Barandur school<br>Pattalama Temple<br>Poonapalli Government Primary School<br>Anjaneya Temple |
| Ecology and biodiversity Study  | Study area covering 5 km radius | One time Sampling   |  |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|   |                             |                   |  |
|---|-----------------------------|-------------------|--|
| Socio- Economic study (Population, Literacy Level, employment, Infrastructure like school, hospitals & commercial establishments) | Villages around 5 km radius | One time Sampling |  |
|---|-----------------------------|-------------------|--|

**Table 6-2: Monitoring Schedule during Mining**

| <b>S. No.</b> | <b>Attributes</b>   | <b>Parameters</b>  | <b>Frequency</b> | <b>Location</b> |
|---------------|---|--|------------------|-----------------|
| 1.            | Ambient Air Quality at Mine Site & Fugitive Dust Sampling | PM 10<br>PM 2.5<br>SO <sub>2</sub><br>NO <sub>x</sub>  | Once in a Month  | Project Site    |
| 2.            | Ground water Quality                                      | Drinking Water Parameters, As per IS - 10500: 2012   | Half yearly      | Project Site    |
| 3.            | Surface Water Quality                                     | Class will be assessed as per the CPCB Guidelines  | Half yearly      | Project Site    |
| 4.            | Soil Quality  | (Organic matter, Texture, pH, Electrical Conductivity, Permeability, Water holding capacity, Porosity) | Half yearly      | Project Site    |
| 5.            | Noise Level Monitoring                                    | Noise level in dB(A)<br>Quarterly/half yearly  | Half yearly      | Project Site    |



|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

## 7 Additional Studies

### 7.1 GENERAL

This chapter covers the details of the additional studies viz. Risk assessment, Disaster Management, Public Hearing, Rehabilitation and Resettlement.

#### 7.1.1 *Public Hearing:*

As the proposed mining project falls under 1(a), Category B1 – Cluster Mining (includes **Existing Quarries**- Nil

**Abandoned /Old Quarries** – Nil

**Proposed Quarries** – Thiru.S.Raghu -1.30.0 Ha, M/s. Natural stone-3.00.0 Ha, Thiru.Nithin Reddy-3.00.0 Ha, Thiru. Sri krish-3.00.0 Ha, Thiru.Vijaya kumar-2.00.0Ha, Thiru. Dhivakar-1.50.0 Ha.

Hence under 7(III) of EIA notification 2006 and its subsequent amendments, the project involves the Public Consultation and the same will be conducted under SPCB (TN) in Virudhunagar District. The proceedings of the same will be incorporated in the Final EIA Report.

#### 7.1.2 *Risk assessment:*

For mining projects to be successful, it should meet not only the production requirements, but also maintain the highest safety standards for all the workers. The industry has to identify the hazards, assess the associated risks and bring the risks to tolerable level regularly. Mining has considerable safety risk to miners. Unsafe conditions and practices in mines lead to a number of accidents and causes loss and injury to human lives, damages the property, interrupt production etc. Risk assessment is a systematic method of identifying and analyzing the hazards associated with an activity and establishing a level of risk. The hazards cannot be completely eliminated, and thus there is a need to define and estimate an accident risk level possible to be presented either in quantitative or qualitative way.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

### 7.1.3 Identification of Hazard

#### 7.1.3.1 Blasting Pattern:

The quarrying operation will be carried out in conjunction with conventional method of mining using Jack hammer drilling and blasting for shattering effect and loosen the Rough stone.

#### 7.1.3.2 Drilling and Blasting:

Drilling and Blasting parameters are as follows:

|    |                                  |   |
|----|----------------------------------|---|
| 1  | Diameter of the hole             | 32-36 mm  |
| 2  | Spacing                          | 60 Cms  |
| 3  | Depth                            | 1 to 1.5 m  |
| 4  | Charge / Hole                    | D.Cord with water or 70gms of gun powder or Gelatine. |
| 5  | Pattern of hole                  | Zig Zag   |
| 6  | Inclination of hole              | 70 <sup>0</sup> from the horizontal.                  |
| 7  | Quantity of rock broken          | 0.45 MT x 2.6 = 1.17 MT                               |
| 8  | Quantity of rock broken per day  | 362.8m <sup>3</sup>                                   |
| 9  | Control Blasting efficiency @90% | 1.17 x 90% = 1.05MT / hole                            |
| 10 | Charge per hole                  | 140 gms of 25mm dia cartridge                         |

#### a. Types of explosives to be used:

Slurry Class 3 explosives, type of nitro compound are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling or Primary blasting is proposed. Detonators of Class 3 and Safety fuse of Class 6 are used.

#### b. Measures proposed to minimize ground vibration due to Blasting:

The quarry is situated more than 1.0 km from the nearby villages. Controlled blasting measures will be adopted for minimizing ground vibration and fly of rock. Shallow depths jackhammer drilling & blasting is proposed to be carried out with minimum use of explosive

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

mainly to give the shattering effect in rough stone for easy excavation and to control fly of rocks.

Diameter of Holes = 30-32mm  
Depth = 1.2 to 1.5 m

Storage and safety measures to be taken while blasting: The proponent will engage an authorized explosive agency to carry out the small amount of blasting and it will be supervised by competent and statutory Foreman/Permit Mines Manager.

***Heavy Machineries:*** The following heavy machineries will be used in the proposed area:

- For Mining – Excavator of 0.90 Cum Bucket capacity , Jack Hammers (30-32 mm Dia) of 4 Nos.
- Loading Equipment – Excavator of 0.9 Cum Bucket Capacity
- Transportation (includes within the mine and mine to destination) – Tipper 10 No of 10 M.T capacity (from quarry to needy peoples and local crushers)

***a. Risk:***

Most of the accidents during transport of mined out mineral using other heavy vehicles are often attributed to mechanical failures and human errors.

***b. Mitigation measures to minimize the risk***

- At the time of loading no person will be allowed within the swing radius of the excavation.
- The dumpers/ trucks will stand near the loading equipment and fully braked when the muck is filled in it.
- The truck would be brought to a lower level so that the loading operation suits to the ergonomic condition of the workers.
- The workers will be provided with helmets, gloves and safety boots; loading and unloading operations will be carried out only during daylight
- All the mining machineries will be regularly maintained and checked such as brakes, lights and horns to keep in the efficient working order.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

#### **7.1.4 General Precautionary measures for the Risk involved in the proposed mine:**

- In order to take care of above hazard/disaster, the following control measures will be adopted:
- 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;
- Entry of unauthorized persons will be prohibited;
- Firefighting and first-aid provisions in the ECC and mining area;
- Provisions of all the safety appliances such as safety boot, helmets, goggles etc. will be made available to the workers (18 Nos.) and regular inspection for their use;
- In case of eventuality, first aid will be given by the senior safety officer in the mine area initially to the injured person. The safety officer will give notice of accident as per Rule-23 of Mines Act-1952;
- The safety officer (common for 3 mines within 500m radius) will be responsible for coordination between management district authorities/DGMS etc. Regarding general safety as per Rule-181 of MMR 1961, “No person shall negligently or will fully do anything likely to endanger life or limb in the mine, or negligible or will fully omit to do anything necessary for the safety of the mine or of the persons employed there in”. The workers will be provided with protective foot wear and safety helmets;
- Cleaning of mine faces will be regularly done;
- Handling of explosives, charging and blasting will be carried out by highly skilled labors only;
- Regular maintenance and testing of all mining equipment as per manufacturer’s guidelines;
- Suppression of dust by sprinkling water on the haulage roads;

#### **7.1.5 Safety Team:**

The effective implementation of compliance of Safety Rules/ Statutory Provisions will be ensured. The safety officer will be engaged, meeting the requirement of Mines Act and their duties and responsibilities. The safety officer will be responsible for identification of the hazardous conditions and unsafe acts of workers and advice on corrective actions, conduct safety audit, organize training programs and provide professional expert advice on various issues related to occupational safety and health. Organizing safety training will be conducted to employees and contractor labors periodically.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

### 7.1.6 *Emergency Control Centre*

The emergency control center will be provided to handle the emergency. The site main controller, key personnel and the senior officers of the fire and police services will attend it. The center will be equipped to receive and transmit information and directions from and to the incident controller and other areas of the works, as well as outside. The emergency control center will be sited in an area of minimum risk. This common Emergency control centre will be used for the mines around the 500m radius

## 7.2 **DISASTER MANAGEMENT**

The possible risks in the case of stone along with associated minor minerals mining projects are fly rock, vibration failure of pit, slope and waste dump, accidents due to transportation. Mining and allied activities are associated with several potential hazards to both the employees and the public at large. Safety of the mine and the employees is taken care of by the mining rules & regulations, which are well defined with laid down procedure for safety, which when scrupulously followed, safety is ensured not only to manpower but also to machines & working environment.

### 7.2.1 *Emergency Management Plan For Proposed Mines On Site- Offsite Emergency Preparedness Plan:*

The emergency plan delineates the procedures for dealing with accidents or unexpected events and natural calamities arising from mining activity. An experience of any accidents that have occurred in other manufacturing/mining projects is considered to prepare this plan. This Emergency plan should be periodically reviewed and modified. It should also be changed based on the observations of emergency mock drills and experience of handling actual emergencies.

Major objectives of this onsite – offsite emergency plan are:

- To take necessary proactive and preventive actions to avoid the emergency.

**The main aim of any emergency plan should be to prevent emergency situations.**

To train the manpower to handle the emergencies of the following nature:

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

- Onsite (Within ML boundary)
- Offsite (Outside ML boundary)

#### 7.2.1 *Onsite off-site emergency Plan:*

##### **1- Emergency on account of:**

- Fire
- Explosion
- Major accidents involving man-made collapse of the mining edges.
- Snake bites, attack by honey bees or attack by wild animals.

##### **2- Disaster due to natural calamities like:**

- Flood/ heavy rains which can involve natural landslides.
- Earth quake
- Cyclone
- Lightening

#### 7.2.2 *Emergency Plan:*

- The mining operations should be immediately stopped in case of any emergency. A siren will be sounded during emergency time.
- An emergency assembly point will be created and all the workers will guide visitors or contractors to approach assembly point.
- Emergency vehicle (Ambulance) will be available in the nearby place, in proximity to the three mines and will rush to the emergency control centre at the blowing of emergency siren. The driver of emergency vehicle will follow the instructions of Incident Controller/Site Main Controller.
- Workers will be trained for the precautions to be taken during natural disasters like heavy rain, floods, earthquake and cyclone.
- All escape routes from mines to the assembly point or any other safe location will be made and the escape plan will be displayed in many places in the mine area

#### 7.2.3 *Emergency Control:*

- Shut down of mining operations: Raising the alarm or siren followed by immediate safe shut down of the power supply, and isolation of affected areas.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

- Treatment of injured: First aid and hospitalization of injured persons
- Protection of environment and property: During mitigation, efforts will be made to prevent impacts on environment and property to the extent possible.
- Preserving all evidences and records: This will be done to enable a thorough investigation of the true causes of the emergency.
- Ensuring safety of personnel prior to restarting of operations: Efforts required will be made to ensure that work environment is safe prior to restarting the work.

### **7.3 NATURAL RESOURCE CONSERVATION**

There are no natural resources within the premises. The conservation strategies for energy will be followed in the proposed mine lease area. The pollutants of the mine will be minimized by adopting appropriate mitigation measures as mentioned Chapter 5 to prevent the effects on nearest water bodies. No surface runoff from the project site will be let into the nearest water bodies.

### **7.4 RESETTLEMENT AND REHABILITATION:**

The proposed Mine lease area is a patta land. There is no displacement of the population within the project area and adjacent nearby area and hence Rehabilitation & Resettlement is not applicable.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

## 8 Project Benefits

### 8.1 GENERAL

This chapter covers the benefits accruing to the locality, neighborhood, region and nation as a whole. It brings out the details of benefits by way of improvements in the physical infrastructure, social infrastructure, employment potential and other tangible benefits.

#### 8.1.1 *Physical Benefits*

The opening of the proposed project will enhance the following physical infrastructure facilities in the adjoining areas:

**Market:** Generating useful economical resource for construction. Due to demand supply chain, excavated mineral (Rough stone) will sold in the market in the affordable price.

**Infrastructure:** The excavated rough stone will be used for *Laying Roads, Building & Construction Projects, Bridges.*

**Enhancement of Green Cover & Green Belt Development:** As a part of reclamation plan, native tree species will be planted along the safety boundary of the mine lease area. A suitable combination of trees that can grow fast and also have good leaf cover will be adopted to develop the green belt. It is proposed to plant 650 numbers of native species along with some fruit bearing and medicinal trees during the mining plan period.

### 8.2 SOCIAL BENEFITS

The mining in the area will create rural employment. During site visit, it has been observed that the economic conditions of the villages in the study area is quite normal. After the development of the proposed mine, it will improve the livelihood of local people and also provide the indirect employment opportunities. The rough stone for the infrastructural development in the area will be made available from the local markets at reasonably lower price.

As a part of CER, i.e., 5 Lakhs will be allocated. The detailed agenda, which is to be executed has been framed. The salient features of the programmes are as follows:

Construction of Infrastructure, additional class room, Environmental books for library (in Tamil language), Greenbelt facilities and basic amenities such as safe drinking water, Hygienic Toilets facilities, furniture to Panchayat Union Middle School, H.Settipalli.



|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

### 8.3 PROJECT COST / INVESTMENT DETAILS

|                  |                  |
|------------------|------------------|
| Fixed cost       | Rs.1,31,90,000/- |
| Operational cost | Rs.30,00,000/-   |
| EMP cost         | Rs.169,70,946/-  |

**Total Project Cost: Rs. 161,90,000/- (One hundred and sixty one Lakhs Ninety Thousand Only)**

|                        | <b>Mitigation Measure</b>  | <b>Provision for Implementation</b>   | <b>Capital</b> | <b>Recurring</b> |
|------------------------|--|---|----------------|------------------|
| <b>Air Environment</b> | Compaction, gradation and drainage on both sides for Haulage Road                            | Rental Dozer & drainage construction on haul road @ Rs. 10,000/- per hectare; and yearly maintenance @ Rs. 10,000/- per hectare | 13000          | 13000            |
|                        | 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      | 810000         | 52000            |
|                        | Air Quality will be regularly monitored as per norms within ML area & Ambient Area           | Yearly Compliance as per CPCB norms   | 0              | 52000            |
|                        | Muffle blasting – To control fly rocks during blasting                                       | Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts                                     | 0              | 5500             |
|                        | 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                 | 53000          | 5600             |
|                        | No overloading of trucks/tippers/tractors  | Manual Monitoring through Security guard  | 0              | 5200             |
|                        | Stone carrying trucks will be covered by tarpaulin   | Monitoring if trucks will be covered by tarpaulin   | 0              | 13000            |
|                        | Enforcing speed limits of 20 km/hr within ML area  | Installation of Speed Governors @ Rs. 5000/- per Tipper/Dumper deployed   | 5400           | 0                |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</b>         | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |

|                          |  |  |  |       |
|--------------------------|--|--|--|-------|
|                          | Regular monitoring of exhaust fumes as per RTO norms   | Monitoring of Exhaust Fumes by Manual Labour                         | 0  | 5200  |
|                          | Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area   | Provision for 2 labours @ Rs.10,000/labour (Contractual) per Hectare | 0  | 22000 |
|                          | Installing wheel wash system near gate of quarry   | Installation + Maintenance + Supervision                             | 52000  | 23000 |
| <b>Noise Environment</b> | Source of noise will be during operation of transportation vehicles, 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 implements 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                            | 52000  | 2300  |
|                          | NONEL Blasting will be practiced to control Ground vibration and fly rocks   | Rs. 30/- per 6 Tonnes of Blasted Material                            | 0  | 53000 |
|                          | <b>Water</b>   | Water management   | Provision for garland drain @ Rs. 10,000/- per Hectare with maintenance of Rs. 5,000/- per annum | 13000 |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</b>         | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |

|   |  |   |        |        |
|---|--|---|--------|--------|
| <b>Waste Management</b>                                       | Waste management (Spent Oil, Grease etc.,)   | Provision for domestic waste collection and disposal through authorized agency  | 28000  | 23000  |
|   |  | Installation of dust bins   | 5400   | 2300   |
|   | Bio toilets will be made available outside mine lease on the land of owner itself  | Provision made in Operating Cost  | 0      | 0      |
| <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 mentioning Environmental Conditions   | 13000  | 1300   |
|   | Workers will be provided with Personal Protective Equipment's  | Provision of PPE @ Rs. 4000/- per employee with recurring based on wear and tear (say, @ Rs. 1000/- per employee)   | 43000  | 13000  |
|   | Health check up for workers will be provisioned  | IME & PME Health check up @ Rs. 1000/- per employee   | 0      | 13000  |
|   | First aid facility will be provided  | Provision of 2 Kits per Hectare @ Rs. 2000/-  | 0      | 4300   |
|   | Mine will have safety precaution signages, boards.   | Provision for signages and boards made  | 13000  | 2300   |
|   | 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   | 230000 | 13000  |
|   | 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   | 53000  | 13000  |
|   | Installation of CCTV cameras in the mines and mine entrance  | Camera 4 Nos, DVR, Monitor with internet facility   | 33000  | 5300   |
|   | 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 under regulation 116 of MMR,1961 @ | 0      | 790000 |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</b>         | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>Thiru.S.Raghu</b>  |                         |
| <b>Project Location</b>  | <b>Gopanapalli Village, Hosur Taluk, Krishnagiri District</b> |                         |

|                               |   |   |         |         |
|-------------------------------|---|---|---------|---------|
|                               |   | 40,000/- for Manager & @<br>25,000/- for Foreman / Mate   |         |         |
| <b>Green Belt Development</b> | Green belt development - 500 trees per one hectare (200 Inside Lease Area & 300 Outside Lease Area) | Site clearance, preparation of land, digging of pits / trenches, soil amendments, transplantation of saplings @ 200 per plant (capital) for plantation inside the lease area and @ 30 per plant maintenance (recurring) | 56000   | 8400    |
|                               |   | Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring)  | 126000  | 12600   |
|                               |   |   | 1598800 | 1158600 |
|                               |   | <b>Total</b>  | 2757400 |         |

| Year 1  | Year 2  | Year 3  | Year 4  | Year 5  |
|---------|---------|---------|---------|---------|
| 2757400 | 1216530 | 1277357 | 1341224 | 1408286 |
| Year 6  | Year 7  | Year 8  | Year 9  | Year 10 |
| 2278100 | 1552635 | 1630267 | 1711780 | 1797369 |

**Total EMP Cost= 169,70,946= 170 (Lakhs)**

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

## **9 Environmental Management Plan**

### **9.1 INTRODUCTION**

This chapter comprehensively presents the Environmental Management Plan (EMP), which includes the administrative and technical setup, summary matrix of EMP, the cost involved to implement the EMP, during various Mining activities and provisions made towards the same in the cost estimates of project. This chapter describes the proposed monitoring scheme as well as inter-organizational arrangements for effective implementation of the mitigation measures.

### **9.2 SUBSIDENCE**

Mining will be carried out by opencast mechanized mining method with drilling & blasting as per mining plan approved by Department of Mining and Geology, Krishnagiri. Subsidence/slope failures are not envisaged because there are no loose strata overlying the deposit (mineral to be excavated). The bench height will be 7m. The individual bench slope has been proposed to be kept at 60° from horizontal. Moreover, all safety standards/ safeguards will be implemented as per guidelines prescribed by Director General of Mines Safety.

### **9.3 MINE DRAINAGE**

#### **9.3.1 *Storm water Management***

The following measures will be taken with respect to the prevailing site conditions.

- Storm water drains with silt traps of size 1m x 1m will be suitably constructed all along the periphery of the pit area to collect the run-off from the mine area and divert into the pit.
- All measures will be taken not to disturb the existing drainage pattern adjacent to the mine lease area.
- The storm water collected from the mine area will be utilized for dust suppression on haul roads, plantation within the premises, etc.,

#### **9.3.2 *Drainage***

Local workers will be deployed for the project. But, urinals and Latrines will be provided and the same will be connected to septic tank followed by soak pit arrangement. No domestic waste will be deposited into the nearby area. Regular checking will be carried out to find any

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

blockage due to silting or accumulation of loose materials. The drains will also be checked for any damage in lining / stone pitching, etc.

### 9.3.3 *Administrative and Technical Setup*

The Environment Management Plan (EMP) will consist of all mitigation measures for each component of the environment due to the activities increased during mining operation to minimize adverse environmental impacts resulting from the activities of the project.

To carry out the above activities, Thiru S.Raghu will work in association with M/s. Ecotech Labs Pvt Ltd.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

**Table 9-1: Impacts and mitigation measures**

| <b>S. No</b> | <b>Impacts on Environment</b> | <b>Activity / Aspect</b>  | <b>Anticipated impacts</b>   | <b>Mitigation measures</b>  |
|--------------|-------------------------------|---|--|---|
| 1.           | Air                           | Fugitive Emission   | During mining operation, fugitive dust and other air pollutants like particulate matter (PM10 & PM 2.5) will be generated.   | Planting of trees along the safety distance of the Mine Lease Area<br><br>Water will be sprinkled in the site as dust suppression measure.  |
| 2.           | Water                         | Wastewater Generation   | Improper management of Domestic wastewater in the Mine lease may create unhygienic conditions in the site thereby causing health impacts to the labors   | Provision of urinals/Latrines along with septic tank followed by soak pit arrangement will be provided in the Mine Lease area for the proper management of wastewater.  |
| 3.           | Noise                         | Mining activities like drilling, blasting, loading and transportation | Noise from the machinery can cause hypertension, high stress level, hearing loss, sleep disturbance etc due to prolonged exposure. Apart from Mining activities like drilling, blasting may generate noise | Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas.  |
| 4.           | Land                          | Improper management of Storm water Runoff                             | Storm water Runoff may result in Soil Erosion  | Garland drainage of 1m x 1m will be provided to avoid storm water runoff.   |
| 5.           | Social Responsibility         | Mining workers  | Unhygienic site sanitation facilities may cause health damage to workers.  | The objective is to ensure health and safety of the workers with effective provisions for the basic facilities of sanitation, drinking water, safety of equipments or machinery etc. The following will be done in the site |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|    |  |                               |   |  |
|----|--|-------------------------------|---|--|
|    |  |                               |   | <ul style="list-style-type: none"> <li>✓ By complying with the safety procedures, norms and guidelines (as applicable) as outlined in the National Building Code of India, Bureau of Indian Standards.</li> <li>✓ Provide adequate number of decentralized latrines and urinals</li> <li>✓ Providing Septic tank along with Soak pit arrangement</li> <li>✓ Providing First Aid room, conducting frequent health checkups to labor and conducting free medical camps</li> <li>✓ Providing safety helmet, Gloves, Jacket &amp; Boots</li> <li>✓ Providing measures to prevent fires. Fire fighting extinguishers and buckets of sand will be provided in the construction site</li> </ul> |
| 6. | Building materials resource conservation | Building Material consumption | Use of farfetched construction materials than the locally available construction materials may lead to over exploitation of natural resources & increase in carbon footprint. | <ul style="list-style-type: none"> <li>• Use of locally available construction materials.</li> </ul>   |



|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

## 10 Summary & Conclusion

This chapter summarizes the overall justification for implementation of the project and explains how the potential impacts are mitigated.

### 10.1 INTRODUCTION

Thiru S.Raghu site is a cluster of four mining project. The individual mine lease area is 1.30.0 Ha of Rough Stone Quarry located at S.F.Nos. 381(Part-1) of Gopanapalli Village, Hosur Taluk, Krishnagiri District.

### 10.2 PROJECT OVERVIEW

**Table 10-1: Project Overview**

| S. No. | Description                 | Details  |
|--------|-----------------------------|--|
| 1      | Project Name                | Thiru. S.Raghu Rough Stone Quarry  |
| 2      | Proponent                   | Thiru. S.Raghu   |
| 3      | Mining Lease Area Extent    | 1.30.0 Ha  |
| 4      | Location                    | 381(Part-1)  |
| 5      | Latitude                    | 12° 38' 05.49" N to 12° 38' 03.12" N   |
| 6      | Longitude                   | 77° 48' 43.41" E to 77° 48' 37.72" E   |
| 7      | Topography                  | Hilly terrain  |
| 8      | Site Elevation above MSL    | 840 m from MSL   |
| 9      | Topo sheet No.              | 57-H/14 of Survey of India   |
| 10     | Minerals of Mine            | Rough Stone Quarry   |
| 11     | Proposed production of Mine | 107190m <sup>3</sup> of Rough stone for (I-V years) and 44020 m <sup>3</sup> of Rough stone for (VI-X years) |
| 12     | Ultimate depth of Mining    | 43 m below ground level  |
| 13     | Method of Mining            | Open cast mechanized mining  |
| 14     | Water demand                | 2.0 KLD  |
| 15     | Source of water             | Water will be supplied through tankers supply  |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|    |  |  |
|----|--|--|
| 16 | Man power  | 18Nos.   |
| 17 | Mining Plan Approval                               | Mining Plan was approved by The Deputy Director, Department of Geology and Mining, Krishnagiri District vide letter Rc.No.539/2022/Mines dated 04.05.2022.   |
| 18 | Production details                                 | Geological reserves: 4,34,140 m <sup>3</sup> of Rough stone<br>Proposed year wise reserves: 107190 m <sup>3</sup> of Rough stone for (I-V years)<br>44020 m <sup>3</sup> of Rough stone for (VI-X) years                               |
| 19 | Boundary Fencing                                   | 7.5 m barrier all along the boundary for adjacent patta lands and 10 m safety distance for Govt. Lands. Fencing will be provided.  |
| 20 | Disposal of overburden                             | The estimated quantity of Top soil (Gravel) is 17316 m <sup>3</sup> . Top Soil formation will be removed and transported to the needy end user only after obtaining permission and paying necessary seigniorage fees to the government |
| 21 | Ground water                                       | The ground water table is reported as 88m BGL in nearby open wells and bore wells of this area. Mining depth taken as 51m . Now, proposed quarry depth is above the water table. Hence, quarrying may not affect the ground water.     |
| 22 | Habitations within 300m radius of the Project Site | There is no Habitation within 300m radius of the project site.   |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|    |                |   |
|----|----------------|---|
| 23 | Drinking water | Water will be supplied through tankers from Goolisandram village which is 0.37 Km NNW of the area |
|----|----------------|---|

### **10.3 JUSTIFICATION OF THE PROPOSED PROJECT**

The said project plays a significant role in the domestic as well as infrastructural market. To achieve a huge infrastructure being envisaged by Government of India, particularly in road and housing sector, there is a need for basic building materials. The rough stone form the primary building material.

Rough stone is one of the most valuable natural building materials. Aggregates are mostly used for building roads and footpaths Aggregates – stone used for its strong physical properties – crushed and sorted into various sizes for use in concrete, coated with bitumen to make asphalt or used 'dry' as bulk fill in construction. Mostly used in roads, concrete and building products. Aggregates represent about 98% of quarry output, most of which is used in road construction, maintenance and repair. Much of this goes to the production of asphalt; the remainder is used 'dry' without the addition of other materials to provide a sturdy base for roads.

Krishnagiri District is covered with wide range of metamorphic rocks of peninsular gnessic complex. These rock formations occur as massive hillocks all over the district in government lands and patta lands, and extensively weathered formations are overlain by soil / alluvium deposits with an average thickness of 1 to 5mts. Rough stone deposits suitable for the production of Jelly, Cut stones and Pillar Stones are available throughout the Krishnagiri District. Rough stones are widely used in this district as building stones, boulders, cut stones and for the production of Jelly, M.Sand, Crusher Dust. The rock products which are produced not only used in the Krishnagiri District alone but also transported to the neighboring districts. These products enter into the market in different parts of the country.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

**Table 10-2: Anticipate Impacts & Appropriate Mitigation Measures**

| <b>S. No.</b> | <b>Potential Impact</b>   | <b>Mitigation Measure</b>   |
|---------------|---|---|
| 1             | The main impact in the air environment is dust emission during various mining activities such drilling, blasting, excavation, loading and transportation. The dust emission may affect the quality of ambient air in the and around the mine area. The increased emission may cause respiratory & Cardiovascular problems in human health | Proper mitigation measures like water sprinkling on haul roads will be adopted to control dust emissions.<br><br>To control the emissions regular preventive maintenance of equipments will be carried out on contractual basis.<br><br>Plantation will be carried out along approach roads & mine premises.  |
| 2             | Waste water will be generated due to mining activity and from other domestic activities. These may contaminate the ground water leading to ground water. The mining activity may affect the ground water table  | No waste water will be generated from the mining activity of minor minerals as the project only involves lifting of over burden from mine site. The wastewater generated from the domestic activity will be disposed off safely through the proposed septic tank.<br><br>Mining will not intersect ground water table. Hence the water table will not be impacted due to the proposed project |
| 3             | Noise will be generated in the mine area during various mining activities such as blasting, drilling, excavation. During transportation of the mined out mineral, there may be noise generation due to the movement of vehicles. This may impact the health condition of the workers by creating headache                                 | Periodical monitoring of noise will be done.<br><br>No other equipments except the transportation vehicles and Excavator (as & when required) for loading will be allowed at site.  |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

|   |   |   |
|---|---|---|
|   |   | <p>Noise generated by these equipments shall be intermittent and does not cause much adverse impact.</p> <p>Plantation will be carried out along approach roads. The plantation minimizes propagation of noise and also arrest dust.</p>  |
| 4 | Solid waste will be generated from the mining activity as there will be refuse after 95% recovery and also generation of domestic waste | <p>The 100% recovery is achieved by extracting the entire mineable reserve. Hence there will be no refuse generation due to the mining activity. Apart from that, a very meagre quantity of domestic waste will be generated in the project, which will be handed over to the local body on daily basis.</p>  |
| 5 | During mining activities, there are chances of workers getting health issues or may be prone to accidents                               | <p>Dust masks will be provided as additional personal protection equipment to the workers working in the dust prone area.</p> <p>Periodical trainings will be conducted to create awareness about the occupational health hazards due to activities like blasting, drilling, excavation</p> <p>Workers health related problem if any, will be properly addressed.</p> |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.30.0 Ha by Thiru.S.Raghu</i>         | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>Thiru.S.Raghu</i>  |                         |
| <i>Project Location</i>  | <i>Gopanapalli Village, Hosur Taluk, Krishnagiri District</i> |                         |

## **11 Disclosure of Consultant**

### **11.1 INTRODUCTION**

This chapter presents the details of the environmental consultants engaged, their background and the brief description of the key personnel involved in the project. Specific studies on the mining project have been carried out by engaging engineers/experts of Ecotech Labs Pvt. Ltd, Chennai. Ecotech Labs Pvt. Ltd (ETL), Chennai is NABET accredited consultancy organization. ETL is equipped with in-house, spacious laboratory, accredited by NABL (National Accreditation Board for Testing & Calibration Laboratories), Department of Science & Technology, Government of India and MoEF & CC.

### **11.2 ECO TECH LABS PVT. LTD – ENVIRONMENT CONSULTANT**

Eco Tech Labs Pvt. Ltd is a multi-disciplinary testing and research laboratory in India. Eco Tech labs provides high quality services in environmental consultancy, engineering solution, chemical and microbiological laboratory analysis of food, water and environment (Air, Water, Soil) with highest accuracy.

#### **The Quality policy**

- We at Eco Tech Labs Pvt. Ltd. engaged in providing Environmental consulting services and we are committed to strengthen our capabilities in all areas of our operations in line with customer requirements & expectations, applicable legal requirements & stakeholders expectations.
- We are committed to establish and maintain Quality Management System (QMS) for continual improvement in processes and Services
- We are committed to provide customized solutions in realistic, time bound and cost effective to achieve highest degree of customer satisfaction and Environmental improvement.
- We shall establish, maintain & periodically review our documented management systems, objectives and performance in consultation with our employees and prevailing best practices.
- Effective communication of organization's policy and objectives to employees and seeking feedbacks from all our employees and concerned stakeholders for continual improvement.

**ANNEXURE-I**

**STANDARD TOR CONDITIONS WITH  
ADDITIONAL TOR POINTS**



THIRU.DEEPAK S.BILGI, I.F.S.  
MEMBER SECRETARY

STATE LEVEL ENVIRONMENT IMPACT  
ASSESSMENT AUTHORITY-TAMILNADU

3rd Floor, PanagalMaaligai,  
No.1, Jeemis Road, Saidapet,  
Chennai - 600 015.  
Phone No. 044-24359973  
Fax: No. 044-24359975

**TERMS OF REFERENCE (ToR)**

**Lr.No,SEIAA-TN/F.No.9566/SEAC/ToR-1326/2023 Dated:10.02.2023**

To

Thiru,S.Raghu  
S/o.Sreeramaiya,  
D.No.6/202, Arusonai village,  
Bommathatham Post,  
Denkanikottai Taluk,  
Krishnagiri District-635113

Sir / Madam,

**Sub:** SEIAA, Tamil Nadu – Terms of Reference with Public Hearing (ToR) for the Proposed Rough stone quarry over an extent of 1.30.0 Ha (Government piramboke land) at Survey No. 381 (part 1) in Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu by Thiru.S.Raghu - 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/405072/2022, Dated: 04.11.2022.
  2. Your application submitted for Terms of Reference dated: 17.11.2022
  3. Minutes of the 346<sup>th</sup>Meeting of SEAC held on 12.01.2023
  4. Minutes of the 391<sup>st</sup>meeting of Authority held on 10.02.2023.

Kindly refer to your proposal submitted to the State Level Impact Assessment Authority for Terms of Reference.

  
MEMBER SECRETARY  
SEIAA-TN



The proponent, Thiru.S.Raghu has submitted application for ToR, in Form-1, Pre- Feasibility report for the Proposed Rough stone quarry over an extent of 1.30.0 Ha (Government poramboke land) at Survey No. 381 (part 1) in Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu.

**Discussion by SEAC and the Remarks:-**

Proposed Rough stone quarry over an extent of 1.30.0 Ha (Government poramboke land) at Survey No. 381 (part 1) in Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu by Thiru.S.Raghu - for Terms of Reference (SIA/TN/MIN/405072/2022, Dated: 04.11.2022).


The proposal was placed in this 346<sup>th</sup> meeting of SEAC held on 12.01.2023. The details of the project furnished by the proponent are available in the website (parivesh.nic.in).

**The SEAC noted the following**

1. The Project Proponent, Thiru.S.Raghu has applied for Terms of Reference for the Proposed Rough stone quarry over an extent of 1.30.0 Ha of (Government poramboke land) at Survey No. 381 (part 1) in Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu.
2. The proposed quarry/activity is covered under Category "B1" of Item 1(a) "Mining Projects" of the Schedule to the EIA Notification, 2006.
3. The precise area communication was issued for the period of 10 years. The approved mining plan is for the period of ten years & production should not exceed 1,07,190 cu.m of Rough Stone for first five years, 44020 cu.m of Rough Stone for next five years & 17316 Cu.m of Topsoil. The ultimate depth is 37m (8m AGL + 29m BGL) (2m Topsoil + 35m Rough stone)

Based on the presentation made by the proponent, SEAC decided to recommend grant of Terms of Reference (TOR) with Public Hearing subject to the following additional TORs, in addition to the standard terms of reference for EIA study for non-coal mining projects and details issued by the MOEF & CC to be included in EIA/EMP Report:


1. The bench height 7m shall be reduced to 5 m (or) 6 m based upon the reach of excavating equipment proposed and accordingly the revised quantity is spelt out in the 'modified Production and Development Plan' to be submitted during the EIA appraisal.

  
MEMBER SECRETARY  
SEIAA-TN


2. The Proponent shall submit the aforesaid 'Production & Development Plan' prepared as a part of the approved Mining Plan, duly signed by the concerned QP & approved by the concerned AD (Geology & Mining) during the EIA appraisal.
3. In the case of proposed lease exists in the sloping hilly terrain, the Project Proponent (PP) shall prepare and submit an 'Action Plan' for carrying out the formation of the benches from top to downwards in the proposed quarry lease including the removal of boulder formed over the sloping face during the time of appraisal for obtaining the EC.
4. The PP shall submit detailed mitigation measures particularly related to dust pollution with respect to the location of the dwellings surrounding the proposed project based on the wind direction during the time of appraisal for obtaining the EC.
5. The structures within the radius of (i) 100 m, (ii) 200 m and (iii) 300 m 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.
6. 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.
7. The Proponent shall carry out Bio-diversity study through reputed Institution and the same shall be included in EIA Report.
8. 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.
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.

  
MEMBER SECRETARY  
SEIAA-TN

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.
  - a. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?
  - b. Quantity of minerals mined out.
  - c. Highest production achieved in any one year
  - d. Detail of approved depth of mining.
  - e. Actual depth of the mining achieved earlier.
  - f. Name of the person already mined in that leases area.
  - g. If EC and CTO already obtained, the copy of the same shall be submitted.
  - h. Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.
13. 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).
14. The PP shall carry out Drone video survey covering the cluster, Green belt, fencing etc..
15. The PP shall furnish the revised manpower including the statutory & competent persons as required under the provisions of the MMR 1961 for the prosed quarry based on the volume of rock handled & area of excavation.
16. 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.
17. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the


  
MEMBER SECRETARY  
SEIAA-TN

- anticipated impacts of the mining operations on the surrounding environment and the remedial measures for the same.
18. 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 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.
  19. The Project Proponent shall conduct the 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) 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.
  20. 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.
  21. 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.
  22. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.
  23. 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.
  24. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine

  
MEMBER SECRETARY  
SEIAA-TN

lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.

25. 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.
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 on local transport infrastructure due to the Project should be indicated.
28. 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.
29. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.
30. Public Hearing points raised and commitments 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 and to be submitted to SEIAA/SEAC with regard to the Office Memorandum of MoEF& CC accordingly.
31. The Public hearing advertisement shall be published in one major National daily and one most circulated vernacular daily.
32. The PP shall produce/display the EIA report, Executive summary and other related information with respect to public hearing in Tamil Language also.
33. 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.
34. 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

  
MEMBER SECRETARY  
SEIAA-TN

- wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University and local school/college authorities. 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.
35. Taller/one-year old Saplings raised in appropriate size of bags, preferably eco-friendly 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
36. 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.
37. 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.
38. 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.
39. 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.
40. 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.
41. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
42. 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.

  
MEMBER SECRETARY  
SEIAA-TN

43. 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/TNPCC.
44. **The PP shall prepare the EMP for the entire life/lease of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.**
45. 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.



  
MEMBER SECRETARY  
SEIAA-TN



**Appendix - I**  
**List of Native Trees Suggested for Planting**

| No | Scientific Name                 | Tamil Name         | Tamil Name                 |
|----|---------------------------------|--------------------|----------------------------|
| 1  | <i>Azadirachta indica</i>       | Vilvam             | அழிவே                      |
| 2  | <i>Adenanthe peduncularis</i>   | Marjadi            | மரஜாடி<br>அடனாந்தே         |
| 3  | <i>Albizia lebbekii</i>         | Vanga              | வங்கை                      |
| 4  | <i>Albizia amara</i>            | Urali              | உரலி                       |
| 5  | <i>Bauhinia variegata</i>       | Marthandu          | மர்தாந்து                  |
| 6  | <i>Bauhinia racemosa</i>        | Aadu               | அாடு                       |
| 7  | <i>Bauhinia zosterata</i>       | AravaDu            | அரவாடு                     |
| 8  | <i>Bauhinia axillaris</i>       | Kattuma            | காட்டமா                    |
| 9  | <i>Borassus flabellifera</i>    | Punai              | புனா                       |
| 10 | <i>Bursera macrocarpa</i>       | Murakkannaram      | முரக்கனாரம்                |
| 11 | <i>Berberis zaidii</i>          | Barva, Serrulava   | பரவா                       |
| 12 | <i>Calophyllum inophyllum</i>   | Purrai             | புரை                       |
| 13 | <i>Cassia fistula</i>           | Sarakandam         | சரகாண்டம்                  |
| 14 | <i>Cassia torbanglai</i>        | Sengondra          | செங்கண்டா                  |
| 15 | <i>Chloroxylon swietenia</i>    | Parasaramam        | பாரசாரம்                   |
| 16 | <i>Condispermum religiosum</i>  | Kingsu, Manjallaru | கிங்சு, மஞ்சல்லா<br>பிங்கு |
| 17 | <i>Cordia dichroma</i>          | Narvudi            | நர்வூடி                    |
| 18 | <i>Crotalaria aluminosa</i>     | Mevalingum         | மேவலிங்கம்                 |
| 19 | <i>Dalmanea indica</i>          | Uva, Ucha          | உவா, உச்சா                 |
| 20 | <i>Dalmanea pedunculata</i>     | Siri'va, Setrucha  | சீர்வா, செருச்சா           |
| 21 | <i>Diospyros adonensis</i>      | Karungali          | கரங்கலி                    |
| 22 | <i>Diospyros schottiana</i>     | Vaganu             | வாغانு                     |
| 23 | <i>Ficus amplissima</i>         | Kallichu           | காலிச்சு                   |
| 24 | <i>Hibiscus tiliaceus</i>       | Aatrapoovaram      | அாட்ராபூவாரம்              |
| 25 | <i>Hibiscus binnia</i>          | Aacha              | அாச்சா                     |
| 26 | <i>Hedyotis corymbosa</i>       | Aayili             | அாயிலி                     |
| 27 | <i>Lantana camara</i>           | Odham              | ஓடாம்                      |
| 28 | <i>Lagerströmia speciosa</i>    | Poo Marudhu        | பூ மரூடு                   |
| 29 | <i>Leprosanthus tetraphylla</i> | Nedkottanuram      | நேடகோட்டனூர்               |
| 30 | <i>Lourea arborea</i>           | Vila marum         | விலா மரம்                  |
| 31 | <i>Litsea glutinosa</i>         | Pinnappai          | பிண்ப்பை                   |
| 32 | <i>Madhura longifolia</i>       | Iluppai            | இலுப்பை                    |
| 33 | <i>Mandicaria laurandra</i>     | UkkaiPaalai        | உக்கைபாலை                  |
| 34 | <i>Mimusops elengi</i>          | Mangalamaram       | மங்கலம்                    |
| 35 | <i>Mitrasyna parvifolia</i>     | Kalamita           | காலமிட்டா                  |
| 36 | <i>Morinda pinnatifida</i>      | Nura               | நூர்                       |
| 37 | <i>Morinda corymbosa</i>        | Vallai Nura        | வலை நூர்                   |
| 38 | <i>Phoenix paludosa</i>         | Euchi              | ஏச்சி                      |
| 39 | <i>Pongamia pinnata</i>         | Puram              | புரம்                      |

  
MEMBER SECRETARY  
SEIAA-TN



|    |                               |                  |       |
|----|-------------------------------|------------------|-------|
| 40 | <i>Prunus noliifera</i>       | Murugai          | 10000 |
| 41 | <i>Prunus stracheyi</i>       | Narasimam        | 10000 |
| 42 | <i>Prunus taeniocarpa</i>     | Mangalam         | 10000 |
| 43 | <i>Prunus cuneata</i>         | Vanni Kurum      | 10000 |
| 44 | <i>Pterocarpus marsiporum</i> | Vengal           | 10000 |
| 45 | <i>Pterocarpus indicus</i>    | Venugopal Yada   | 10000 |
| 46 | <i>Pterocarpus indicus</i>    | Putra            | 10000 |
| 47 | <i>Pterocarpus indicus</i>    | Karpala          | 10000 |
| 48 | <i>Salweenia pinnata</i>      | Uppa Murug       | 10000 |
| 49 | <i>Sapindus saponaria</i>     | Mangalam         | 10000 |
| 50 | <i>Sapindus saponaria</i>     | Sopala           | 10000 |
| 51 | <i>Sapindus saponaria</i>     | Arora            | 10000 |
| 52 | <i>Sapindus saponaria</i>     | Prasanna         | 10000 |
| 53 | <i>Sapindus saponaria</i>     | Yeth             | 10000 |
| 54 | <i>Strychnos nuxvomica</i>    | Theelanga Kottai | 10000 |
| 55 | <i>Strychnos nuxvomica</i>    | Nandi            | 10000 |
| 56 | <i>Tamarindus indica</i>      | Thandi           | 10000 |
| 57 | <i>Tamarindus indica</i>      | Venugopal        | 10000 |
| 58 | <i>Tamarindus indica</i>      | Sankaravathi     | 10000 |
| 59 | <i>Tamarindus indica</i>      | Peranna          | 10000 |
| 60 | <i>Tamarindus indica</i>      | Putra            | 10000 |
| 61 | <i>Tamarindus indica</i>      | Vengal           | 10000 |
| 62 | <i>Tamarindus indica</i>      | Kudukapala       | 10000 |

**Discussion by SEIAA and the Remarks:-**

The proposal was placed in the 591<sup>st</sup> Authority meeting held on 10.02.2023. The authority noted that this proposal was placed for appraisal in this 346<sup>th</sup> meeting of SEAC held on 12.01.2023. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant **Terms of Reference (ToR) along with Public Hearing** 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 in addition to the conditions in 'Annexure B' of this minute.

**Annexure 'B'**

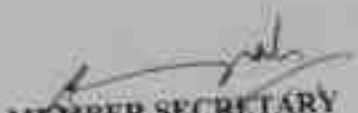
1. Cluster Management Committee, which must include all the proponents in the cluster as members including the existing as well as proposed quarry.
2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,

MEMBER SECRETARY,  
SEIAA-TN

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.
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.
5. The committee shall deliberate on risk management plan 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.
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.
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.
8. The committee shall furnish the Emergency Management plan within the cluster.
9. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.
10. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following
  - a) Soil health & bio-diversity.
  - b) Climate change leading to Droughts, Floods etc.
  - c) Pollution leading to release of Greenhouse gases (GHG), rise in Temperature, & Livelihood of the local people.
  - d) Possibilities of water contamination and impact on aquatic ecosystem health.
  - e) Agriculture, Forestry & Traditional practices.
  - f) Hydrothermal/Geothermal effect due to destruction in the Environment.
  - g) Bio-geochemical processes and its foot prints including environmental stress.
  - h) Sediment geochemistry in the surface streams.

  
MEMBER SECRETARY  
SEIAA-TN

11. The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.
12. The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.
13. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.
14. 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 be committed mentioned in EMP.
15. Impact on surrounding agricultural fields around the proposed mining Area.
16. Erosion Control measures.
17. Impact on soil flora & vegetation around the project site.
18. 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.
19. 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.
20. 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.
21. 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.
22. 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.
23. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.
24. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.

  
MEMBER SECRETARY  
SEIAA-TN



25. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.
26. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.
27. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.
28. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.
29. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.
30. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.
31. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.
32. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.
33. The project proponent shall study and furnish the details on potential fragmentation impact of natural environment, by the activities.
34. 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.
35. 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.
36. The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife.
37. 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,

  
MEMBER SECRETARY  
SEIAA-TN

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.

38. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/unforeseen 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.
39. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.
40. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.
41. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.

#### 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

  
MEMBER SECRETARY  
SEIAA-TN



- 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.

  
MEMBER SECRETARY  
SEIAA-TN

- 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

  
MEMBER SECRETARY  
SEIAA-TN




- 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-

  
MEMBER SECRETARY  
SEIAA-TN



- 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.

  
MEMBER SECRETARY  
SEIAA-TN



- 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

  
MEMBER SECRETARY  
SEIAA-TN

- 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(1) dated 4th

  
MEMBER SECRETARY  
SEIAA-TN



August, 2009, which are available on the website of this Ministry, should be followed.

- b) 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.III) 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 shall be submitted along with EIA report.

  
MEMBER SECRETARY  
SEIAA-TN

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


  
MEMBER SECRETARY  
SEIAA-TN

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 G.M. No. J-11013/41/2006-1A.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 -11013/77/2004-1A-II(1) dated 2<sup>nd</sup> December,

  
MEMBER SECRETARY  
SEIAA-TN

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(T)(part) dated 29<sup>th</sup> August, 2017.

MEMBER SECRETARY  
SEIAA-TN

**Copy to:**

1. The Additional Chief Secretary to Government, Environment & Forests Department, Govt. of Tamil Nadu, Fort St. George, Chennai - 9
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD Cum-Office Complex, East Arjun Nagar, New Delhi 110032.
3. The Member Secretary, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai-600 032.
4. The APCCF (C), Regional Office, MoEF & CC (SZ), 34, HEPC Building, 1<sup>st</sup> & 2<sup>nd</sup> Floor, Cathedral Garden Road, Nungambakkam, Chennai -34.
5. Monitoring Cell, IA Division, Ministry of Environment, Forests & CC, Paryavaran Bhavan, CGO Complex, New Delhi 110003
6. The District Collector, Krishnagiri District.
7. Stock File.

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

### COMPLIANCE OF TOR CONDITIONS

**Point wise compliance of ToR points issued by SEIAA, TN vide letter No. SEIAA-TN/F. No. 9566/ToR-1326/2023 Dated: 10.02.2023 for Mining of Minor Minerals in the Mine of “Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha at S.F.No. 381(Part 1) of Gopanapalli Village, Hosur Taluk, Tirunelveli District, Tamilnadu State.**

| ToR Ref. | Description  | Response  | Page Ref. in EIA Report                         |
|----------|--|---|---|
| 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. | <p>Precise area communication letter received from the district collector, Krishnagiri district vide letter Rc.No.539/2022/Mines,dated 04.05.2022</p> <p>Mining Plan was approved by The Deputy Director, Department of Geology &amp; Mining,Krishnagiri district vide letter Rc.No.539/2022/Mines dated 04.05.2022.</p> <p>As area is being exploited for the first time hence Year-wise production details since 1994 and before 1994 are not relevant or applicable.</p> <p>Proposed Production of Rough Stone &amp; Gravel for five years is proposed in the EIA/EMP in chapter no-2.</p> | <p>Chapter-2</p> <p>Table No.2.2 Page No.38</p> |



## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |  |  |   |
|----|--|--|---|
| 2. | A copy of document in support of the fact that the Proponent is the rightful lessee of the mine should be given.   | The mine lease area of 1.30.0 hectare in Gopanapalli Village for Rough stone quarry approved by Assistant Director, Dept. of Geology & Mining, Krishnagiri vide Rc.No.539/2022/Mines dated 04.05.2022  | Annexure-III                                  |
| 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 and mining technology and should be in the name of the lessee.      | All the documents i.e., Mining Plan, EIA and public hearing are compatible with each other in terms of ML area production levels, waste generation and its management and mining technology are compatible with one another.<br><br>The mining plan of the project site has been submitted to The Assistant Director, Dept. of Geology & Mining, Krishnagiri | Annexure-VI<br><br>Chapter-II                 |
| 4  | All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/toposheet 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). | Details of coordinates of all corners of proposed mining lease area have been incorporated in mining plan and Chapter 2 of EIA/ EMP Report.  | Chapter-2,<br>Fig no. 2.2<br><br>Page. no. 42 |
| 5  | Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, important water bodies, streams and rivers and   | Topo map as attached in Chapter-2  | Chapter-2,<br>Fig no. 2.4<br><br>Page. no. 44 |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |   |   |                              |
|----|---|---|------------------------------|
|    | soil characteristics  |   |                              |
| 6. | <p>Details about the land proposed for mining activities should be given with information as to whether 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</p>   | <p>Details about the land proposed for mining activities should be given Chapter 2.</p> | <p>Chapter-2<br/>Page 43</p> |
| 7  | <p>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?</p> <p>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</p> | <p>Noted.</p>   |                              |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |   |  |  |
|----|---|--|--|
|    | 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. | It is an open cast mining project. Blasting details are incorporated in chapter 2  | Chapter-2,<br><br>Page no.56                   |
| 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.   | Study area comprises of 10 km radius from the mine lease boundary. Key Plan showing core zone (ML area).   | Chapter-2<br><br>Fig no. 2.5<br><br>Page no.45 |
| 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  | 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 prepared and incorporated in Chapter-3 of EIA/ EMP Report. | Chapter-2, Table no. 2.4<br><br>Page no.47     |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |  |  |                                  |
|----|--|--|----------------------------------|
|    | <p>ecological features should be indicated.</p> <p>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>There is no wildlife sanctuary and national park, migratory routes of fauna in the study area.</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>Top soil formation will be removed and transported to the needy end user only after obtaining permission and paying necessary seigniorage fees to the Government.</p> | <p>Chapter-2,<br/>Page no.53</p> |
| 12 | <p>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.</p> <p>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</p> | <p>Complied.</p> <p>The proposed mining lease area is not falling under forest land.</p>   |                                  |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |  |  |                        |
|----|--|--|------------------------|
|    | 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.  | The proposed mining lease area is not falling under 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  | Not Applicable.<br><br>There is no involvement of forest land in the project area. |                        |
| 15 | The vegetation in the RF / PF areas in the study area, with necessary details, should be   | Details of flora have been discussed in Chapter-3 of the EIA/EMP Report.           | Chapter-3<br>Pg No. 64 |

TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |   |  |  |
|----|---|--|--|
| 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 a relatively poor sighting of animals in the core and buffer areas of the mining lease.<br><br>No significant impact is anticipated   |  |
| 17 | Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger/Elephant Reserves/ (existing as well as proposed), if any, within 10km 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 State Wildlife Department/Chief | There is no National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger / Elephant Reserves / Critically Polluted areas within 10 km radius of the mining lease area. |  |
| 18 | A detailed biological study   | Details biological study (flora & fauna)   |  |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|           |  |   |                                  |
|-----------|--|---|----------------------------------|
|           | <p>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, 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 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>within 10 km radius of the project site have been incorporated in Chapter-3 of EIA/EMP Report.</p> <p>No flora &amp; fauna listed in scheduled I have been found in study area so there is no need of conservation plan. However, all care will be taken for protection of flora &amp; fauna, if any in the lease hold area.</p> | <p>Chapter – 3<br/>Pg No. 98</p> |
| <p>19</p> | <p>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</p>  | <p>The proposed mining lease area is not falling under critically polluted area.</p>  |                                  |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |  |  |  |
|----|--|--|--|
|    | 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.  |  |  |
| 20 | Similarly, for coastal projects, A CRZ map duly authenticated by one of the authorized agencies 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) | There is no Coastal Zone within 15km radius of the project site.                       |  |
| 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  | There is no Rehabilitation and resettlement is involved. Land classified as Patta land |  |



## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |  |  |           |
|----|--|--|-----------|
|    | <p>&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 located in the mine lease area will be shifted or not. The issues relating to shifting of Village including their R&amp;R and socio-economic aspects should be discussed in the report.</p> |  |           |
| 22 | <p>One season (non-monsoon) and (Summer Season), (Post monsoon) primary baseline data on ambient air quality CPCB Notification of 2009 water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled</p>  | <p>Baseline data collected during Pre-Monsoon Season and Monsoon (January to March 2023) has been incorporated in EIA/EMP report.</p> <p>The key plan of monitoring station has been discussed in Chapter-4. Locations of the monitoring stations have been selected keeping in view the pre- dominant</p> | Chapter 3 |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |  |  |                                     |
|----|--|--|-------------------------------------|
|    | <p>presented date-wise in the EIA and EMP Report.</p> <p>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 500m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.</p> | <p>downwind direction and location of the sensitive receptors and also that they represent whole of the study area.</p>  |                                     |
| 23 | <p>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</p>   | <p>Air quality modelling &amp; Impact of Air quality will be furnished in Final EIA report</p> <p>Transportation of mineral during operation of mines will be done by road &amp; MDR-937 through dumpers and the impact of movement of vehicles are incorporated in EIA/EMP report.</p> <p>Air quality modelling &amp; Impact of Air</p> | <p>Chapter-4</p> <p>Page No.116</p> |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |  |   |                                      |
|----|--|---|--------------------------------------|
|    | <p>used for modelling should be provided.</p> <p>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 predominant wind direction may also be indicated on the map.</p> | <p>quality will be furnished in Final EIA report</p>  |                                      |
| 24 | <p>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.</p>  | <p>Total water requirement: 2.0 KLD<br/> Dust Suppression: 0.75 KLD<br/> Domestic Purpose: 0.5 KLD<br/> Plantation :0.75 KLD<br/> Domestic Water will be sourced from nearby Goolisandram which is about 0.37 Km-NNW of the area.</p> | <p>Chapter-2<br/><br/>Page no.59</p> |
| 25 | <p>Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.</p>   | <p>Not Applicable<br/> Water will be taken from nearby villages</p>   |                                      |
| 26 | <p>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>At the last stage of mining operation, almost complete area will be worked to restore the land to its optimum reclamation for future use as water reservoir.</p>   |                                      |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |   |   |                              |
|----|---|---|------------------------------|
| 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 of the project on the water quality & its mitigation measures has been incorporated in Chapter-4 of EIA/EMP report.  | Chapter-4<br>Page<br>No.117  |
| 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. 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. | Maximum working depth: 37 m BGL<br><br>The ground water table is reported as 88m below surface ground level in nearby wells of this area. Now, the present quarry shall be proposed above the water table and hence, quarrying may not affect the ground water So mine working will not be intersecting the ground water table. | Chapter-2<br><br>Page no. 40 |
| 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.  | There is no any stream crossing in the proposed quarry  | Executive<br>Summary         |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |   |   |  |
|----|---|---|--|
| 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.  | Highest elevation: 840 AMSL<br>Depth: 37 m Below Ground Level | Chapter-2<br>Table no.<br>2.2<br>Page no. 40 |
| 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 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 | Green Belt Development plan is proved given in Chapter 2.     | Chapter-2                                    |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |   |   |                                     |
|----|---|---|-------------------------------------|
|    | pollution   |   |                                     |
| 32 | <p>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</p> | <p>Impact on local transport infrastructure due to the project has been assessed. There shall not be much impact on local transport. Traffic density from the proposed mining activity has been incorporated in EIA/EMP report.</p> | <p>Chapter-3</p> <p>Page No.114</p> |
| 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>Adequate infrastructure &amp; other facilities shall be provided to the mine workers.</p> <p>Details are given in chapter-2 of EIA/EMP</p>   | <p>Chapter-2</p>                    |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |   |   |                               |
|----|---|---|-------------------------------|
| 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.   | Conceptual post mining land use and Reclamation and restoration sectional plates are given in Mining Plan followed by Scheme of mining.   | Mining plates<br>Annexure VII |
| 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 in the mining area may be detailed. | Suitable measure will be adopted to minimize occupational health impacts of the project. The project shall have positive impact on local environment. Details are given in chapter-10 of EIA/EMP. | Chapter-10<br>Pg No. 151      |
| 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.   | Suitable measure will be adopted to minimize occupational health impacts of the project.  | Chapter-10<br>Pg No. 143      |
| 37 | Measures of socio-economic significance and influence to the local community proposed to be provided by the Project   | Suitable measures has been discussed in Chapter 4   | Chapter-4<br>Pg No. 116       |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|       | Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.  |  |                         |             |      |   |                  |             |                         |
|-------|---|--|-------------------------|-------------|------|---|------------------|-------------|-------------------------|
| 38    | Detailed environmental management plan 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. | Environment Management Plan has been described in detail in Chapter-9 of the EIA/EMP Report.   | Chapter-9<br>Pg No. 145 |             |      |   |                  |             |                         |
| 39    | Public hearing points raised and commitment of the project proponent on the same along with time bound action plan to implement the same should be provided and incorporated in the final EIA/EMP Report of the Project.  | Public Hearing proceedings will be furnished in 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.  | Not applicable<br><br>No. litigation is pending against the project in any court.  |                         |             |      |   |                  |             |                         |
| 41    | The cost of the project (capital cost and recurring cost) as well as the cost towards implementation of EMP   | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">S. No</th> <th style="text-align: center;">Description</th> <th style="text-align: center;">Cost</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Fixed Asset Cost</td> <td style="text-align: right;">1,31,90,000</td> </tr> </tbody> </table> | S. No                   | Description | Cost | 1 | Fixed Asset Cost | 1,31,90,000 | Chapter-8<br>Pg No. 151 |
| S. No | Description   | Cost   |                         |             |      |   |                  |             |                         |
| 1     | Fixed Asset Cost  | 1,31,90,000  |                         |             |      |   |                  |             |                         |



## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|     |   |  |                         |                  |           |  |       |               |  |
|-----|---|--|-------------------------|------------------|-----------|--|-------|---------------|--|
|     | should clearly be spelt out.  | <table border="1" style="width: 100%;"> <tr> <td style="width: 5%;">2</td> <td style="width: 60%;">Operational Cost</td> <td style="width: 35%;">30,00,000</td> </tr> <tr> <td></td> <td>Total</td> <td>1,61,90,000/-</td> </tr> </table> <p><b>EMP Cost: 169,70,946/-</b></p> | 2                       | Operational Cost | 30,00,000 |  | Total | 1,61,90,000/- |  |
| 2   | Operational Cost  | 30,00,000  |                         |                  |           |  |       |               |  |
|     | Total   | 1,61,90,000/-  |                         |                  |           |  |       |               |  |
| 42  | Disaster Management Plan shall be prepared and included in the EIA/EMP Report.  | Disaster Management and Risk Assessment has been incorporated in Chapter-7   | Chapter-7<br>Pg No. 136 |                  |           |  |       |               |  |
| 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 has incorporated   | Chapter-8<br>Pg No. 143 |                  |           |  |       |               |  |
| 44  | Besides the above, the below mentioned general points are also to be followed:  |  |                         |                  |           |  |       |               |  |
| (a) | Executive Summary of the EIA/EMP report   | Executive Summary of EIA Report is given from page No.10-25  |                         |                  |           |  |       |               |  |
| (b) | All documents to be properly referenced with index and continuous page numbering.   | Complied   |                         |                  |           |  |       |               |  |
| (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.   | Complied   |                         |                  |           |  |       |               |  |
| (d) | Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise   | Complied   |                         |                  |           |  |       |               |  |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|     |  |  |  |
|-----|--|--|--|
|     | 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.  | Complied   |  |
| (f) | The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.  | The complete questionnaire has been prepared   |  |
| (g) | 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 also be followed. | The EIA report has been prepared and complying with the circular issued by MoEF vide O.M. No. J-11013/41/2006-IA. II(I) dated 4th August 2009. |  |
| (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   | There are no changes in prepared EIA as per submitted Form-1 & PFR   |  |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|     |  |   |  |
|-----|--|---|--|
|     | <p>brought to the attention of MoEF 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</p> |   |  |
| (i) | <p>As per the circular no. J- 11011/618/2010-IA. II(I) dated 30.5.2012, report on the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project by the Regional Office of Ministry of Environment &amp; Forests, if applicable.</p>  | <p>Will be complied after grant environment clearance from SEIAA, Tamilnadu</p> |  |
| (j) | <p>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 (iii) sections of mine pit and external dumps, if any clearly showing the features of the</p>   | <p>All Sectional Plates of Quarry is enclosed in Mining Plan.</p>               |  |

TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|  |                 |  |  |
|--|-----------------|--|--|
|  | adjoining area. |  |  |
|--|-----------------|--|--|

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

### Additional TOR by SEAC

| S.No. | Condition   | Compliance   |
|-------|---|--|
| 1.    | The bench height 7m shall be reduced to 5 m (or) 6 m based upon the reach of excavating equipment proposed and accordingly the revised quantity is spelt out in the 'modified Production and Development Plan' to be submitted during the EIA appraisal.  | Agreed to comply.  |
| 2.    | The Proponent shall submit the aforesaid 'Production & Development Plan' prepared as a part of the approved Mining Plan, duly signed by the concerned QP & approved by the concerned AD (Geology & Mining) during the EIA appraisal.  | Agreed to comply   |
| 3.    | In the case of proposed lease exists in the sloping hilly terrain, the Project Proponent (PP) shall prepare and submit an 'Action Plan' for carrying out the formation of the benches from top to downwards in the proposed quarry lease including the removal of boulder formed over the sloping face during the time of appraisal for obtaining the EC. | Will be furnished.   |
| 4.    | The PP shall submit detailed mitigation measures particularly related to dust pollution with respect to the location of the dwellings surrounding the proposed project based on the wind direction during the time of appraisal for obtaining the EC.   | The PP will submit detailed mitigation measures particularly related to dust pollution with respect to the location of the dwellings surrounding the proposed project based on the wind direction during the time of appraisal for obtaining the EC. |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |  |   |
|----|--|---|
| 5. | The structures within the radius of (i) 100 m, (ii) 200 m and (iii) 300 m 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.       | Will be Complied.   |
| 6. | 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.   | The PP will 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.   |
| 7. | The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.  | The Proponent will carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.  |
| 8. | 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.               | The proponent will 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. |
| 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 PP will 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                      |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|     |  |   |
|-----|--|---|
|     |  | 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   | The PP will 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.   | The EIA Coordinators will 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. | <p>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> <ol style="list-style-type: none"> <li>a. What was the period of the operation and stoppage of the earlier mines with the last work permit issued by the AD/DD mines?</li> <li>b. Quantity of minerals mines out.</li> <li>c. Highest production achieved in any one year.</li> <li>d. Details of approved depth of mining.</li> <li>e. Actual depth of the mining achieved earlier.</li> <li>f. Name of the person already mined in that</li> </ol> | Agreed to comply  |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|     |  |  |
|-----|--|--|
|     | <p>leases area.</p> <p>g. If EC and CTO already obtained, the copy of the same shall be submitted.</p> <p>Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.</p>  |  |
| 13. | <p>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 feature of the study area (core and buffer zone)</p> | <p>Complied.</p> <p>All corners with coordinates of the mine lease area has attached with EIA report in chapter 2</p>  |
| 14. | <p>The Project Proponent shall carry out Drone video survey covering survey covering the cluster, green belt, fencing etc.,</p>  | <p>Drone video survey will be submitted in final EIA report.</p>   |
| 15. | <p>The PP shall furnish the revised manpower including the statutory and competent persons as required under the provisions of the MMR 1961 for the proposed quarry based on the volume of rock handled and area of excavation.</p>  | <p>The PP will furnish the revised manpower including the statutory and competent persons as required under the provisions of the MMR 1961 for the proposed quarry based on the volume of rock handled and area of excavation.</p> |
| 16. | <p>The Project Proponent shall furnish photographs of adequate fencing, green belt along 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>Complied.</p> <p>The photographs of fencing and green belt attached as per SEAC recommendation.</p>   |



## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|     |  |  |
|-----|--|--|
| 17. | The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justification, the anticipated impacts of the mining operations on the surrounding environment and the remedial measures for the same  | The details of Geological reserves, Mineable reserves and Yearwise production reserves are tabulated in Chapter 2. The mining methodology and impacts are follow as on prescribed norms by Government. |
| 18. | The PP shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of 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.  | Complied.<br>Manpower requirements table attached in EIA report chapter 2  |
| 19. | The PP shall conduct the 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 1km (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. | Hydro geological study report will be submitted along final EIA report.  |
| 20. | 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.   | The proponent has furnished the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna               |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|     |  |  |
|-----|--|--|
|     |  | including traffic/vehicular movement study details attached in EIA report chapter 3  |
| 21. | 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. | Noted.<br>Agree to comply.   |
| 22. | Rainwater harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.  | Noted.<br>Agree to comply.   |
| 23. | 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  | Current land use of the study area has attached in EIA report chapter 3. Operational and post operational land use will be submitted.  |
| 24. | Details of the land for storage of Overburden/Waste dumb (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.   | The overburden is in the form of top soil and weathered rock formation. It will be quarried for filling purposes to nearby end users and part of soil will be preserved all along the boundary as barrier for afforestation. |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|     |   |  |
|-----|---|--|
| 25. | 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 | Noted  |
| 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.  | The ultimate pit at the end of the mining operation will be used for rainwater storage, the stored water will be used for green belt development and further the stored water will be used for domestic purposes (other than drinking) after proper treatment. |
| 27. | Impact on local transport infrastructure due to the Project should be indicated.  | Traffic impact assessment has given in EIA report chapter 3.   |
| 28. | A tree survey study shall be carried out (nos., name of the species, diameter, etc.) both within the mining lease applied area & 300m buffer zone and its management during mining activity.  | No tree species were found inside the project site. only few shrubs and thorny bushes were present. Tree survey study details given in EIA report chapter 3.   |
| 29. | A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.  | Noted. The mine plan and mine closure plan has been approved by the Assistant Director, Department of Mining and Geology, Virudhunagar District  |
| 30. | Public hearing points raised and commitments of the PP on the same along with time bound Action   | Noted and will be complied in Final EIA report.  |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|     |   |                            |
|-----|---|----------------------------|
|     | Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project and to be submitted to SEIAA/SEAC with regard to the Office Memorandum of MoEF & CC accordingly.   |                            |
| 31. | The Public hearing advertisement shall be published in on major National daily and one most circulated vernacular daily   | Noted.<br>Agree to comply. |
| 32. | The PP shall produce/display the EIA report, Executive summary and other related information with respect to public hearing Tamil Language also.  | Noted                      |
| 33. | 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.   | Noted.<br>Agree to comply  |
| 34. | 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 and local school/college authorities. 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. | Noted.<br>Agree to comply  |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|     |  |  |
|-----|--|--|
| 35. | Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly 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 meter wide and in between blocks in an organized manner. | The green belt plan enclosed with mining plates in Annexure VII  |
| 36. | 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.  | Disaster management plan has prepared and enclosed in Chapter 7.   |
| 37. | 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.   | Risk assessment and management plan has prepared and enclosed in chapter 7.                                |
| 38. | 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 has prepared and incorporated in Environmental management plan. |
| 39. | 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.  | Suitable measure will be adopted to minimize occupational health impacts of the project.                   |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|     |  |  |
|-----|--|--|
| 40. | The Socio-economic studies should be carried out within a 5km 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. | The socio-economic study has been discussed in chapter 3.  |
| 41. | 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 against the project in any court.  |
| 42. | 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 has incorporated in EIA report chapter 8   |
| 43. | 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          | Agree to comply.   |
| 44. | The PP shall prepare the EMP for the entire life/lease of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.  | The PP will prepare the EMP for the entire life/lease of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine. |
| 45. | concealing any factual information or submission of false/fabricated data and failure to comply with any of the Condition mentioned above may result   | Noted.   |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|  |   |  |
|--|---|--|
|  | in withdrawal of this Terms of conditions besides attracting penal provisions in the Environment (Protection) Act, 1986 |  |
|--|---|--|

### Additional TOR by SEIAA

|   |  |   |
|---|--|---|
| 1 | Cluster Management Committee, which must include all the proponents in the cluster as members including the existing as well as proposed quarry.   | Noted<br>All the proponents in the cluster is discussed in Chapter-2, Page number-35                |
| 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.,  | Green belt development, water sprinkling, tree plantation is discussed in chapter-2, Page number-58 |
| 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.  | Agreed to comply.   |
| 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.                | Agreed to comply.<br><br>It will be furnished in final EIA report.                                  |
| 5 | The committee shall deliberate on risk management plan 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 | Risk management plan is discussed in Chapter-7, page number-135                                     |
| 6 | The Cluster Management Committee shall form  | Agreed to comply.   |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |  |   |
|----|--|---|
|    | 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 furnished in final EIA report.   |
| 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.   | Agreed to comply.<br><br>It will be furnished in final EIA report.  |
| 8  | The committee shall furnish the Emergency Management plan within the cluster.  | Emergency management plan is discussed in Chapter-7, page number-139  |
| 9  | The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.  | Health of workers and staff is discussed in Chapter-9 Page number-153   |
| 10 | Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following. <ul style="list-style-type: none"> <li>a) Soil health &amp; bio-diversity</li> <li>b) Climate change leading to Droughts, Floods etc.,</li> <li>c) Pollution leading to release Greenhouse gases (GHG), rise in Temperature &amp; Livelihood of the local people.</li> <li>d) Possibilities of water containment and impact on aquatic ecosystem health.</li> <li>e) Agriculture, Forestry &amp; Traditional practices.</li> </ul> | The biodiversity has been studied and discussed in chapter 3.<br><br>The soil erosion map 5km surrounding the project site has been given in chapter 3.<br><br>The detailed study will be carried out and will be enclosed in the Draft EIA Report. |



## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |   |  |
|----|---|--|
|    | <p>f) Hydrothermal/Geothermal effects due to destruction in the Environment.</p> <p>g) Bio-geochemical processes and its foot prints including environmental stress</p> <p>h) Sediment geochemistry in the surface streams</p> <p>Sediment geochemistry in the surface streams.</p> |  |
| 11 | The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.   | <p>Agreed to comply.</p> <p>It will be furnished in final EIA report.</p>                        |
| 12 | The committee shall furnish the fire safety and evacuation plan in the case of fire accidents   | Fire safety and evacuation plan is discussed in chapter-7  |
| 13 | The measures taken to control Noise, Air, water, Dust control and steps adopted to efficiently utilise the energy shall be furnished.   | Measures taken to control Noise, Air, water, Dust control is discussed in Chapter-4              |
| 14 | Details of type of vegetation 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.   | Type of vegetation no.of trees & shrubs is discussed in Chapter-3 page number-100                |
| 15 | Impact on surrounding agricultural fields around the proposed mining area.  | There is no agricultural fields around the proposed mining area                                  |
| 16 | Erosion control measures  | <p>Agreed to comply.</p> <p>Will be furnished in final EIA.</p>                                  |
| 17 | Impact on soil flora & vegetation around the project site   | Impact on soil flora & vegetation around the project site discussed in Chapter-4 page number-110 |
| 18 | Detailed study shall be carried out regard to impact of mining around the proposed mine lease area on the nearby villages, Water-bodies/Rivers,   | The detailed study will be carried out and will be furnished in the Final EIA Report.            |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |   |  |
|----|---|--|
|    | & any ecological fragile areas.   |  |
| 19 | The project proponent shall furnish VAO Certificate with reference to 300m radius regard to approved habitations, schools, Archaeological structures etc.   | Obtained and same has been attached as Annexure.   |
| 20 | 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.                  | Noted and public hearing details will be included along with final EIA report.   |
| 21 | 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. | Noted and will be complied in Final EIA report.  |
| 22 | 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 biodiversity has been studied and discussed in chapter 3 – Pg No. 113.   |
| 23 | Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.  | Noted.<br>Agree to comply.   |
| 24 | The project proponent shall study impact on fish habitats and the food WEB/food chain in the water body and reservoir.  | There is no water bodies within 1km radius, The seasonal pond located 50m south from the project site. Water gets stagnant only during rainy season. Hence there won't be much impact on |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |  |  |
|----|--|--|
|    |  | fish habitats and the food WEB/ food chain in the water body and Reservoir.  |
| 25 | The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.   | The soil erosion map 5km surrounding the project site has been given in chapter 3.<br><br>The soil samples have been collected surrounding the project site and physical, chemical components and microbial components study has been carried out and the results are tabulated in chapter 3 |
| 26 | The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.            | The biological environment impacts, and its mitigation measures has been given in Chapter 4  |
| 27 | The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection. | There is no existing trees in the project site and surrounding the project site. Only thorny shrubs were present.  |
| 28 | The Environmental Impact Assessment should study on wetlands, water bodies, river streams, lakes and farmer sites.                                       | The water environment impacts and its mitigation measures has been given in Chapter 4  |
| 29 | The EIA should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.               | The EMP details has been given in Chapter 8  |
| 30 | The EIA should study impact on climate change, temperature rise, pollution and above soil carbon stock.  | Noted and will be complied in Final EIA report.  |
| 31 | The EIA should study impact on protected areas,  | There is no Reserve Forest within 1 km   |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |  |   |
|----|--|---|
|    | Reserve forests, National parks, Corridors and Wildlife pathways, near project site.   | radius of the Project Site. Hence our project will not cause any damage to reserve forest. Also, we have received letter from DFO indicating the nearest reserve forest and attached with Annexures.<br><br>There is no protected areas, National Parks, Corridors and Wildlife pathways near project site. |
| 32 | The PP shall study and furnish the impact on plantations in adjoining Patta lands, Horticulture, Agriculture and livestock.  | There is no plantation surrounding 500m from project site. Hence there won't be any impact in adjoining patta lands, Horticulture, Agriculture and livestock.   |
| 33 | The PP shall study and furnish the details on potential fragmentation impact of natural environment, by the activities.  | Noted and will be complied in Final EIA report.   |
| 34 | The PP 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 landform changes visual and aesthetic impacts                                  | Noted.<br>Agree to comply.  |
| 35 | The PP shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impact of plastic & microplastic on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated | There will not be any plastic and microplastic pollution due to mining activity. Also, we ensure that we won't use any single use plastics in the project site.   |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |   |   |
|----|---|---|
|    | and reported.   |   |
| 36 | The PP shall detailed study on impact of mining on Reserve forests free ranging wildlife.   | There is no Reserve Forest within 1 km radius of the Project Site. Hence our project will not cause any damage to reserve forest. Also, we have received letter from DFO indicating the nearest reserve forest and attached with Annexures. |
| 37 | 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 and documentation in this regard may be provided, covering the entire mine lease period. | The hydro-geological study will be conducted and submitted in final EIA report.   |
| 38 | To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazard & to cope with disaster/untoward 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.  | Disaster Management and Risk Assessment has be incorporated in Chapter-7  |
| 39 | To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of mining.  | A Risk Assessment and management Plan will be prepared and included in the final EIA/EMP Report.  |
| 40 | Detailed mine closure plan covering the entire mine lease period as per precise area  | Mine closure plan has been attached along with mining plates as Annexure  |

## TOR Reply of Proposed Rough stone Quarry Over an Extent of 1.30.0 Ha

|    |  |   |
|----|--|---|
|    | communication order issued.  | VI.   |
| 41 | Detailed Environment Management plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued. | Environment Management Plan has been described in detail in Chapter-10 of the Draft EIA/EMP Report. |

**ANNEXURE-II**  
**PRECISE AREA COMMUNICATION LETTER**

குறிட் பாணை

பொருள்

கனிமங்களும் குவாரிகளும்- கி.ருஷ்ணகிரி மாவட்ட புவியியல் & சுரங்கத் துறை, மாவட்ட அலுவலகம், திரு.ரகு. நாள்: 24.04.2022. வண. கருக்களம்பாற் புலங்களில் அமைந்துள்ள கற்குவா முறையில் குத்தகை வழங்குவது வெளியீடு - ஓசூர் வட்டம் - கோபனப்பள்ளி கிராமம் - புல எண்.381(பகுதி-1) 1.30.0 ஹெக்டேர் பரப்பில் 05.04.2022 அன்று டெண்டருடன் இணைந்த ஏலம் நடத்தப்பட்டது - டெண்டர் விண்ணப்பத்தில் அதிகபட்ச குத்தகை தொகை குறிப்பிட்ட திரு.ரகு என்பவருக்கு டெண்டர் உறுதி செய்யப்பட்டது - விதிகளின்படி குத்தகை தொகை முழுவதும் செலுத்தப்பட்டது - குத்தகை உரிமம் வழங்கிட வேண்டி ஏற்பளிக் கூ்ப்பட்ட சுரங்கத் திட்டம் மற்றும் சுற்றுச் சூழல் ஆணைய முன் அனுமதி பெற்று சமர்ப்பிக்கக் கோருதல்- தொடர்பாக.

பார்வை:

1. வட்டாட்சியர், ஓசூர் கடிதம் ந.க.எண்.426/2022/அ2 நாள்:22.01.2022.
2. வருவாய் கோட்டாட்சியர் ஓசூர் அறிக்கை ந.க.எண்.103/2022/பி2 நாள்:04.02.2022.
3. வண உயிரின காப்பாளர், ஓசூர் கடிதம் ந.க.எண்.261/2022/எல் நாள்:10.02.2022.
4. கிருஷ்ணகிரி மாவட்ட புவியியல் மற்றும் சுரங்கத் துறை நில அளவர், தனி வருவாய் ஆய்வாளர் மற்றும் உதவி புவியியலாளர் (கனிமம்) புலதணிக்கை அறிக்கை நாள்:11.02.2022.
5. கிருஷ்ணகிரி மாவட்ட அரசிதழ் சிறப்பு வெளியீடு எண்.15 நாள்:14.03.2022 மற்றும் எண்.20 நாள்:28.03.2022.
6. தி இந்து செய்தி நாளிதழில் விளம்பரம் நாள்:17.03.2022.
7. தி இந்து, தினகரன், தினமலர் மற்றும் காலைக்கதிர் ஆகிய செய்தி நாளிதழ்களில் 29.03.2022 அன்று வெளியிடப்பட்ட மாவட்ட ஆட்சியரின் அறிவிக்கை.
8. திரு.ரகு என்பவர் டெண்டர் விண்ணப்பம் நாள்:04.04.2022.
9. திரு.என்.அண்ணையாரெட்டி மற்றும் இரண்டு நபர்களின் ஏல விண்ணப்பங்கள் நாள்:05.04.2022.
10. திரு.ரகு என்பவரது கடிதம் நாள் :18.04.2022.
11. தொடர்புடைய ஆவணங்கள்.

பார்வையில் காணும் கடிதங்களின்பால் கனிவான கவனம் வேண்டப்படுகிறது.



2. கிருஷ்ணகிரி மாவட்டம், ஓசூர் வட்டம், கோபனப்பள்ளி கிராமம் அரசு புல எண்.381(பகுதி-1) விஸ்.1.30.0 ஹெக்டேர் பரப்பில் அமைந்துள்ள சாதாரண கற்குவாரியை டெண்டர் / பொது ஏலத்திற்கு கொண்டு வர உரிய நில இருப்பு அறிக்கை வருவாய் கோட்டாட்சியரிடம் கோரப்பட்டதில், ஓசூர் வட்டாட்சியர், ஓசூர் வருவாய் கோட்டாட்சியர் மற்றும் கிருஷ்ணகிரி மாவட்ட புவியியல் மற்றும் சுரங்கத் துறை நில அளவர், தனி வருவாய் ஆய்வாளர் மற்றும் உதவி புவியியலாளர் (கனிமம்) ஆகியோர் தணிக்கை மேற்கொண்டு கிருஷ்ணகிரி மாவட்டம், ஓசூர் வட்டம், கோபனப்பள்ளி கிராமம் அரசு புறம்போக்கு தீ.ஏ.த.தரிசு புல எண்.381(பகுதி-1) விஸ்.1.30.0 ஹெக்டேர் பரப்பு பூமியினை குத்தகை உரிமம் வழங்கிட விதிகளின்படி மேற்கண்ட புலம் தகுதிவாய்ந்தது என்பதால் டெண்டருடன் இணைந்த ஏலத்தின் மூலம் உரிமம் வழங்கிட பரிந்துரை செய்துள்ளனர். வன உயிரின காப்பாளர், ஓசூர் மேற்கண்ட புலங்கள் விதிகளின்படி அருகில் உள்ள காப்பு காடுகளுக்கு வரையறுக்கப்பட்ட பாதுகாப்பு தொலைவிற்கு அப்பால் அமைந்துள்ளதாக அறிக்கை அளித்துள்ளார்.

3. அதன் அடிப்படையில், கிருஷ்ணகிரி மாவட்டத்தில் அரசு புறம்போக்கு நிலங்களில் உள்ள சாதாரண கற்களை வெட்டியெடுத்துச் செல்ல உரிமம் வழங்க ஏதுவாக கிருஷ்ணகிரி மாவட்ட அரசிதழ் சிறப்பு வெளியீடு எண்.15 நாள்:14.03.2022 மற்றும் எண்.20 நாள்:28.03.2022-ன்படி பிரசுரம் செய்யப்பட்டது. அதன்படி 04.04.2022-ம் நாள் பிற்பகல் 05.00 மணிக் குள் மூடி முத்திரை இடப்பட்ட டெண்டர் மனுக்களை அளிக்க இறுதி நாளாக அறிவித்து, 05.04.2022 அன்று பொது ஏலம் நடத்தப்பட்டு டெண்டர் மனுக்கள் ஏலத்தில் கலந்து கொண்டவர்கள் முன்னிலையில் திறக்கப்பட்டன.

4. மேற்கண்ட அரசிதழில் விளம்பரம் செய்யப்பட்டிருந்த குவாரிப்பட்டியலில் வரிசை எண்.(11), ஓசூர் வட்டம், கோபனப்பள்ளி கிராமம், அரசு புறம்போக்கு (தீ.ஏ.த.தரிசு) புல எண்.381(பகுதி-1)-ல் 1.30.0 ஹெக்டேர் பரப்பில் உள்ள உள்ள கற்குவாரிக்கு டெண்டர் / பொது ஏலத்தில் கலந்து கொண்டவர்களில் திரு.ரகு டெண்டரில் குறிப்பிட்டிருந்த தொகை ரூ.1,30,00,000/- மாவட்ட ஆட்சித் தலைவர் அவர்களால் நிர்ணயம் செய்யப்பட்டிருந்த ஏலத் தொகையை விட அதிகமாக இருந்ததால் அவருக்கு டெண்டர் ஊர்ஜிதம் செய்யப்பட்டது. மேற்கண்ட டெண்டர்தாரர் மொத்த குத்தகை தொகையையும் விதிகளின்படி 19.04.2022-க் குள் செலுத்தியுள்ளார்.

5. எனவே, டெண்டர்தாரர் டெண்டர்தொகை முழுவதும் செலுத்திவிட்டபடியால், மேற்படி கற்குவாரி ஏலமானது விதிகளின்படி உயர்நதபட்ச டெண்டர் கோரிய திரு.ரகு என்பவருக்கு உறுதி செய்யப்படுகிறது. மேலும், மேற்படி நபருக்கு ஓசூர் வட்டம், கோபனப்பள்ளி கிராமம், அரசு புறம்போக்கு (தீ.ஏ.த.தரிசு) புல எண்.381(பகுதி-1)-ல் 1.30.0 ஹெக்டேர் பரப்பு புலத்தில் பத்து (10) ஆண்டுகளுக்கு குவாரி உரிமம் வழங்க



**ANNEXURE-III**  
**MINING PLAN APPROVED LETTER**

**From**

Dr.S.Vediappan,M.Sc.,Ph.D.,  
Deputy Director,  
Dept of Geology and Mining,  
Krishnagiri.

**To**

Thiru.S.Raghu,  
S/o. Sreeramaya, D.No.6/206,  
Anusonai Village,  
Bommathathanoor post,  
Denkanikottai Taluk,  
Krishnagiri District- 635113.

**Rc.No.539/2022/Mines Dated:29.06.2022.**

**Sir,**

**Sub:** Mines and Minerals - Rough stone - Krishnagiri District - Hosur Taluk - Gopanapalli Village- Govt Poramboke land in S.F.No. 381(Part-1) Over an extent of 1.30.0 Hects - Tender Cum Auction conducted - Thiru.S.Raghu declared as highest tenderer - Precise area communicated - Draft Mining Plan submitted for approval - Approved - reg.

**Ref:** 1. Krishnagiri District, Extraordinary Gazette notification No. 15 & 20, dated 14.03.2022 & 28.03.2022.  
2. This Office Letter No.539/2022/Mines dated: 04.05.2022.  
3. Draft Mining plan submitted by Thiru.S.Raghu, dated: 13.06.2022.

\*\*\*\*\*

Kind attention is invited to the references cited above.

2. Tender Cum Auction has been conducted on 05.04.2022 for the grant of quarry lease to quarry rough stone in government lands situated in Krishnagiri district including S.F.No. 381(Part-1) Over an extent of 1.30.0 Hects of Gopanapalli Village, Hosur Taluk, Thiru.S.Raghu has quoted highest lease amount and hence he has been declared as successful tenderer.

3. Accordingly, Thiru.S.Raghu has been directed to submit the mining plan for approval and to obtain Environmental Clearance for quarrying Rough stone over an extent of 1.30.0 Hects of Government Poramboke land in S.F.No. 381(Part-1) in Gopanapalli Village, Hosur Taluk, Krishnagiri District for a period of 10 (Ten) years under the

provisions of Rule 8 of Tamil Nadu Minor Mineral Concession Rules, 1959.

4. In this regard, the tenderer Thiru.S.Raghu had submitted 03 copies of draft Mining Plan vide letter dated: 13.06.2022 and the same has been examined in detail and it is found correct.

5. As per the mining plan the year wise production for the proposed first and second five years are as follows.

| <b>First Five Years</b> | <b>Year</b>          | <b>Recoverable Reserves (m<sup>3</sup>) @ 100%</b> | <b>Top Soil (Gravel)in (m<sup>3</sup>)</b> |
|-------------------------|----------------------|--|--|
|                         | 1 <sup>st</sup> Year | 55692  | 17316                                      |
|                         | 2 <sup>nd</sup> year | 27083  | 0  |
|                         | 3 <sup>rd</sup> year | 27083  | 0  |
|                         | 4 <sup>th</sup> year | 23373  | 0  |
|                         | 5 <sup>th</sup> year | 31206  | 0  |
|                         | <b>Total</b>         | <b>164437</b>                                      | <b>17316</b>                               |

| <b>Second Five Years</b> | <b>Year</b>          | <b>Recoverable Reserves (m<sup>3</sup>) @ 100%</b> | <b>Top Soil (Gravel)in (m<sup>3</sup>)</b> |
|--------------------------|----------------------|--|--|
|                          | 1 <sup>st</sup> Year | 19663  | 0  |
|                          | 2 <sup>nd</sup> year | 11438  | 0  |
|                          | 3 <sup>rd</sup> year | 11438  | 0  |
|                          | 4 <sup>th</sup> year | 15246  | 0  |
|                          | 5 <sup>th</sup> year | 9016   | 0  |
|                          | <b>Total</b>         | <b>66801</b>                                       | <b>0</b>                                   |

6. Hence, as per the powers delegated under Rule 42 of TNMMCR, 1959 and also as per the guidelines/instructions issued by the Commissioner of Geology and Mining, vide letter Rc.No.3868/LC/2012 dated:19.11.2012, the said mining plan submitted by the Thiru.S.Raghu is here by approved subject to the following conditions.

- i. That the 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. This approval of the mining plan does not in any way imply the approval of the Government in terms of any other provisions of Mines and Minerals Development and Regulation) Act 1957, or any other connected laws including Forest (Conservation) Act 1957, or any other connected Laws industry Forest (Conservation) Act 1980, Forest Conservation Rules 1981 Environment protection Act 1980, Indian Explosive Act 1884 (Central Act IV of 1884) and the rules made there under, Minor Mineral Conservation and Development Rules, and The Tamil Nadu Minor Mineral Concession rules, 1959.
- iii. That the mining plan is approved without prejudice to any other order or directions from any court of competent jurisdiction.
- iv. All the conditions mentioned in the precise area letter should be followed during quarry operation as per rules.
- v. The applicant should get prior Environmental clearance from the appropriate authority and should submit it to the District Collector, Krishnagiri.
- vi. Provisions of the Mines Act 1952 and the rules and regulation made there under including submission of notice of opening, appointment of manager and other statutory officials has required under Mines Act 1952 shall be complied with.
- vii. Provisions made under the Mines and Minerals (Development and Regulation) Acts 1957, amended Act 2015 made there under shall be complied with.
- viii. This approval of Mining Plan is restricted to the mining lease area only as shown in the plan.
- ix. The earlier instances of irregular / illegal quarrying, if any shall not be regularized through the approval of this document.

- x. The applicant shall remit penalty /cost of the mineral /other dues if any.
- xi. Every Mining Plan duly approved under rule 41(9) of TNMMCR, 1959 shall be valid for a period of five years. Further, the applicant shall submit modification in the mining plan if any, review the mining plan and submit scheme of mining plan for the next five years of the lease if any as per TNMMCR 1959.
- xii. Non adherence to any condition set out above, the approval shall be deemed to have been withdrawn with immediate effect.

*S. Gov.*  
24.06.22  
Deputy Director,  
Dept of Geology and Mining,  
Krishnagiri.

*SS*  
24/6/22

*SS*  
24/6/22

**Copy submitted to** : 1. The Director,  
Dept of Geology and Mining,  
Guindy, Chennai -32.

**ANNEXURE-IV**  
**500M Radius letter**



**From**  
Dr. S.Vediappan, M.Sc.,Ph.d.,  
Deputy Director,  
Dept of Geology and Mining,  
Krishnagiri.

**To**  
Thiru.S.Raghu,  
S/o. Sreeramaya, D.No.6/206,  
Anusonai Village,  
Bommathathanoor post,  
Denkanikottai Taluk,  
Krishnagiri District - 635113.

**Roc.No.539/2022/Mines Dated: 24.06.2022**

**Sir,**

**Sub:** Mines and Minerals - Rough stone - Krishnagiri District - Hosur Taluk - Gopanapalli Village- Govt Poramboke land in S.F.No. 381(Part-1) Over an extent of 1.30.0 Hects - Tender Cum Auction conducted - Thiru.S.Raghu declared as highest tenderer - Mining Plan approved - Other quarry situated in 500 mtrs radial distance - Details furnished - reg.

**Ref:**

1. Krishnagiri District, Extraordinary Gazette notification No. 15 & 20, dated 14.03.2022 & 28.03.2022.
2. This Office Letter No.539/2022/Mines dated: 04.05.2022.
3. Draft Mining plan submitted by Thiru.S.Raghu, dated: 13.06.2022
4. This Office Letter No.544/2022/Mines dated: ~~24.06.22~~  
~~.06.2022~~

\*\*\*\*\*

Kind attention is invited to the references cited above.

2. Tender Cum Auction has been conducted on 05.04.2022 for the grant of quarry lease to quarry rough stone in government lands situated in Krishnagiri district including S.F.No. 381(Part-1) over an extent of 1.30.0 Hects of Gopanapalli Village, Hosur Taluk.

3. Thiru.S.Raghu has quoted highest lease amount and hence he has been declared as highest tenderer for the grant of quarry lease for quarrying Rough stone over an extent of 1.30.0 Hects of government lands in S.F.No. 381(Part-1) in Gopanapalli Village, Hosur Taluk, Krishnagiri District for a period of 10 year under the provisions of Rule 19(1) of Tamil Nadu Minor Mineral Concession Rules, 1959. In this regard, precise area communication has been

issued to the applicant vide letter dated: 04.05.2022 with a direction to submit approved mining plan and Environment Clearance.

4. Accordingly, Thiru.S.Raghu had submitted 03 copies of draft Mining Plan vide letter dated: 13.06.2022 and the same has been approved vide this office letter dated: 24.06.2022. In addition to that the details of other quarries situated within 500 mts radial distance from the subject quarry is furnished as follows.

**I. Details of Existing quarries.**

| Sl No         | Name of the lessee | Village & Taluk | Mineral | S.F No. | Extent in Het | GO No.& Date | Lease period. |
|---------------|--------------------|-----------------|---------|---------|---------------|--------------|---------------|
| -----Nil----- |                    |                 |         |         |               |              |               |


**II. Details of abandoned/Old quarries.**

| Sl. No.       | Name of the lessee | Village | S.FNo. | Extent in Het | GO No.& Date | Lease period. |
|---------------|--------------------|---------|--------|---------------|--------------|---------------|
| -----Nil----- |                    |         |        |               |              |               |

**III. Details of Proposed quarries**

| Sl No | Name of the lessee | Village & Taluk                  | Mineral     | S.F No.         | Extent in Het | GO No.& Date                             | Lease period.      |
|-------|--------------------|----------------------------------|-------------|-----------------|---------------|--|--------------------|
| 1.    | Thi.ru.S.Raghu     | Gopanapalli Village, Hosur Taluk | Rough Stone | 381(Part-1)     | 1.30.0        | Re.No. 539/2022/ Mines dated: 04.05.2022 | Instant Proposal   |
| 2.    | M/s. Natural Stone | Gopanapalli Village, Hosur Taluk | Rough Stone | 220/ 1(part -1) | 3.00.0        | Re.No. 535/2022/ Mines Dated: 21.04.2022 | Precise area given |
| 3.    | Thiru.Nithin Reddy | Gopanapalli Village, Hosur Taluk | Rough Stone | 220/ 1(part -2) | 3.00.0        | Re.No. 536/2022/ Mines Dated: 05.05.2022 | Precise area given |
| 4.    | Thiru. Sri Krish   | Gopanapalli Village, Hosur Taluk | Rough Stone | 220/ 1(part -3) | 3.00.0        | Re.No. 537/2022/ Mines Dated: 21.04.2022 | Precise area given |

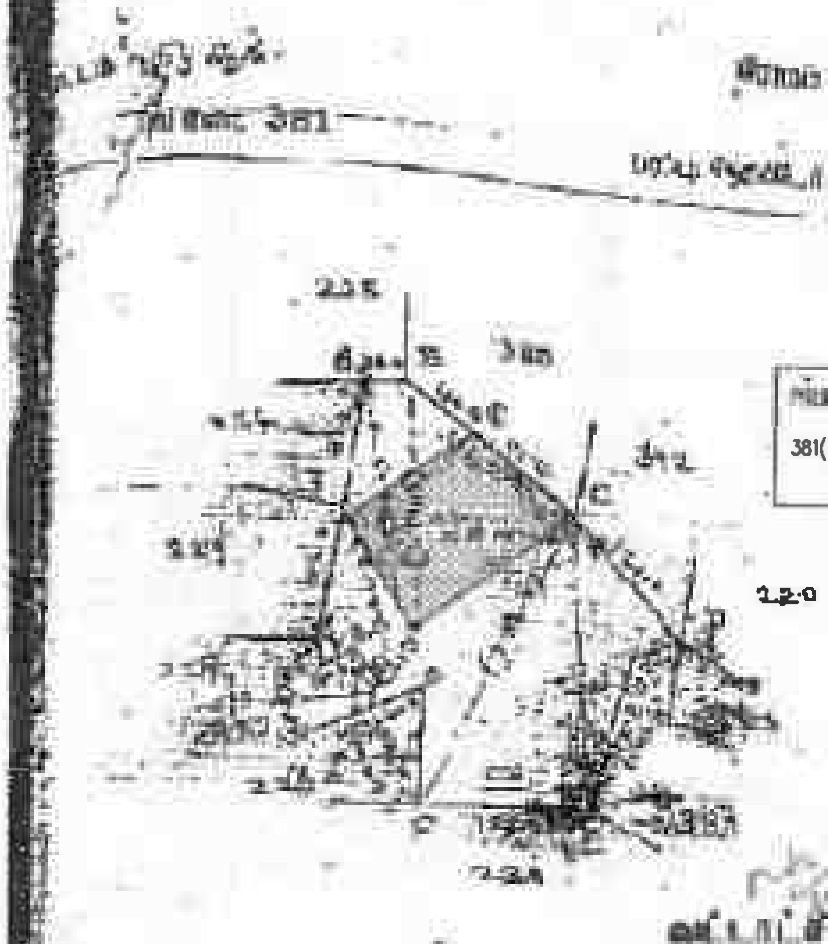
|    |                       |  |                |                     |        |  |                          |
|----|-----------------------|--|----------------|---------------------|--------|--|--------------------------|
| 5. | Thiru.Vijaya<br>Kumar | Gopanapalli<br>Village,<br>Hosur Taluk | Rough<br>Stone | 220/ 1(<br>part -4) | 2.00.0 | Rc.No.<br>538/2022/<br>Mines<br>Dated:<br>26.04.2022 | Precise<br>area<br>given |
| 6. | Thiru. Dhivakar       | Gopanapalli<br>Village,<br>Hosur Taluk | Rough<br>Stone | 381/ 1(<br>part -2) | 1.50.0 | Rc.No.<br>540/2022/<br>Mines<br>Dated:<br>22.04.2022 | Precise<br>area<br>given |

  
 Deputy Director,  
 Dept of Geology and Mining,  
 Krishnagiri.

**Copy to:-**

The Chairman,  
 Tamil Nadu State Environment  
 Impact Assessment Authority,  
 3<sup>rd</sup> Floor, Panakal Maligai,  
 No. 1 Jeenes Road, Saidapet, Chennai -15.

**ANNEXURE-V**  
**FMB, A REGISTER, VILLAGE MAP AND**  
**DEED OF AGREEMENT**



సంఖ్య: 70/2016/A  
 తేదీ: 24 JUN 2022  
 చి. చి. సంఖ్య: 70/2016/A



381(Part-I) = 1.3000 Ha

*Main copy*  
 గ్రామ పంచాయతీ  
 ముఖ్య కార్యదర్శి, గ్రామ పంచాయతీ,  
 రెవెన్యూ విభాగం,  
 పాలవరం, విజయవాడ జిల్లా.

సంఖ్య: 70/2016/A  
 తేదీ: 24 JUN 2022

|     |        |        |        |
|-----|--------|--------|--------|
| 381 | 1.3000 | 1.3000 | 1.3000 |
| 382 | 1.2000 | 1.2000 | 1.2000 |
| 383 | 1.1000 | 1.1000 | 1.1000 |
| 384 | 1.0000 | 1.0000 | 1.0000 |
| 385 | 0.9000 | 0.9000 | 0.9000 |
| 386 | 0.8000 | 0.8000 | 0.8000 |
| 387 | 0.7000 | 0.7000 | 0.7000 |
| 388 | 0.6000 | 0.6000 | 0.6000 |
| 389 | 0.5000 | 0.5000 | 0.5000 |
| 390 | 0.4000 | 0.4000 | 0.4000 |
| 391 | 0.3000 | 0.3000 | 0.3000 |
| 392 | 0.2000 | 0.2000 | 0.2000 |
| 393 | 0.1000 | 0.1000 | 0.1000 |
| 394 | 0.0000 | 0.0000 | 0.0000 |
| 395 | 0.0000 | 0.0000 | 0.0000 |
| 396 | 0.0000 | 0.0000 | 0.0000 |
| 397 | 0.0000 | 0.0000 | 0.0000 |
| 398 | 0.0000 | 0.0000 | 0.0000 |
| 399 | 0.0000 | 0.0000 | 0.0000 |
| 400 | 0.0000 | 0.0000 | 0.0000 |

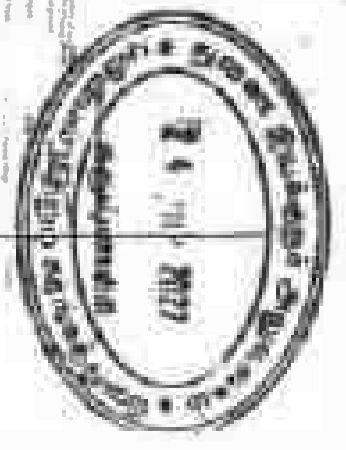
స. మాధవ ప్రకాష్, M.Sc., M.Phil.  
 సంఖ్య: 70/2016/A

No. 97  
**GRANAPALLI**  
**MOORE TALK**  
 ASSAMURU DISTRICT



Approved and issued under the supervision of the Director of Survey for the State of Assam, India.  
 Survey of the State of Assam, India.  
 Survey of the State of Assam, India.

Approved and issued under the supervision of the Director of Survey for the State of Assam, India.  
 Survey of the State of Assam, India.  
 Survey of the State of Assam, India.



Legend  
 1. Shaded area  
 2. ...  
 3. ...  
 4. ...  
 5. ...  
 6. ...  
 7. ...  
 8. ...  
 9. ...  
 10. ...

DENKANKOTTA TALK

**ANNEXURE-VI MINING PLAN REPORT &  
PLATES**

# MINING PLAN



FOR

GRANT OF ROUGH STONE QUARRY LEASE IN  
GOVERNMENT PORAMBOKE LAND

**TOTAL LEASE GRANTED PERIOD 10 YEARS**

**PERIOD OF MINING 10 YEARS**

(Prepared Under Rule 8(6)(b) Tamil Nadu Minor Mineral Concession Rules, 1959 & As  
Per Amendment Under Rule 41 & 42)

## LOCATION OF THE APPLIED AREA

EXTENT : 1.30.00 HA.  
S.F. No. : 381(PART-1).  
VILLAGE : GOPANAPALLI.  
TALUK : HOSUR.  
DISTRICT : KRISHNAGIRI.  
STATE : TAMIL NADU.

## APPLICANT

**THIRU. S. RAGHU,**  
S/O. SREERAMAIYA,  
D.No.6/202, ANUSONAI VILLAGE,  
BOMMATHATHANUR POST,  
DENKANIKOTTAI TALUK,  
KRISHNAGIRI DISTRICT- 635 113.

## PREPARED BY

**S.MATHAN PRAKASH,M.Sc.,M.PHIL.,**  
RQP/CNN/270/2016/A,  
No.2/274, EAST STREET,  
KULASEKARANALLUR POST,  
OTTAPIDARAM TALUK,  
THOOTHUKUDI DISTRICT - 628 401.

Email: [geomathanprakash@gmail.com](mailto:geomathanprakash@gmail.com)  
CELL : 8668020217.





## CONTENTS

| Sl. No. | Description  | Page No. |
|---------|--|----------|
| 1.0     | Introduction   | 8        |
| 2.0     | Executive Summary                                    | 10       |
| 3.0     | General Information                                  | 11       |
| 4.0     | Location   | 12       |
| 5.0     | Geology and Mineral Reserves                         | 12       |
| 6.0     | Mining   | 16       |
| 7.0     | Blasting   | 20       |
| 8.0     | Mine Drainage  | 22       |
| 9.0     | Other Permanent Structures                           | 23       |
| 10.0    | Employment Potentials & Welfare Measures             | 24       |
| 11.0    | Environment Management Plan                          | 25       |
| 12.0    | Mine Closure Plan                                    | 28       |
| 13.0    | Any Other Details Intend to furnish by the Applicant | 29       |



## ANNEXURES

| Sl. No. | Description                          | Annexure No. |
|---------|--------------------------------------|--------------|
| 1.      | Precise Area Communication letter    | I            |
| 2.      | Copy of Krishnagiri District Gazette | II           |
| 3.      | Copy of DFO letter                   | III          |
| 4.      | Copy of FMB & Combined Sketch        | IV           |
| 5.      | Copy of Adangal & 'A' Register       | V            |
| 6.      | Copy of Applicant ID Proof           | VI           |
| 7.      | Copy of RQP Certificate              | VII          |
| 8.      | Copy of Applied Lease Area Photos    | VIII         |



## LIST OF PLATES

| Sl. No. | Description  | Plate No. | Scale        |
|---------|--|-----------|--------------|
| 1.      | Location Plan  | I         | Not to Scale |
| 2.      | Route Map  | IA        | Not to Scale |
| 3.      | Topo Sheet Map of The Lease Ares   | IB        | 1:50,000     |
| 4.      | Satellite Image (500m Radius)  | IC        | 1:5000       |
| 5.      | Mine Lease Plan  | II        | 1:1000       |
| 6.      | Surface & Geological Plan  | III       | 1:1000       |
| 7.      | Geological Sections  | III-A     | 1:1000       |
| 8.      | Year Wise Development and Production Plan and Sections (1 <sup>st</sup> Five (I-V)Years) | IV-A & A1 | 1:1000       |
| 9.      | Year Wise Development and Production Plan and Sections(2 <sup>nd</sup> Five (VI-X)Years) | IV-B & B1 | 1:1000       |
| 10.     | Mine Layout, Land Use Pattern and Afforestation Plan                                     | V         | 1:1000       |
| 11.     | Environment Plan   | VI        | 1:5000       |
| 12.     | Conceptual/Final Mine Closure Plan   | VII       | 1:1000       |
| 13.     | Conceptual/Final Mine Closure Sections   | VII- A    | 1:1000       |
| 14.     | Progressive Mine Closure Plan  | VIII      | 1:1000       |

**S. RAGHU,**

S/o. Sreeramaiya,

D.No.6/202, Anusonai Village,

Bommathathanur Post,

Denkanikottai Taluk,

Krishnagiri District- 635 113.



**CONSENT LETTER FROM THE APPLICANT**

I hereby give my consent for preparing the Mining Plan in respect of **Rough Stone** quarry over an extent of **1.30.00 Hectares** of **Government Poramboke Land** in **S.F.No.381(Part-1)** of **Gopanapalli Village, Hosur Taluk, Krishnagiri District,** Tamil Nadu State has been prepared by **Shri. S. Mathan Prakash, M.Sc., M.Phil.,** Recognized Qualified Person.

I request the Deputy Director, Department of Geology and Mining, KRISHNAGIRI District to make further correspondence regarding the Mining Plan with the said Recognized Qualified Person on this following address.

**S.MATHAN PRAKASH, M.Sc., M.Phil.,**

RQP/CNN/270/2016/A

No.2/274, East Street,

Kulasekaranallur Post,

Ottapidaram Taluk,

Thoothukudi District - 628 401.

E-Mail: [geomathanprakash@gmail.com](mailto:geomathanprakash@gmail.com)

Cell: 86680-20217

I hereby undertake that all modifications so made in the Mining Plan by the Recognized 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: KRISHNAGIRI

Date:

(S.RAGHU)

Signature of the Applicant

**S. RAGHU,**  
S/o. Sreeramaiya,  
D.No.6/202, Anusonai Village,  
Bommathathanur Post,  
Denkanikottai Taluk,  
Krishnagiri District - 635 113.



**DECLARATION**

I hereby declare that the Mining Plan in respect of **Rough Stone** quarry over an extent of **1.30.00 Hectares** of **Government Poramboke Land** in **S.F.No.381(Part-1)** of **Gopanapalli Village, Hosur Taluk, Krishnagiri District,** and Tamil Nadu State has been prepared with my consultation and I have understood the contents and agree to implement the same in accordance with the Mining Laws.

**(S.RAGHU)**

Signature of the Applicant

Place: KRISHNAGIRI

Date:

S.MATHAN PRAKASH, M.Sc.,M.Phil.,  
RQP/CNN/270/2016/A



**CERTIFICATE**

This is to certify that, the provisions of Minor Minerals Conservation and Development Rules, 2010 (MMCDR) have been observed in the Mining Plan for the grant of **Rough Stone** quarry lease over an extent of 1.30.00 Hectares of **Government Poramboke Land** in S.F.No.381(Part-1) of **Gopanapalli Village, Hosur Taluk, Krishnagiri District** District, Tamil Nadu State obtained by **Thiru. S. Raghu**, for applied quarry lease.

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.

Certified

Signature of Recognized Qualified Person.

S. MATHAN PRAKASH, M.Sc., M.Phil.,  
RQP/CNN/270/2016/A

Place: Thoothukudi

Date:

S.MATHAN PRAKASH, M.Sc.,M.Phil.,  
RQP/CNN/270/2016/A

No.2/274, East Street,



**CERTIFICATE**

This is to certify that during preparation of Mining Plan for Rough Stone quarry over an extent 1.30.00 Hectares of Government Poramboke Land in S.F.No.381(Part-1) of Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu State for Thiru. S. Raghu, covers all the provisions of Mines Act, Rules, and Regulations etc made there under and whenever specific permission are required, the applicant will approach the Director General of Mines Safety, Chennai. The standards prescribed by DGMS in respect of Mines Health will be strictly implemented.

Certified

Signature of Recognized Qualified Person.

**S. MATHAN PRAKASH, M.Sc., M.Phil.,**  
**RQP/CNN/270/2016/A**

Place: Thoothukudi

Date:

**MINING PLAN FOR MINOR MINE**  
**ROUGH STONE QUARRY**  
**TOTAL LEASE GRANTED PERIOD**  
**PROPOSED PERIOD OF MINING**



Over an extent of 1.30.00 Hectares of Government Poramboke  
S.F.No.381(Part-1) of Gopanapalli Village, Hosur Taluk, Krishnagiri District,  
Tamilnadu State.

(Prepared Under Rule 8(6)(b) Tamil Nadu Minor Mineral Concession Rules, 1959 &  
As Per Amendment Under Rule 41 & 42)

**1.0 INTRODUCTION AND EXECUTIVE SUMMARY:**

1. **Thiru. S. RAGHU**, S/o. Sreeramaiya, residing at D.No.6/202, Anusonai Village, Bommathathanur Post, Denkanikottai Taluk, Krishnagiri- 635 113 has applied for the grant of quarry lease to quarry **Rough Stone** over an extent of **1.30.00 Hectares** of **Government Poramboke Land** in **S.F.No.381(Part-1)** of **Gopanapalli Village, Hosur Taluk, Krishnagiri District** of **Tamil Nadu State** for a period of **Ten Years** under **Tender cum Auction**.
2. The Applicant has been the **Successful HIGHEST BIDDER** for an **Amount Rs.1,30,00,000/-** in a tender cum Auction conducted by the Government of Tamilnadu Notified vide Gazette No.15 dated 14.03.2022 and Precise area had been given for the proposed grant of **Rough Stone quarry lease** to **Thiru. S. Raghu** over an extent of **1.30.00 hectares** in **Government Poramboke land** in **S.F.No.381(Part-1)** of **Gopanapalli Village, Hosur Taluk, Krishnagiri District** of **Tamil Nadu State** for a period of **Ten Years** Vide Letter **Rc. No.539/2022/Mines** dated **04.05.2022** and directed to submit the approved **Mining Plan** and **Environmental Clearance certificate** from the **State Environment Impact Assessment Authority (SEIAA)** for the grant of quarry lease for the applied area.
3. Accordingly, **Mining Plan** is prepared under **Rule 8(6)(b) Tamil Nadu Minor Mineral Concession Rules, 1959 & As per Amendment under Rule 41 & 42** by incorporating the conditions imposed in the precise area communication letter and by incorporating all the details proposed in the letter to obtain **Environmental clearance** from **State Environment Impact Assessment Authority**.
4. In the above circumstances the mining plan has been prepared for the Applicant **Thiru. S. RAGHU** for approval and subsequent submission of **Form-1** and **pre Feasibility report** to obtain **environmental clearance** from the **SEIAA** of **Tamil Nadu**.

  
**S. MATHAN PRAKASH, M.Sc., M.Phil.,**  
**RQP/CNM/270/2016/A**



5. This Mining Plan is prepared for the applied Rough Stone Quarry for Ten years by considering the TNMMCR 1959 and as per the subsequent amendments and judgements.

6. The Geological Reserves is estimated as 616028M<sup>3</sup> and Recoverable Reserves is estimated as 231238M<sup>3</sup> of Rough Stone at a distance from the lease boundary as indicated in the precise area and relevant mining laws in force.

7. The proposed production scheduled for the Ten years is estimated as 231238M<sup>3</sup> (for the First five (I-V)years- 164437M<sup>3</sup> & for the Next five (VI-X)years- 66801M<sup>3</sup>) of Rough Stone.

Proposed average annual production of Rough stone 23124M<sup>3</sup>.

8. Estimated Life of the Quarry

|                              |                               |
|------------------------------|-------------------------------|
| Total Mineable ROM           | = 231238 M <sup>3</sup>       |
| Recoverable Reserves @ 100%  | = 231238 M <sup>3</sup>       |
| Average production per year  | = 23124 M <sup>3</sup>        |
| Estimated Life of the Quarry | = 231238 / 23124 = 10.0 years |

**Life = 10.0 years**

The Life of mine may change depend upon the prospecting results, rate of production and the extent of mechanization done by the applicant in near future.

9. Environmental measures to be adopted shall be,

- i) Dust Control at source while drilling and Proposed Control Blasting,
- ii) Dust suppression at loading point and transport haul roads,
- iii) Noise Control in Proposed Control Blasting, control of fly rock missiles and vibration by doing peak particle velocity within standard as prescribed by the DGMS and MoEF.
- iv) Unnecessary land degradation should be avoided or damaged land should be reclaimed or rehabilitated.
- v) Avoid uneven rat hole mining and follow scientific and systematic mining by safe bench system of open cast mining.
- vi) Mining near major fracture zones if any should be avoided to control ground water fluctuation in the adjacent agricultural lands.
- vii) Emission test of vehicles should be in stack to maintain minimum emission level of flue gases.

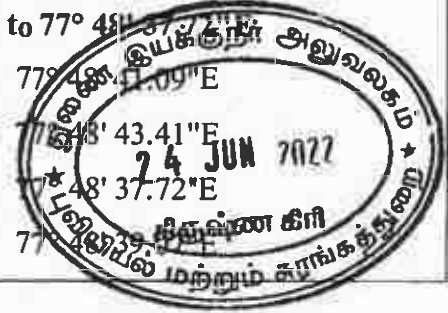
- viii) Noise level should not exceed 80db and the vehicle Air Horn while on road near residential areas.
- ix) Safety zones as prescribed by the Department of infrastructures should be strictly adhered to.
- x) And any other conditions as stipulated by the followed to protect the environment.



## 2.0 EXECUTIVE SUMMARY:

|    |   |   |
|----|---|---|
| a. | Name of the Village   | : Gopaanapalli  |
| b. | Name of the Panchayat / Union   | : Gopanapalli / Hosur   |
| c. | The proposed total Mineable Reserves  | : 231238M <sup>3</sup>  |
| d. | The proposed quantity of reserves (level of production) for Ten Years to be mined is (Recoverable reserves) | : 231238M <sup>3</sup> (for the First five (I-V) years- 164437M <sup>3</sup> & for the Next five (VI-X) years- 66801M <sup>3</sup> )                            |
| e. | Total extent of the area  | : 1.30.00 Ha.   |
| f. | Proposed Period of mining   | : Ten years   |
| g. | Proposed Depth of mining  | : Mining Reserves Calculated upto 51m - Top Soil 2.0m + Rough stone 49m. (Surface Ground Level Above height is 8m and Surface Ground Level Below Depth is 43m). |
| h. | Existing Pit Dimension  | Nil   |
| i. | Average production per year   | : 23124M <sup>3</sup>   |
| j. | Method of mining / level of mechanization   | : Opencast, Semi-mechanized Mining with a bench height of 7m and bench width of 5m is proposed.   |
| k. | Types of Machineries used in the quarry   | : i) Compressor with jack hammer.<br>ii) Excavator of 0.90Cbm bucket Capacity.  |
| l. | Cost of the Project   |   |
|    | a. Fixed Cost   | : Rs.1,31,90,000/-  |
|    | b. Operational Cost   | : Rs.30,00,000/-  |
|    | c. EMP Cost   | : Rs.3,50,000/-   |
| m. | The area applied for lease is bounded by four corners and the coordinates are                               | : Toposheet No. 57 - H/14   |

|            |                                      |
|------------|--------------------------------------|
| Latitude   | : 12° 38' 05.49"N to 12° 38' 03.12"N |
| Longitude  | : 77° 48' 43.41"E to 77° 48' 37.72"E |
| North East | : 12° 38' 07.82"N 77° 48' 43.41"E    |
| South East | : 12° 38' 05.49" N 77° 48' 43.41"E   |
| North West | : 12° 38' 06.10"N 77° 48' 37.72"E    |
| South West | : 12° 38' 03.12"N 77° 48' 37.72"E    |



### 3.0 GENERAL INFORMATION:

|     |    |   |   |
|-----|----|---|---|
| 3.1 | a. | Name of the Applicant   | : Thiru. S. Raghu,  |
|     | b. | Address of the Applicant with phone No and e-mail id if any                   | : Thiru. S. Raghu,<br>S/o. Sreeramaiya,<br>D.No.6/202, Anusonai Village,<br>Bommathathanur Post,<br>Denkanikottai Taluk,<br>Krishnagiri District - 635 113.   |
|     | c. | Status of the Applicant   | : Individual  |
| 3.2 | a. | Mineral Which the applicant intends to mine                                   | : Rough Stone   |
|     | b. | Precise area communication letter No.   | : Rc. No.539/2022/Mines dated<br>04.05.2022   |
|     | c. | Period of permission  | : 10 Years  |
|     | d. | Name and Address of the Recognized Qualified Person preparing the Mining Plan | : S.Mathan Prakash, M.Sc., M.Phil.,<br>RQP/CNN/270/2016/A<br>No.2/274, East Street,<br>Kulasekaranallur Post,<br>Ottapidaram Taluk,<br>Thoothukudi District - 628 401.<br>Email: geomathanraj@gmail.com |
|     | e. | RQP Regn. No.   | : RQP/CNN/270/2016/A<br>Valid up to 09.02.2026.   |

#### 4.0 LOCATION:

##### a. Details of the Area:

| State          | District  | Panchayat/ Union       | Taluk | Village  | SP.No. | Extent in Hectares |
|----------------|---|------------------------|-------|--|--------|--------------------|
| Tamilnadu      | Krishnagiri   | Gopanapalli/<br>/Hosur | Hosur | Gopanapalli  | 24/381 | 1.3000             |
| <b>TOTAL -</b> |   |                        |       |  |        | <b>1.3000</b>      |
| b.             | Classification of the Area<br>(Ryotwari / poramboke / others)                           |                        | :     | It is a Government Poramboke Land, which is not fit for vegetation/cultivation.  |        |                    |
| c.             | Ownership/ Occupancy of the Applied Lease area (Surface rights)                         |                        | :     | It is a Government Poramboke land. The applicant had been given precise area for the proposed grant of Rough Stone Quarry Lease.   |        |                    |
| d.             | Toposheet No. with Latitude and Longitude   |                        | :     | Toposheet No. 57- H/14<br>: 12° 38' 05.49"N to 12° 38' 03.12"N<br>: 77° 48' 43.41"E to 77° 48' 37.72"E   |        |                    |
| e.             | Existence of Public Road / Railway line if any nearby the area and approximate distance |                        | :     | Krishnagiri - Shoolagiri = 28.0 Kms<br>Shoolagiri - Kelamangalam = 18.0 Kms<br>Quarry site is located in Northwestern side at a distance of 5.7 km. from Kelamangalam village. |        |                    |

#### PART - A

#### 5.0 GEOLOGY AND MINERAL RESERVES:

|     |    |   |
|-----|----|---|
| 5.1 | a. | <p><b>Topography:</b></p> <ol style="list-style-type: none"><li>1. The area applied for quarry lease is hilly terrain area sloping towards Western side covered with Rough Stone which does not sustain any type of vegetation. The altitude of the area is Maximum 850m and Minimum 840m above MSL.</li><li>2. No major river is found nearby the lease area.</li><li>3. Water table is noticed at a depth of 88m from the below surface in the adjacent open wells and bore wells of the area.</li><li>4. Temperature of the area is reported to be 18<sup>0</sup>C to a maximum of 38<sup>0</sup>C during summer.</li><li>5. Rainfall of this area is about 800mm to 900 mm during the monsoons in a year.</li></ol> |
|-----|----|---|



| b. | <p>Infrastructures nearby the applied Lease area.</p> <p>1. Post Office</p> <p>2. Police Station</p> <p>3. G.H</p> <p>4. Fire service</p> <p>5. Railway Station</p> <p>6. School</p> <p>7. Airport</p> <p>8. Seaport</p> | <p>Mugalur – 5.8 Kms</p> <p>Kelamangalam – 8.4 Kms</p> <p>Hosur – 14.3 Kms</p> <p>Hosur – 20.7 Kms</p> <p>Hosur – 13.0 Kms</p> <p>Nagondapalli – 7.3 Kms</p> <p>Bangalore – 78.0 Kms</p> <p>Chennai – 318.0 Kms</p>  |  |     |                |    |                      |                |    |          |   |
|----|--|--|--|-----|----------------|----|----------------------|----------------|----|----------|---|
| c. | Regional Geology   | <p><b>KRISHNAGIRI</b> District is underlined by the wide range of metamorphic rocks of peninsular gneissic complex. These rocks are extensively weathered and overlain by the recent valley fills and alluvium at places. The geological formations found in the District are Archaean rocks like Gneisses, Granites, Charnockite basic granulites and calc-gneisses. The younger formations are Quartz veins and pegmatite. The generalized stratigraphic succession of the geological formations met within this District is as follows.</p> <table border="1"> <thead> <tr> <th></th> <th>Age</th> <th>Rock Formation</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Recent to Sub recent</td> <td>Soil, Alluvium</td> </tr> <tr> <td>2.</td> <td>Archaean</td> <td>Granites, basic granulites, Peninsular Gneiss, Calc Gneiss and Charnockites</td> </tr> </tbody> </table> <p>1.</p> |  | Age | Rock Formation | 1. | Recent to Sub recent | Soil, Alluvium | 2. | Archaean | Granites, basic granulites, Peninsular Gneiss, Calc Gneiss and Charnockites |
|    | Age  | Rock Formation   |  |     |                |    |                      |                |    |          |   |
| 1. | Recent to Sub recent   | Soil, Alluvium   |  |     |                |    |                      |                |    |          |   |
| 2. | Archaean   | Granites, basic granulites, Peninsular Gneiss, Calc Gneiss and Charnockites  |  |     |                |    |                      |                |    |          |   |



|            | <p>d. Geology of the Lease Area</p>   | <p>2. The area is mainly composed of Archaean crystalline metamorphic complex.</p> <p>3. The rock type noted in the area for lease is Granite Gneiss which contains mostly Quartz and Feldspar with some ferromagnesian minerals. The Granite Gneiss is part of peninsular Gneisses, a high grade metamorphic rock.</p> <p>4. The general trend of formation is N25°W – S25°E and dip towards NE-70°.</p>  |  |     |                |    |                      |                |    |          |              |    |          |                                    |
|------------|---|--|--|-----|----------------|----|----------------------|----------------|----|----------|--------------|----|----------|------------------------------------|
|            |   | <p>The general geological succession of the area is given as under.</p> <table border="1"> <thead> <tr> <th></th> <th>Age</th> <th>Rock Formation</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Recent to Sub recent</td> <td>Soil, Alluvium</td> </tr> <tr> <td>2.</td> <td>Archaean</td> <td>Charnockites</td> </tr> <tr> <td>3.</td> <td>Archaean</td> <td>Peninsular Gneiss, and Calc Gneiss</td> </tr> </tbody> </table> |  | Age | Rock Formation | 1. | Recent to Sub recent | Soil, Alluvium | 2. | Archaean | Charnockites | 3. | Archaean | Peninsular Gneiss, and Calc Gneiss |
|            | Age   | Rock Formation   |  |     |                |    |                      |                |    |          |              |    |          |                                    |
| 1.         | Recent to Sub recent  | Soil, Alluvium   |  |     |                |    |                      |                |    |          |              |    |          |                                    |
| 2.         | Archaean  | Charnockites   |  |     |                |    |                      |                |    |          |              |    |          |                                    |
| 3.         | Archaean  | Peninsular Gneiss, and Calc Gneiss   |  |     |                |    |                      |                |    |          |              |    |          |                                    |
| <p>5.2</p> | <p>Details of Exploration already carried out if any</p>  | <p>Since the <b>Rough Stone</b> is seen from the Surface itself, no exploration is needed. However, the area was personally examined by the Geologist who prepared the Mining Plan.</p>  |  |     |                |    |                      |                |    |          |              |    |          |                                    |
| <p>5.3</p> | <p>a. Already excavated pit dimensions</p>  | <p>Nil</p>   |  |     |                |    |                      |                |    |          |              |    |          |                                    |
|            | <p>b. <b>GEOLOGICAL RESERVES:</b><br/><b>Top Soil (Gravel):</b><br/>The Thickness of Top soil in this area is 2.0m and the total volume of topsoil (gravel) will be <b>25676m<sup>3</sup></b>.<br/><b>Rough Stone :</b><br/>The Geological Reserve is estimated as <b>616028m<sup>3</sup></b> respectively, at the rate of 100% Recovery upto the permissible depth. The Geological reserve of Rough stone and Top soil(Gravel) is calculated upto a depth upto <b>51m(2m top soil + 49m Rough Stone)</b>. Surface Ground Level Above height is 8m and Surface Ground Level Below depth is 43m.</p> |  |  |     |                |    |                      |                |    |          |              |    |          |                                    |

| GEOLOGICAL RESERVES |       |       |       |       |                   |  |              |
|---------------------|-------|-------|-------|-------|-------------------|--|--------------|
| Section             | Bench | L (m) | W (m) | D (m) | Volume in (Cu.m.) | Recoverable Reserve (Gravel) in Cu.m. (100%) |              |
| XY-AB               | I     | 131   | 98    | 2     |                   |  |              |
|                     | II    | 112   | 98    | 7     | 76832             | 76832  |              |
|                     | III   | 131   | 98    | 7     | 89866             | 89866  |              |
|                     | IV    | 131   | 98    | 7     | 89866             | 89866  |              |
|                     | V     | 131   | 98    | 7     | 89866             | 89866  |              |
|                     | VI    | 131   | 98    | 7     | 89866             | 89866  |              |
|                     | VII   | 131   | 98    | 7     | 89866             | 89866  |              |
|                     | VIII  | 131   | 98    | 7     | 89866             | 89866  |              |
| <b>Total=</b>       |       |       |       |       | <b>616028</b>     | <b>616028</b>                                | <b>25676</b> |



**c. MINEABLE RESERVES:**

The Mineable reserves are calculated by deducting 10.0m safety distance and Bench Loss.

**Top Soil (Gravel):**

The Thickness of Top soil in this area is 2.0m and the total volume of topsoil(gravel) will be 17316m<sup>3</sup>.

**Rough Stone :**

The mineable reserves and the recoverable reserves are 231238m<sup>3</sup> respectively, at the rate of 100% Recovery upto the permissible depth. The Mineable reserve of Rough stone and Top soil(Gravel) is calculated upto 51m (2m top soil + 49m Rough Stone). Surface Ground Level Above height is 8m and Surface Ground Level Below depth is 43m.

| MINABLE RESERVES |       |       |       |       |                   |                                    |                           |
|------------------|-------|-------|-------|-------|-------------------|------------------------------------|---------------------------|
| Section          | Bench | L (m) | W (m) | D (m) | Volume in (Cu.m.) | Recoverable Reserve in Cu.m.(100%) | Topsoil (Gravel) in Cu.m. |
| XY-AB            | I     | 111   | 78    | 2     |                   |                                    | 17316                     |
|                  | II    | 102   | 78    | 7     | 55692             | 55692                              |                           |
|                  | III   | 106   | 73    | 7     | 54166             | 54166                              |                           |
|                  | IV    | 96    | 63    | 7     | 42336             | 42336                              |                           |
|                  | V     | 86    | 53    | 7     | 31906             | 31906                              |                           |
|                  | VI    | 76    | 43    | 7     | 22876             | 22876                              |                           |
|                  | VII   | 66    | 33    | 7     | 15246             | 15246                              |                           |
|                  | VIII  | 56    | 23    | 7     | 9016              | 9016                               |                           |
| <b>Total=</b>    |       |       |       |       | <b>231238</b>     | <b>231238</b>                      | <b>17316</b>              |

## 6.0 MINING:

|     |  |  |
|-----|--|--|
| 6.1 | Method of Mining   | <p>1. Opencast method of semi mechanized mining is adopted to extract Rough Stone.</p> <p>2. Machineries like Tractor, compressor, Jack hammers with Jack hammers is being used for blasting. Remote Control Blasting. Excavators, Tipper / Lorries are used for Rough Stone and Tipper / Lorries are used for transportation of Rough Stone to the destination.</p>                     |
| 6.2 | Mode of Working  | <p>It is a semi mechanized quarrying operation using shot hole drilling with the help of compressor and jack hammers, smooth blasting. Rough Stone are removed using Hydraulic excavator and loaded directly to the tippers and transported to the nearby end users.</p>   |
| 6.3 | Proposed bench height & Width                                    | <p>Bench height = 7mts.</p> <p>Bench width = 5mts.</p>   |
| 6.4 | Details of Overburden / Mineral Production proposed for Ten year | <p><b>Top Soil(Gravel)/ Overburden production details follows:</b></p> <p>The entire lease area is covered 2.0m of Top Soil(Gravel) and the estimated quantity of Top soil(Gravel) is 17316m<sup>3</sup>. Top Soil(Gravel) formation will be removed and transported to the needy end user, only after obtaining permission and paying necessary seigniorage fees to the Government.</p> |

### Year wise reserves calculations :

#### Rough stone production First Five Years details as follows:

The proposed rate of production of **Rough Stone** is estimated as 164437m<sup>3</sup> for First Five (I-V) years. The average proposed rate of production of **Rough Stone** is about 32887m<sup>3</sup> per year at the rate of 100% recovery upto the permissible depth. Reserves Calculated upto 30m (2m top soil (Gravel) + 28m Rough Stone). Surface Ground Level Above Height is 8m and Surface Ground Level Below Depth is 22m. (Refer Drawing Plate No.IV-A1-Year wise Sections).



Proposed Production of Ten Years.



| YEARWISE DEVELOPMENT AND PRODUCTION (First Five (I-V) Years) |         |       |       |       |       |                             |  |
|--|---------|-------|-------|-------|-------|-----------------------------|--|
| YEAR   | Section | Bench | L (m) | W (m) | D (m) | Volume in (m <sup>3</sup> ) | Recoverable Reserve in m <sup>3</sup> (100%) |
| I-YEAR   | XY-AB   | I     | 11.1  | 78    | 2     |                             | 17316  |
|  |         | II    | 102   | 78    | 7     | 55692                       | 55692  |
| TOTAL  |         |       |       |       |       | 55692                       | 17316  |
| II-YEAR  | XY-AB   | III   | 53    | 73    | 7     | 27083                       | 27083  |
|  |         | TOTAL |       |       |       |                             |  |
| III-YEAR   | XY-AB   | III   | 53    | 73    | 7     | 27083                       | 27083  |
|  |         | TOTAL |       |       |       |                             |  |
| IV-YEAR  | XY-AB   | IV    | 53    | 63    | 7     | 23373                       | 23373  |
|  |         | TOTAL |       |       |       |                             |  |
| V-YEAR   | XY-AB   | IV    | 43    | 63    | 7     | 18963                       | 18963  |
|  |         | V     | 33    | 53    | 7     | 12243                       | 12243  |
| TOTAL  |         |       |       |       |       | 31206                       | 31206  |
| GRAND TOTAL(I-V years) =                                     |         |       |       |       |       | 164437                      | 17316  |

**Rough stone production Second Five Years details as follows:**

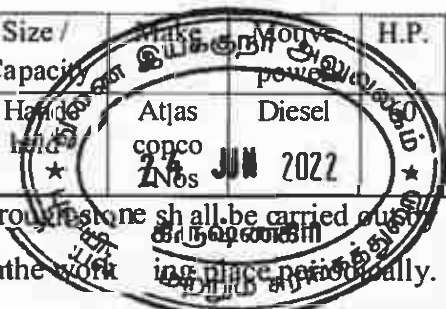
The proposed rate of production of **Rough Stone** is estimated as **66801m<sup>3</sup>** for Second Five (VI-X) years. The average proposed rate of production of **Rough Stone** is about **13360m<sup>3</sup>** per year at the rate of 100% recovery upto the permissible depth. Reserves Calculated upto **28m** Rough Stone. (Refer Drawing Plate No.IV-B1-Year wise Sections).

| YEARWISE DEVELOPMENT AND PRODUCTION(VI-X) Years) |         |       |       |       |       |                             |  |
|--|---------|-------|-------|-------|-------|-----------------------------|--|
| YEAR   | Section | Bench | L (m) | W (m) | D (m) | Volume in (m <sup>3</sup> ) | Recoverable Reserve in m <sup>3</sup> (100%) |
| VI-YEAR  | XY-AB   | V     | 53    | 53    | 7     | 19663                       | 19663  |
| VII-YEAR   |         | VI    | 38    | 43    | 7     | 11438                       | 11438  |
| VIII-YEAR  |         | VI    | 38    | 43    | 7     | 11438                       | 11438  |
| IX-YEAR  |         | VII   | 66    | 33    | 7     | 15246                       | 15246  |
| X-YEAR   |         | VIII  | 56    | 23    | 7     | 9016                        | 9016   |
| Total (VI-X years) =                             |         |       |       |       |       | 66801                       | 66801  |
| Grand Total (I-X Years) =                        |         |       |       |       |       | 231238                      | 231238                                       |

6.5 a. Mining : Drilling of shot holes will be carried out using compressor and jack hammer. Depth of holes shall be 1 to 2m bench height and spacing shall be 0.75m and burden shall be 0.60m from the preface.

Details of drilling equipments are given below.

| Type        | Nos | Dia of hole | Size/ Capacity | Make        | Motive power | H.P. |
|-------------|-----|-------------|----------------|-------------|--------------|------|
| Jack Hammer | 4   | 25.5 mm     | Hand held      | Atlas copco | Diesel       |      |



b Loading

Loading of waste and rough stone shall be carried out by 10 tonne capacity tippers for the work in place periodically. Details of loading equipment are given as under.

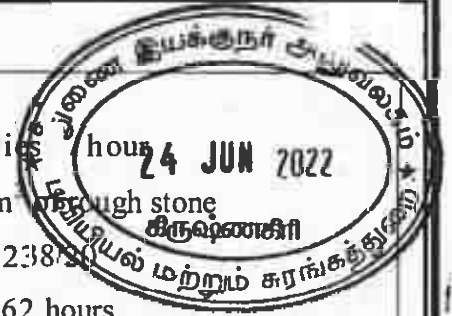
| Type                | Nos | Bucket Capacity (MT) | Make         | Motive power | H.P. |
|---------------------|-----|----------------------|--------------|--------------|------|
| Hydraulic excavator | 1   | 1.2 M <sup>3</sup>   | L&T or Ex200 | Diesel       | 120  |

c. Transportation

Transport of raw materials and waste shall be done by Tipper of 10 M.T. capacity

| Type   | Nos | Size/ Capacity | Make          | Motive power | H.P. |
|--------|-----|----------------|---------------|--------------|------|
| Tipper | 1   | 10M.T          | Ashok Leyland | Diesel       | 110  |

d **Energy:**  
 Electricity for mines and lights only at nights (working is restricted on day time only between 9Am to 5Pm). Diesel (HSD) will be used for quarrying machines around 187882 litres of HSD will be used for the entire project life. Diesel will be brought from nearby diesel pumps. NO power is required for the project. Lightings on the night will be taken from nearby electric poles after obtaining permission from concerned authorities.  
**For Top soil(Gravel):**  
 Per hour excavator will consume = 10 litres / hour  
 Per hour excavator will excavate = 60m<sup>3</sup> of Top soil  
 For 17316m<sup>3</sup> = 17316/60  
 = 289 hours  
 Diesel consumption 289 working hours = 289 x 10 litres  
 Total diesel consumption = 2890 litres of HSD will be utilized for Top Soil(Gravel)



**For Rough stone:**

Per hour excavator will consume = 16litres  
 Per hour excavator will excavate = 20m<sup>3</sup> Rough stone  
 For 231238m<sup>3</sup> = 231238/20  
 = 11562 hours  
 Diesel consume 11562 working hours = 11562 hours x 16 litres

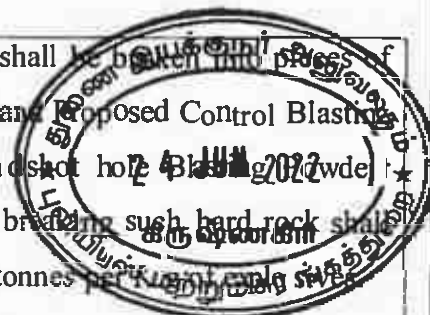
Total diesel consumption = 184992 litres of HSD will be utilized for Rough Stone.

Total diesel consumption is around (Top soil (Gravel) 2890 Litres + Rough Stone 184992 Litres )= 187882 litres of HSD for the entire period of life.

|                                 |  |  |                         |                                 |
|---------------------------------|--|--|-------------------------|---------------------------------|
| 6.6                             | Disposal of Overburden   | : The estimated quantity of Top soil(Gravel) is 17316m <sup>3</sup> . Top Soil(Gravel) formation will be removed and transported to the needy end user, only after obtaining permission and paying necessary seigniorage fees to the Government.   |                         |                                 |
| 6.7                             | Brief Note on Conceptual Mining Plan for the entire lease period | : Conceptual Mining Plan is prepared with an object of systematic development of bench lay outs, selection of ultimate pit limit, depth of quarrying, ultimate pit slope, etc.,<br>Average Ultimate Pit dimension in given as Under,<br><table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">ULTIMATE PIT DIMENSIONS</td> </tr> <tr> <td style="text-align: center;">111.0m(L) X 78.0m(W) X 43.0m(D)</td> </tr> </table> Ultimate pit size is designed based on certain practical factors such as the economical depth of mining, safety zones, permissible areas etc.<br>Afforestation has been proposed on the boundary barrier by planting trees. All the baseline information studies like Air Quality monitoring, Noise and Vibration monitoring, Water Analysis studies will be carried out every year as per the MOEF norms. | ULTIMATE PIT DIMENSIONS | 111.0m(L) X 78.0m(W) X 43.0m(D) |
| ULTIMATE PIT DIMENSIONS         |  |  |                         |                                 |
| 111.0m(L) X 78.0m(W) X 43.0m(D) |  |  |                         |                                 |

**7.0 BLASTING:**

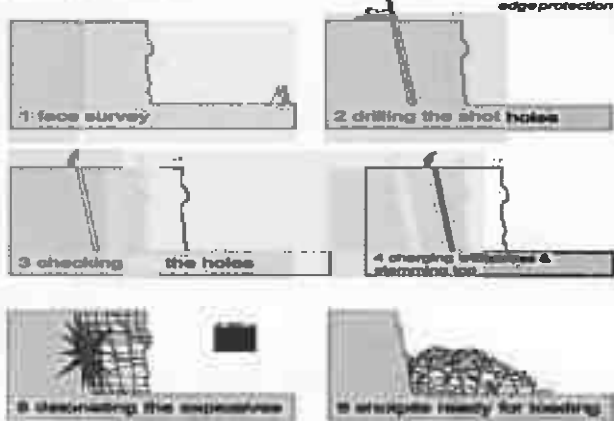
7.1 Proposed Control Blasting Pattern : The massive formation shall be broken into portable size by drilling and using jack hammers and shot hole factor of explosives for breaking such hard rock shall be in the order of 6 to 7 tonnes per



**Proposed Control Blasting parameters are as follows.**

|                                   |  |
|-----------------------------------|--|
| Diameter of the hole              | : 32-36 mm   |
| Spacing                           | : 60Cms  |
| Depth                             | : 1 to 1.5m  |
| Charge / Hole                     | : D.Cord with water or 70 gms of gun powder or Gelatine. |
| Pattern of hole                   | : Zig Zag  |
| Inclination of hole               | : 70° from the horizontal.                               |
| Quantity of rock broken           | : 0.45 MT x 2.6 = 1.17 MT                                |
| Control Blasting efficiency @ 90% | : 1.17 x 90% = 1.05MT / hole                             |
| Charge per hole                   | : 140 gms of 25mm dia cartridge                          |
| Quantity of rock broken per day   | : 77.08M <sup>3</sup> .                                  |

**ROCK BLASTING**



7.2 Types of Explosives : Following explosives are recommended for efficient Proposed Control Blasting with safe practice.

| S. No | Description | Class | Quantity | Unit |
|-------|-------------|-------|----------|------|
| 1.    | Slurry      | Class |          |      |
| 2.    | Detonators  | C     |          |      |
| 3.    | Safety fuse | Class |          |      |



|     |   |  |
|-----|---|--|
| 7.3 | Measures proposed to minimize ground vibration due to Proposed Control Blasting | <p>The following steps shall be adopted to control ground vibration due to Proposed Control Blasting.</p> <ol style="list-style-type: none"> <li>1. The minimum recommended delay time of 8ms was introduced to minimize ground vibration to avoid constructive interference of blast vibration waves and hence its impact or amplitude.</li> <li>2. In case of electronic detonators, which are inherently much more accurate delays (+/- 0.2 milliseconds delay) to minimize the ground vibration.</li> <li>3. Use of Ammonium nitrate fuel oil mixture for shot holes may be avoided because which cause for high fly of rocks in view critical diameter problem. Only high strength explosives like slurry will be used in the form of cartridge.</li> </ol> |
|     |   | <ol style="list-style-type: none"> <li>4. Charge per hole should exceed the powder factor designed for each hole based on the quantum of Proposed Control Blasting, strength of rocks, fracture pattern etc.</li> </ol>  |

|     |  |   |  |
|-----|--|---|--|
| 7.4 | Storage of Explosives and safety measures to be taken while Proposed Control Blasting. | : | <ol style="list-style-type: none"> <li>1. The Applicant stores the explosives as per the Indian Explosives Act.</li> <li>2. The explosives stored in mines being small quantity, the concerned authorities are approached to keep 5kgs at time or any other quantity as decided by the concerned authorities in a portable magazine of S &amp; B types.</li> <li>3. An authorized explosive agency is engaged to carry out blasting.</li> <li>4. The blasting time in a day is between 5 PM to 6PM.</li> <li>5. First Aid Box is kept ready at all the time.</li> <li>6. Necessary precautionary announcement is being carried out before the blasting operation.</li> </ol> |
|-----|--|---|--|

**8.0 MINE DRAINAGE:**

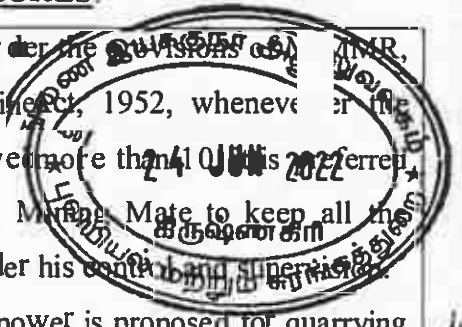
|     |  |   |  |
|-----|--|---|--|
| 8.1 | Depth of Water table   | : | The ground water table is reported as 88m below ground level in nearby open wells and bore wells of this area. Mining depth taken as 51m (Surface Ground Level Above Height 8m & Surface Ground Level Below Depth 43m). Now, proposed quarry depth is above the water table. Hence, quarrying may not affect the ground water.   |
| 8.2 | Arrangement 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 out periodically by a stand by diesel powered Centrifugal pump motivated with 7.5 H.P. Motor. The quality of water is potable and it is not contaminated with any hazardous things. |

**9.0 OTHER PERMANENT STRUCTURES:**

|      |  |        |  |                    |                 |            |
|------|--|--------|--|--------------------|-----------------|------------|
| 9.1  | Habitations/ Village   | :      | There are no villages within a radius of 500m. Nearest habitations with the population given as under,   |                    |                 |            |
|      |  |        | Direction  | Village            | Distance in Kms | Population |
|      |  |        | North  | Goolisandram       | 1.0kms          | 100        |
|      |  |        | East   | Bennikkal          | 6.0kms          | 200        |
|      |  |        | South  | Nagappan Agraharam | 2.5kms          | 570        |
| West | Agraharam  | 3.0kms | 310  |                    |                 |            |
| 9.2  | Power lines (HT/LT)  | :      | No power line is located in the lease area.  |                    |                 |            |
| 9.3  | Water bodies (River, Pond, Lake, Odai, Channel etc)  | :      | There is No Water bodies (River, Pond, Lake, Odai, Channel etc) located within a radius of 500m.   |                    |                 |            |
| 9.4  | Archeological / Historical Monuments   | :      | There are no Archeological / Historical Monuments within a radius of 500m.   |                    |                 |            |
| 9.5  | Road (NH, SH, Village Road etc)  | :      | Krishnagiri - Shoolagiri = 28.0 Kms<br>Shoolagiri – Kelamangalam = 18.0 Kms<br>Quarry site is located in Northwestern side at a distance of 5.7 km. from Kelamangalam village. |                    |                 |            |
| 9.6  | Places of Worship  | :      | There are no Places of Worship within a radius of 500m.  |                    |                 |            |
| 9.7  | Reserved Forest / Forest / Social Forest / Wild Life Sanctuary etc.,   | :      | Distance between Reserve Forest Sanamavu and the applied area = 6.4kms<br>Distance from Wildlife Sanctuary Udedurgam = 13.2kms   |                    |                 |            |
| 9.8  | Any Interstate Border, Protected areas under the Wild Life (Protection) Act, 1972, Critically Polluted Areas as Identified by Central Pollution Control Board and Notified Eco sensitive areas | :      | There are No interstate borders within a radius of 10 kms.<br>Cauvery North Wild life Sanctuary, Udedurgam located within the distance of about 13.2kms from the lease area.   |                    |                 |            |
| 9.9  | Any Other Structures   | :      | Nil  |                    |                 |            |

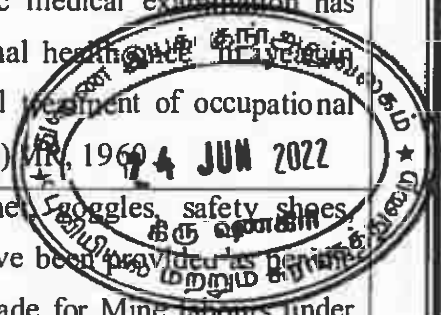
**10.0 EMPLOYMENT POTENTIAL & WELFARE MEASURES:**

|      |  |   |       |         |          |      |  |  |          |       |  |  |             |       |    |                |        |      |    |           |                   |      |  |  |          |      |  |  |            |     |    |                                |  |      |  |        |  |       |
|------|--|---|-------|---------|----------|------|--|--|----------|-------|--|--|-------------|-------|----|----------------|--------|------|----|-----------|-------------------|------|--|--|----------|------|--|--|------------|-----|----|--------------------------------|--|------|--|--------|--|-------|
| 10.1 | Employment Potential (Management & Supervisory personal) | <p>1. As per Mines safety provisions of 1961 under the Mines Act, 1952, whenever workers are employed more than 10 workers to have a qualified Manager to keep all the workers directly under his control and supervision.</p> <p>2. The following man power is proposed for quarrying Rough Stone during the Ten years period to achieve the proposed production to the provisions of the Government norms.</p> <table border="1"> <tr> <td>1.</td> <td>Skilled</td> <td>Operator</td> <td>2No.</td> </tr> <tr> <td></td> <td></td> <td>Mechanic</td> <td>1 No.</td> </tr> <tr> <td></td> <td></td> <td>Blaster/Mat</td> <td>1 No.</td> </tr> <tr> <td>2.</td> <td>Semi – skilled</td> <td>Driver</td> <td>2Nos</td> </tr> <tr> <td>3.</td> <td>Unskilled</td> <td>Musdoor / Labours</td> <td>5Nos</td> </tr> <tr> <td></td> <td></td> <td>Cleaners</td> <td>3Nos</td> </tr> <tr> <td></td> <td></td> <td>Office Boy</td> <td>1No</td> </tr> <tr> <td>4.</td> <td>Management &amp; Supervisory staff</td> <td></td> <td>3No.</td> </tr> <tr> <td></td> <td>Total=</td> <td></td> <td>18Nos</td> </tr> </table> | 1.    | Skilled | Operator | 2No. |  |  | Mechanic | 1 No. |  |  | Blaster/Mat | 1 No. | 2. | Semi – skilled | Driver | 2Nos | 3. | Unskilled | Musdoor / Labours | 5Nos |  |  | Cleaners | 3Nos |  |  | Office Boy | 1No | 4. | Management & Supervisory staff |  | 3No. |  | Total= |  | 18Nos |
| 1.   | Skilled  | Operator  | 2No.  |         |          |      |  |  |          |       |  |  |             |       |    |                |        |      |    |           |                   |      |  |  |          |      |  |  |            |     |    |                                |  |      |  |        |  |       |
|      |  | Mechanic  | 1 No. |         |          |      |  |  |          |       |  |  |             |       |    |                |        |      |    |           |                   |      |  |  |          |      |  |  |            |     |    |                                |  |      |  |        |  |       |
|      |  | Blaster/Mat   | 1 No. |         |          |      |  |  |          |       |  |  |             |       |    |                |        |      |    |           |                   |      |  |  |          |      |  |  |            |     |    |                                |  |      |  |        |  |       |
| 2.   | Semi – skilled   | Driver  | 2Nos  |         |          |      |  |  |          |       |  |  |             |       |    |                |        |      |    |           |                   |      |  |  |          |      |  |  |            |     |    |                                |  |      |  |        |  |       |
| 3.   | Unskilled  | Musdoor / Labours   | 5Nos  |         |          |      |  |  |          |       |  |  |             |       |    |                |        |      |    |           |                   |      |  |  |          |      |  |  |            |     |    |                                |  |      |  |        |  |       |
|      |  | Cleaners  | 3Nos  |         |          |      |  |  |          |       |  |  |             |       |    |                |        |      |    |           |                   |      |  |  |          |      |  |  |            |     |    |                                |  |      |  |        |  |       |
|      |  | Office Boy  | 1No   |         |          |      |  |  |          |       |  |  |             |       |    |                |        |      |    |           |                   |      |  |  |          |      |  |  |            |     |    |                                |  |      |  |        |  |       |
| 4.   | Management & Supervisory staff                           |   | 3No.  |         |          |      |  |  |          |       |  |  |             |       |    |                |        |      |    |           |                   |      |  |  |          |      |  |  |            |     |    |                                |  |      |  |        |  |       |
|      | Total=   |   | 18Nos |         |          |      |  |  |          |       |  |  |             |       |    |                |        |      |    |           |                   |      |  |  |          |      |  |  |            |     |    |                                |  |      |  |        |  |       |
| 10.2 | Welfare Measures   |   |       |         |          |      |  |  |          |       |  |  |             |       |    |                |        |      |    |           |                   |      |  |  |          |      |  |  |            |     |    |                                |  |      |  |        |  |       |
|      | a. Drinking Water  | Drinking water at the rate of 2Ltrs per person shall be provided as per the Mines Rules, 1960. It is proposed to make a borehole for providing uninterrupted supply of drinking water and other utilities.  |       |         |          |      |  |  |          |       |  |  |             |       |    |                |        |      |    |           |                   |      |  |  |          |      |  |  |            |     |    |                                |  |      |  |        |  |       |
|      | b. Sanitary facilities                                   | Semi permanent latrines & urinals shall be maintained at convenient places for use of labours as per the provisions of Rule (33) of the Mines Rules, 1960 separately for males and females. Washing facilities are also arranged as per rule (36) of the Mines Rules, 1960.   |       |         |          |      |  |  |          |       |  |  |             |       |    |                |        |      |    |           |                   |      |  |  |          |      |  |  |            |     |    |                                |  |      |  |        |  |       |
|      | c. First Aid Facility                                    | Being a small mine First Aid station as per provisions under Rule (44) of the Mines Rules 1960 will be provided with facilities as per the third schedule as prescribed. Qualified First Aid personnel should be appointed or nominated to attend emergency first aid treatment.  |       |         |          |      |  |  |          |       |  |  |             |       |    |                |        |      |    |           |                   |      |  |  |          |      |  |  |            |     |    |                                |  |      |  |        |  |       |





|    |   |   |   |
|----|---|---|---|
| d. | Labour Health                                 | : | As per Mines Rule, Periodic medical examination has been arranged for occupational health. In addition to attending medical treatment of occupational injuries under the Rule 45 (A) MR, 1960.  |
| e. | Precautionary safety measures to the Laborers | : | Safety provisions like helmet, goggles, safety shoes, Dust mask, Ear muffs etc have been provided as per circulars and amendments made for Mine labours under the guidance of DGMS being a semi-mechanized operation. Necessary training will be conducted once in a year to all the employees with the help of qualified and experienced officers to train about the safe and system at quarrying operation. |



**PART-B**

**11.0 ENVIRONMENTAL MANAGEMENT PLAN:**

| 11.1    | Existing Land Use Pattern | :                   | The existing land use pattern is given as under.   |         |          |                     |  |    |                      |     |        |    |                |     |        |    |       |     |        |    |            |     |        |    |                 |        |     |  |               |                 |                 |
|---------|---------------------------|---------------------|--|---------|----------|---------------------|--|----|----------------------|-----|--------|----|----------------|-----|--------|----|-------|-----|--------|----|------------|-----|--------|----|-----------------|--------|-----|--|---------------|-----------------|-----------------|
|         |                           |                     | <table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Land Use</th> <th>Present Area (Hect)</th> <th>Area in use during the quarrying period (Hect)</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Area under quarrying</td> <td>Nil</td> <td>0.87.0</td> </tr> <tr> <td>2.</td> <td>Infrastructure</td> <td>Nil</td> <td>0.01.0</td> </tr> <tr> <td>3.</td> <td>Roads</td> <td>Nil</td> <td>0.01.0</td> </tr> <tr> <td>4.</td> <td>Green Belt</td> <td>Nil</td> <td>0.41.0</td> </tr> <tr> <td>5.</td> <td>Unutilized Area</td> <td>1.30.0</td> <td>Nil</td> </tr> <tr> <td></td> <td><b>Total=</b></td> <td><b>1.30.0Ha</b></td> <td><b>1.30.0Ha</b></td> </tr> </tbody> </table> | Sl. No. | Land Use | Present Area (Hect) | Area in use during the quarrying period (Hect) | 1. | Area under quarrying | Nil | 0.87.0 | 2. | Infrastructure | Nil | 0.01.0 | 3. | Roads | Nil | 0.01.0 | 4. | Green Belt | Nil | 0.41.0 | 5. | Unutilized Area | 1.30.0 | Nil |  | <b>Total=</b> | <b>1.30.0Ha</b> | <b>1.30.0Ha</b> |
| Sl. No. | Land Use                  | Present Area (Hect) | Area in use during the quarrying period (Hect)   |         |          |                     |  |    |                      |     |        |    |                |     |        |    |       |     |        |    |            |     |        |    |                 |        |     |  |               |                 |                 |
| 1.      | Area under quarrying      | Nil                 | 0.87.0   |         |          |                     |  |    |                      |     |        |    |                |     |        |    |       |     |        |    |            |     |        |    |                 |        |     |  |               |                 |                 |
| 2.      | Infrastructure            | Nil                 | 0.01.0   |         |          |                     |  |    |                      |     |        |    |                |     |        |    |       |     |        |    |            |     |        |    |                 |        |     |  |               |                 |                 |
| 3.      | Roads                     | Nil                 | 0.01.0   |         |          |                     |  |    |                      |     |        |    |                |     |        |    |       |     |        |    |            |     |        |    |                 |        |     |  |               |                 |                 |
| 4.      | Green Belt                | Nil                 | 0.41.0   |         |          |                     |  |    |                      |     |        |    |                |     |        |    |       |     |        |    |            |     |        |    |                 |        |     |  |               |                 |                 |
| 5.      | Unutilized Area           | 1.30.0              | Nil  |         |          |                     |  |    |                      |     |        |    |                |     |        |    |       |     |        |    |            |     |        |    |                 |        |     |  |               |                 |                 |
|         | <b>Total=</b>             | <b>1.30.0Ha</b>     | <b>1.30.0Ha</b>  |         |          |                     |  |    |                      |     |        |    |                |     |        |    |       |     |        |    |            |     |        |    |                 |        |     |  |               |                 |                 |
| 11.2    | Water Regime              | :                   | Water table in this area is noticed at a depth of 88m and presently, the quarrying of Rough Stone is proposed upto 51m (Surface Ground Level Above Height 8m & Surface Ground Level Below Depth 43m). it will not affect the ground water depletion of this area.  |         |          |                     |  |    |                      |     |        |    |                |     |        |    |       |     |        |    |            |     |        |    |                 |        |     |  |               |                 |                 |
| 11.3    | Flora and Fauna           | :                   | Except acacia bushes, no other valuable trees are noticed in the applied lease area. Further, neither flora of botanical interest nor fauna of zoological interest is noticed in this area.  |         |          |                     |  |    |                      |     |        |    |                |     |        |    |       |     |        |    |            |     |        |    |                 |        |     |  |               |                 |                 |
| 11.4    | Climatic conditions       | :                   | Generally sub tropical climatic condition prevails throughout the year and this District receives rain both in South west and North east monsoon.  |         |          |                     |  |    |                      |     |        |    |                |     |        |    |       |     |        |    |            |     |        |    |                 |        |     |  |               |                 |                 |

|           |   | <p>The average rainfall is about 800mm to 900mm and the temperature ranges from 18°C to a maximum of 38°C during the summer.</p>   |            |         |          |            |       |              |  |  |      |          |  |  |       |                    |        |     |      |           |        |     |
|-----------|---|--|------------|---------|----------|------------|-------|--------------|--|--|------|----------|--|--|-------|--------------------|--------|-----|------|-----------|--------|-----|
| 11.5      | Human Settlement  | <p>The nearest habitation with population is observed as follows:</p> <table border="1"> <thead> <tr> <th>Direction</th> <th>Village</th> <th>Distance</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>North</td> <td>Cochimandram</td> <td></td> <td></td> </tr> <tr> <td>East</td> <td>Benricha</td> <td></td> <td></td> </tr> <tr> <td>South</td> <td>Namuppai Agraharam</td> <td>2.5kms</td> <td>370</td> </tr> <tr> <td>West</td> <td>Agraharam</td> <td>3.0kms</td> <td>710</td> </tr> </tbody> </table>  | Direction  | Village | Distance | Population | North | Cochimandram |  |  | East | Benricha |  |  | South | Namuppai Agraharam | 2.5kms | 370 | West | Agraharam | 3.0kms | 710 |
| Direction | Village   | Distance   | Population |         |          |            |       |              |  |  |      |          |  |  |       |                    |        |     |      |           |        |     |
| North     | Cochimandram  |  |            |         |          |            |       |              |  |  |      |          |  |  |       |                    |        |     |      |           |        |     |
| East      | Benricha  |  |            |         |          |            |       |              |  |  |      |          |  |  |       |                    |        |     |      |           |        |     |
| South     | Namuppai Agraharam  | 2.5kms   | 370        |         |          |            |       |              |  |  |      |          |  |  |       |                    |        |     |      |           |        |     |
| West      | Agraharam   | 3.0kms   | 710        |         |          |            |       |              |  |  |      |          |  |  |       |                    |        |     |      |           |        |     |
| 11.6      | Plan for Air, Dust Suppression  | <p>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. For the sampling of air, high volume air sampler (Model VFC-PM10) was used (10 meter above and 5 meter away from road) and the particulates were collected on what man GFA glass fiber filters dried in a hot air oven at 105°C for 1hr and weighed. The average flow rate was about 1.1 cubic meters.</p>  |            |         |          |            |       |              |  |  |      |          |  |  |       |                    |        |     |      |           |        |     |
| 11.7      | Plan for Noise Control  | <p>Quarrying of Rough Stone will be carried out by drilling and Proposed Control Blasting by using low power explosives, and hence, noise will be very Minimum. However, periodical noise level monitoring will be carried out to check the noise level in and around the quarry site. In order to assess the extent of noise pollution due to vehicular traffic different zones viz., Silence zone, Residential Zone, Commercial zone, Traffic signals and Industrial zones were identified in urban and suburban areas of Krishnagiri. Adequate Number of observations were made in all the selected sites by using the sound level meter (LT Lutron SL-4001).</p> |            |         |          |            |       |              |  |  |      |          |  |  |       |                    |        |     |      |           |        |     |
| 11.8      | Environmental Impact Assessment Statement Describing Impact on mining on the next Ten years | <p>Factors to be considered for EIA are,</p> <ol style="list-style-type: none"> <li>1. Dust generation,</li> <li>2. Land degradation</li> <li>3. Stabilization and vegetation of dumps</li> <li>4. Adverse effect on water regime</li> <li>5. Socio economic benefits arising out of Mining.</li> <li>6. Noise and Vibration.</li> </ol>   |            |         |          |            |       |              |  |  |      |          |  |  |       |                    |        |     |      |           |        |     |

|       |   |   |  |
|-------|---|---|--|
|       | a. Dust   | : | Dust is expected to be generated from drilling, hauling roads; place of excavation etc and will be controlled by periodical wetting of lands   |
|       | b. Land degradation   | : | Land degradation is by removal of fertile soil due to mining. Afforestation will be started during operation itself.   |
|       | c. Stabilization and vegetation of dumps  | : | The topsoil will be spread over the non-active dumps along the slope and edges to plant tree saplings to form vegetal cover over the dumps. Such vegetal cover will prevent erosion of dumps during rainy seasons.   |
|       | d. Socio economic benefits arising out of mining  | : | <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>  |
|       | e. Noise and vibration  | : | Since, no deep hole blasting is proposed, small dia explosives are used for breaking the hard rock and boulders, the noise and vibration will be very minimum and are within the permissible limits.   |
| 11.9  | Proposal for Waste Management   | : | There is no requirement for waste management as there is 100% recovery percentage.   |
| 11.10 | Proposal of Reclamation of Land affected during mining activities and at the end of mining. | : | The present mining is proposed to a calculated of 51m (Surface Ground Level Above Height 8m & Surface Ground Level Below Depth 43m). 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 rough stone persist still at deeper level. |
| 11.11 | Program for Afforestation   | : | Trees like tamarind, casuarinas etc will be planted along the lease boundary and avenues as well as over non active dumps at a rate 50 trees per annum with an interval of 5m. The rate of survival expected to be 80% in this area.   |

|       |   |                     |
|-------|---|---------------------|
| 11.12 | Proposed Financial Estimate / Budget for (EMP) Environment Management |                     |
|       | <b>A. Fixed Asset Cost:</b>   |                     |
|       | Land Cost   | : Rs. 1,30,00,000/- |
|       | Labour Shed   | : Rs. 70,000/-      |
|       | Sanitary Facility   | : Rs. 60,000/-      |
|       | Fencing cost  | : Rs. 60,000/-      |
|       | Total=  | : Rs.1,31,90,000/-  |
|       | <b>B. Operational Cost:</b>   |                     |
|       | <b>Machinery cost</b>   | : Rs.30,00,000/-    |
|       | <b>C. EMP Cost:</b>   |                     |
|       | 1. Drinking water facility  | : Rs. 1,10,000/-    |
|       | 2. Safety kits  | : Rs. 75,000/-      |
|       | 3. Water sprinkling   | : Rs. 50,000/-      |
|       | 4. Afforestation  | : Rs. 25,000/-      |
|       | 5. Water quality test   | : Rs. 30,000/-      |
|       | 6. Air quality test   | : Rs. 30,000/-      |
|       | 7. Noise/vibration test   | : Rs. 30,000/-      |
|       | Total=  | : Rs. 3,50,000/-    |
|       | <b>Total Project cost(A+B+C)</b>                                      | : Rs.1,65,40,000/-  |



### 12.0 MINE CLOSURE PLAN:

|      |   |  |
|------|---|--|
| 12.1 | Steps proposed for phased restoration, reclamation of already mined out area. | : The present mining is proposed to a calculated of 51m (Surface Ground Level Above Height 8m & Surface Ground Level Below Depth 43m). 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 using Barbed wire fencing. Green belt development at the rate of 50 trees per year will be proposed.  |

|      |  |   |
|------|--|---|
| 12.3 | Mitigation measures to be undertaken for safety and restoration/ reclamation of the already mined out area | : It is a fresh Rough stone quarry with 51m (Surface Ground Level) & Surface Ground Level below Depth 43m. Ten years and hence, no need of restoration / reclamation of the applied area. |
|------|--|---|



**13.0 ANY OTHER DETAILS INTEND TO FURNISH BY THE APPLICANT**

- (i) Permission will be obtained from the Director of Mines Safety for the extracting the Rough Stone from the Boundary barriers and from slopes.
- (ii) Care and precautionary measures will be taken for the safety of workers as per Rules and Acts.
- (iii) The applicant will endeavour every attempt to quarry the Rough Stone economically without any wastage and to improve the environment and ecology.
- (iv) Accordingly, Mining Plan is prepared under Rule 8(6)(b) Tamil Nadu Minor Mineral Concession Rules, 1959 & As per Amendment under Rule 41 & 42 by incorporating the conditions imposed in the precise area communication letter and by incorporating all the details proposed in the letter to obtain environment clearance from State Level Environmental Impact Assessment Authority.
- (v) This Mining Plan is prepared for the Applied Rough Stone Quarry for a period of Ten Years.

*S. Mathan Prakash*  
**S. MATHAN PRAKASH, M.Sc., M.Phil.,**  
**RQP/CMM/270/2016/A**

This Mining Plan is approved based on guidelines / instruction issued and in corporation of the particulars specified in the letter Rec. No. 519/2016 Dated 06.2.2016 of the Deputy Director of Geology and Mining, Krishnagiri and subject to further fulfillment of the conditions laid down under Tamil Nadu Minor Mineral Concession Rules, 1959 and Minor Mineral Conservation and Development Rule 2010.

*S. Mathan Prakash*  
**DEPUTY DIRECTOR**  
**Geology and Mining,**  
**Collectorate, Krishnagiri.**  
*06/02/2016*

This Mining Plan is approved subject to the conditions / Stipulation indicated in the Mining Plan Approval  
 Letter Rec. No. 539/2016 Dated 06.2.2016

குறிப்பாணை

பொருள்

கனிமங்களும் குவாரிகளும்- சிவக்கிமப் - சா.நாரண வணிகர்கள் - கிருஷ்ணகிரி மாவட்ட புவியியல் மற்றும் சுரங்கத் துறை அலுவலகம் - புலங்களில் அமைந்துள்ள கற்குவா - மீட்டர் - தளம் - புல முறையில் குத்தகை வழங்குவது தொடர்பாக தாசில்தர் வெளியீடு - ஓசூர் வட்டம் - கோபனப்பள்ளி கிராமம் - புல எண்.381(பகுதி-1) 1.30.0 ஹெக்டேர் பரப்பில் 05.04.2022 அன்று டெண்டருடன் இணைந்த ஏலம் நடத்தப்பட்டது - டெண்டர் விண்ணப்பத்தில் அதிகபட்ச குத்தகை தொகை குறிப்பிட்ட திரு.ரகு என்பவருக்கு டெண்டர் உறுதி செய்யப்பட்டது - விதிகளின்படி குத்தகை தொகை முழுவதும் செலுத்தப்பட்டது - குத்தகை உரிமம் வழங்கிட வேண்டி ஏற்பளிக்கப்பட்ட சுரங்கத் திட்டம் மற்றும் சுற்றுச் சூழல் ஆணைய முன் அனுமதி பெற்று சமர்ப்பிக்கக் கோருதல்- தொடர்பாக.

பார்வை:

1. வட்டாட்சியர், ஓசூர் கடிதம் ந.க.எண்.426/2022/அ2 நாள்:22.01.2022.
2. வருவாய் கோட்டாட்சியர் ஓசூர் அறிக்கை ந.க.எண்.103/2022/பி2 நாள்:04.02.2022.
3. வன உயிரின காப்பாளர், ஓசூர் கடிதம் ந.க.எண்.261/2022/எல் நாள்:10.02.2022.
4. கிருஷ்ணகிரி மாவட்ட புவியியல் மற்றும் சுரங்கத் துறை நில அளவர், தனி வருவாய் ஆய்வாளர் மற்றும் உதவி புவியியலாளர் (கனிமம்) புலதணிக்கை அறிக்கை நாள்:11.02.2022.
5. கிருஷ்ணகிரி மாவட்ட அரசிதழ் சிறப்பு வெளியீடு எண்.15 நாள்:14.03.2022 மற்றும் எண்.20 நாள்:28.03.2022.
6. தி இந்து செய்தி நாளிதழில் விளம்பரம் நாள்:17.03.2022.
7. தி இந்து, தினகரன், தினமலர் மற்றும் காலைக்கதிர் ஆகிய செய்தி நாளிதழ்களில் 29.03.2022 அன்று வெளியிடப்பட்ட மாவட்ட ஆட்சியரின் அறிவிக்கை.
8. திரு.ரகு என்பவர் டெண்டர் விண்ணப்பம் நாள்:04.04.2022.
9. திரு.என்.அண்ணையாரெட்டி மற்றும் இரண்டு நபர்களின் ஏல விண்ணப்பங்கள் நாள்:05.04.2022.
10. திரு.ரகு என்பவரது கடிதம் நாள் :18.04.2022.
11. தொடர்புடைய ஆவணங்கள்.

பார்வையில் காணும் கடிதங்களின்பால் கனிவான கவனம் வேண்டப்படுகிறது.

2. கிருஷ்ணகிரி மாவட்டம், ஓசூர் வட்டம், கோபனப்பள்ளி கிராமம் அரசு புல எண்.381(பகுதி-1) விஸ்.1.30.0 ஹெக்டேர் பரப்பில் அமைந்துள்ள சாதாரண கற்குவாரியை டெண்டர் / பொது ஏலத்திற்கு கொண்டு வர உரிய நில இருப்பு அறிக்கை வருவாய் கோட்டாட்சியரிடம் கோரப்பட்டதில், ஓசூர் வட்டாட்சியர், ஓசூர் வருவாய் கோட்டாட்சியர் மற்றும் கிருஷ்ணகிரி மாவட்ட புவியியல் மற்றும் சுரங்கத் துறை நில அளவர், தனி வருவாய் ஆய்வாளர் மற்றும் உதவி புவியியலாளர் (கனிமம்) ஆகியோர் தணிக்கை மேற்கொண்டு கிருஷ்ணகிரி மாவட்டம், ஓசூர் வட்டம், கோபனப்பள்ளி கிராமம் அரசு புறம்போக்கு தீ.ஏ.த.தரிசு புல எண்.381(பகுதி-1) விஸ்.1.30.0 ஹெக்டேர் பரப்பு பூமியினை குத்தகை உரிமம் வழங்கிட விதிகளின்படி மேற்கண்ட புலம் தகுதிவாய்ந்தது என்பதால் டெண்டருடன் இணைந்த ஏலத்தின் மூலம் உரிமம் வழங்கிட பரிந்துரை செய்துள்ளனர். வன உயிரின காப்பாளர், ஓசூர் மேற்கண்ட புலங்கள் விதிகளின்படி அருகில் உள்ள காப்பு காடுகளுக்கு வரையறுக்கப்பட்ட பாதுகாப்பு தொலைவிற்கு அப்பால் அமைந்துள்ளதாக அறிக்கை அளித்துள்ளார்.

3. அதன் அடிப்படையில், கிருஷ்ணகிரி மாவட்டத்தில் அரசு புறம்போக்கு நிலங்களில் உள்ள சாதாரண கற்களை வெட்டியெடுத்துச் செல்ல உரிமம் வழங்க ஏதுவாக கிருஷ்ணகிரி மாவட்ட அரசிதழ் சிறப்பு வெளியீடு எண்.15 நாள்:14.03.2022 மற்றும் எண்.20 நாள்:28.03.2022-ன்படி பிரசுரம் செய்யப்பட்டது. அதன்படி 04.04.2022-ம் நாள் பிற்பகல் 05.00 மணிக் குள் மூடி முத்திரை இடப்பட்ட டெண்டர் மனுக்களை அளிக்க இறுதி நாளாக அறிவித்து, 05.04.2022 அன்று பொது ஏலம் நடத்தப்பட்டு டெண்டர் மனுக்கள் ஏலத்தில் கலந்து கொண்டவர்கள் முன்னிலையில் திறக்கப்பட்டன.

4. மேற்கண்ட அரசிதழில் விளம்பரம் செய்யப்பட்டிருந்த குவாரிப்பட்டியலில் வரிசை எண்.(11), ஓசூர் வட்டம், கோபனப்பள்ளி கிராமம், அரசு புறம்போக்கு (தீ.ஏ.த.தரிசு) புல எண்.381(பகுதி-1)-ல் 1.30.0 ஹெக்டேர் பரப்பில் உள்ள உள்ள கற்குவாரிக்கு டெண்டர் / பொது ஏலத்தில் கலந்து கொண்டவர்களில் திரு.ரகு டெண்டரில் குறிப்பிட்டிருந்த தொகை ரூ.1,30,00,000/- மாவட்ட ஆட்சித் தலைவர் அவர்களால் நிர்ணயம் செய்யப்பட்டிருந்த ஏலத் தொகையை விட அதிகமாக இருந்ததால் அவருக்கு டெண்டர் ஊர்ஜிதம் செய்யப்பட்டது. மேற்கண்ட டெண்டர்தாரர் மொத்த குத்தகை தொகையையும் விதிகளின்படி 19.04.2022-க்குள் செலுத்தியுள்ளார்.

5. எனவே, டெண்டர்தாரர் டெண்டர்தொகை முழுவதும் செலுத்திவிட்டபடியால், மேற்படி கற்குவாரி ஏலமானது விதிகளின்படி உயர்நதபட்ச டெண்டர் கோரிய திரு.ரகு என்பவருக்கு உறுதி செய்யப்படுகிறது. மேலும், மேற்படி நபருக்கு ஓசூர் வட்டம், கோபனப்பள்ளி கிராமம், அரசு புறம்போக்கு (தீ.ஏ.த.தரிசு) புல எண்.381(பகுதி-1)-ல் 1.30.0 ஹெக்டேர் பரப்பு புலத்தில் பத்து (10) ஆண்டுகளுக்கு குவாரி உரிமம் வழங்க

ஏதுவாக 1959ம் வருடத்திய தமிழ்நாடு சிறுகனிம விநியோக கமிஷன் நிபந்தனைகளுடன் ஏற்பளிக்கப்பட்ட சிறுகனிம விதிகள், விதி எண்.42-ன்படி மாவட்ட சிறுகனிம விநியோக கமிஷன் ஆணைய இசைவு பெற்று சமர்ப்பிக்கும் பட்சத்தில் சாதாரண விலை வழங்கப்படும் என்ற விவரம் இதன் மூலம் தெரிவிக்கப்படுகிறது.



**நிபந்தனைகள்:**

- 1959ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள், அட்டவணை-II-ல் கண்டுள்ளபடி குவாரி செய்யப்படும் கனிமங்களுக்குரிய சீனியரேஜ் தொகை அவ்வப்போது செலுத்தி கனிமம் கொண்டு செல்லப்பட வேண்டும்.
- அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர், அரசு புறம்போக்கு புலங்களுக்கு 10 மீட்டர் மற்றும் இது நிலையான அமைப்புகளுக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரிப் பணி மேற்கொள்ள வேண்டும்.
- விதிகளின் படி ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தினை உரிய காலத்திற்குள் சமர்ப்பிக்க வேண்டும்.
- குவாரி உரிமம் வழங்க உள்ள பகுதிக்கு சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் முன் அனுமதி பெற்று சமர்ப்பிக்கும் பட்சத்தில் மட்டுமே குவாரி உரிமம் வழங்கப்படும்.

இணைப்பு: குத்தகை உரிமம் வழங்க பரிந்துரைக்கப்பட்ட புல வரைபடம்.

மும்/- வி.ஜெய சந்திர பாணு ரெட்டி  
மாவட்ட ஆட்சித் தலைவர்,  
கிருஷ்ணகிரி.

// உண்மை நகல்// உத்தரவுபடி//

மாவட்ட ஆட்சியுத்காக,  
கிருஷ்ணகிரி

பெறுநர்,  
திரு.ரகு,  
த/பெ.முராராமைய்யா,  
எண்.6/202, அனுசோனை - கிராமம்,  
பெம்மதாதனூர் - அஞ்சல்,  
தேன்கனிக்கோட்டை வட்டம்,  
கிருஷ்ணகிரி மாவட்டம்.

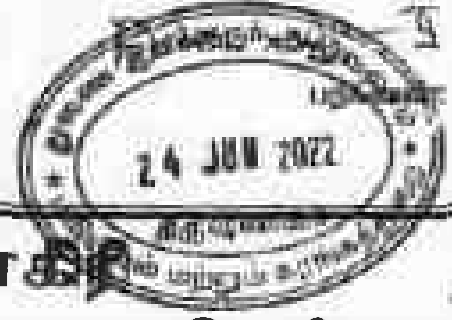
4/5/22

S. MATHAN PRAKASH, M.Sc., M.Phil.,  
RQPICNN/270/2016/A

- நகல்: 1. இயக்குநர், புவியியல் மற்றும் சுரங்கத் துறை, சென்னை  
2. தமிழ்நாடு மாநில சுற்றுச்சூழல் மதிப்பீட்டு ஆணையம், சென்னை.



©  
தமிழ்நாடு அரசு  
2022



# கிருஷ்ணகிரி மாவட்ட அரசிதழ்

சிறப்பு வெளியீடு

ஆணையின்படி வெளியிடப்பட்டது

கிருஷ்ணகிரி, மார்ச் 14, 2022  
[பிலவ, மாசி 30 - திருவள்ளூர் ஆண்டு 2053]

[எண் 15

## மாவட்ட ஆட்சியர் அறிவிக்கை

[ந. க. எண். 180/2022/(கனிமம்), நாள்: 10.03.2022]

சாதாரண கற்குவாரி ஒப்பந்தப்புள்ளி (டெண்டர்) மற்றும் ஏலம் குறித்த அறிவிப்பு

|                                      |   |                          |
|--------------------------------------|---|--------------------------|
| டெண்டர் விண்ணப்பங்கள் பெற கடைசி நாள் | : | 30.03.2022               |
|                                      |   | பிற்பகல் 05.00 மணி வரை   |
| பொது ஏலம் நடைபெறும் நாள்             | : | 31.03.2022               |
|                                      |   | முற்பகல் 10.30 மணி முதல் |

1. கிருஷ்ணகிரி மாவட்டத்தில் அரசு புறம்போக்கு நிலங்களில் அமைந்துள்ள சாதாரண கற்குவாரிகளிலிருந்து பொது உபயோக பயன்பாட்டிற்காக சாதாரண கற்களை வெட்டியெடுத்துச் செல்வதற்கு தனிநபர் மற்றும் தனியார் நிறுவனங்களுக்கு குவாரி குத்தகை உரிமம் வழங்க மூடி முத்திரையிடப்பட்ட ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்கள் வரவேற்கும் மற்றும் ஏல அறிவிப்பு.
2. 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகளின் விதி 8 உள்விதி (1)-ன்படி கிருஷ்ணகிரி மாவட்டத்தில் இவ்வறிக்கையுடன் இணைக்கப்பட்ட அட்டவணையில் குறிப்பிடப்பட்டுள்ள அரசு புறம்போக்கு நிலங்களில் அமைந்துள்ள சாதாரண கற்குவாரிகளிலிருந்து சாதாரணகற்களை குவாரி செய்து எடுத்துச் செல்ல டெண்டருடன் இணைந்த ஏல முறையில் குவாரி குத்தகை உரிமம் வழங்க மூடி முத்திரையிடப்பட்ட 03 பிரதிகள் கொண்ட டெண்டர் விண்ணப்பங்கள் கிருஷ்ணகிரி மாவட்ட ஆட்சியரால் வரவேற்கப்படுகின்றன.
3. இந்த அறிவிக்கையின்படி விண்ணப்பிக்கப்படும் ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பம் 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகளின் பின் இணைப்பு VI-ல் குறிப்பிடப்பட்டுள்ள படிவத்தில் இருக்க வேண்டும் மாதிரி விண்ணப்பப்படிவம் இந்த மாவட்ட அரசிதழ் சிறப்பு வெளியீட்டின் இணைப்பில் பிரசுரிக்கப்பட்டுள்ளது. இணைப்பில் பிரசுரிக்கப்பட்டுள்ள படிவம் VI-ன்படி பூர்த்தி செய்து அனுப்பப்படாத விண்ணப்பங்கள் ஏற்றுக் கொள்ளப்படமாட்டாது.
4. ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்களுடன் இணைத்து அனுப்பப்பட வேண்டிய இணைப்புகளின் விவரங்கள் மற்றும் குத்தகை நிபந்தனைகள் பற்றிய விவரங்கள் குறிப்பிடப்பட்டுள்ள அரசிதழ், கிருஷ்ணகிரி மாவட்ட ஆட்சியர் அலுவலகம், கிருஷ்ணகிரி புவிபியல் மற்றும் சுரங்கத்துறை துணை இயக்குநர் அலுவலகம், கிருஷ்ணகிரி மாவட்டத்திலுள்ள அனைத்து சார் ஆட்சியர்/ வருவாய் கோட்டாட்சியர், வட்டாட்சியர் மற்றும் ஊராட்சி ஒன்றிய ஆணையர் அலுவலகங்களின் தகவல் பலகையில் விளம்பரம் செய்யப்படும்.

5. அட்டவணையில் குறிப்பிட்டுள்ள குவாரிகளின் குத்தகை காலமானது குத்தகை ஒப்பந்த பத்திரம் நிறைவேற்றப்பட்ட நாளிலிருந்து ஏற்கனவே குவாரி குத்தகை வழங்கப்பட்டு குத்தகை காலம் முடிவுற்ற சாதாரண கற்குவாரி இனங்களுக்கு 05 ஆண்டுகளும், புதியதாக சேர்க்கப்பட்டுள்ள (virgin) ஏற்கனவே குவாரி பணி நடைபெறாத சாதாரண கற்குவாரி இனங்களுக்கு 10 ஆண்டுகளும் ஆகும்.
6. ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பதாரர் தனது விண்ணப்பத்தில் குவாரியின் மொத்த குத்தகை காலத்திற்குமான ஒரே தவணையில் செலுத்தக்கூக குத்தகை தொகையை உரிய இடத்தில் எண்ணிலும் எழுத்திலும் தெளிவாக குறிப்பிட வேண்டும்.
7. மாவட்ட அரசிதழ் சிறப்பு வெளியீட்டின்படி அரசிதழில் கண்டுள்ள நிபந்தனைகளின்படி பூர்த்தி செய்யப்பட்ட ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்களை அனைத்து இணைப்புகளுடன் கவரில் வைத்து மூடி முத்திரையிட்டு துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கிருஷ்ணகிரி என்ற விலாசமிட்டு நேரிலோ அல்லது ஒப்புக்கை பெறத்தக்க பதிவஞ்சல் மூலமாகவோ மாவட்ட ஆட்சியர் அலுவலக வளாக தளத்தளத்தில் அறை எண்.30ல் உள்ள புவியியல் மற்றும் சுரங்கத்துறை, துணை இயக்குநர் அலுவலகத்தில் 2022ம் ஆண்டு மார்ச் திங்கள் 30-ம் நாள் மாலை 5.00 மணிக்குள் கிடைக்கும்படி அனுப்பப்பட வேண்டும். கவரின் மீது விண்ணப்பிக்கும் குவாரியின் விலரம் மற்றும் அட்டவணையில் குறிப்பிட்டுள்ள குவாரியின் வரிசை எண் போன்றவற்றை தவறாமல் குறிப்பிட வேண்டும்.
8. மேலே குறிப்பிட்ட காலக்கெடுவிற்குள் வரப்பெற்ற விண்ணப்பங்கள் மட்டும் ஏலம் நடைபெறும் நாளன்று ஆலோசகியிருக்கும் சம்பந்தப்பட்ட குவாரிக்கு விண்ணப்பித்துள்ள விண்ணப்பதாரர்கள் மற்றும் பொது ஏலத்தில் கலந்து கொள்பவர்கள் முன்னிலையில் அட்டவணைகளில் உள்ள குவாரிகளின் வரிசைகளின் முறையே முதலில் பொது ஏலமும் பின்னர் ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்கள் திறப்பும் மேற்கொள்ளப்படும்.
9. மேலே குறிப்பிட்ட நாளில் ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்கள் திறப்பதற்கு முன்னர் ஒவ்வொரு குவாரிக்கும் தனித்தனியே பொது ஏலம் விடப்படும். ஏல நடவடிக்கை முடிவு பெற்ற பின்பு சம்பந்தப்பட்ட குவாரிக்கு வரப்பெற்ற டெண்டர் விண்ணப்பங்கள் பிரித்து பரிசீலிக்கப்படும். டெண்டர் விண்ணப்பம் மூலம் கோரப்பட்டுள்ள உயர்ந்தபட்ச டெண்டர் தொகை அல்லது ஏலம் மூலம் கோரப்பட்ட உயர்ந்தபட்ச குத்தகை தொகை இதில் எது அதிகமோ அத்தொகையே சம்பந்தப்பட்ட குவாரிக்கான உயர்ந்தபட்ச குத்தகை தொகையாக எடுத்துக்கொள்ளப்பட்டு குவாரி குத்தகை உரிமம் வழங்குதல் சம்பந்தமாக நடவடிக்கைகள் மேற்கொள்ளப்படும்.
10. மேற்கண்டபடி வரப்பெறும் டெண்டர் / ஏல விண்ணப்பங்கள், 1959ஆம் ஆண்டு தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள், சுரங்கங்கள் மற்றும் கனிமங்கள் (மேம்படுத்துதல் மற்றும் முறைப்படுத்துதல்) சட்டம் 1957 மற்றும் இந்த ஏல அறிவிப்பில் குறிப்பிட்டுள்ள முக்கிய நிபந்தனைகளின்படி பரிசீலிக்கப்பட்டு அவற்றின்மீது தக்க ஆணைகள் பிறப்பிக்கப்படும்.
11. இந்த மாவட்ட அரசிதழ் அறிவிக்கை பிரசுரிக்கப்பட்ட பின்னரோ, குத்தகை உறுதி ஆணை பிறப்பிப்பதற்கு முன்னரோ, நிபந்தனைகளை மாற்றவோ அல்லது ரத்து செய்யவோ மற்றும் பட்டியலில் கண்டுள்ள எல்லா குவாரிகளின் குத்தகை உரிமம் கோரும் ஒப்பந்தப்புள்ளி மனுக்களை எக்காரணமும் கூறாமல் ரத்து செய்யவோ அல்லது மேற்படி மனுக்களை மூடி முத்திரையிடப்பட்ட உறைகளை திறக்கும் நாள் நேரம் மற்றும் ஏலம் நடத்தும் நாள் மற்றும் நேரம் ஆகியவைகளை தள்ளிவைக்கவோ நிறுத்திவைக்கவோ மாவட்ட ஆட்சியருக்கு முழு அதிகாரம் உண்டு. ஏதாவது காரணத்தினால் ஒத்திவைக்க நேர்ந்தால் அதற்கு மனுதாரர்கள் யாருக்கும் நஷ்டஈடு கோர உரிமை இல்லை.
12. விண்ணப்பதாரர் ஒவ்வொரு குவாரிக்கும் தனித்தனியே ஒரு ஒப்பந்தப்புள்ளி விண்ணப்பத்தை உரிய இணைப்புகளோடு அனுப்ப வேண்டும். ஒரே விண்ணப்பத்தில் ஒரு குவாரிக்கு மேல் பல குவாரிகளை குறிப்பிட்டு அனுப்பும் விண்ணப்பம் நிராகரிக்கப்படும்.



13. ஒப்பந்தப்புள்ளி விண்ணப்பம் அனுப்புவதற்கு முன்/ ஏலத்தில் கலந்து கொள்ளும்படி அறிவிக்கையுடன் இணைக்கப்பட்டுள்ள பட்டியலில் கண்ட சம்பந்தப்பட்ட தனது சொந்த செலவிலேயே நேரில் பார்வைபிட்டு பாதை வசதி கனிமத்தின் தரம் ஆராய்ந்து பின்னர் குத்தகை உரிமம் கோரி விண்ணப்பிக்க வேண்டும் மற்றும் ஏலத்தில் கலந்து கொள்ளவேண்டும். ஆணை வழங்கப்பட்ட பின் குவாரி அமைந்துள்ள புல எண், பரப்பு, குவாரிகளின் நான்கு எல்லைகள், பாதை வசதி, கனிமத்தின் தரம் கனிமத்தின் இருப்புக்குறித்து எவ்வித தாவாலும் செய்ய குத்தகைதாரருக்கு உரிமை கிடையாது.
14. 1959-ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகளில் கண்டுள்ள அனைத்து சாராம்சங்களையும் மாவட்ட அரசிதழில் உள்ள அனைத்து நிபந்தனைகளையும் நன்கு தெரிந்து கொண்டபின் ஒப்பந்தப்புள்ளி விண்ணப்பங்களை உரிய இணைப்புகளோடு அனுப்பவேண்டும். விண்ணப்பம் அனுப்பிய பிறகு விதிகள் மற்றும் குத்தகை நிபந்தனைகள் பற்றி சரியாக தெரியாது என மனுதாரர் வாதிட்டால் அது ஏற்றுக்கொள்ளப்பட மாட்டாது.
15. ஒப்பந்தப்புள்ளி (டெண்டர்) மற்றும் ஏல நிபந்தனைகள் :
- 1) ஒவ்வொரு குவாரிக்கும் இந்த அரசிதழின் பிற்சேர்க்கையில் பிரகரிக்கப்பட்டுள்ள இணைப்பு VI-ல் காணும் மாதிரி விண்ணப்ப படிவத்தின்படி தனித்தனி விண்ணப்பங்களில் விண்ணப்பிக்க வேண்டும்.
  - 2) நடப்பில் ஈரநில அளவில் ஒரு நபருக்கு அதிகபட்சம் இரண்டு குவாரிகளுக்கு மட்டுமே குத்தகை உரிமம் வழங்கப்படும்.
  - 3) இந்த அரசிதழின் அட்டவணையில் குறிப்பிட்டுள்ள குவாரிகளின் குத்தகை காலமானது, குத்தகை ஒப்பந்த பத்திரம் நிறைவேற்றப்பட்ட நாளிலிருந்து ஏற்கனவே குவாரி குத்தகை வழங்கப்பட்டு குத்தகை காலம் முடிவுற்ற சாதாரண கற்குவாரி இனங்களுக்கு 05 ஆண்டுகளும் புதியதாக சேர்க்கப்பட்டுள்ள சாதாரண கற்குவாரி இனங்களுக்கு (Virgin quarry) 10 ஆண்டுகளும் ஆகும். குத்தகை ஒப்பந்தப்பத்திரத்தில் குறிப்பிடப்படும் இறுதி நாளில் குத்தகை காலம் முடிவடையும், குத்தகை காலம் எக்காரணத்தைக்கொண்டும் நீட்டிக்கப்பட மாட்டாது.
  - 4) ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பத்துடன் கீழ்க்கண்டவற்றை இணைத்து அனுப்ப வேண்டும்.
    - (அ) திரும்ப வழங்க இயலாத விண்ணப்பக் கட்டணமாக ரூ.1500/-க்கான கேட்பு வரைவோலையை (டிமாண்ட் டிராப்ட்) ஏதேனும் ஒரு தேசிய மயமாக்கப்பட்ட வங்கியில் துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கிருஷ்ணகிரி அவர்களின் பதவியின் பெயரில் பெற்று அல்லது அரசு கருவூலத்தில் செலுத்திய அசல் சலான் இணைக்க வேண்டும்.
    - (ஆ) பிணை வைப்புத்தொகை (Earnest money deposit) ரூ.25000/- (ரூபாய் இருபத்தைந்தாயிரம் மட்டும்)க்கான கேட்பு வரைவோலை ஏதேனும் ஒரு தேசியமயமாக்கப்பட்ட வங்கியில் துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கிருஷ்ணகிரி அவர்களின் பதவியின் பெயரில் பெற்று இணைக்க வேண்டும். தனிநபர் பெயருக்கு எடுத்து கொடுக்கப்படும் வங்கி வரைவோலை ஏற்றுக்கொள்ளப்பட மாட்டாது குத்தகை உரிமம் வழங்கப்படுபவர் செலுத்த வேண்டிய டெண்டர்/ ஏலத் தொகையில் இந்த தொகை பின்னர் சரி செய்து கொள்ளப்படும்.
    - (இ) ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பத்தில் குறித்துள்ள மொத்த குத்தகை தொகையில் 10 சதவீதத் தொகைக்கான கேட்பு வரைவோலை (டிமாண்ட் டிராப்ட்டை) துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கிருஷ்ணகிரி அவர்களின் பதவியின் பெயரில் ஏதேனும் ஒரு தேசியமயமாக்கப்பட்ட வங்கியில் பெற்று இணைக்க வேண்டும்.

(#) மாவட்ட வாரியாக கனிம வாரியாக விண்ணப்பதாரர் / ஏலதாரர் நேரடியாகவோ அல்லது பங்குதாரராகவோ தொடர்புள்ள குவாரிகள் பற்றிய கீழ்க்கண்ட விவரங்கள் அல்லது ஆணையறுதி ஆவணம் (அபிடவிட்) மூலம் தெரிவிக்க வேண்டும்.

1. விண்ணப்பதாரருக்கு கனிம குத்தகையுள்ள மாவட்ட ஆட்சியரால் வழங்கப்பட்ட செல்லத்தக்க சுரங்கவரி நிலுவை இல்லா சான்றிதழ் அல்லது சுரங்கவரி நிலுவை இல்லை என்பதற்கான ஆணையறுதி வாக்குமூலம் இணைக்கப்படவேண்டும்.
2. வருமான வரி செலுத்திய சான்றிதழ் அல்லது வருமானவரி பாக்கியில்லை என்பதற்கான ஆணையறுதி வாக்குமூலம் இணைக்கப்படவேண்டும்.
3. மற்றும்,
  - i) அனுபவத்திமிருக்கும் குவாரி குத்தகை அனுமதி பற்றி விவரம்
  - ii) ஏற்கனவே விண்ணப்பித்து இதுவரை அனுமதி வழங்கப்படாத குவாரி குத்தகை அனுமதி பற்றி விவரம்.
  - iii) தற்போது உடனிகழ்வாக விண்ணப்பிக்கும் குவாரி குத்தகை அனுமதி விவரம்.
4. மேற்கண்ட ஆணையறுதி ஆவணங்களை ரூ.20/- மதிப்புள்ள முத்திரைத்தாளில் சான்று உறுதி அலுவலரிடம் (Notary Public) கையொப்பம் பெற்று யூர்த்தி செய்யப்பட்ட விண்ணப்பத்துடன் இணைத்து சமர்ப்பிக்கப்பட வேண்டும்.
- 5) ஏலத்தில் நேரடியாக கலந்து கொள்பவர்கள் யூர்த்தி செய்யப்பட்ட விண்ணப்பப்படிவம், திருப்பித்தரப்படாத விண்ணப்பக்கட்டணம் ரூ.1500/- மற்றும் பிணை வைப்புத்தொகை ரூ.25000/- ஆகியவற்றிற்கான கேட்பு வரைவோலைகள் (டிமாண்ட் டிராப்ட்) துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கிருஷ்ணகிரி அவர்களின் பதவியின் பெயரில் ஏதேனும் ஒரு தேசியமயமாக்கப்பட்ட வங்கியில் பெற்று ஏலத்தில் நேரடியாக கலந்து கொள்வதற்கு முன்னர் ஏலம் நடத்தும் அலுவலரிடம் சமர்ப்பிக்க வேண்டும். மேலும் ஏலம் மூலம் கோரப்பட்ட உயர்ந்தபட்ச தொகை டெண்டர் மூலம் கோரப்பட்ட உயர்ந்த பட்ச தொகையைவிட அதிகமாக இருந்தால் ஏல முடிவு அறிவிப்பு செய்யப்பட்டவுடன் ஷத்தொகையில் 10 சதவீதத் தொகையை உடன் ஏலம் நடத்தும் அலுவலரிடம் தேசிய மயமாக்கப்பட்ட ஏதேனும் ஒரு வங்கியில் பெறப்பட்ட கேட்பு வரைவோலையாகவோ அல்லது ரொக்க தொகையாகவோ செலுத்தி தக்க இரசீதுகள் பெற்றுக் கொள்ள வேண்டும்.
- 6) நேரில் விண்ணப்பங்கள் அளித்தால் அதைப்பெற்றுக் கொண்டதற்கான ஒப்புதல் கடிதம் அன்றைய தினமே வழங்கப்படும். தபால் மூலம் பெறப்படும் விண்ணப்பத்திற்கு ஒப்புதல் கடிதம் மூன்று தினங்களுக்குள் தபாலில் அனுப்பி வைக்கப்படும். டெண்டர் விண்ணப்பங்கள் மூடி முத்திரையிடப்பட்ட கவர்களில் மட்டுமே அனுப்பி வைக்கப்பட வேண்டும். கவரின் மேல்புறத்தில் விண்ணப்பதாரரின் பெயர் மற்றும் விலாசம் தெளிவாக குறிப்பிடப்பட வேண்டும். கவரின் இடது மூலையில் கனிமத்தின் பெயர், குவாரி அமைந்துள்ள கிராமம், புல எண், பரப்பு அரசிதழின் இணைப்பில் பிரசுரிக்கப்பட்டுள்ள குவாரிகளின் பட்டியலில் உள்ள வரிசை எண் ஆகியவற்றை தவறாமல் குறிப்பிடவேண்டும்.



- 7) மாவட்ட ஆட்சியரால் அல்லது அவரால் அங்கீகாரம் வழங்கப்படாத அல்லது மாவட்டில் விண்ணப்பதாரர்கள் / ஏலதாரர்கள் கையொப்பமிட்ட பின்னரே ஏலம் மற்றும் சுரம்
- 8) ஏலம் மற்றும் ஒப்பந்தப்புள்ளியில் (டெண்டர்) கலந்து கொள்பவர் செலுத்தும் விண்ணப்பக் கட்டணத் தொகை ரூ.1500/- திருப்பித்தரப்படமாட்டாது. ஏலத்தில் நேரிடையாக பங்குபெறுபவர்கள் கொடுக்கும் விண்ணப்பத்தில் குத்தகை தொகையை குறிப்பிட தேவையில்லை. ஏற்கனவே டெண்டர் விண்ணப்பம் கொடுத்தவர்கள் ஏலத்தில் கலந்துகொள்ள முடியாவிடில் அவருக்குப் பதிலாக அவரால் நியமிக்கப்பட்ட வேறு ஒரு நபர் மட்டுமே நோட்டரிப்பளிக் முன்பு விண்ணப்பதாரர் மற்றும் நியமிக்கப்பட்ட நபர் கையெழுத்துக்கள் சான்றுபெறப்பட்ட உறுதிமொழி ஆவணம் (அட்டிவிட்) தாக்கல் செய்வதின் பேரில் ஏலத்தில் கலந்து கொள்ள அனுமதிக்கப்படுவார்கள்.
- 9) ஒப்பந்தப்புள்ளி விண்ணப்படிவத்தில் மனு செய்யும் நபர்கள் தாங்கள் மனு செய்யும் குவாரிக்கு குத்தகை தொகையாக செலுத்த விரும்பும் தொகையை விண்ணப்பத்தில் குறிப்பிடாமல் இருந்தாலோ அல்லது விண்ணப்ப கட்டணம், பிணைவைப்புத் தொகை, அதிகப்பட்சமாக குறிப்பிடும் குத்தகை தொகையின் 10% தொகை ஆகியவற்றிற்கான வங்கி வரைவோலைகளை விண்ணப்பத்துடன் இணைக்காமல் இருந்தாலோ, விண்ணப்பத்தாளில் விண்ணப்பதாரர் தன் கையொப்பம் செய்யாமல் இருந்தாலோ 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகளில் கூறப்பட்ட சுரங்கவரி பாக்கியின்மை சான்றிதழ், வருமானவரி பாக்கியின்மை சான்றிதழ் அல்லது இவைகளுக்காக வழங்கப்படும் ஆணை உறுதி ஆவணம் மற்றும் ஏற்கனவே மனுதாரர் நேரடியாகவோ பங்குதாரராகவோ உள்ள குவாரிகள் தொடர்பான உறுதிமொழி ஆவணம் ஆகியவற்றை இணைக்கப்படாமல் இருந்தாலோ மேற்படி ஒப்பந்தப்புள்ளி விண்ணப்பம் விதிகளின்படி நிராகரிக்கப்படும். மேற்குறிப்பிட்டவாறு விண்ணப்பம் நிராகரிக் கட்ட ஒப்பந்தப்புள்ளி விண்ணப்பதாரர்களுக்கு ஒப்பந்தப்புள்ளிகள் திறக்கும் சமயத்தில் விண்ணப்பதாரர் ஆணையில் இருந்தால் மட்டும் விண்ணப்பதாரரிடம் தக்க ஒப்புதல் பெற்று வங்கிவரைவோலை திருப்பி வழங்கப்படும். ஒப்பந்தப்புள்ளி திறக்கும் சமயத்தில் ஆணையில் இல்லாத நபருக்கு பதிவளச்சல் மூலம் வங்கி வரைவோலைகள் தனியே அனுப்பி வைக்கப்படும்.
- 10) ஒவ்வொரு குவாரிக்கும் பொது ஏலம் நடத்தி முடித்த பின்னர் சம்பந்தப்பட்ட குவாரிக் கான டெண்டர் விண்ணப்பங்கள் வருகை தந்திருக்கும் சம்பந்தப்பட்ட டெண்டர் விண்ணப்பதாரர்கள் மற்றும் ஏலதாரர்கள் அல்லது அவர்களது அதிகாரம் பெற்ற நபர்கள் முன்னிலையில் சம்பந்தப்பட்ட அதிகாரிகளால் திறக்கப்படும் ஒப்பந்தப்புள்ளி (டெண்டர்) திறக்கும் நேரத்தில் விண்ணப்பதாரர் அல்லது ஏலதாரர் அல்லது அங்கீகாரம் பெற்ற நபர் ஆணையில் இல்லாததற்கு மாவட்ட நிர்வாகம் பொறுப்பு அல்ல. இதன்பொருட்டு ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பம் திறப்பதோ ஏலம் நடத்துவதோ நிறுத்தி வைக்கப்படமாட்டாது.
- 11) அட்டவணையில் கண்ட ஒவ்வொரு குவாரிக்கும் வரப்பெற்ற மொத்த செல்லத்தக்க விண்ணப்பங்கள், விண்ணப்பதாரர்களின் பெயர்கள் ஒவ்வொரு விண்ணப்பதாரராலும் குறிப்பிடப்பட்ட அதிகப்பட்ச டெண்டர் தொகை ஆகியவற்றையும் அதிகப்பட்ச தொகைக்கு ஏலம் கேட்ட நபர் பெயர் மற்றும் அதிகப்பட்ச ஏலத்தொகை ஆகியவற்றையும் ஏலம் முடிவடைந்தவுடன் அறிவிக்கப்படும். ஏலத்தொகை, ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பத்தில் குறிப்பிடப்பட்டுள்ள குத்தகை (டெண்டர்) தொகையை விடகுறைவாக இருந்து ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்கள் மூலமாக கோரப்படும் குத்தகை தொகைகள் ஒன்றுக்கும் மேற்பட்ட விண்ணப்பதாரர்களால் ஒரே மாதிரியாக குறிப்பிடப்பட்டிருந்தால் சம்பந்தப்பட்ட விண்ணப்பதாரர்களை மட்டும் அழைத்து சம்பந்தப்பட்ட குவாரிக்கு மட்டும் மறுகேட்ட மூலம் உயர் குத்தகை தொகை பெற நடவடிக்கை எடுக்கப்படும். அதிகப்பட்ச குத்தகைத் தொகை கோரும் நபர் அதிகப்பட்ச ஏலத்தொகை கோரிய நபராக அறிவிக்கப்படுவார். ஒவ்வொரு குவாரிக்கும் பெறப்பட்ட ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்களில் குறிப்பிடப்பட்டுள்ள அதிகப்பட்ச குத்தகைத்தொகை அல்லது பொது ஏலத்தின் மூலம் கேட்கப்படும் அதிகப்பட்ச குத்தகைத் தொகை இவற்றில் எது அதிகமோ அந்த தொகை மேற்கண்ட குவாரிக்கு கோரப்பட்ட அதிகப்பட்ச குத்தகை தொகை என அறிவிக்கப்பட்டு அதிகப்பட்ச குத்தகைத் தொகை குறிப்பிட்டவராக அறிவிக்கப்படுவார். அதிகப்பட்சத் தொகைக்கு டெண்டர்/ஏலம் மூலம் கேட்ட நபர் என உறுதி செய்யப்பட்டவுடன், டெண்டர்/ ஏலம்

கேட்ட நபர் அவரால் அதிகபட்சமாக கோரப்பட்ட தொகையில் பத்து சதவிகித தொகையினை கேட்பு வரைவோலையாகவோ / பணமாகவோ உடனடியாக செலுத்திடவேண்டும். அவ்வாறு செலுத்தத் தவறும் பட்சத்தில் அவரது ஏலம் / டெண்டர் ரத்து செய்யப்பட்டு அவருக்கு அடுத்தடியாக அதிகபட்சத்தொகை கேட்ட நபருக்கு வாய்ப்பளிக்கப்படும். அவரும் பத்து சதவிகித தொகையினை செலுத்த தவறும் பட்சத்தில் இதே நடைமுறையை தொடர்ந்து நடத்துவது அல்லது மறு ஏலம் விட ஆணையிடுவது போன்றவை மாவட்ட ஆட்சியரின் இறுதி முடிவு மற்றும் அதிகார வரம்பிற்கு உட்பட்டதாகும். அதிகபட்ச ஏலம் / டெண்டர் கேட்ட நபரை தவிர மற்றவர்களுக்கு அவர் தாம் செலுத்திய பிணைவைப்பதொகை திரும்ப தரப்படும். ஏலம் / டெண்டர் உறுதி செய்யப்பட்ட நபர் மீதமுள்ள 90 சதவிகித தொகையினை பதினைந்து (15) தினங்களுக்குள் செலுத்திவிட வேண்டும், தவறும் பட்சத்தில் ஏலம் / டெண்டர் ரத்து செய்யப்பட்டு அவர் செலுத்திய அனைத்து தொகைகளும் பறிமுதல் செய்து அரசு கணக்கில் சேர்க்கப்படும்.

12) (அ) சிறப்பு நிபந்தனைகள்:

- (i) இந்த டெண்டர் மற்றும் எழுமுறையில் கலந்து கொள்ளும் விண்ணப்பதாரர்கள் அனைவரும் இந்திய அரசின் வருமான வரித்துறையினரால் வழங்கப்படும் நிரந்தர கணக்கு எண் (PAN - CARD) அட்டையை பெற்றிருக்க வேண்டும் அல்லது வருமான வரி துறையினரிடமிருந்து பெற்று சமர்ப்பிக்க வேண்டும்.
- (ii) இந்த நிரந்தர கணக்கு எண்ணை சமர்ப்பித்து டெண்டர் மற்றும் ஏலம் கோரும் தொகைக்கு 2% வருமான வரியை கிருஷ்ணகிரி மாவட்ட புவியியல் மற்றும் சுரங்கத்துறை, துணை இயக்குநர் அவர்களுக்கு வருமான வரித்துறையினரால் அளிக்கப்பட்டுள்ள T.AN.No.CHE05905E-ன் கீழ் உரிய வருமான வரித்துறை செலுத்துச்சீட்டின் மூலம் செலுத்த வேண்டும்.
- (iii) மேலும் குத்தகை உரிமம் பெற்ற பின்னர் கனிமங்களை எடுத்துச் செல்ல போக்குவரத்து அனுமதி சீட்டுபெற ஒவ்வொரு முறையும் செலுத்துகின்ற சீனியரேஜ் தொகையின் மீது 2% வருமான வரி தொகை செலுத்தவேண்டும்.
- (iv) மேலும் குத்தகை உரிமம் பெற்ற பின்னர் கனிமங்களை எடுத்துச் செல்ல போக்குவரத்து அனுமதி சீட்டு பெற ஒவ்வொருமுறையும் செலுத்துகின்ற சீனியரிஜே தொகையின் மீது 10 சதவிகித தொகையை கிருஷ்ணகிரி மாவட்ட கனிம அறக்கட்டளை நிதியாக கிருஷ்ணகிரி பாரத மாநில வங்கி (State Bank of India) கணக்கு எண்,37243080996-ல் செலவன் மூலம் செலுத்த வேண்டும்.
- (v) அரசாணை எண்.23 தொழில் (எம்.எம்.சி.1) துறை நாள்:23.02.2022-ன்படி பசுமை வரியாக உள்மாநிலங்களில் கனிமம் கொண்டு செல்வதற்கு சீனியரேஜ் தொகைக்கு 10 சதவிகிதம் அல்லது வெளி மாநிலங்களுக்கு கனிமம் கொண்டு செல்வதற்கு சீனியரேஜ் தொகைக்கு 20 சதவிகிதம் உரிய அரசு கணக்கில் செலுத்தி கனிமம் கொண்டு செல்லப்பட வேண்டும்.

- 13). குவாரி குத்தகை கோரி ஒரே ஒரு மறைமுக டெண்டர் மனு கொடுக்கப்பட்டு திறந்த முறை பொது ஏலத்தில் கலந்து கொள்ள யாரும் முன்வரவில்லையெனில், டெண்டர் தொகை அரசுக்கு ஆதாயமானது என்று உதவி / துணை இயக்குநர் (புவியியல் மற்றும் சுரங்கத்துறை) கருதினால், அந்த டெண்டர் மனுதாரருக்கு குவாரி குத்தகை வழங்க உதவி / துணை இயக்குநர் (புவியியல் மற்றும் சுரங்கத்துறை) ஒப்புதல் அளிக்கலாம். டெண்டர் தொகை அரசுக்கு ஆதாயமானதல்ல என்று உதவி / துணை இயக்குநர் (புவியியல் மற்றும் சுரங்கத்துறை) கருதும் பட்சத்தில், மனுவைத் தள்ளுபடி செய்து ஆணையிடப்பட்டு மறு ஏலத்தின் மூலம் குவாரி குத்தகை வழங்க மேல்நடவடிக்கை எடுக்க மாவட்ட ஆட்சியர்க்கு அதிகாரம் உண்டு.



- 14) மாண்புமிகு இந்திய உச்சநீதிமன்றம் வழக்கு எண் ஐ.ஏ 12-13/2012 எ ஆகியவற்றின் மீது 27.02.2012 அன்று வழங்கியுள்ள ஆணைகளின்படி வளத்துறை குறிப்பாணை எண். எல்.11011/47/2011 - IA II(M) நாள்: 18. (எம்எஸ்)எண். 79, தொழில் (எம்எம்சி1) துறை நாள்: 06.04.2015ன்படி 1959ஆம் சலுகை விதிகளில் திருத்தம் செய்யப்பட்டு சேர்க்கப்பட்ட விதிகள் எண். 41 மற்றும் 42-ன் படியும் அனைத்து சிறுகனிம குவாரிகளுக்கும் குவாரி குத்தகை வழங்கும் முன்பு புவியியல் மற்றும் சுரங்கத் துறை துணை இயக்குநரால் அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம் மற்றும் இந்திய அரசின் சுற்றுச்சூழல், வனம் மற்றும் பருவநிலை மாற்றம் அமைச்சகத்தால் வழங்கப்படும், மாநில சுற்றுச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின் / இசைவு ஆகியவற்றை பெற்று சமர்ப்பித்த பின்பு மட்டுமே குவாரி குத்தகை வழங்க முடியும். குவாரி பணி தொடங்குவதற்கு முன்பாக தமிழ்நாடு மாக கட்டுப்பாட்டு வாரியத்தின் இசைவினை பெற்று சமர்ப்பிக்கும் பட்சத்தில் மட்டுமே குவாரி பணி தொடங்க அனுமதிக்கப்படும்.
- 15) அதிகபட்சத் தொகை கேட்ட நபருக்கு குவாரி குத்தகை உரிமம் உறுதி செய்யப்படுமாயின் அவருக்கு குவாரி குத்தகை உரிமம் வழங்கப்படவுள்ள குவாரியின் புல எண், பரப்பளவு, ஆகிய விவரங்கள் அடங்கிய அறிவிக்கை வழங்கப்பட்டு அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம், தமிழ்நாடு மாநில சுற்றுச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின்/ இந்திய அரசு சுற்றுச்சூழல் மற்றும் வளத்துறையின் தடையின்மை சான்று ஆகியவற்றை விதிகளின்படி உரிய காலத்திற்குள் சமர்ப்பிக்குமாறு தெரிவிக்கப்படும்.
- (அ) மேற்கண்ட அறிவிக்கை பெற்றுக்கொண்ட மனுதாரர் சுரங்கத்திட்டத்தை தகுதி வாய்ந்த நபர் (QP) மூலம் அரசு தெரிவித்துள்ள விதிகள் மற்றும் வழிகாட்டுதலின்படி தயாரித்து அறிவிக்கை பெறப்பட்ட நாளிலிருந்து மூன்று மாத காலத்திற்குள் கிருஷ்ணகிரி புவியியல் மற்றும் சுரங்கத்துறை துணை இயக்குநரிடம் அங்கீகாரம் பெற சமர்ப்பிக்க வேண்டும்.
- (ஆ) மேற்கண்ட மனுதாரர் கிருஷ்ணகிரி புவியியல் மற்றும் சுரங்கத்துறை துணை இயக்குநரால் அங்கீகாரம் வழங்கப்பட்ட சுரங்கத்திட்டத்தை இந்திய அரசு சுற்றுச்சூழல், வனம் மற்றும் பருவநிலை மாற்றம் அமைச்சகத்தின் மாநில சுற்றுச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின் முன்பு சமர்ப்பித்து தடையின்மை சான்று கோரி விண்ணப்பித்து தடையின்மை சான்றினை பெற்று சமர்ப்பிக்க வேண்டும்.
- (இ) காவேரி உடக்கு வனவிலங்கு சரணாலயம், தேசிய பூங்கா, யானைகளின் வலசை பாதை மற்றும் காப்பு காடுகளிலிருந்து பாதுகாப்பு இடைவெளி தூரத்திற்கு அப்பால் மட்டுமே குத்தகை உரிமம் வழங்க நடவடிக்கை எடுக்கப்பட்டுள்ளது. எனினும், அரசால் மாற்றி அமைக்கப்படும் பாதுகாப்பு இடைவெளி தூரத்திற்குள் குவாரி பகுதி வருவதாக பிற்காலத்தில் தெரியவந்தால் குத்தகை உரிமம் ரத்து செய்ய மேல்நடவடிக்கை தொடரப்படும்.
- (ஈ) அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம் முதல் ஐந்து ஆண்டு காலத்திற்கு மட்டுமே செல்லத்தக்கதாகும்.
- (உ) மேற்கண்ட ஆவணங்களை சமர்ப்பித்த பின்பு விதிகளின்படி மனுதாரருக்கு குவாரி குத்தகை வழங்கி ஆணையிடப்படும் அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம் மற்றும் தமிழ்நாடு மாநில சுற்றுச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின்/ இந்திய அரசு சுற்றுச்சூழல், வனம் மற்றும் பருவநிலை மாற்றம் அமைச்சகத்தின் தடையின்மை சான்று ஆகியவற்றை குறிப்பிட்ட காலக்கெடுவிற்குள் சமர்ப்பிக்க தவறினால் மனுதாரருக்கு மாவட்ட ஆட்சியர் முன்பு விசாரணைக்கு ஆஜராக வாய்ப்பளித்து விசாரணை நடத்தப்பட்டு ஏற்கனவே வழங்கப்பட்ட உத்தரவு ரத்து செய்ய நடவடிக்கை எடுக்கப்படும்.
- 16) மேற்கூறிய உத்தரவு கிடைக்கப் பெற்றவுடன் விண்ணப்பதாரர், ஆணையில் குறிப்பிடப்பட்ட காலக்கெடுவிற்குள் கீழ்க்கண்ட ஆவணங்களை குத்தகை ஒப்பந்த ஆவணம் நிறைவேற்றுவது தொடர்பாக துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கிருஷ்ணகிரி அவர்களிடம் சமர்ப்பிக்க வேண்டும்.
- (அ) விண்ணப்பதாரரின் கையொப்பமிட்ட வரைவு குத்தகை ஒப்பந்தப்பத்திரம் மற்றும் வரைபடம்.

**அட்டவணை 1**

**உள்ளூர் / குரது எண் விவரத்தை பரிந்துரை செய்யப்படும் குவாரி பகுதிகள் விவரம்**

| Sl. No.                  | Village              | Classification of the proposed site (As per Revenue Record) | S.F. No.            | Extent Proposed for Quarry Lease | GPS coordinates of the proposed sites |           | Distance from nearest Reserved Forest (km) | Distance from CNWLS (km) |
|--------------------------|----------------------|---|---------------------|----------------------------------|---------------------------------------|-----------|--|--------------------------|
|                          |                      |   |                     |                                  | Latitude                              | Longitude |  |                          |
| <b>Krishnagiri Taluk</b> |                      |   |                     |                                  |                                       |           |  |                          |
| 1                        | Jinjupalli           | Un-assessed waste - Parai                                   | 169 (Part)          | 2.00.00                          | 12.54916                              | 78.15410  | 3.4 Pethathalapalli                        | 20 Udedurgam             |
| 2                        | Jinjupalli           | Un-assessed waste - Tharisu                                 | 197/2 (Part)        | 1.20.00                          | 12.55956                              | 78.15585  | 4 Pethathalapalli                          | 20.4 Udedurgam           |
| 3                        | Billanakuppam        | Un-assessed waste - Parai                                   | 278                 | 2.08.50                          | 12.59999                              | 78.16812  | 3.2 Naralapalli Extn.                      | 23 Udedurgam             |
| <b>Bargur Taluk</b>      |                      |   |                     |                                  |                                       |           |  |                          |
| 4                        | Shoolamalai          | Un-assessed waste - Parai                                   | 54-Part-3           | 1.40.00                          | 12.51168                              | 78.25921  | 7.4 Pethathalapalli                        | 31.2 Udedurgam           |
| <b>Shoolagiri Taluk</b>  |                      |   |                     |                                  |                                       |           |  |                          |
| 5                        | Kamandoddi           | Un-assessed waste - Tharisu                                 | 616/3 (Part-2)      | 2.75.00                          | 12.66910                              | 77.94928  | 2.4 Settupalli                             | 14.2 Udedurgam           |
| 6                        | Kamandoddi           | Un-assessed waste - Tharisu                                 | 653/1 (Part)        | 3.35.00                          | 12.66448                              | 77.94973  | 2.8 Settupalli                             | 13.7 Udedurgam           |
| 7                        | Kamandoddi           | Un-assessed waste-Malai                                     | 754 & 760 (Part-VI) | 4.00.00                          | 12.65973                              | 77.96080  | 2.7 Settupalli                             | 13.3 Udedurgam           |
| 8                        | Kamandoddi           | Un-assessed waste - Tharisu                                 | 1276 (Part)         | 2.00.00                          | 12.66421                              | 77.96741  | 2.2 Settupalli                             | 13.9 Udedurgam           |
| 9                        | Venkatesapuram       | Un-assessed waste-Karadu                                    | 86-Part-1           | 2.50.00                          | 12.75552                              | 77.94513  | 1.05 Athimugam II                          | 24 Udedurgam             |
| 10                       | Venkatesapuram       | Un-assessed waste-Karadu                                    | 86-Part-2           | 2.00.00                          | 12.75586                              | 77.94660  | 1.05 Athimugam II                          | 24.1 Udedurgam           |
| 11                       | Venkatesapuram       | Un-assessed waste-Karadu                                    | 86-Part-3           | 2.00.00                          | 12.75397                              | 77.94352  | 1.04 Athimugam II                          | 23.8 Udedurgam           |
| 12                       | B.S. Thi.mmasandiram | Un-assessed waste-Parai                                     | 88/1 (Part-3)       | 4.50.00                          | 12.84070                              | 77.95736  | 1.01 Amuthugondapalli                      | 33.5 Udedurgam           |
| 13                       | Doripalli            | Un-assessed waste-Parai                                     | 72(Part)            | 0.65.00                          | 12.71262                              | 77.95474  | 2.2 Settupalli                             | 19.3 Udedurgam           |
|                          |                      |   | 87/1(Part)          | 0.95.00                          |                                       |           |  |                          |
|                          |                      |   | <b>Total</b>        | <b>1.60.00</b>                   |                                       |           |  |                          |
| 14                       | Thuppuganapalli      | Un-assessed waste-Karadu malai                              | 420-Part-1          | 4.00.00                          | 12.62856                              | 77.95266  | 4.5 Sanamavu                               | 9.9 Udedurgam            |
| 15                       | Thuppuganapalli      | Un-assessed waste-Karadu malai                              | 420-Part-3          | 4.60.00                          | 12.62604                              | 77.95370  | 4.8 Sanamavu                               | 9.7 Udedurgam            |
| 16                       | Thuppugana palli     | Un-assessed waste-Karadu malai                              | 420-Part-4          | 4.50.00                          | 12.62499                              | 77.95265  | 4.7 Sanamavu                               | 9.6 Udedurgam            |





| Sl. No.                    | Village         | Classification of the proposed site (As per Revenue Record) | S.F. No.               | Extent Proposed for Quarry Lease | GPS coordinates of the proposed site |           | Distance from nearest Reserved Forest (km) | Distance from nearest Reserved Forest (km) |
|----------------------------|-----------------|---|------------------------|----------------------------------|--------------------------------------|-----------|--|--|
|                            |                 |   |                        |                                  | Latitude                             | Longitude |  |  |
| 17                         | Chennapalli     | Un-assessed waste - Karadu                                  | 327/1-Part-1           | 2.45.00                          | 12.62504                             | 78.05404  | 2  | 14.3                                       |
| 18                         | Chennapalli     | Un-assessed waste - Karadu                                  | 327/1-Part-2           | 2.45.00                          | 12.62400                             | 78.05477  | 2  | 14.3                                       |
| <b>Hosur Taluk</b>         |                 |   |                        |                                  |                                      |           |  |  |
| 19                         | Mugalur         | Un-assessed waste   | 232/2 (Part-2)         | 4.85.00                          | 12.62273                             | 77.81719  | 5.6  | 11.6                                       |
| 20                         | Panchakshipuram | Un-assessed waste   | 603/1 (Part-C)         | 1.30.00                          | 12.59781                             | 77.79278  | 8.6  | 11.6                                       |
| 21                         | Panchakshipuram | Un-assessed waste   | 603/1 (Part-D)         | 2.00.00                          | 12.59668                             | 77.79277  | 8.6  | 11.5                                       |
| 22                         | Gobanapalli     | Un-assessed waste   | 220/1 (Part-1)         | 3.00.00                          | 12.63255                             | 77.81140  | 6.4  | 13   |
| 23                         | Gobanapalli     | Un-assessed waste   | 220/1 (Part-2)         | 3.00.00                          | 12.63169                             | 77.81128  | 6.4  | 12.8                                       |
| 24                         | Gobanapalli     | Un-assessed waste   | 220/1 (Part-3)         | 3.00.00                          | 12.63221                             | 77.81357  | 6.2  | 12.8                                       |
| 25                         | Gobanapalli     | Un-assessed waste   | 220/1 (Part-4)         | 2.00.00                          | 12.63109                             | 77.81268  | 6.3  | 12.7                                       |
| 26                         | Gobanapalli     | Un-assessed waste   | 381 (Part-1)           | 1.30.00                          | 12.63489                             | 77.81198  | 6.4  | 13.2                                       |
| 27                         | Gobanapalli     | Un-assessed waste   | 381 (Part-2)           | 1.50.00                          | 12.63391                             | 77.81214  | 6.4  | 13.1                                       |
| <b>Denkanikottal Taluk</b> |                 |   |                        |                                  |                                      |           |  |  |
| 28                         | Hosapuram       | Un-assessed waste   | 346 (Part), 353, 354/2 | 1.97.50                          | 12.64563                             | 77.81959  | 6.1  | 13.8                                       |
| 29                         | Daravendiram    | Un-assessed waste - Podu                                    | 320/1 (Part)           | 1.70.50                          | 12.56214                             | 77.68326  | 6.5  | 6.5  |
|                            |                 |   | 320/2                  | 0.29.50                          |                                      |           |  |  |
|                            |                 |   | <b>Total</b>           | <b>2.00.00</b>                   |                                      |           |  |  |
| 30                         | Nagamangalam    | Un-assessed waste - Kallankuthu                             | 629 (Part)             | 3.20.50                          | 12.57400                             | 77.91418  | 3.9  | 3.9  |

மேற்கண்ட அட்டவணை 1ல் உள்ள குவாரி பகுதிகள், காவேரி வடக்கு வனஉயிரின சரணாலயத்திற்கான சூழல் உயர்தரன் மண்டலத்திற்குள் (Eco-Sensitive Zone) வருவதில்லை.

**அட்டவணை 2**

**டெண்டர் / பொது ஏலம் மூலம் குத்தகை அனுமதி வழங்குவதை தற்காலிகமாக நிறுத்திவைக்க பரிந்துரை செய்யப்படும் குவாரிகளின் விவரப் பட்டியல்**

| Sl. No.                  | Village      | Classification of the proposed site (As per Revenue Record) | S.F.No.        | Extent Proposed for Quarry Lease | GPS coordinates of the proposed sites |           | Distance from nearest Reserved Forest (km) | Distance from CNWLS (km) |
|--------------------------|--------------|---|----------------|----------------------------------|---------------------------------------|-----------|--|--------------------------|
|                          |              |   |                |                                  | Latitude                              | Longitude |  |                          |
| <b>Krishnagiri Taluk</b> |              |   |                |                                  |                                       |           |  |                          |
| 1                        | Kallukurukki | Govt. Poramboke -- Ko Malai                                 | 701 (Part-II)  | 1.00.00                          | 12.55536                              | 78.22426  | 3.2 Kundarapalli II                        | 27.7 Udedurgam           |
| 2                        | Kallukurukki | Govt. Poramboke -- Ko Malai                                 | 701 (Part-III) | 1.00.00                          | 12.55541                              | 78.22483  | 3.2 Kundarapalli II                        | 27.8 Udedurgam           |
| 3                        | Kallukurukki | Govt. Poramboke -- Ko Malai                                 | 701 (Part-IV)  | 0.90.00                          | 12.55463                              | 78.22316  | 3.2 Kundarapalli II                        | 27.6 Udedurgam           |
| 4                        | Kallukurukki | Govt. Poramboke -- Ko Malai                                 | 701 (Part-V)   | 3.50.00                          | 12.55034                              | 78.22850  | 3.9 Kundarapalli II                        | 28.05 Udedurgam          |
| 5                        | Kallukurukki | Govt. Poramboke -- Ko Malai                                 | 701 (Part-VI)  | 1.00.00                          | 12.54704                              | 78.22598  | 3.7 Pethathalapalli                        | 27.8 Udedurgam           |
| <b>Uthangarai Taluk</b>  |              |   |                |                                  |                                       |           |  |                          |
| 6                        | Katteri      | Govt. Punjai-Podugal  | 17/1           | 1.25.00                          | 12.19712                              | 78.53751  | 1.6 Onnakarai                              | 65.4 Marandahalli        |
| 7                        | Thathanur    |   | 10//2          | 1.61.00                          | 12.21405                              | 78.53499  | 0.5 Onnakarai                              | 64.6 Marandahalli        |
| <b>Shoolagiri Taluk</b>  |              |   |                |                                  |                                       |           |  |                          |
| 8                        | Mattampalli  | Un-assessed waste-Karadu                                    | 53/1 (Part-1)  | 3.00.00                          | 12.69400                              | 78.06509  | 0.53 Kumbalam I                            | 21 Udedurgam             |
| 9                        | Mattampalli  | Un-assessed waste-Karadu                                    | 53/1 (Part-2)  | 1.90.00                          | 12.69279                              | 78.06464  | 0.64 Kumbalam I                            | 20.9 Udedurgam           |
| 10                       | Marandapalli | Un-assessed waste-Parai                                     | 71/2           | 1.15.0                           | 12.67734                              | 78.05708  | 1.4 Thekkalapalli                          | 19.1 Udedurgam           |

மேற்கண்ட அட்டவணை 2ல் குறிப்பிட்டுள்ள இடங்கள் குறித்து வனம் மற்றும் வனஉயிரின பாதுகாப்பு தொடர்பான கூடுதல் கள ஆய்வு மேற்கொள்ள வேண்டி உள்ளதாலும், மேலும் கால அவகாசம் தேவைப்படுவதால் அப்பகுதியை ஒட்டி அமைந்துள்ள இடங்களில் காப்பு நிலம் தொடர்பான முன்மொழிவுகள், பரிசீலனையில் உள்ளதாலும் இதுகுறித்த மேல் நடவடிக்கையினை துரிதப்படுத்திட இயலாத சூழ்நிலையில் உள்ளது. எனவே, அட்டவணை 2ல் உள்ள இவ்விடங்களின் டெண்டர் மற்றும் பொது ஏலத்தில் விடுவதை தற்சமயம் நிறுத்தி வைக்க பரிந்துரைக்கப்படுவதுடன், இவ்விவரம் தூரத்தை கணக்கிடும் பொருட்டே அனுப்பப்படுகிறது. குவாரி பணிகள் மேற்கொள்ள தனியாக துறைத்தலைவரிடமிருந்து, வனத்துறையின் தடைகுறித்த குறிப்புரை வழங்கப்படும் என அன்புடன் தெரிவித்துக் கொள்கிறேன்.

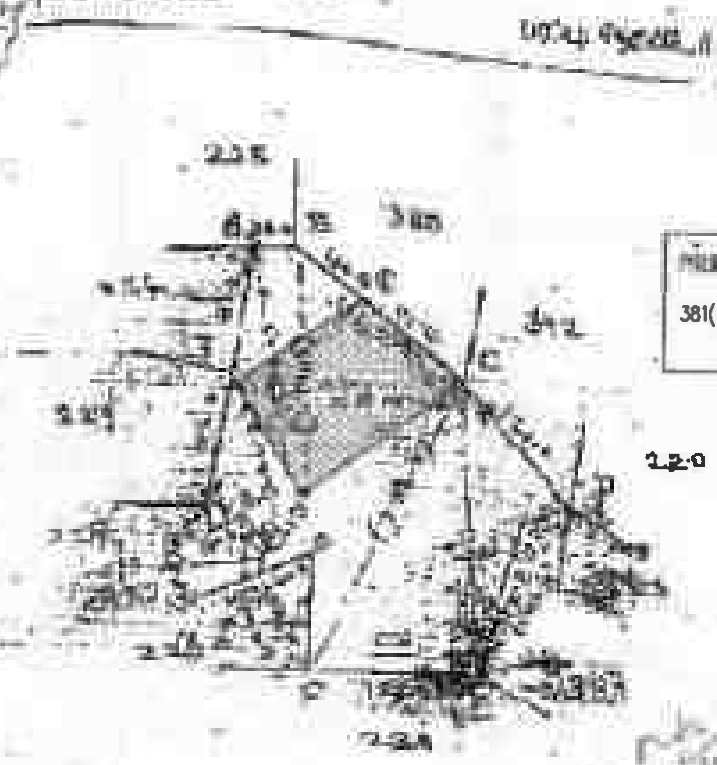
தங்கள் அன்புள்ள,  
ஒம்/- க. கார்த்திகேயனி,  
வனஉயிரினகாப்பாளர்,  
ஒசூர் வனக்கோட்டம்.

**S. J. NATHAN PRAKASH, M.Sc., M.Phil., //உநஉப//**  
NOPI/270/2016/A

*(Handwritten Signature)*  
கண்காணிப்பாளர்

ಶಿಬಿರ ಸಂಖ್ಯೆ 381

ತಾ. 97  
ಆಧಾರ್ ಸಂಖ್ಯೆ - 10A



381(Part-I) = 1.3000 Ha

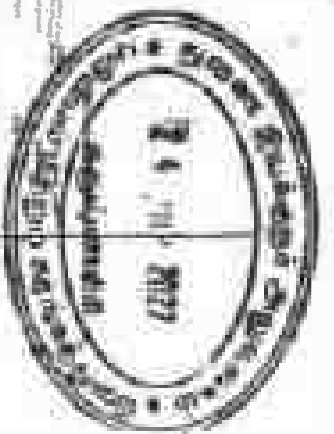
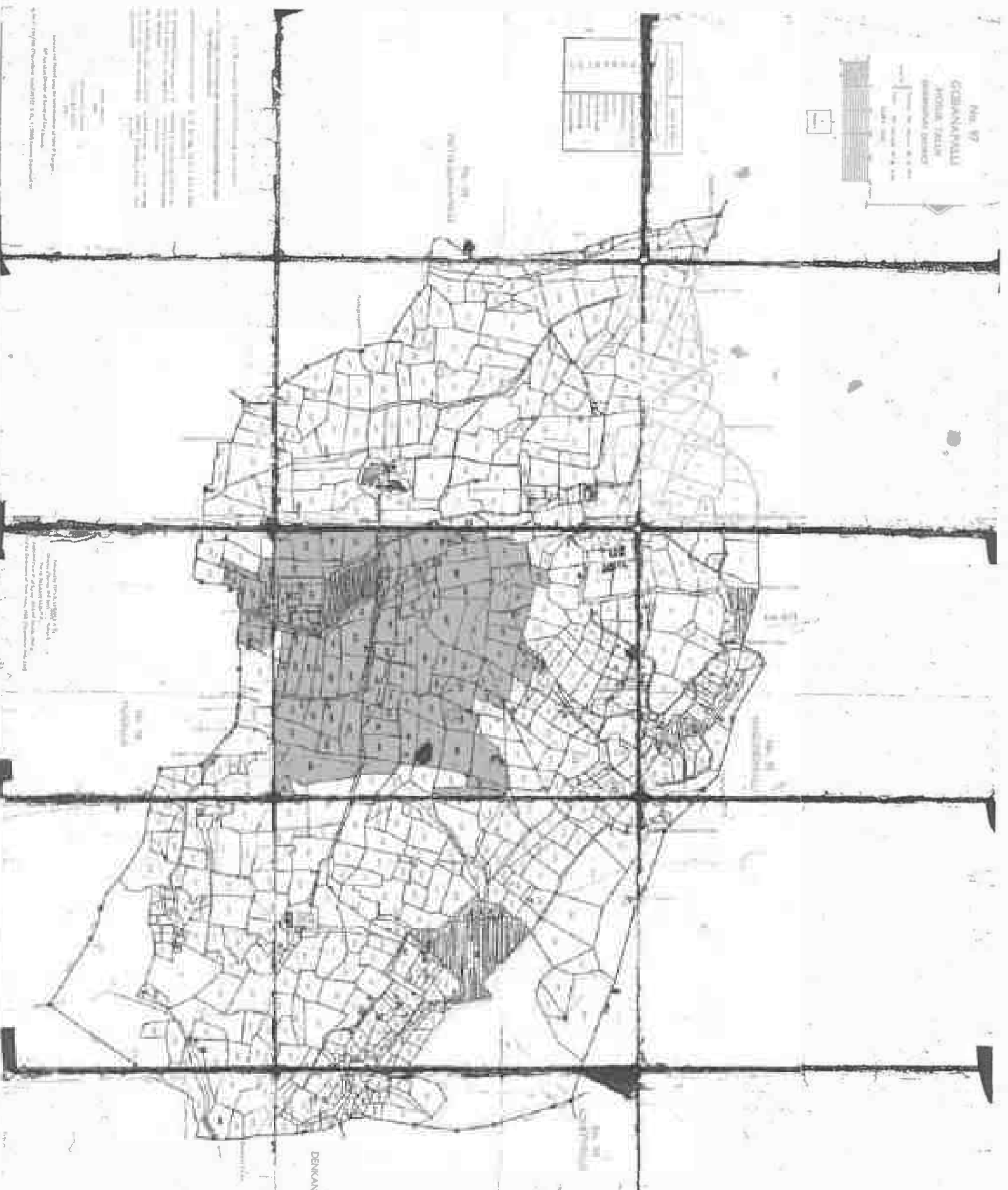
ಶಿಬಿರ ಸಂಖ್ಯೆ  
ಶಿಬಿರ ಸಂಖ್ಯೆ 381  
ಶಿಬಿರ ಸಂಖ್ಯೆ 381  
ಶಿಬಿರ ಸಂಖ್ಯೆ 381

ಶಿಬಿರ ಸಂಖ್ಯೆ 381

|              |              |              |
|--------------|--------------|--------------|
| ಶಿಬಿರ ಸಂಖ್ಯೆ | ಶಿಬಿರ ಸಂಖ್ಯೆ | ಶಿಬಿರ ಸಂಖ್ಯೆ |
| 381          | 381          | 381          |
| 381          | 381          | 381          |
| 381          | 381          | 381          |
| 381          | 381          | 381          |
| 381          | 381          | 381          |
| 381          | 381          | 381          |
| 381          | 381          | 381          |
| 381          | 381          | 381          |
| 381          | 381          | 381          |

ಶಿಬಿರ ಸಂಖ್ಯೆ 381  
S. MATHA PRASHN, M.Sc., M.Phil.  
70/2016/A

No. 97  
**GRANAPALLI**  
 AHOIA TALUK  
 DISTRICT OF DENKANKOTTA  
 1917



Scale of 1 inch = 1 mile  
 1. Surveyed by S. S. Srinivasan  
 2. Checked by S. S. Srinivasan  
 3. Approved by S. S. Srinivasan  
 4. Date of Survey 1917

Approved and signed by the Commissioner of the District of Denkanikota  
 S. S. Srinivasan  
 Commissioner of the District of Denkanikota  
 1917

Approved and signed by the Commissioner of the District of Denkanikota  
 S. S. Srinivasan  
 Commissioner of the District of Denkanikota  
 1917

ANNEXURE - 1

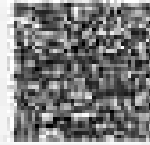


CONFIDENTIAL

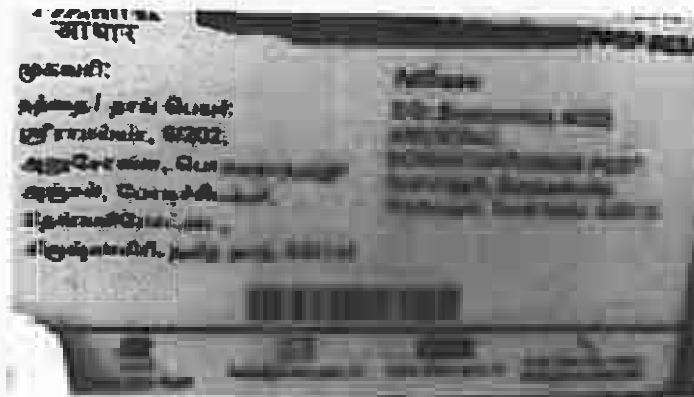


ரஹு ராமன்  
Raghu Ramana  
பிறந்த நாள் / DOB : 05/03/1983  
பால / GENDER : MALE

5562 9477 0011



ஆதார - சாதாரண மனிதனின் அதிகாரம்



*S. Mathan*

**S. MATHAN PRAKASH, M.Sc., M.Phil.,  
RQP/CNN/270/2016/A**



*[Handwritten signature]*

अर्हताप्राप्त व्यक्ति के रूप में मान्यता प्रमाण पत्र  
(खनिज रियायत नियमवली, 1960 के नियम 22सी के तहत)  
**CERTIFICATE OF RECOGNITION AS QUALIFIED PERSON**  
(Under Rule 22C of Mineral Concession Rules, 1960)

श्री एस. माथन प्रकाश, 2/274, ईस्ट स्ट्रीट, कुलरोकरनल्लूर पोस्ट, ओटपिडारम तालुक, तूतुकुडी डस्ट्रीक्ट - 628 401, तमिलनाडु, 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 नियमवली 1960 के नियम 22सी के तहत अर्हताप्राप्त व्यक्ति के रूप में मान्यता प्रदान की जाती है।

Shri S. Mathan Prakash, 2/274, East Street, Kulasekaranallur Post, Ottapidaram Taluk, Thoothukudi District - 628 401, Tamilnadu, 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/270/2016/A

यह मान्यता 10 वर्षों की अवधि के लिए मान्यता है जो दिनांक 09.02.2026 को समाप्त होगी।  
This recognition is valid for a period of 10 years ending on 09.02.2026.

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 : 10.02.2016

*[Handwritten signature]*  
**S. MATHAN PRAKASH, M.Sc., M.Phil.,**  
RQP/CNN/270/2016/A

*[Handwritten signature]*  
क्षेत्रीय खान नियंत्रक / Regional Controller of Mines  
भारतीय खान ब्यूरो / Indian Bureau of Mines

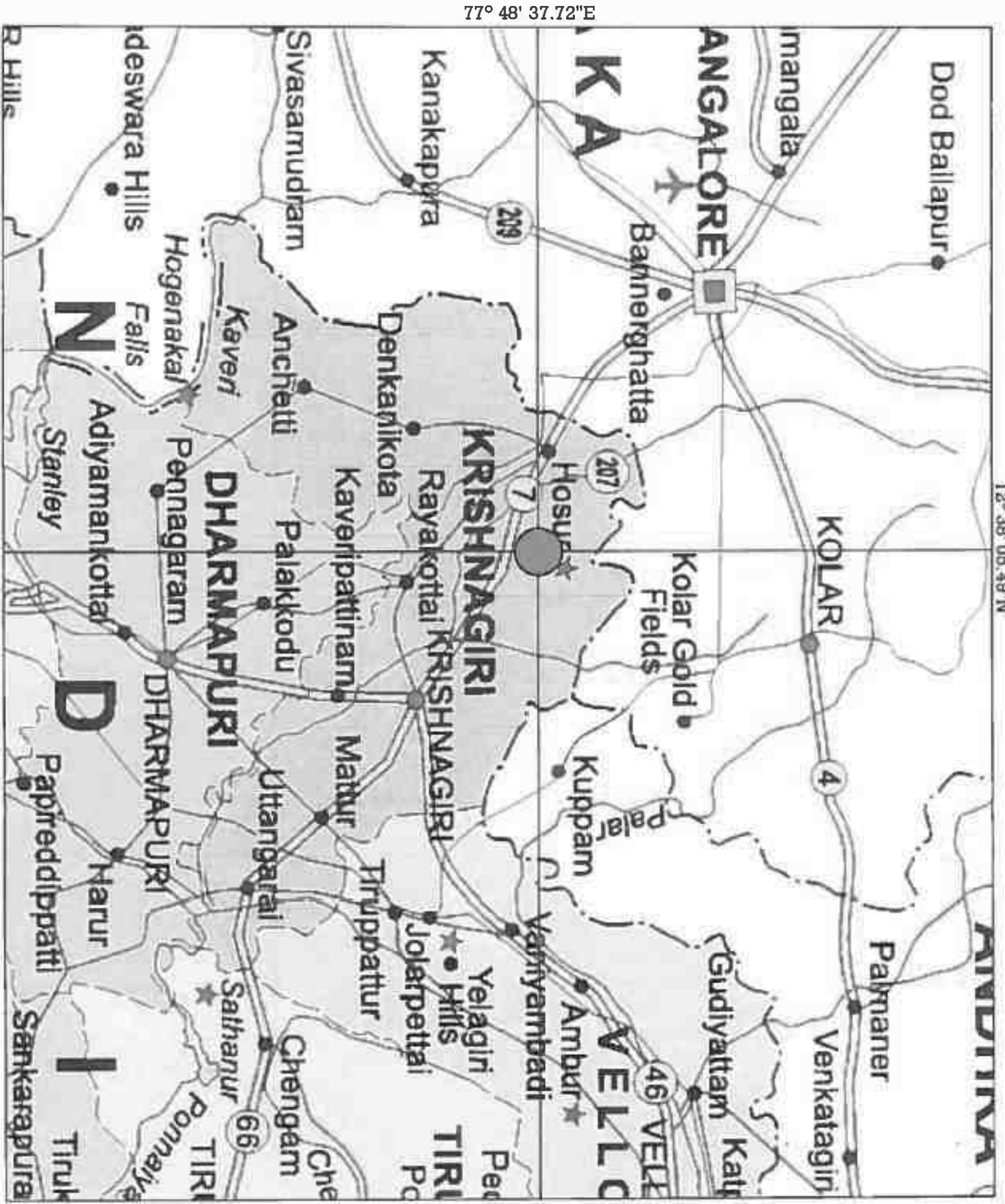
PHOTO SHOWN PROPOSED APPLIED LEASE AREA VIEW-1



PHOTO SHOWN PROPOSED APPLIED LEASE AREA VIEW-2



*S. Mathan Pra Kash*  
**S. MATHAN PRA KASH, M.Sc M.Phil.,**  
**ROP/CMM/270/2016/A**

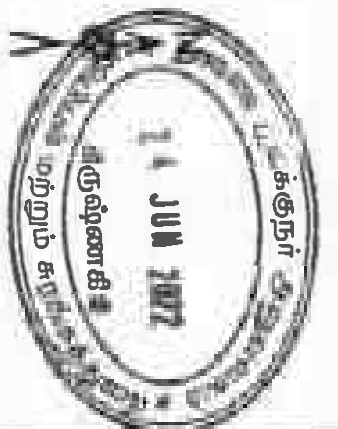


77° 48' 37.72"E

12° 39' 05.49"N

77° 48' 43.41"E

12° 38' 03.12"N



**PLATE NO:1**

DATE OF SURVEY : 06-05-2022

**APPLICANT ADDRESS:**

THIRU.S.RAGHU,  
S/o.SREERAMA YYA,  
D.No.6/202 ANUSONAI VILLAGE,  
B MATHATH NUR POST,  
DENKANIKOTTA TALUK,  
KRISHNAGIRI DISTRICT - 635 113.

**LOCATION OF QUARRY:**

EXTENT : 1.30.00 Ha,  
S.F.NO : 381(Part-1)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

**INDEX**

QUARRY LEASE AREA : ●  
TOPO SHEET NO. : 57-H/14,  
LATITUDE : 12° 38' 05.49"N to 12° 38' 03.12"N  
LONGITUDE : 77° 48' 43.41"E to 77° 48' 37.72"E

**LOCATION PLAN**

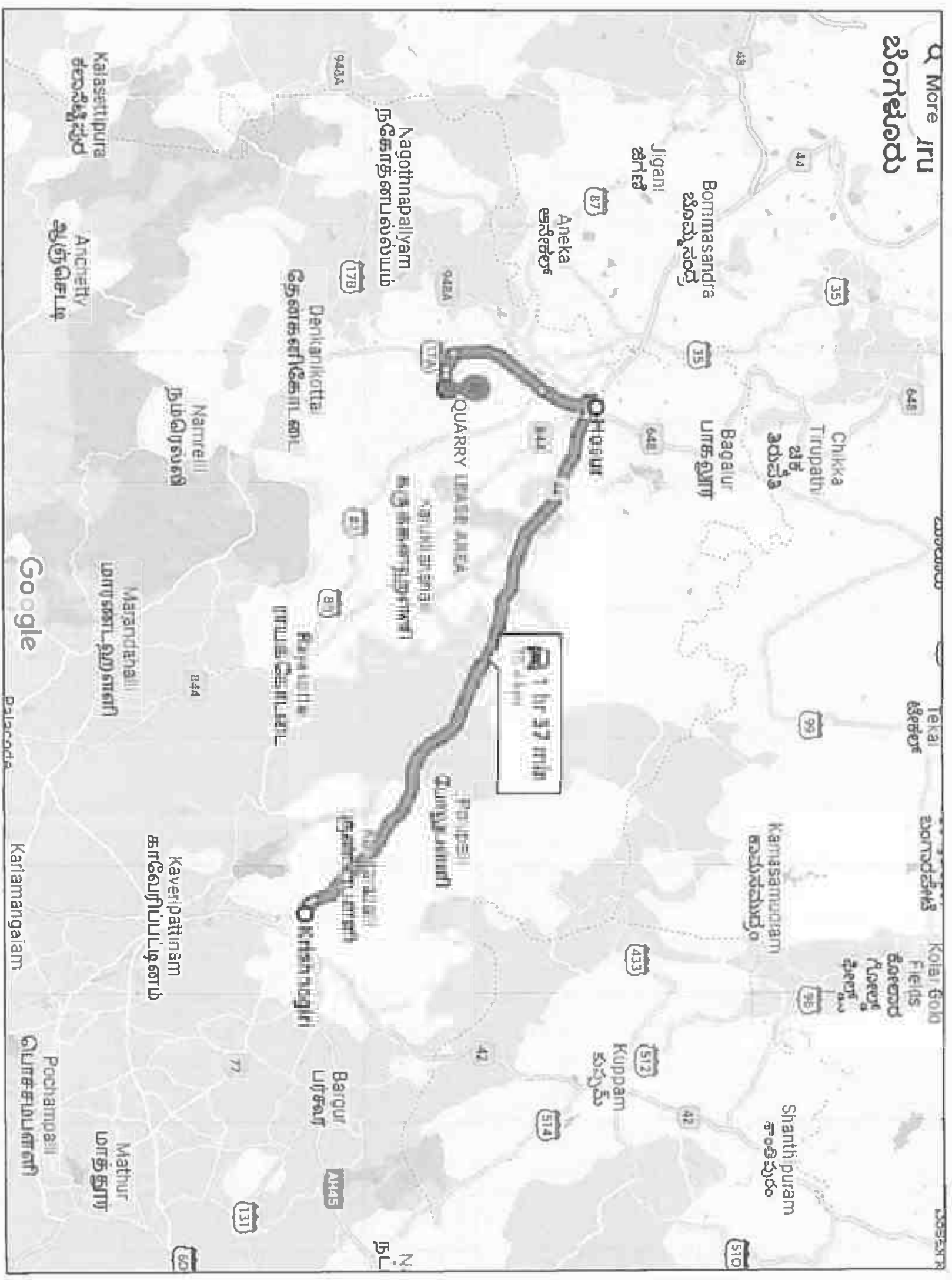
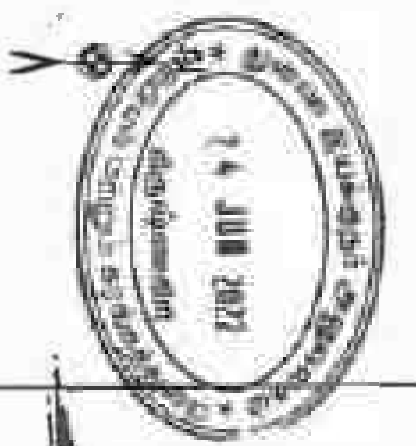
NOT TO SCALE

**PREPARED BY:**

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

**S.MATHAN PRAKASH, M.Sc., M.Phil.,**  
RECOGNIZED QUALIFIED PERSON  
RQP/CNN/270/2016/A





**PLATE NO:1A**

**DATE OF SURVEY: 06-05-2022**

**APPLICANT ADDRESS:**

THIRU.S.RAGHU,  
S/O.SREERAMAYYA,  
D.No.6/202, ANUSONAI VILLAGE,  
BOMMATHATHANUR POST,  
DENKANIKOTTAI TALUK,  
KRISHNAGIRI DISTRICT - 535 113.

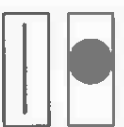
**LOCATION OF QUARRY:**

EXTENT : 1.30.00 Ha,  
S.E.'O : 381(Part-1)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

**INDEX**

QUARRY LEASE AREA

ROAD



ROUTE MAP

NOT TO SCALE

**Prepared By:**

I HEREBY CERTIFY THAT THE SURVEY HAS BEEN CONDUCTED BY ME AND THE RESULTS ARE TRUE TO THE BEST OF MY KNOWLEDGE.

**THIRU.S.RAGHU**  
S/O.SREERAMAYYA,  
D.No.6/202, ANUSONAI VILLAGE,  
BOMMATHATHANUR POST,  
DENKANIKOTTAI TALUK,  
KRISHNAGIRI DISTRICT - 535 113.

PLATE NO:IB

DATE OF SURVEY : 06-05-2022

APPLICANT ADDRESS:

THIRU'S HATCHI  
 S/O. SURESH  
 D.NO. 6/202  
 DENKALUR  
 KESIRIPALAI  
 TALUK - 625 113  
 DISTRICT - SRI LAKSHMI



LOCATION OF QUANTER LEASE AREA

EXTENT : 1.50 HECTARE  
 SC/LNO : 381/201-1  
 VILLAGE : GOPANAPALLE  
 TALUK : HOSUR  
 DISTRICT : KRISHNAPRADESH

**INDEX**

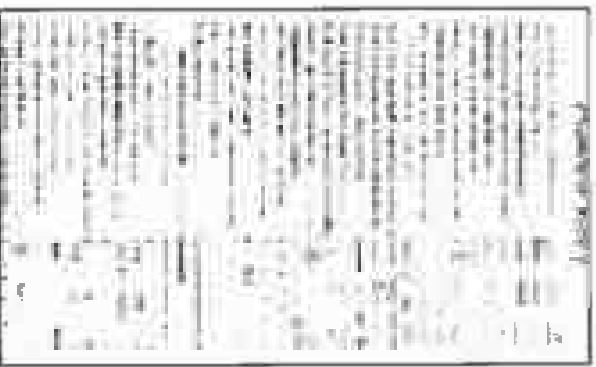
QUANTER LEASE AREA :

Field boundary :

TOPO SHEET NO. : 57-11/1A

LATITUDE : 12° 38' 05.49" N TO 12° 38' 03.12" N

LONGITUDE: 77° 48' 43.41" E TO 77° 48' 37.72" E



TOPO SHEET MAP OF  
 THE LEASE AREA

SCALE-1:50,000

PREPARED BY:

I DO HEREBY CERTIFY THAT THE PLATE  
 HAS BEEN CHECKED BY ME AND IS CORRECT  
 TO THE BEST OF MY KNOWLEDGE



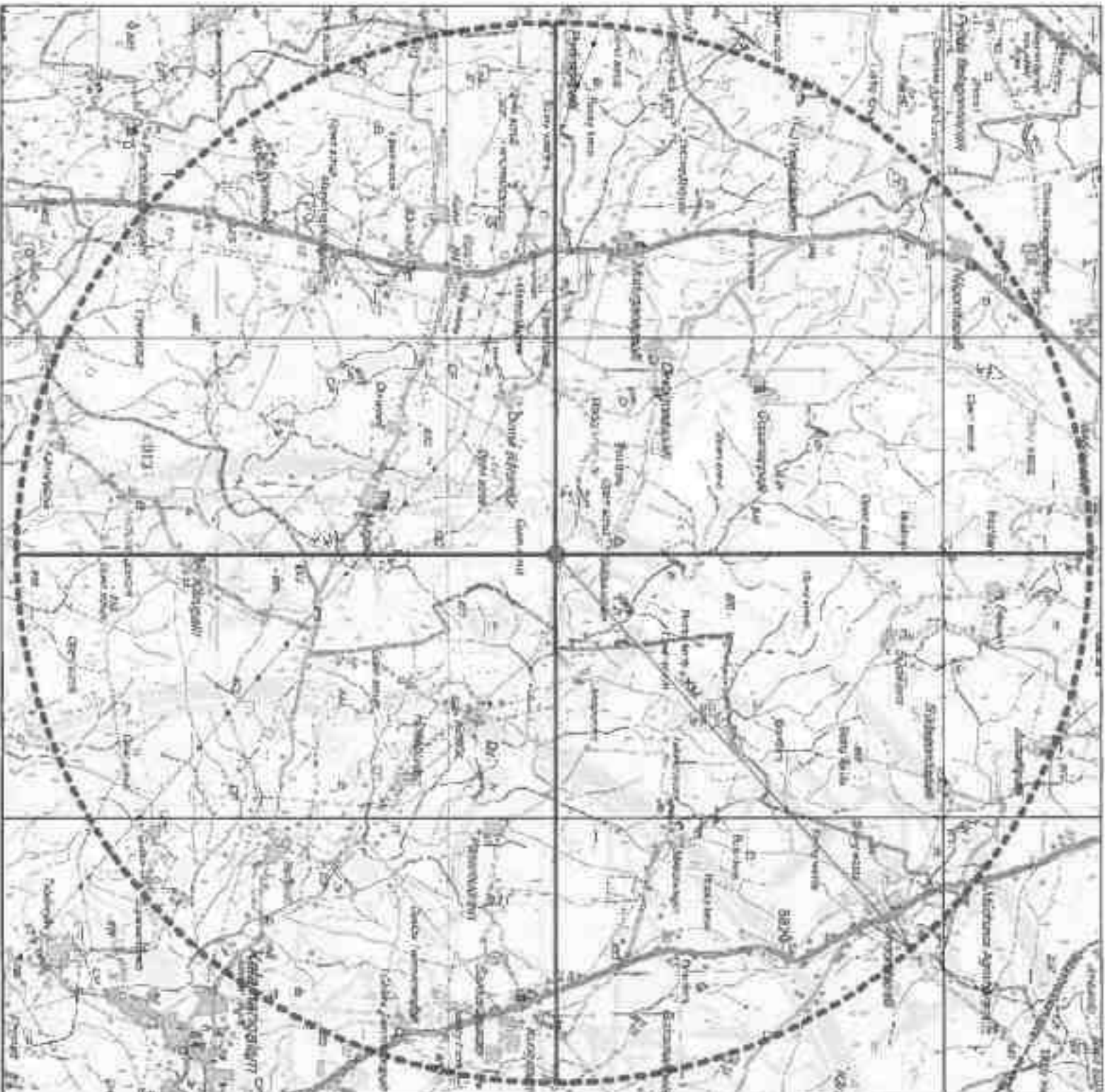
S. MATHAN PRAKASH, M.Sc., M.Phil.,  
 RECOGNIZED QUALIFIED PERSON  
 RQP/CNH/279/2019/A

77° 48' 37.72"E

12° 38' 05.49"N

12° 38' 03.12"N

77° 48' 43.41"E



12° 38' 07.82"N  
77° 48' 41.09"E



12° 38' 06.10"N  
77° 48' 37.72"E

12° 38' 05.49"N  
77° 48' 43.41"E

12° 38' 03.12"N  
77° 48' 39.07"E



**PLATE NO:IC**

**DATE OF SURVEY : 06-05-2022**




**APPLICANT ADDRESS:**

THIRU S.RAGHU,  
S/O.SREERAMAYYA,  
D.No.6/202, ANUSOMAI VILLAGE,  
BOMMATHATHANUR POST,  
DENKANIKOTTAI TALUK,  
KRISHNAGIRI DISTRICT - 635 113.

**LOCATION OF QUARRY:**

EXTENT : 1.50.00 Ha,  
S.F.NO : 381(Part-1)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

**INDEX**

- QUARRY LEASE BOUNDARY 
- 500M RADIUS 
- 300M RADIUS 

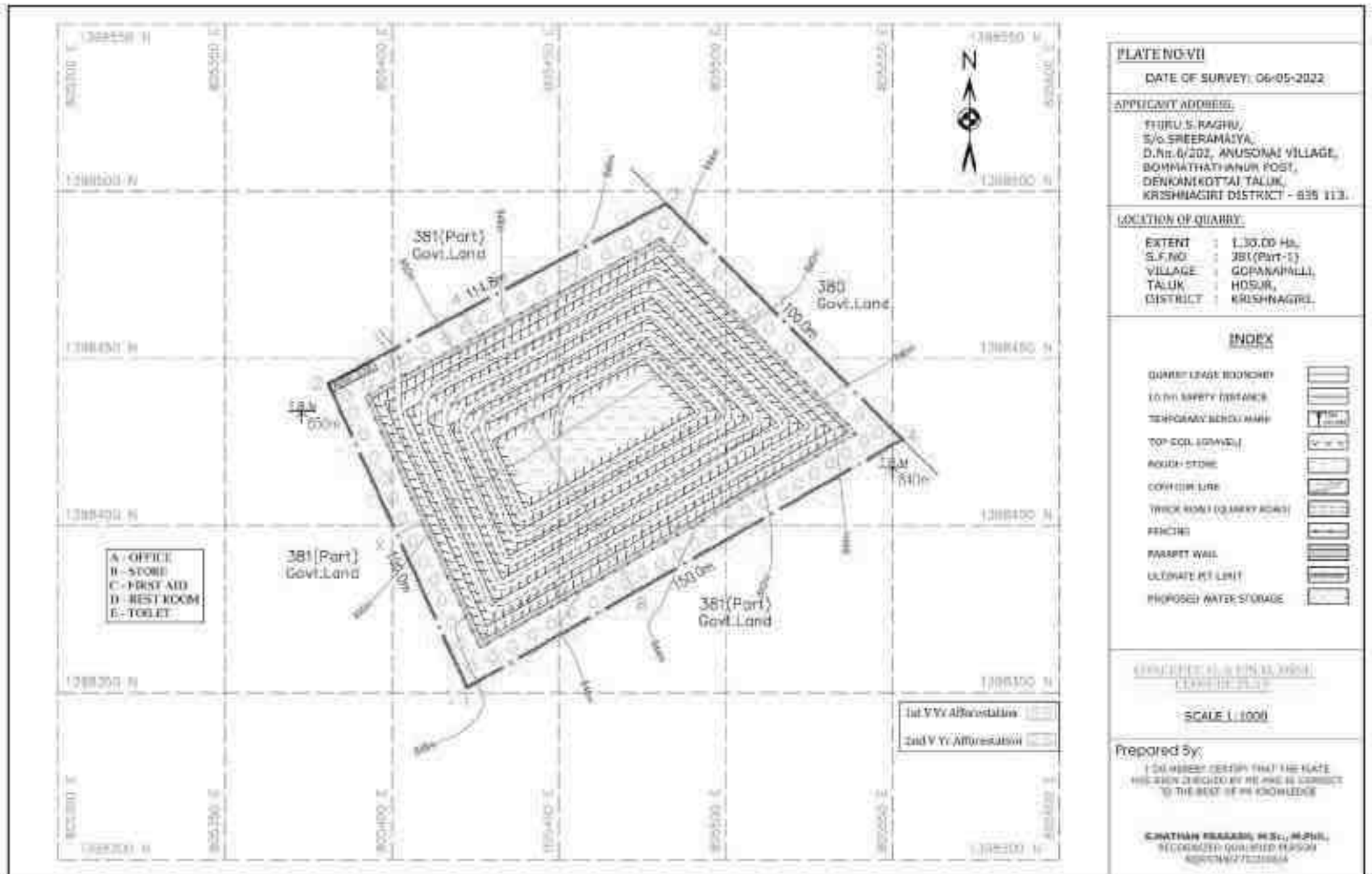
**SATELLITE IMAGE**  
**(FROM RADARSAT)**

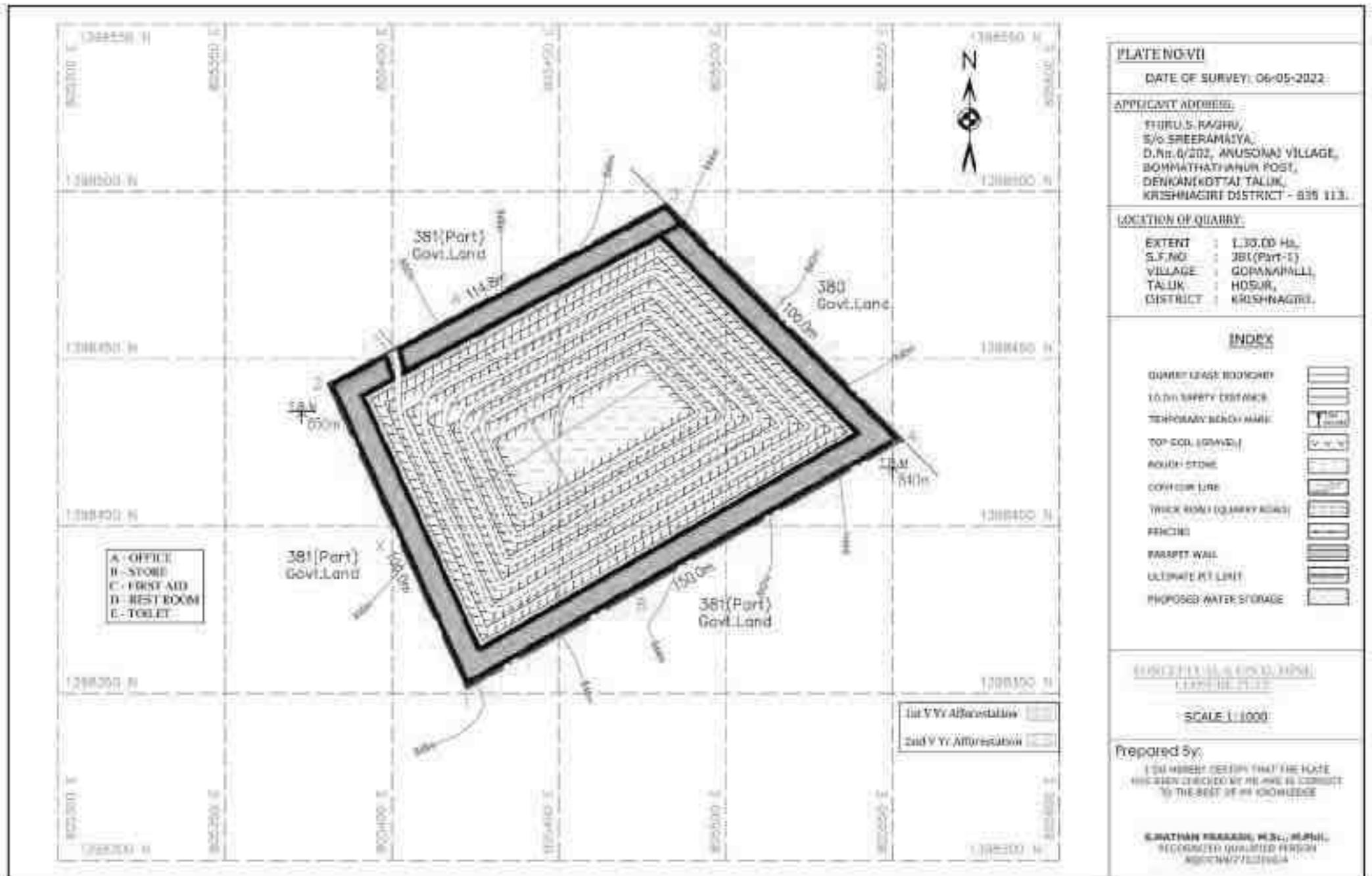
**SCALE 1:5000**

**Prepared By:**

I DO HEREBY CERTIFY THAT THE PLATE  
HAS BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

  
S.MATHAN PRASAD, M.Sc., M.Phil.,  
RECOGNIZED QUALIFIED PERSON  
ROP/DIN/270/2015/A





**PLATE NO VII**

DATE OF SURVEY: 06-05-2022

**APPLICANT ADDRESS:**

THIRU S. RAJHU,  
S/o SREERAMAYA,  
D.No. 6/202, ANUSOMAI VILLAGE,  
BOMMATHATHANUR POST,  
DEKANIKOTTAI TALUK,  
KRISHNAGIRI DISTRICT - 635 113.

**LOCATION OF QUARRY:**

EXTENT : 1.30.00 Ha.  
S.F.NO : 381 (Part-I)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

**INDEX**

- QUARRY LEASE BOUNDARY
- 10.M SAFETY DISTANCE
- TEMPORARY BENCH MARK
- TOP SOIL (GRADE)
- ROUGH STONE
- COIR CORE WIRE
- TRUCK ROAD (QUARRY ROAD)
- FENCE
- PARAPET WALL
- ULTIMATE PIT LIMIT
- PROPOSED WATER STORAGE

ENGINEER (S) & CIVIL (S) (PNS)  
12/11/2022

SCALE: 1:1000

**Prepared by:**

I AM HEREBY DESIGN THAT THE QUOTE  
HAS BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

SRATHAN KRISHNAN, M.Sc., M.Phil.  
REGISTERED QUALIFIED PERSON  
REG/194/2012/064

SECTION ALONG X-Y



SECTION ALONG A-B



ULTIMATE PIT DIMENSION  
= 111.0m[L] X 78.0m[W] X 29.0m[D]

Surface Ground Level Above Height - 8m  
Surface Ground Level Below Depth - 29m

| MINABLE RESERVES |       |                  |                 |                 |                      |   |                                 |
|------------------|-------|------------------|-----------------|-----------------|----------------------|---|---------------------------------|
| Section          | Bench | Length<br>in (m) | Width<br>in (m) | Depth<br>in (m) | Volume<br>in (Cu.m.) | Recoverable<br>Reserve<br>in Cu.m(100%) | Topsoil<br>(Gravel) in<br>Cu.m. |
| X-Y & A-B        | I     | 111              | 28              | 2               |                      |   | 17208                           |
|                  | II    | 88               | 26              | 5               | 3548                 | 3548                                    |                                 |
|                  | III   | 204              | 21              | 5               | 36920                | 36920                                   |                                 |
|                  | IV    | 94               | 21              | 5               | 28670                | 28670                                   |                                 |
|                  | V     | 84               | 21              | 5               | 21420                | 21420                                   |                                 |
|                  | VI    | 74               | 21              | 5               | 15170                | 15170                                   |                                 |
|                  | VII   | 54               | 21              | 5               | 5920                 | 5920                                    |                                 |
|                  | VIII  | 54               | 21              | 5               | 5670                 | 5670                                    |                                 |
| Total:-          |       |                  |                 |                 | 151210               | 151210                                  | 17208                           |

**PLATE NO-VII-A**

DATE OF SURVEY / 05/05/2022

**APPLICANT ADDRESS**  
THIRU.S.RAGHU,  
S/o.SREERAMAIYA,  
D.No.6/202, ANUSONAI VILLAGE,  
BOPMATHATHANUR POST,  
DENKANIKOTTAI TALUK,  
KRISHNAGIRI DISTRICT - 635 113.

**LOCATION OF QUARRY**  
EXTENT : 1.30.00 Ha,  
S.F.NO : 381(Part-31)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

**INDEX**

- QUARRY LEASE BOUNDARY
- 15.0m SAFETY DISTANCE
- TOP SOIL (FORMELT)
- ROUGH STORE
- ULTIMATE PIT SLOPE
- REFROSED WATER STORAGE

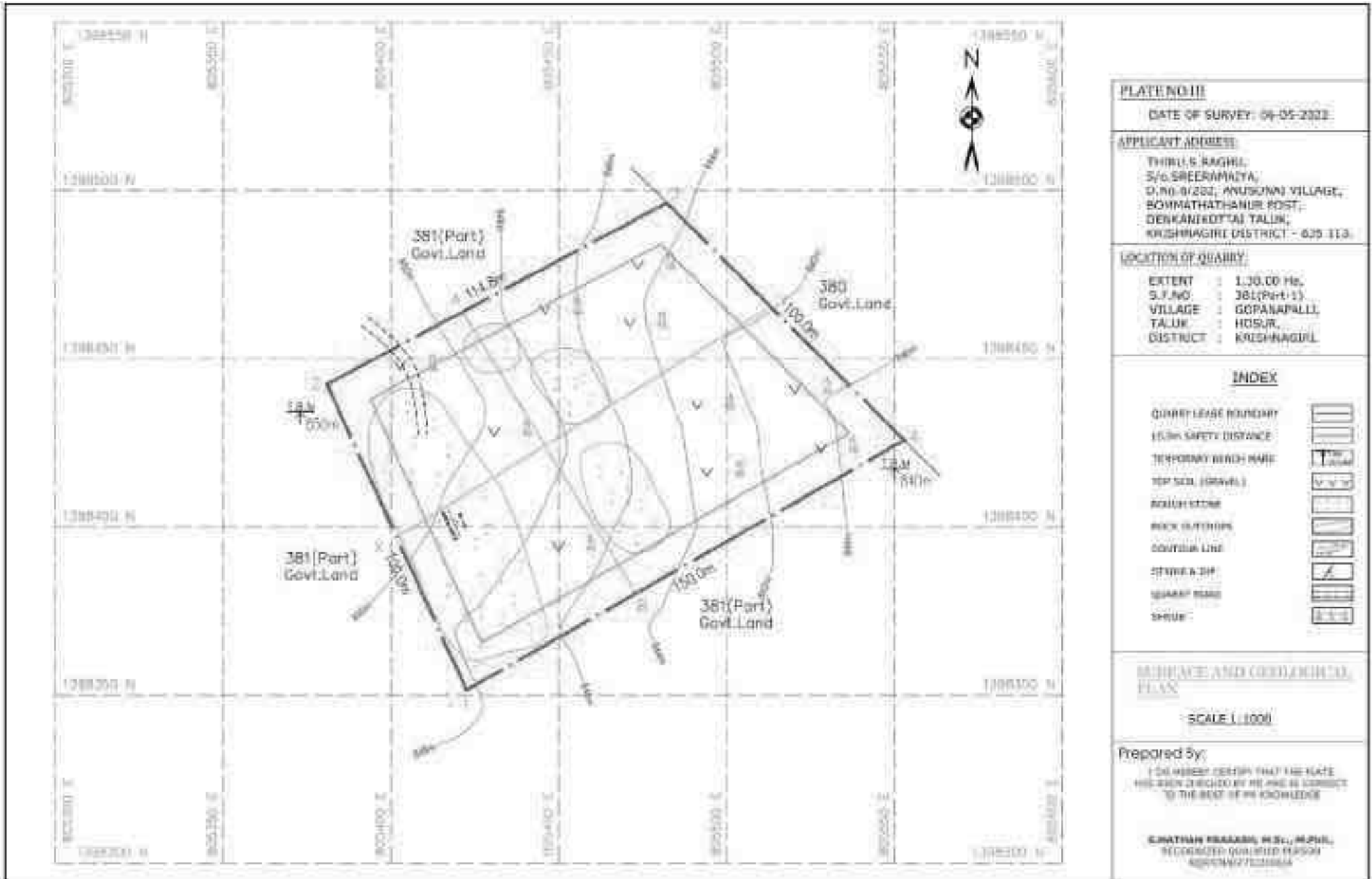
**CONCEPTUAL & FINAL  
SITE LAYOUT & SECTION**

SCALE 1:1000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE  
HAS BEEN DRAWN BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

S. NATHAN PRABHU, M.Sc., M.Phil.,  
REGISTERED QUARRIES PERSON  
HQ/2019/275130/MA



SECTION ALONG X-Y



Surface Ground Level Above Height - 8m  
Surface Ground Level Below Depth - 29m

SECTION ALONG A-B



PLATE NO-III-A

DATE OF SURVEY: 06-05-2022

APPLICANT ADDRESS

THIRU.S.RAGHU,  
S/o.SREERAMAYYA,  
D.No.6/202, ANUSONAI VILLAGE,  
BOPMATHATHANUR POST,  
DENKANIKOTTAI TALUK,  
KRISHNAGIRI DISTRICT - 635 113.

LOCATION OF QUARRY

EXTENT : 1.30,00 HA,  
S.F.NO : 381(Part-1)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI

INDEX

QUARRY LEASE BOUNDARY

15.0M SAFETY DISTANCE

TOPSOIL (GRAVEL)

ROUGH STORE

GEOLOGICAL SETTINGS

SCALE 1:1000

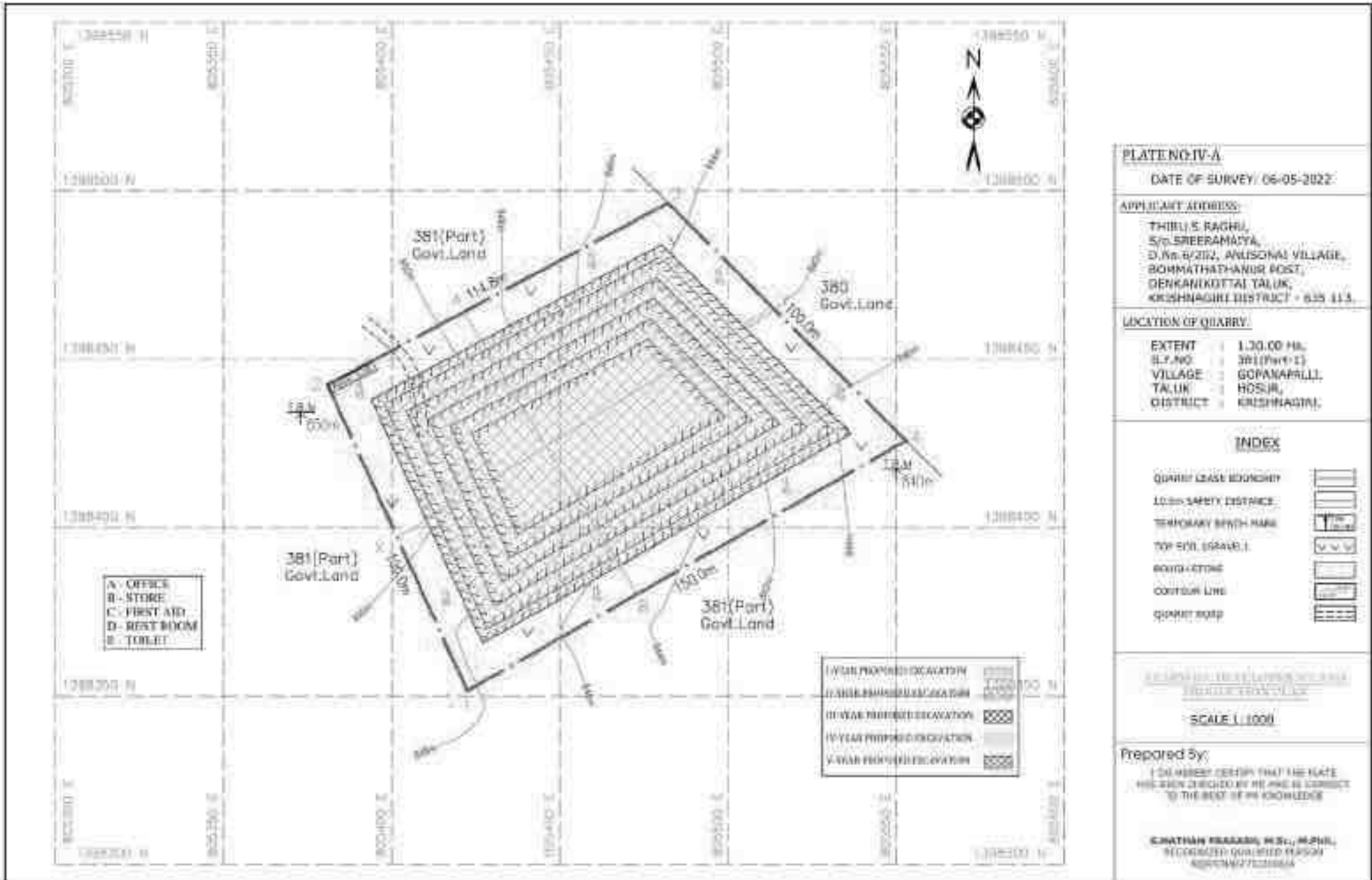
Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE  
HAS BEEN DRAWN BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

S.MATHAN PRABHAKAR, M.Sc., M.Phil.,  
REGULATED QUALIFIED PERSON  
HQ/2019/27713/2019A

| GEOLOGICAL RESERVES |       |                  |                 |                 |                      |  |                                 |
|---------------------|-------|------------------|-----------------|-----------------|----------------------|--|---------------------------------|
| Section             | Bench | Length<br>in (m) | Width<br>in (m) | Depth<br>in (m) | Volume<br>in (Cu.m.) | Recoverable<br>Reserve<br>in Cu.m.(200%) | Topsoil<br>(Gravel) in<br>Cu.m. |
| XY-AB               | I     | 131              | 98              | 2               |                      |  | 25676                           |
|                     | II    | 100              | 98              | 5               | 49000                | 49000                                    |                                 |
|                     | III   | 131              | 98              | 5               | 64190                | 64190                                    |                                 |
|                     | IV    | 131              | 98              | 5               | 64190                | 64190                                    |                                 |
|                     | V     | 131              | 98              | 5               | 64190                | 64190                                    |                                 |
|                     | VI    | 131              | 98              | 5               | 64190                | 64190                                    |                                 |
|                     | VII   | 131              | 98              | 5               | 64190                | 64190                                    |                                 |
|                     | VIII  | 131              | 98              | 5               | 64190                | 64190                                    |                                 |
| Total-              |       |                  |                 |                 | 434140               | 434140                                   | 25676                           |





**PLATE NO. IV-A**

DATE OF SURVEY: 06-05-2022

**APPLICANT ADDRESS:**

THIRU S. RAGHU,  
S/O. SREERAMAYYA,  
D.No. 6/212, ANLISONAI VILLAGE,  
BOMMATHATHANUR POST,  
DENKANIKOTTAI TALUK,  
KRISHNAGIRI DISTRICT - 635 113.

**LOCATION OF QUARRY:**

EXTENT : 1.00.00 Ha.  
S.Y. NO : 381 (Part-1)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

**INDEX**

|                       |  |
|-----------------------|--|
| QUARRY LEASE BOUNDARY |  |
| 100m SAFETY DISTANCE  |  |
| TEMPORARY BENCH MARK  |  |
| TOP OF GRAVEL         |  |
| BOUND STONE           |  |
| OUTSIDE LINE          |  |
| QUARRY SOIL           |  |

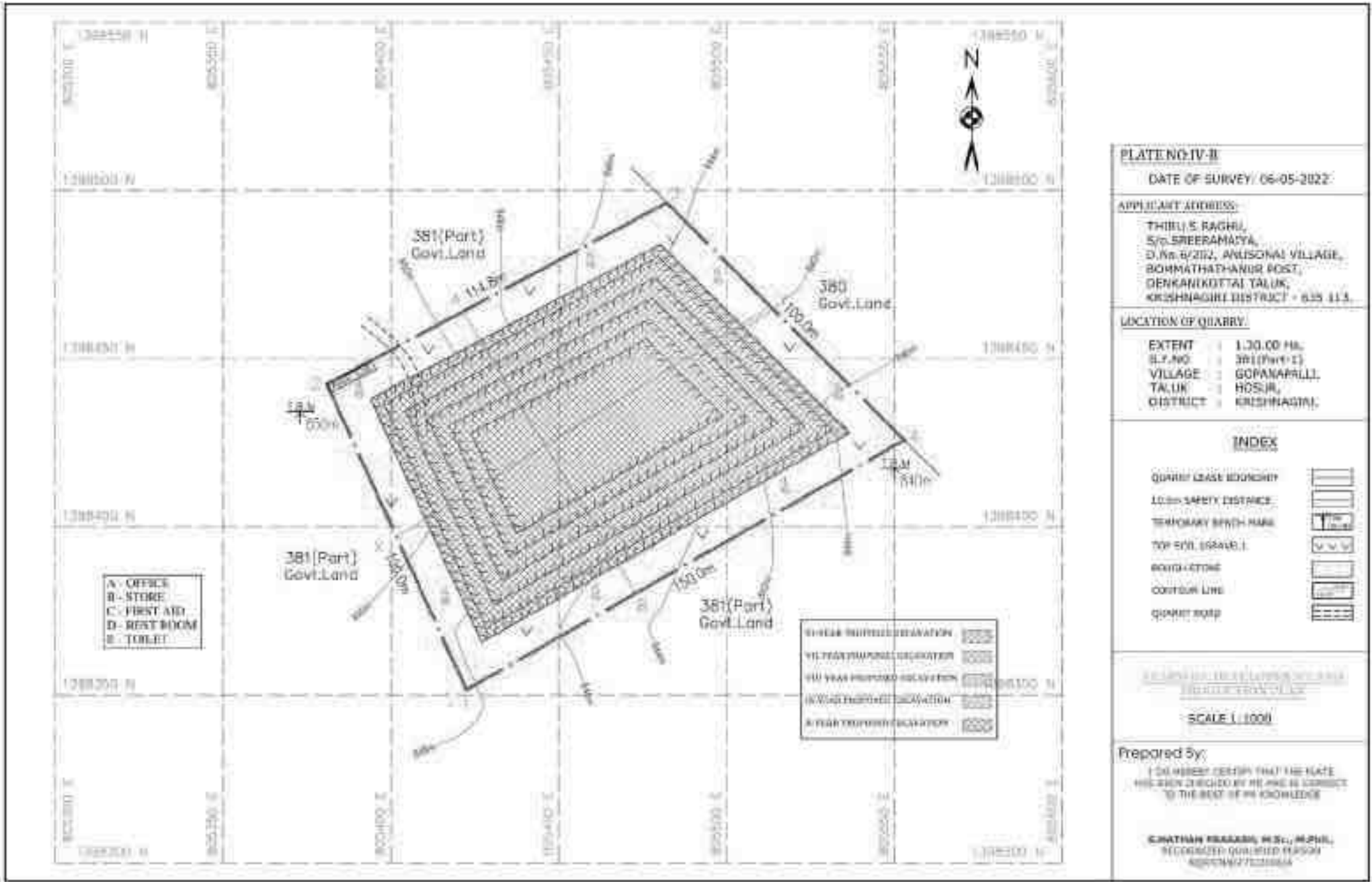
Prepared by: **SRINATH KRISHNAN, M.Sc., M.Phil.,**  
REGULATED QUALIFIED PERSON  
REGISTRATION NO. 42020004

SCALE 1:1000

**Prepared by:**

I DO HEREBY CERTIFY THAT THE PLATE  
HEREON DRAWN BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

**SRINATH KRISHNAN, M.Sc., M.Phil.,**  
REGULATED QUALIFIED PERSON  
REGISTRATION NO. 42020004



**PLATE NO. IV-B**

DATE OF SURVEY/ 06-05-2022

**APPLICANT ADDRESS:**  
 THIRU S. RAGHU,  
 S/o. SREERAMAYA,  
 D.No. 6/212, ANLISONAI VILLAGE,  
 BOMMATHATHANUR POST,  
 DENKANIKOTTAI TALUK,  
 KRISHNAGIRI DISTRICT - 635 113.

**LOCATION OF QUARRY:**  
 EXTENT : 1.00.00 Ha.  
 S.Y. NO : 381 (Part-1)  
 VILLAGE : GOPANAPALLI,  
 TALUK : HOSUR,  
 DISTRICT : KRISHNAGIRI.

**INDEX**

- QUARRY LEASE BOUNDARY
- 100m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- TOP OF GRAVEL
- BOUND STONE
- OUTSIDE LINE
- QUARRY SOUP

- A - OFFICE
- B - STORE
- C - FIRST AID
- D - REST ROOM
- E - TOILET

- STEEL RAILROAD EXCAVATION
- VI YEAR RAILROAD EXCAVATION
- III YEAR RAILROAD EXCAVATION
- II YEAR RAILROAD EXCAVATION
- I YEAR RAILROAD EXCAVATION

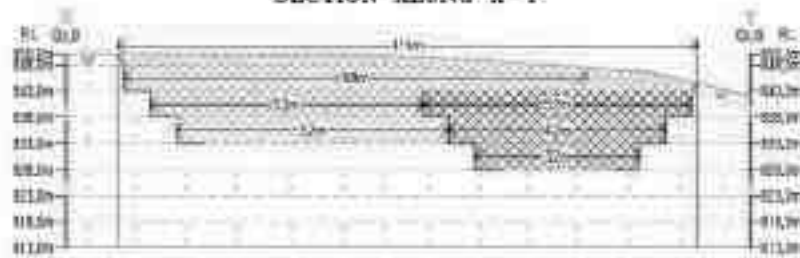
Prepared by:

SCALE 1:1000

I DO HEREBY CERTIFY THAT THE PLATE  
 HEREON DRAWN BY ME AND IS CORRECT  
 TO THE BEST OF MY KNOWLEDGE

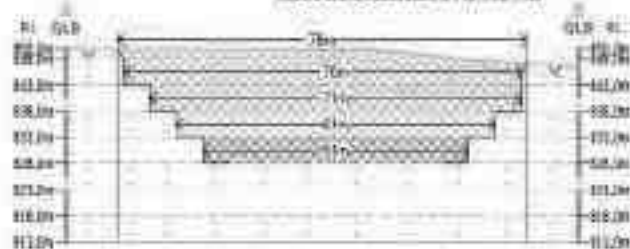
**CRATHAN KRASABU, M.Sc., M.Phil.,**  
 REGISTERED SURVEYOR  
 402004/2720004

SECTION ALONG X-Y



Surface Ground Level Above Height - 8m  
Surface Ground Level Below Depth - 14m

SECTION ALONG A-B



YEARWISE DEVELOPMENT AND PRODUCTION

| YEAR               | Section | Bench        | Length in (m) | Width in (m) | Depth in (m) | Volume in (m <sup>3</sup> ) | Recoverable Reserve in m <sup>3</sup> (100%) | Top Soil in m <sup>3</sup> |
|--------------------|---------|--------------|---------------|--------------|--------------|-----------------------------|--|----------------------------|
| I-YEAR             | XY-AB   | I            | 11            | 78           | 2            |                             |  | 17316                      |
|                    |         | II           | 88            | 76           | 5            | 33440                       | 33440  |                            |
| <b>TOTAL</b>       |         |              |               |              |              | <b>33440</b>                | <b>33440</b>                                 | <b>17316</b>               |
| II-YEAR            | XY-AB   | III          | 52            | 71           | 5            | 18460                       | 18460  |                            |
|                    |         | <b>TOTAL</b> |               |              |              |                             |  | <b>18460</b>               |
| III-YEAR           | XY-AB   | III          | 52            | 71           | 5            | 18460                       | 18460  |                            |
|                    |         | <b>TOTAL</b> |               |              |              |                             |  | <b>18460</b>               |
| IV-YEAR            | XY-AB   | IV           | 52            | 61           | 5            | 15860                       | 15860  |                            |
|                    |         | <b>TOTAL</b> |               |              |              |                             |  | <b>15860</b>               |
| V-YEAR             | XY-AB   | IV           | 42            | 61           | 3            | 12810                       | 12810  |                            |
|                    |         | V            | 32            | 51           | 5            | 8160                        | 8160   |                            |
| <b>TOTAL</b>       |         |              |               |              |              | <b>20970</b>                | <b>20970</b>                                 |                            |
| <b>GRAND TOTAL</b> |         |              |               |              |              | <b>107190</b>               | <b>107190</b>                                | <b>17316</b>               |

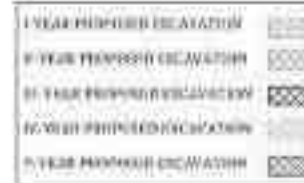


PLATE NO-IV-A1

DATE OF SURVEY: 06-05-2022

APPLICANT ADDRESS:

THEBI C RAGHI,  
S/o SREERAMALYA,  
D.No.6/202, ANUSONAI VILLAGE,  
BOMMATHATHANUR POST,  
DENKANIKOTTAI TALUK,  
KRISHNAGIRI DISTRICT - 635 113.

LOCATION OF QUARRY:

EXTENT : 1.30.00 Ha.  
S.F.NO : 381(Part-1)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

INDEX

- QUARRY LEASE BOUNDARY
- 10.00 SAFETY DISTANCE
- TOP SOIL (GRAVEL)
- ROUGH STORE

YEARWISE DEVELOPMENT AND PRODUCTION

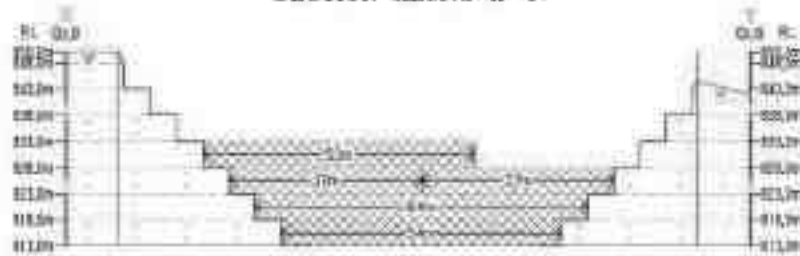
SCALE 1:1000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN DRAWN BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE.

S. NATHAN PRABHU, M.Sc., M.Phil.,  
REGISTERED QUALIFIED PERSON  
HQ/2002/2713/2016A

SECTION ALONG X-Y



SURFACE GROUND LEVEL BELOW DEPTH - 20M

SECTION ALONG A-B



|                               |  |
|-------------------------------|--|
| VI-YEAR PROPOSED EXCAVATION   |  |
| VII-YEAR PROPOSED EXCAVATION  |  |
| VIII-YEAR PROPOSED EXCAVATION |  |
| IX-YEAR PROPOSED EXCAVATION   |  |
| X-YEAR PROPOSED EXCAVATION    |  |

YEARWISE DEVELOPMENT AND PRODUCTION

| YEAR         | Section | Bench | Length in (m) | Width in (m) | Depth in (m) | Volume in (m <sup>3</sup> ) | Recoverable Reserve in m <sup>3</sup> (100%) |
|--------------|---------|-------|---------------|--------------|--------------|-----------------------------|--|
| VI-YEAR      | XY-AB   | V     | 57            | 51           | 5            | 13260                       | 13260  |
| VII-YEAR     |         | VI    | 37            | 41           | 5            | 7585                        | 7585   |
| VIII-YEAR    |         | VI    | 37            | 41           | 5            | 7585                        | 7585   |
| IX-YEAR      |         | VII   | 64            | 31           | 5            | 9920                        | 9920   |
| X-YEAR       |         | VIII  | 54            | 21           | 5            | 5670                        | 5670   |
| <b>TOTAL</b> |         |       |               |              |              | <b>44020</b>                | <b>44020</b>                                 |

PLATE NO-IV-B1

DATE OF SURVEY: 06-05-2022

APPLICANT ADDRESS:

THEBI C RAGHI,  
S/O SREERAMALYA,  
D.No.6/202, ANUSONAI VILLAGE,  
BOMMATHATHANUR POST,  
DENKANIKOTTA TALUK,  
KRISHNAGIRI DISTRICT - 635 113.

LOCATION OF QUARRY:

EXTENT : 1.30.00 Ha.  
S.F.NO : 381(Part-1)  
VILLAGE : GOPANAPALLI,  
TALUK : HOSUR,  
DISTRICT : KRISHNAGIRI.

INDEX

|                       |  |
|-----------------------|--|
| QUARRY LEASE BOUNDARY |  |
| 10.00 SAFETY DISTANCE |  |
| TOP SOIL (GRAVEL)     |  |
| ROUGH STONE           |  |

YEARWISE DEVELOPMENT AND PRODUCTION

SCALE 1:1000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN DRAWN BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE.

S. NATHAN PRABHU, M.Sc., M.Phil.,  
REGISTERED QUARRIES PERSON  
HQ/2019/275130/NA

**ANNEXURE-VII**  
**VAO CERTIFICATE**

**THIRU. S. RAGHU**, Rough stone quarry in the S.F.No.381(Part-1) over an extent of 1.30.00ha. in Gopanapalli Village, Hosur Taluk, Krishnagiri District.

**GENERAL VIEW OF THE APPLIED LEASE AREA**



  
**S. Raghunath**  
(Deponent)

  
Sd/-  
No. 85, Gopanapalli, Village  
(VAO), Krishnagiri District.



# **ANNEXURE-VIII BLASTING AGREEMENT**





# VISHNU EXPLOSIVES

Blasting Contractor



Office : Door No. 273-A, Keelpaiyur, Paiyur Village, Kaveripattinam, Krishnagiri Dt. Pin - 635 112.  
Magazine at : SF No. 344/3B, Paiyur Village, Kaveripattinam, Krishnagiri Dt.  
Cell : 98427 44073, 99655 44073, 94437 44073

Ref To

S Raghv,  
S/o. Sreeramaiya,  
D.No.6/202, Anusotai Village,  
Boornathathanur Post,  
Denkanikottai Taluk,  
Krishnagiri District-635 113.

Sir,

**Sub: Willingness to do Explosives Blasting Works - Reg.**

With respect to the above subject, we would like to introduce myself as the Explosives Blasting Contractors, for which our LICENCE NO: E/HQ/TN/22/335(E64278) & E/SC/TN/22/463(E17227) S.F.No.144/3B, Paiyur Village. Krishnagiri Taluk magazine is situated in No.273-A, Keel Paiyur Village, Kaveripattinam, Krishnagiri, Tamilnadu-635 112.

We were engaged in professional blasting contract works with all facilities and License holders to carry out blasting works in specified time and period covered under Explosives Rules, 2008.

We kindly request yourself to engage us to do Explosives Blasting Works in your proposed Rough stone Quarry situated at S.F.No: 381 (Part- 1) in Gopunapalli Village, Hosur Taluk, Krishnagiri District over an extent of 1.30.00 hectares.

**SERVING BEST AT ALL TIMES**

Thanking you.

For VISHNU EXPLOSIVES,

Vk. Vishwanath



Enclosure: Magazine License Copy.



**ANNEXURE-IX AFFIDAVIT AND CER  
DETAILS**

भारतीय गैर न्यायिक

पचास  
रुपये

रु.50



FIFTY  
RUPEES

Rs.50

INDIA NON JUDICIAL

தமிழ்நாடு தமிழ்நாடு TAMILNADU 20.10.2022. / ரூ 50. BE 949686

S. Raghu, Krishnagiri

M. கந்திராணி

முத்திரை வைக்கப்பட்டது  
ச. சிவாஜி சாஸ்திரி, 1/2003  
கல்யாணசுந்தரி நகர் கிரிவிளாக்கம்,  
காமங்கலம், சேஷா-5, தமிழ்நாடு

AFFIDAVIT TO SEIAA, TAMIL NADU

I, S. Raghu, S/o. Sreeramaia residing at D.No.6/202, Anusonai Village, Bommathathanur Post, Denkanikottai Taluk, Krishnagiri District-835 113, do hereby solemnly declare and sincerely affirm that, I have applied for getting environment clearance to SEIAA, Tamil Nadu for quarry lease for Rough Stone quarry over an extent of 1.30.0 Ha with Survey No. 381 (Part-1), in Gopanapalli village, Hosur Taluk, Krishnagiri District, Tamil Nadu.

1. I swear to state and confirm that none of the following is situated within 10km radius of the quarry site for which, i have applied for environmental clearance,
- Notified Protected areas under the wild life (Protection) Act, 1972 (NBWL).
  - Critically polluted areas as notified by the central pollution control board constituted under water (Prevention and control of Pollution) Act 1974.
  - Eco sensitive area as notified.
  - International boundaries within 10km radius from the boundary of the proposed quarry site.



2. The following Corporate Environment Responsibility (CER) activities will be completed before commencement of the quarrying activities.

| CER Activity   | Project cost (Rs) | CER cost (Rs)  |
|--|-------------------|----------------|
| Carrying out various developmental works in the nearby region based on the need of the locals. | Rs. 1,65,40,000/- | Rs. 5,00,000/- |
| Total cost Allocation  | Rs. 1,65,40,000/- | Rs. 5,00,000/- |

3. Details of quarry within 500m radius from the applied area:

a. Existing Quarries

| S.No  | Name and address of the lessee | Village & Taluk | SF.No. | Extent in Hectare | G.O. No. & date | Lease Period |
|-------|--------------------------------|-----------------|--------|-------------------|-----------------|--------------|
| -Nil- |                                |                 |        |                   |                 |              |

b. Details of abandoned / Old Quarries

| S.No  | Name and address of the lessee | Village & Taluk | SF.No. | Extent in Hectare | G.O. No. & date | Lease Period |
|-------|--------------------------------|-----------------|--------|-------------------|-----------------|--------------|
| -Nil- |                                |                 |        |                   |                 |              |



## c. Details of Proposed Quarries

| S.No | Name and address of the lessee | Village & Taluk                      | SF.No.            | Extent in Hectare | G.O. No. & date                        | Lease Period          |
|------|--------------------------------|--------------------------------------|-------------------|-------------------|--|-----------------------|
| 1    | Thru. S. Raghu                 | Gopanaalli<br>village<br>Hosur Taluk | 381<br>(Part-1)   | 1.30.0 Ha.        | Rc.No.539/2022/<br>Mines dt:04.05.2022 | Instant<br>Proposal   |
| 2    | M/s. Natural Stone             | Gopanaalli<br>village<br>Hosur Taluk | 220/1<br>(Part-1) | 3.00.0 Ha.        | Rc.No.535/2022/<br>Mines dt:21.04.2022 | Precise<br>area given |
| 3    | Thiru. Nithin Reddy            | Gopanaalli<br>village<br>Hosur Taluk | 220/1<br>(Part-2) | 3.00.0 Ha.        | Rc.No.536/2022/<br>Mines dt:05.05.2022 | Precise<br>area given |
| 4    | Thiru. Sri Krish               | Gopanaalli<br>village<br>Hosur Taluk | 220/1<br>(Part-3) | 3.00.0 Ha.        | Rc.No.537/2022/<br>Mines dt.21.04.2022 | Precise<br>area given |
| 5    | Thiru. Vijaya Kumar            | Gopanaalli<br>village<br>Hosur Taluk | 220/1<br>(Part-4) | 2.00.0 Ha.        | Rc.No.538/2022/<br>Mines dt:28.04.2022 | Precise<br>area given |
| 6    | Thiru. Dhivakar                | Gopanaalli<br>village<br>Hosur Taluk | 381/1<br>(Part-2) | 1.50.0 Ha.        | Rc.No.540/2022/<br>Mines dt.22.04.2022 | Precise<br>area given |





4. There will not be hindrance or disturbance to the people living on enrooted/ nearby my quarry site while transporting the mineral and due to quarrying activities.
5. There is no approved habitation within 300m radius from the periphery of my applied quarry.
6. I swear that afforestation will be carried out during the course of quarrying operation and maintained
7. Insurance coverage will be arranged for the laborers working in my quarry site.
8. The existing road from the main road to quarry is in good condition and the same will be maintained and utilized for Transportation of Rough Stone.
9. I will not engage any child labor in my quarry site and I am aware that engaging child labor is punishable under the law
10. All types of safety / protective equipment will be provided and used by all the laborers working in my quarry.
11. No permanent structures, temple etc., are located within 500m radius from the periphery of my quarry.

I ensure to do the social and Environment commitment as mentioned in the Mining plan to the best of my knowledge.

  
S. Raghu  
(Deponent)



  
CALL (0)8443286345  
M. SANKARANARAYANAN-PEAR.S.S.C.,B.L.  
ADVOCATE & NOTARY,  
GOVT. OF INDIA)  
No. 15, V. Mansion,  
1st Gate, Near Sona College.,  
Junction Main Road, SALEM-636 005.

# **ANNEXURE-X NABET CERTIFICATE**





## National Accreditation Board for Education and Training



### Certificate of Accreditation

#### Eco Tech Labs Pvt Ltd.,

48, 2nd Main Road, Ram Nagar South Extension, Pallikaranai, Chennai- 600100, T.N.

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 Open cast only   | 1               | 1 (a) (i) | B    |
| 2     | Thermal power plants  | 4               | 1(d)      | A    |
| 3     | Coal washeries  | 6               | 2 (a)     | B    |
| 4     | Metallurgical industries - Ferrous only   | 8               | 3 (a)     | B    |
| 5     | Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates) | 21              | 5 (f)     | A    |
| 6     | Airports  | 29              | 7 (a)     | A    |
| 7     | Industrial estates/ parks/ complexes/areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes   | 31              | 7 (c)     | A    |
| 8     | Building and construction projects  | 38              | 8 (a)     | B    |
| 9     | Townships and Area development projects   | 39              | 8 (b)     | B    |

**Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in SAAC minutes dated Apr. 20, 2021 and supplementary minutes dated Oct.19, 2021 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/22/2217 dated Jan. 19, 2022. The accreditation needs to be renewed before the expiry date by Eco Tech Labs Pvt. Ltd., Chennai following due process of assessment.



Sr. Director, NABET  
Dated: Jan. 19, 2022

Certificate No.  
NABET/EIA/2124/SA 0147

Valid up to  
Sep. 15, 2023

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.

