

OCTOBER  
2022

Application Form For Environmental Clearance (Public Hearing)

# Application Form (Draft EIA Report)

For

Proposed Rough Stone and Gravel Quarry – 1.92.0 Ha

at

S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur  
District and Tamil Nadu State

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

Category of the Project: B1 Cluster Mining

***Baseline Period: March, April and May 2022***

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



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

*Proponent details:*

M/s. Annai Blue metals  
S.F.No.451, Kaalipalayam  
Kuppam Village,  
Pugalur Taluk,  
Karur District – 639 111.

**Date:**

**From**

M/s. Annai Blue metals  
S.F.No.451, Kaalipalayam  
Kuppam Village,  
Pugalur Taluk,  
Karur District – 639 111.

**To**

**The District Environmental Engineer**

Tamilnadu Pollution Control Board,  
No 26, Ramakrishnapuram West,  
Karur - 639 001.

**Sir,**

**Sub: Request to conduct Public Hearing** – Environmental Clearance for the M/s. Annai Blue metals Rough Stone and Gravel Quarry over a total extent of 1.92.0 Ha at S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu State – Regarding.

**Ref: Letter No. SEIAA-TN/F. No. 8693/ SEAC/ToR-1077/2021 Dated: 01.03.2022**

Please find enclosed herewith the application of Draft EIA Report along with necessary enclosures towards seeking environmental clearance for M/s. Annai Blue metals Rough Stone and Gravel Quarry over a total extent of 1.92.0 Ha at S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu State. In this regard, we had obtained the Terms of Reference from State Environmental Impact Assessment Authority (SEIAA) Tamil Nadu; vide reference mentioned above for conducting EIA studies. We wish to inform that the draft EIA report complying with all the conditions mentioned in the TOR has been prepared and the copies of the same are enclosed with this letter. With reference to the above, we kindly request the TNPCB to make the necessary arrangements for **conducting the public hearing for the Rough Stone and Gravel Quarry**. With the above, we request the TNPCB to accept and process our application for conducting the Public Hearing at the earliest.

**Thanking you**

**Yours Sincerely**

Authorized Signatory

Enclosures: Draft EIA report



M/s. Annai Blue metals  
S.F.No.451, Kaalipalayam  
Kuppam Village,  
Pugalur Taluk,  
Karur District – 639 111.

---

## **UNDERTAKING**

I, M/s. Annai Blue metals, undertaking that the Draft Environmental Impact Assessment (EIA) Report for Rough Stone and Gravel Quarry over an extent of 1.92.0 Ha at S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu 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. 8693/ SEAC/ToR-1077/2021 Dated: 01.03.2022

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: Karur

Date:

Yours faithfully

M/s. Annai Blue metals

Plot No.48A, 2nd Main Road,  
Ram Nagar, South Extension,  
Pallikarantal, 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 and Gravel Quarry over an extent of 1.92.0 Ha at S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu State has been prepared at M/s. Ecotech Labs Pvt. Ltd., Chennai.

I also confirm that I shall be fully accountable for any miss-leading 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

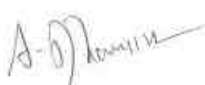
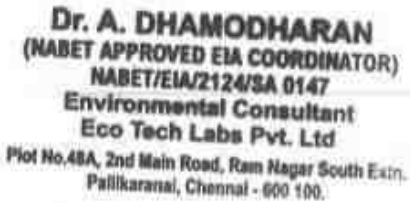
Date: 22.06.2022

Place: Chennai

## Declaration of Experts contributing to the EIA




Declaration by experts contributing to the EIA report for New Rough Stone and Gravel Quarry (minor mineral) mining project of M/s. Annai Blue metals Rough Stone and Gravel Quarry over a total extent of 1.92.0 Ha at S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu State.





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

|   |  |
|---|--|
| <b>Project</b>  | Rough Stone and Gravel Quarry-1.92.0 Ha  |
| <b>Type &amp; Category</b>                                    | 1 (a) Mining of Minerals   |
| <b>Project Proponent</b>                                      | M/s. Annai Blue metals   |
| <b>Environment Consultant with their Accreditation Status</b> | M/s. Eco Tech Labs Pvt. Ltd.,<br>QCI Accredited  |
| <b>NABET Certificate No.</b>                                  | NABET/ EIA/2124/ SA 0147   |
| <b>EIA Coordinator Name</b><br><br><b>Signature</b>           | Dr. A. Dhamodharan (Mining of Minerals)<br><br> |
| <b>Period of Involvement</b>                                  | March to May 2022  |
| <b>Contact Information</b>                                    | <b>M/s. Eco Tech Labs Pvt. Ltd.</b><br>No. 48, 2nd Main Road,<br>Ram Nagar South Extension<br>Pallikaranai, Chennai - 600 100<br>Mobile: +91 9789906200<br>E-mail: dhamo@ecotechlabs.in                                |

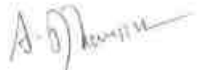

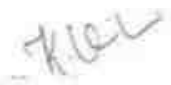

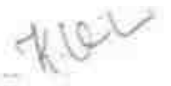
### Functional Area Experts

The basic fact division that environment and laboratory are accredited by NABL and Ministry of Environment and Forests, India and by other international bodies, stand testimony to its emphasis.

| S. No. | Functional areas | Name of the experts   | Involvement (period and task)   | Signature and date  |
|--------|------------------|-----------------------|---|---|
| 1      | AP               | Mrs. K. Vijayalakshmi | <ol style="list-style-type: none"><li>1. Selection of Baseline Monitoring stations based on the wind direction</li><li>2. Interpretation of Baseline data by comparing it with standards prescribed by CPCB against the type of area</li><li>3. Identification of sources of air pollution and suggesting mitigation measures to minimize impact</li></ol> <p><i>Period: March 2022 – Till now</i></p>  |    |
| 2      | WP               | Dr. A. Dhamodharan    | <ol style="list-style-type: none"><li>1. Selection of baseline Monitoring Locations for Ground water analysis and also identifying nearest surface water to be studied.</li><li>2. Interpretation of baseline data collected</li><li>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</li><li>4. Preparation of suitable and appropriate mitigation plan.</li></ol> <p><i>Period: March 2022 – Till now</i></p> |  |
| 3      | SHW              | Dr. A. Dhamodharan    | <ol style="list-style-type: none"><li>1. Identification of nature of solid waste generated</li><li>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</li><li>3. Suggesting suitable mitigation measures by recommending appropriate disposal method for each category of waste generated</li></ol>   |  |

|   |     |                    |   |   |
|---|-----|--------------------|---|---|
|   |     |                    | 4. Top soil and refuse management<br><i>Period: March 2022 – Till now</i>   |   |
| 4 | SE  | Mr. S. Pandian     | 1. Primary data collection through the census questionnaire<br>2. Obtaining Secondary data from authenticated sources and incorporating the same in EIA report.<br>3. Impact assessment & proposing suitable mitigation plan<br>4. CSR budget allocation by discussing with the local body and allotting the same for need based activity.<br><i>Period: March 2022 – Till now</i><br><b>*INVOLVES PUBLIC HEARING</b> |    |
| 5 | EB  | Dr. A. Dhamodharan | 1. Primary data collection through field survey and sheet observation for ecology and biodiversity<br>2. Secondary Collection through various authenticated sources<br>3. Prediction of anticipated impacts and suggesting appropriate mitigation measures.<br><i>Period: March 2022 – Till now</i>   |    |
| 6 | HG  | Dr. T. P. Natesan  | 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<br>2. Determination of groundwater use pattern, development of rainwater harvesting program. Storm water management through garland drainage system.<br><i>Period: March 2022 – Till now</i>   |  |
| 7 | GEO | Dr. T. P. Natesan  | 1. Field survey for assessing regional and local geology, aquifer distribution, Determination of groundwater use pattern, development of rainwater harvesting program.<br><i>Period: March 2022 – Till now</i>  |  |



|    |    |                       |  |   |
|----|----|-----------------------|--|---|
| 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>Period: March 2022 – Till now</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>Period: March 2022 – Till now</b></p> |    |
| 10 | NV | Mrs. K. Vijayalakshmi | <p>1. Selection of monitoring locations</p> <p>2. Interpretation of baseline data</p> <p>3. Prediction of impacts due to noise pollution and suggestion of appropriate mitigation measures</p> <p><b>Period: May 2022 – Till now</b></p>   |   |
| 11 | LU | Dr. T. P. Natesan     | <p>1. Collection of Remote sensing satellite data to study the land use pattern.</p> <p>2. Primary field survey and limited field verification for land categorization in the study area</p> <p>3. Preparation of Land use map using Satellite data for 10km radius around the project site.</p> <p><b>Period: March 2022 – Till now</b></p>   |  |
| 12 | RH | Mrs. K. Vijayalakshmi | <p>1. Identification of the risk</p> <p>2. Interpreting consequence contours</p> <p>3. Suggesting risk mitigation measures</p> <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 S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu 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:** NABET/ EIA/2124/ SA 0147



## TABLE OF CONTENTS

| <b>Description</b> | <b>Contents</b>  | <b>Page No</b> |
|--------------------|--|----------------|
|                    | <b>Draft EIA Report</b>                                      | 1              |
|                    | <b>Annexure</b>  |                |
| Annexure I         | ToR Copy, Standard ToR Conditions With Additional ToR Points | 151            |
| Annexure II        | Precise Area Communication Letter                            | 197            |
| Annexure III       | Mining Plan Approval letter                                  | 203            |
| Annexure IV        | 500m Radius AD letter Mining Plan report and Plates          | 209            |
| Annexure V         | FMB, A Register, Village Map and Deed Of Agreement           | 213            |
| Annexure VI        | Mining Plan report and Plates                                | 219            |
| Annexure VII       | VAO certificate  | 301            |
| Annexure VIII      | Blasting Agreement   | 305            |
| Annexure IX        | Affidavit And Cer Details                                    | 311            |
| Annexure X         | NABET Certificate  | 317            |
| Annexure XI        | Existing Pit Letter  | 321            |
| Annexure XII       | VAO, Thasildar, RDO Certificates                             | 325            |
| Annexure XIII      | Forest Certificate   | 341            |
| Annexure XIV       | Lab Reports  | 345            |
| Annexure XV        | Site Photos  | 383            |



|                          |  |                             |
|--------------------------|--|-----------------------------|
| <b>Project</b>           | <b><i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i></b> | <b>Draft EIA<br/>Report</b> |
| <b>Project Proponent</b> | <b><i>M/s. Annai Blue metals</i></b>   |                             |
| <b>Project Location</b>  | <b><i>Kuppam Village, Pugalur Taluk, Karur District</i></b>                      |                             |

## Contents

|          |  |           |
|----------|--|-----------|
|          | <i>EXECUTIVE SUMMARY</i> .....                       | 11        |
| <b>1</b> | <b>INTRODUCTION</b> .....                            | <b>25</b> |
| 1.1      | PREAMBLE.....  | 25        |
| 1.2      | GENERAL INFORMATION ON MINING OF MINERALS .....      | 25        |
| 1.3      | ENVIRONMENTAL CLEARANCE.....                         | 26        |
| 1.4      | TERMS OF REFERENCE (TOR).....                        | 27        |
| 1.5      | POST ENVIRONMENTAL CLEARANCE MONITORING .....        | 27        |
| 1.5.1    | <i>Methodology adopted</i> .....                     | 27        |
| 1.6      | GENERIC STRUCTURE OF THE EIA DOCUMENT.....           | 27        |
| 1.7      | DETAILS OF PROJECT PROPONENT.....                    | 29        |
| 1.8      | BRIEF DESCRIPTION OF THE PROJECT .....               | 29        |
| 1.8.1    | <i>Project Nature, Size &amp; Location</i> .....     | 29        |
| <b>2</b> | <b>PROJECT DESCRIPTION</b> .....                     | <b>31</b> |
| 2.1      | GENERAL .....  | 31        |
| 2.1.1    | <i>Need for the project:</i> .....                   | 33        |
| 2.2      | BRIEF DESCRIPTION OF THE PROJECT.....                | 33        |
| 2.2.1    | <i>Site Connectivity:</i> .....                      | 36        |
| 2.3      | LOCATION DETAILS: .....                              | 37        |
| 2.3.1    | <i>Site Photographs</i> .....                        | 40        |
| 2.3.2    | <i>Land Use Breakup of the Mine Lease Area</i> ..... | 40        |
| 2.3.3    | <i>Human Settlement</i> .....                        | 41        |
| 2.4      | LEASEHOLD AREA .....                                 | 41        |
| 2.5      | GEOLOGY.....   | 41        |
| 2.6      | QUALITY OF RESERVES: .....                           | 43        |
| 2.6.1    | <i>Estimation of Reserves</i> .....                  | 43        |
| 2.6.2    | <i>Geological Reserves</i> .....                     | 43        |
| 2.6.3    | <i>Mineable Reserves</i> .....                       | 44        |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

|          |   |           |
|----------|---|-----------|
| 2.6.4    | <i>Year wise Production Plan</i> .....        | 45        |
| 2.7      | TYPE OF MINING .....                          | 48        |
| 2.7.1    | <i>Method of Working:</i> .....               | 48        |
| 2.7.2    | <i>Overburden</i> .....                       | 48        |
| 2.7.3    | <i>Machineries to be used</i> .....           | 48        |
| 2.7.4    | <i>Blasting:</i> .....                        | 49        |
| 2.8      | MAN POWER REQUIREMENTS .....                  | 50        |
| 2.8.1    | <i>Water Requirement</i> .....                | 51        |
| 2.9      | PROJECT IMPLEMENTATION SCHEDULE .....         | 51        |
| 2.10     | SOLID WASTE MANAGEMENT .....                  | 51        |
| 2.11     | MINE DRAINAGE .....                           | 52        |
| 2.12     | POWER REQUIREMENT.....                        | 52        |
| 2.13     | PROJECT COST .....                            | 52        |
| 2.14     | GREENBELT .....                               | 53        |
| <b>3</b> | <b>DESCRIPTION OF THE ENVIRONMENT</b> .....   | <b>54</b> |
| 3.1      | GENERAL: .....                                | 54        |
| 3.1.1    | <i>Study Area:</i> .....                      | 54        |
| 3.1.2    | <i>Instruments Used</i> .....                 | 55        |
| 3.1.3    | <i>Baseline Data Collection Period:</i> ..... | 55        |
| 3.1.4    | <i>Frequency of Monitoring</i> .....          | 55        |
| 3.1.5    | <i>Secondary data Collection</i> .....        | 56        |
| 3.1.6    | <i>Study area details</i> .....               | 57        |
| 3.1.7    | <i>Site Connectivity:</i> .....               | 59        |
| 3.2      | LAND USE ANALYSIS.....                        | 60        |
| 3.2.1    | <i>Land Use Classification</i> .....          | 60        |
| 3.2.2    | <i>Methodology</i> .....                      | 60        |
| 3.2.3    | <i>Satellite Data</i> .....                   | 62        |
| 3.2.4    | <i>Scale of mapping</i> .....                 | 62        |
| 3.2.5    | <i>Interpretation Technique</i> .....         | 62        |

|                          |   |                             |
|--------------------------|---|-----------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA<br/>Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                             |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                             |

|       |   |     |
|-------|---|-----|
| 3.2.6 | Field Verification.....   | 63  |
| 3.2.7 | Description of the Land Use / land cover classes.....   | 63  |
| 3.3   | WATER ENVIRONMENT.....  | 66  |
| 3.3.1 | Contour & Drainage.....   | 66  |
| 3.3.2 | Geomorphology.....  | 66  |
| 3.3.3 | Geology:.....   | 67  |
| 3.3.4 | Hydrogeology.....   | 68  |
| 3.3.5 | Ground water quality monitoring.....  | 70  |
| 3.3.6 | Interpretation of results:.....   | 73  |
| 3.3.7 | Surface Water Analysis.....   | 75  |
| 3.3.8 | Climatology & Meteorology:.....   | 76  |
| 3.3.9 | Selection of Sampling Locations:.....   | 78  |
| 3.4   | AMBIENT AIR QUALITY.....  | 78  |
| 3.4.1 | Ambient Air Quality: Results & Discussion.....  | 79  |
| 3.4.2 | Interpretation of ambient air quality:.....   | 81  |
| 3.5   | NOISE ENVIRONMENT:.....   | 83  |
| 3.5.1 | Day Noise Level (Leq day).....  | 84  |
| 3.5.2 | Night Noise Level (Leq Night).....  | 84  |
| 3.6   | SOIL ENVIRONMENT.....   | 85  |
| 3.6.1 | Baseline Data:.....   | 85  |
| 3.7   | ECOLOGY AND BIODIVERSITY.....   | 88  |
| 3.7.1 | Methods available for floral analysis:.....   | 88  |
| 3.7.2 | Field study& Methodology adopted:.....  | 89  |
| 3.7.3 | Study outcome:.....   | 89  |
| 3.7.4 | Calculation of species diversity by Shannon – wiener Index, Evenness and richness by Margalef:....      | 95  |
| 3.7.5 | Calculation of species diversity by Shannon – wiener Index, Evenness and richness by Margalef for trees | 95  |
| 3.7.6 | Floral study in the Buffer Zone:.....   | 98  |
| 3.7.7 | Faunal Communities.....   | 98  |
| 3.8   | DEMOGRAPHY AND SOCIO ECONOMICS.....   | 101 |



|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

|          |   |            |
|----------|---|------------|
| 3.9      | TRAFFIC IMPACT ASSESSMENT .....   | 102        |
| <b>4</b> | <b>ANTICIPATED ENVIRONMENTAL IMPACTS &amp; MITIGATION MEASURES .....</b>                          | <b>105</b> |
| 4.1      | INTRODUCTION .....  | 105        |
| 4.2      | LAND ENVIRONMENT: .....   | 106        |
| 4.3      | WATER ENVIRONMENT: .....  | 107        |
| 4.4      | AIR ENVIRONMENT: .....  | 109        |
| 4.4.1    | <i>Source Characterization .....</i>  | <i>111</i> |
| 4.5      | NOISE ENVIRONMENT:.....   | 114        |
| 4.6      | BIOLOGICAL ENVIRONMENT:.....  | 115        |
| 4.7      | SOCIO ECONOMIC ENVIRONMENT: .....   | 116        |
| 4.8      | OTHER IMPACTS: .....  | 118        |
| <b>5</b> | <b>ANALYSIS OF ALTERNATIVES.....</b>  | <b>119</b> |
| 5.1      | GENERAL .....   | 119        |
| 5.1.1    | <i>Analysis for Alternative Sites and Mining Technology .....</i>                                 | <i>119</i> |
| <b>6</b> | <b>ENVIRONMENTAL MONITORING PROGRAM .....</b>   | <b>121</b> |
| 6.1      | GENERAL: .....  | 121        |
| <b>7</b> | <b>ADDITIONAL STUDIES.....</b>  | <b>125</b> |
| 7.1      | GENERAL .....   | 125        |
| 7.1.1    | <i>Public Hearing: .....</i>  | <i>125</i> |
| 7.1.2    | <i>Risk assessment: .....</i>   | <i>125</i> |
| 7.1.3    | <i>Identification of Hazard .....</i>   | <i>126</i> |
| 7.1.4    | <i>General Precautionary measures for the Risk involved in the proposed mine: .....</i>           | <i>127</i> |
| 7.1.5    | <i>Safety Team:.....</i>  | <i>128</i> |
| 7.1.6    | <i>Emergency Control Centre.....</i>  | <i>129</i> |
| 7.2      | DISASTER MANAGEMENT .....   | 129        |
| 7.2.1    | <i>Emergency Management Plan For Proposed Mines On Site- Offsite Emergency Preparedness Plan:</i> |            |
|          | <i>129</i>  |            |
| 7.2.1    | <i>Onsite off-site emergency Plan:.....</i>   | <i>130</i> |

|                          |  |                                |
|--------------------------|--|--------------------------------|
| <b>Project</b>           | <b><i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i></b> | <b><i>Draft EIA Report</i></b> |
| <b>Project Proponent</b> | <b><i>M/s. Annai Blue metals</i></b>   |                                |
| <b>Project Location</b>  | <b><i>Kuppam Village, Pugalur Taluk, Karur District</i></b>                      |                                |

|           |  |            |
|-----------|--|------------|
| 7.2.2     | <i>Emergency Plan:</i> .....                         | 130        |
| 7.2.3     | <i>Emergency Control:</i> .....                      | 130        |
| 7.3       | NATURAL RESOURCE CONSERVATION.....                   | 131        |
| 7.4       | RESETTLEMENT AND REHABILITATION:.....                | 131        |
| <b>8</b>  | <b>PROJECT BENEFITS .....</b>                        | <b>132</b> |
| 8.1       | GENERAL .....  | 132        |
| 8.1.1     | <i>Physical Benefits</i> .....                       | 132        |
| 8.2       | SOCIAL BENEFITS.....                                 | 132        |
| 8.3       | PROJECT COST / INVESTMENT DETAILS.....               | 132        |
| <b>9</b>  | <b>ENVIRONMENTAL MANAGEMENT PLAN .....</b>           | <b>134</b> |
| 9.1       | INTRODUCTION .....                                   | 134        |
| 9.2       | SUBSIDENCE .....                                     | 134        |
| 9.3       | MINE DRAINAGE .....                                  | 134        |
| 9.3.1     | <i>Storm water Management</i> .....                  | 134        |
| 9.3.2     | <i>Drainage</i> .....                                | 134        |
| 9.3.3     | <i>Administrative and Technical Setup</i> .....      | 135        |
| <b>10</b> | <b>SUMMARY &amp; CONCLUSION.....</b>                 | <b>140</b> |
| 10.1      | INTRODUCTION .....                                   | 140        |
| 10.2      | PROJECT OVERVIEW .....                               | 140        |
| 10.3      | JUSTIFICATION OF THE PROPOSED PROJECT .....          | 142        |
| <b>11</b> | <b>DISCLOSURE OF CONSULTANT.....</b>                 | <b>145</b> |
| 11.1      | INTRODUCTION .....                                   | 145        |
| 11.2      | ECO TECH LABS PVT. LTD – ENVIRONMENT CONSULTANT..... | 145        |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

**List Of Tables:**

|  |    |
|--|----|
| TABLE 1-1: POST ENVIRONMENTAL CLEARANCE MONITORING ..... | 27 |
| TABLE 2-1: QUARRY WITHIN 500M RADIUS .....               | 32 |
| TABLE 2-2 SALIENT FEATURES OF THE PROJECT .....          | 33 |
| TABLE 2-3: LOCATION DETAILS .....                        | 37 |
| TABLE 2-4: LAND USE PATTERN .....                        | 40 |
| TABLE 2-5: HABITATION .....                              | 41 |
| TABLE 2-6: DETAILS OF MINING .....                       | 43 |
| TABLE 2-7: GEOLOGICAL RESERVES.....                      | 43 |
| TABLE 2-8: MINEABLE RESERVES.....                        | 44 |
| TABLE 2-9: YEAR WISE PRODUCTION PLAN.....                | 45 |
| TABLE 2-10: LIST OF MACHINERIES USED .....               | 48 |
| TABLE 2-11: DRILLING AND BLASTING PARAMETERS .....       | 49 |
| TABLE 2-12: BLASTING DETAILS .....                       | 50 |
| TABLE 2-13: MAN POWER REQUIREMENTS.....                  | 50 |
| TABLE 2-14: WATER REQUIRMENT .....                       | 51 |
| TABLE 2-15: SOLID WASTE MANAGEMENT .....                 | 52 |
| TABLE 3-1: FREQUENCY OF SAMPLING AND ANALYSIS .....      | 55 |
| TABLE 3-2 STUDY AREA DETAILS .....                       | 57 |
| TABLE 3-3 LAND USE PATTERN .....                         | 65 |
| TABLE 3-4 GROUND WATER QUALITY ANALYSIS.....             | 70 |
| TABLE 3-5: STANDARD PROCEDURE.....                       | 71 |
| TABLE 3-6 GROUND WATER SAMPLING RESULTS .....            | 72 |
| TABLE 3-7 SURFACE WATER SAMPLE RESULTS .....             | 75 |
| TABLE 3-8: SELECTION OF SAMPLING LOCATION.....           | 78 |
| TABLE 3-9 AMBIENT AIR QUALITY.....                       | 80 |
| TABLE 3-10 NOISE ANALYSIS.....                           | 83 |
| TABLE 3-11 DAY NOISE LEVEL (LEQ DAY) .....               | 84 |
| TABLE 3-12 NIGHT NOISE LEVEL (LEQ NIGHT) .....           | 84 |
| TABLE 3-13 SOIL QUALITY ANALYSIS .....                   | 86 |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

|   |     |
|---|-----|
| TABLE 3-14 SOIL QUALITY ANALYSIS .....  | 86  |
| TABLE 3-15 CALCULATION OF DENSITY, FREQUENCY (%), DOMINANCE, RELATIVE DENSITY,<br>RELATIVE FREQUENCY, RELATIVE DOMINANCE & IMPORTANT VALUE INDEX..... | 89  |
| TABLE 3-16 TREE SPECIES IN THE CORE ZONE .....  | 91  |
| TABLE 3-17 SHRUBS IN THE CORE ZONE.....   | 92  |
| TABLE 3-18 HERBS & GRASSES IN THE CORE ZONE.....  | 93  |
| TABLE 3-19 CALCULATION OF SPECIES DIVERSITY .....   | 95  |
| TABLE 3-20 LIST OF FAUNA SPECIES .....  | 99  |
| TABLE 3-21: DEMOGRAPHY SURVEY STUDY.....  | 101 |
| TABLE 3-22: NO. OF VEHICLES PER DAY.....  | 103 |
| TABLE 3-23: EXISTING TRAFFIC SCENARIO AND LOS .....   | 103 |
| TABLE 4-1 EMISSION FACTORS FOR UNCONTROLLED MINING.....   | 113 |
| TABLE 5-1: ALTERNATIVE FOR TECHNOLOGY AND OTHER PARAMETERS.....   | 119 |
| TABLE 6-1: ENVIRONMENTAL MONITORING PROGRAMME.....  | 121 |
| TABLE 6-2: MONITORING SCHEDULE DURING MINING .....  | 124 |
| TABLE 9-1: IMPACTS AND MITIGATION MEASURES .....  | 136 |
| TABLE 9-2: BUDGETARY ALLOCATION FOR EMP DURING MINING .....   | 138 |
| TABLE 10-1: PROJECT OVERVIEW.....   | 140 |
| TABLE 10-2: ANTICIPATE IMPACTS & APPROPRIATE MITIGATION MEASURES.....   | 142 |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

## LIST OF FIGURES:

|   |     |
|---|-----|
| FIGURE 1.1: LOCATION MAP OF THE PROJECT SITE.....                                 | 30  |
| FIGURE 2.1: LOCATION MAP OF THE PROJECT SITE .....                                | 35  |
| FIGURE 2.2: GOOGLE EARTH IMAGE AND COORDINATES OF THE PROJECT SITE .....          | 36  |
| FIGURE 2.3: SITE CONNECTIVITY .....   | 37  |
| FIGURE 2.4: TOPO MAP OF PROJECT SITE.....   | 38  |
| FIGURE 2.5: ENVIRONMENTAL SENSITIVITY WITHIN 15KM RADIUS.....                     | 39  |
| FIGURE 2.6: SITE PHOTOGRAPHS .....  | 40  |
| FIGURE 2.7: GEOMORPHOLOGY .....   | 42  |
| FIGURE 2.8 LITHOLOGY .....  | 42  |
| FIGURE 2.9 YEAR WISE PRODUCTION PLAN .....  | 47  |
| FIGURE 3.1: SITE CONNECTIVITY .....   | 60  |
| FIGURE 3.2 FLOW CHART SHOWING METHODOLOGY OF LAND USE MAPPING .....               | 62  |
| FIGURE 3.3 LAND USE CLASSES AROUND 10 KM RADIUS FROM THE PROJECT SITE.....        | 65  |
| FIGURE 3.4 GEOMORPHOLOGY WITHIN 10KM FROM THE PROJECT SITE .....                  | 67  |
| FIGURE 3.5 GEOLOGY WITHIN 10KM FROM THE PROJECT SITE.....                         | 68  |
| FIGURE 3.6 GROUND WATER PROSPECTS WITHIN 5 KM RADIUS OF THE PROJECT SITE .....    | 70  |
| FIGURE 3.7 WIND ROSE .....  | 78  |
| FIGURE 3.8 CONCENTRATION OF PM10 ( $\mu\text{G}/\text{M}^3$ ) IN STUDY AREA.....  | 81  |
| FIGURE 3.9 CONCENTRATION OF PM2.5 ( $\mu\text{G}/\text{M}^3$ ) IN STUDY AREA..... | 82  |
| FIGURE 3.10 CONCENTRATION OF SOX ( $\mu\text{G}/\text{M}^3$ ) IN STUDY AREA ..... | 82  |
| FIGURE 3.11 CONCENTRATION OF NOX ( $\mu\text{G}/\text{M}^3$ ) IN STUDY AREA.....  | 83  |
| FIGURE 3.12 SOIL EROSION PATTERN WITHIN 5 KM RADIUS OF THE PROJECT SITE .....     | 85  |
| FIGURE 3.13 SOCIO ECONOMIC MAP SURROUNDING THE PROJECT SITE. ....                 | 101 |
| FIGURE 3.14: SITE CONNECTIVITY .....  | 103 |

## 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

|                          |   |                             |
|--------------------------|---|-----------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA<br/>Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                             |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                             |

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 and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA<br/>Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                             |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                             |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

## EXECUTIVE SUMMARY

### 1. Project Background:

The Proposed project total extent area is 1.92.0 Ha, Patta land in Kuppam Village of Pugalur Taluk, Karur District. The category of project is B1, It is an existing Rough stone and Gravel quarry in Kuppam village. The area is situated on undulated terrain sloping towards Western 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 mining with 5.0 meter vertical bench with a bench width of 5.0 meter. The Quarry operation involves shallow jack hammer drilling, slurry blasting, loading and transportation.

The quarry operation is proposed up to depth for 47m (2.0m Topsoil + 45.0m Rough Stone). The Total Geological reserve is about 784728 m<sup>3</sup> of Rough Stone and 20592 m<sup>3</sup> of Gravel. The Mineable Reserves is about 227340 m<sup>3</sup> of Rough Stone and 15256 m<sup>3</sup>. The year wise production/recoverable resources of rough stone for 5 years is 227340 m<sup>3</sup> and for gravel is 15256 m<sup>3</sup>.

Mining Plan was approved by The Deputy Director, Dept. of Geology & Mining, Karur vide Roc No: 134/Mines/2020 dated 17.02.2021. The project area does not fall in Hill Area Conservation Authority region. There is no interstate boundary, CRZ zone, Western Ghats, notified Bird sanctuaries, wildlife sanctuaries as per Wildlife protection Act 1972, within the radius of 15Km.

### 2. Nature & Size of the Project

The Rough Stone and Gravel Quarry over an extent of 1.92.0 Hectares land is located Kuppam Village of Pugalur Taluk, Karur District.

Mineral intends to quarry : Rough stone and Gravel  
District : Karur  
Taluk : Pugalur



|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

Village : Kuppam  
S. F. Nos. : 682 (Part)  
Extent : 1.92.0 Hectares

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

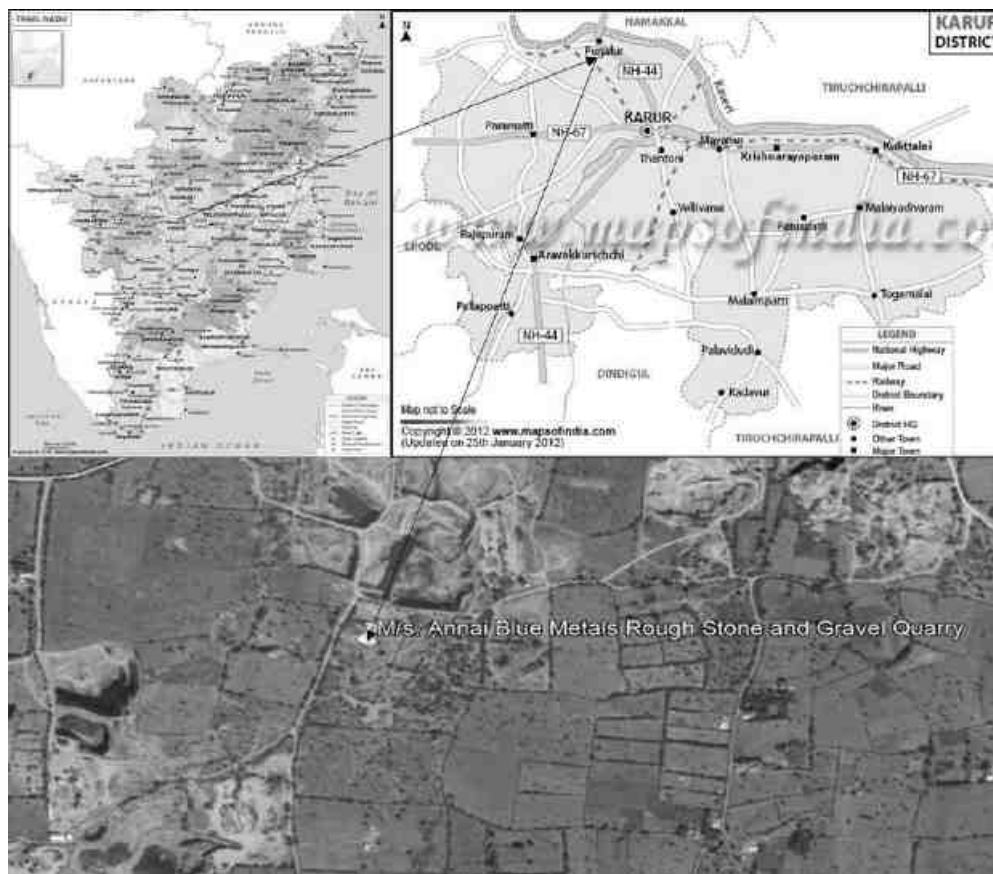
| S. No | Particulars                           | Details  |
|-------|---------------------------------------|--|
| 1     | Latitude                              | 10° 59' 2.28" N to 10° 58' 57.34" N  |
| 2     | Longitude                             | 77° 56' 13.64" E to 77° 56' 8.30" E  |
| 3     | Site Elevation above MSL              | 174 m from MSL   |
| 4     | Topography                            | Undulated terrain  |
| 5     | Land use of the site                  | Patta land   |
| 6     | Extent of lease area                  | 1.92.0 Ha  |
| 7     | Nearest highway                       | NH 81 - 2.57 km towards Southern side  |
| 8     | Nearest railway station               | Pugalur Railway station - 9.54 Km - NE   |
| 9     | Nearest airport                       | Salem Airport – 89.37 Km - N   |
| 10    | Nearest town / city                   | Town - Pugalur - 9.54 Km -NE<br>City - Karur - 16.14 Km – SE<br>District – Karur - 16.14 Km – SE |
| 11    | Rivers / Canal                        | ➤ Noyyal River – 6.90 km, NW<br>➤ Kaveri River – 8.90 km, N<br>➤ Kodaganar River – 10.20 km, SE  |
| 12    | Lake                                  | Noyyal Irrigation Canal – 5.88 km, NW  |
| 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          | Nil  |
| 17    | Seismicity                            | Proposed Lease area come under Seismic zone-II(low risk area)                                    |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

|    |                       |                     |
|----|-----------------------|---------------------|
| 18 | Defense Installations | Nil in 15 Km radius |
|----|-----------------------|---------------------|

### 3. Need for the Project

- ❖ The mining activities as proposed are the backbone of all construction and infrastructure projects as the raw material for construction is available only from such mining. The Rough stone extracted will be transported to be Stone crusher of district Karur.
- ❖ The raw Rough stone as well as the crushed material of stone is in high demand in real estate, construction projects as well as in building construction projects.
- ❖ Rough stone is quarried for producing crusher aggregates to the nearby building contractors, road contractors and nearby villagers.
- ❖ After quarrying the entire reserves mined out, the area will be used as water reservoir to have an artificial recharge to the nearby wells.
- ❖ No damage to the land is caused, no reclamation or back filling is required.



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

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |



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

#### **4. Charnockite**

Charnockite and granitic gneisses are extensively quarried as rough stone which is used as aggregates for construction of building, laying of roads and for preparation of value added products like hollow blocks, pillar stones, M-sand etc. Charnockite occurs as massive bodies, greyish colour, medium to coarse grained, composed quartz, feldspar and orthopyroxene. At places, metamorphic gneissic banding (alternate dark and black colour) in charnockite is noticed. Top portion, it gives gneissic appearance but 1-5m depth below it is typical charnockite of grey colour.

#### **5. Geological Resources**

The geological reserves have been calculated based on the cross section method

**Table 2. Geological resources**

| <b>Section</b> | <b>Bench</b> | <b>L (m)</b> | <b>W (m)</b> | <b>D (m)</b> | <b>Volume In M<sup>3</sup></b> | <b>Recoverable Reserve in m<sup>3</sup> @ 95%</b> | <b>Mine waste in m<sup>3</sup> @ 5%</b> | <b>Gravel in m<sup>3</sup></b> |
|----------------|--------------|--------------|--------------|--------------|--------------------------------|---|---|--------------------------------|
| XY-AB          | I            | 75           | 4            | 2            |                                |   |   | 600                            |
|                | II           | 91           | 56           | 5            | 25480                          | 24206   | 1274                                    |                                |
|                | III          | 91           | 56           | 5            | 25480                          | 24206   | 1274                                    |                                |
|                | IV           | 91           | 56           | 5            | 25480                          | 24206   | 1274                                    |                                |
|                | V            | 91           | 102          | 5            | 46410                          | 44090   | 2320                                    |                                |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

|                     |               |     |     |               |               |               |              |            |
|---------------------|---------------|-----|-----|---------------|---------------|---------------|--------------|------------|
| XY-CD               | VI            | 91  | 102 | 5             | 46410         | 44090         | 2320         |            |
|                     | VII           | 91  | 102 | 5             | 46410         | 44090         | 2320         |            |
|                     | VIII          | 91  | 102 | 5             | 46410         | 44090         | 2320         |            |
|                     | IX            | 91  | 102 | 5             | 46410         | 44090         | 2320         |            |
|                     | X             | 91  | 102 | 5             | 46410         | 44090         | 2320         |            |
|                     | <b>Total=</b> |     |     |               | <b>354900</b> | <b>337158</b> | <b>17742</b> | <b>600</b> |
|                     | I             | 98  | 102 | 2             |               |               |              | 19992      |
|                     | II            | 98  | 102 | 3             | 29988         | 28489         | 1499         |            |
|                     | III           | 98  | 102 | 5             | 49980         | 47481         | 2499         |            |
|                     | IV            | 98  | 102 | 5             | 49980         | 47481         | 2499         |            |
|                     | V             | 98  | 102 | 5             | 49980         | 47481         | 2499         |            |
| VI                  | 98            | 102 | 5   | 49980         | 47481         | 2499          |              |            |
| VII                 | 98            | 102 | 5   | 49980         | 47481         | 2499          |              |            |
| VIII                | 98            | 102 | 5   | 49980         | 47481         | 2499          |              |            |
| IX                  | 98            | 102 | 5   | 49980         | 47481         | 2499          |              |            |
| X                   | 98            | 102 | 5   | 49980         | 47481         | 2499          |              |            |
| <b>Total=</b>       |               |     |     | <b>429828</b> | <b>408337</b> | <b>21491</b>  | <b>19992</b> |            |
| <b>Grand Total=</b> |               |     |     | <b>784728</b> | <b>745495</b> | <b>39233</b>  | <b>20592</b> |            |

**Table 3. Year wise Production Plan**

| YEAR          | Section       | Bench | L (m) | W (m) | D (m) | Volume In M <sup>3</sup> | Recoverable Reserve in m <sup>3</sup> @ 95% | Mine waste in m <sup>3</sup> @ 5% | Gravel in m <sup>3</sup> |
|---------------|---------------|-------|-------|-------|-------|--------------------------|---|-----------------------------------|--------------------------|
| I- YEAR       | XY-AB         | I     | 68    | 1     | 2     |                          |   |                                   | 136                      |
|               |               | II    | 82    | 46    | 5     | 18860                    | 17917                                       | 943                               |                          |
|               | XY-CD         | I     | 90    | 84    | 2     |                          |   |                                   | 15120                    |
|               |               | II    | 88    | 80    | 3     | 21120                    | 20064                                       | 1056                              |                          |
| <b>Total=</b> |               |       |       |       |       | <b>39980</b>             | <b>37981</b>                                | <b>1999</b>                       | <b>15256</b>             |
| II- YEAR      | XY-AB         | III   | 77    | 41    | 5     | 15785                    | 14996                                       | 789                               |                          |
|               | XY-CD         | III   | 83    | 70    | 5     | 29050                    | 27598                                       | 1453                              |                          |
|               | <b>Total=</b> |       |       |       |       |                          | <b>44835</b>                                | <b>42593</b>                      | <b>2242</b>              |
| III- YEAR     | XY-AB         | IV    | 72    | 36    | 5     | 12960                    | 12312                                       | 648                               |                          |
|               | XY-CD         | IV    | 78    | 60    | 5     | 23400                    | 22230                                       | 1170                              |                          |
|               |               | V     | 73    | 50    | 5     | 18250                    | 17338                                       | 913                               |                          |
|               | <b>Total=</b> |       |       |       |       |                          | <b>54610</b>                                | <b>51880</b>                      | <b>2731</b>              |
| IV- YEAR      | XY-AB         | V     | 67    | 64    | 5     | 21440                    | 20368                                       | 1072                              |                          |
|               |               | VI    | 62    | 54    | 5     | 16740                    | 15903                                       | 837                               |                          |
|               | XY-CD         | VI    | 68    | 40    | 5     | 13600                    | 12920                                       | 680                               |                          |
|               | <b>Total=</b> |       |       |       |       |                          | <b>51780</b>                                | <b>49191</b>                      | <b>2589</b>              |
|               | XY-AB         | VII   | 57    | 44    | 5     | 12540                    | 11913                                       | 627                               |                          |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

|            |                     |      |    |    |               |               |              |              |  |
|------------|---------------------|------|----|----|---------------|---------------|--------------|--------------|--|
| V-<br>YEAR |                     | VIII | 52 | 34 | 5             | 8840          | 8398         | 442          |  |
|            |                     | IX   | 47 | 24 | 5             | 5640          | 5358         | 282          |  |
|            |                     | X    | 42 | 14 | 5             | 2940          | 2793         | 147          |  |
|            | XY-CD               | VII  | 63 | 30 | 5             | 9450          | 8978         | 473          |  |
|            |                     | VIII | 58 | 20 | 5             | 5800          | 5510         | 290          |  |
|            |                     | IX   | 53 | 10 | 5             | 2650          | 2518         | 133          |  |
|            |                     | X    | 48 | 1  | 5             | 240           | 228          | 12           |  |
|            | <b>Total=</b>       |      |    |    | <b>48100</b>  | <b>45695</b>  | <b>2405</b>  |              |  |
|            | <b>Grand Total=</b> |      |    |    | <b>239305</b> | <b>227340</b> | <b>11965</b> | <b>15256</b> |  |

## 6. Mining

### Opencast mining

The quarry operation is proposed to carry out with conventional open cast mechanized mining with 5.0 meter vertical bench with a bench width of 5.0 meter. The Quarry operation involves shallow jack hammer drilling, blasting, loading and transportation.

### Process Description

- The reserves and resource are arrived based upon the Geological investigation
- Removal of Topsoil by Excavators and directly Loaded into Tippers.
- Removal of Rough Stone by Excavators by Drilling and Blasting.
- Shallow Drilling With Jackhammer of 32mm Dia.
- Minimum Blasting With Class 2 Explosives.
- Loading of Rough Stone By Excavators Into Tippers.

## 7. Water Requirement

Total water requirement for the mining project is 1.675 KLD. Domestic water will be sourced from nearby Kuppam Village and other water will be source from nearby road tankers supply.

**Table 4. Water Balance**

| <b>Purpose</b> | <b>Quantity</b> | <b>Source</b> |
|----------------|-----------------|---------------|
|----------------|-----------------|---------------|

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

|                  |                  |   |
|------------------|------------------|---|
| Drinking Water   | 0.675 KLD        | Packaged Drinking water vendors available in Kuppam which is about 0.51Km Northwest of the area |
| Green belt       | 0.5 KLD          | Other domestic activities through road tankers supply   |
| Dust suppression | 0.5 KLD          | From road tankers supply  |
| <b>Total</b>     | <b>1.675 KLD</b> |   |

## 8. Manpower

Total manpower required for the project is approximately 15 persons. Workers will be from nearby villages.

**Table 5. Man Power**

|    |                                |                  |        |
|----|--------------------------------|------------------|--------|
| 1. | Skilled                        | Operator         | 2 No.  |
|    |                                | Mechanic         | 1 No.  |
|    |                                | Blaster/Mat      | 1 No.  |
| 2. | Semi – skilled                 | Driver           | 2 Nos  |
| 3. | Unskilled                      | Musdoor / Labors | 4 Nos  |
|    |                                | Cleaners         | 2 Nos  |
|    |                                | Office Boy       | 1 No   |
| 4. | Management & Supervisory staff |                  | 2 Nos  |
|    | <b>Total</b>                   |                  | 15 Nos |

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

## 9. Solid Waste Management

**Table 6 Solid Waste Management**

| <b>S. No</b> | <b>Type</b> | <b>Quantity</b> | <b>Disposal Method</b>             |
|--------------|-------------|-----------------|------------------------------------|
| 1            | Organic     | 2.7 kg/day      | Municipal bin including food waste |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <i>M/s. Annai Blue metals</i>   |                         |
| <b>Project Location</b>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

|   |           |             |                            |
|---|-----------|-------------|----------------------------|
| 2 | Inorganic | 4.05 kg/day | TNPCB authorized recyclers |
|---|-----------|-------------|----------------------------|

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

**Table 7 500m Radius Cluster Mine**

**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>         |
|---------------|--------------------------|----------------------------|---------------------|------------------------|-----------------------------|
| 1.            | Thiru.S.K.Krishnamurthy  | Thangayur<br>Edapati       | 679,<br>680/1(part) | 1.95.5                 | 04.07.2018 to<br>03.07.2023 |
| 2.            | Tmt.S.Tamilselvi         | Enam Karur<br>Karur        | 706 part            | 3.36.0                 | 18.08.2017 to<br>17.08.2022 |
| 3.            | Thiru.T.Manoharan        | Kuppam<br>Karur            | 665/1,<br>665/2     | 2.66.0                 | 21.02.2018 to<br>20.02.2023 |

**2) Proposed 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> |
|---------------|--------------------------|----------------------------|-----------------|------------------------|---------------------|
| 1.            | M/s. Annai Blue Metals   | Kuppam<br>Pugalur          | 682(part)       | 1.92.0                 | 5 years             |

**3) Lease Expired**

| <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>            |
|---------------|--------------------------|----------------------------|-----------------|------------------------|--------------------------------|
| 1.            | S.Tamilselvi             | K.V.B Nagar,<br>Karur      | 702             | 3.35.5                 | 09.09.2010<br>to<br>08.09.2015 |

The Total extent of the Existing / Lease expired / Proposed quarries are 9.89.5 Ha

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

## 10. Land Requirement

The total extent area of the project is 1.92.0 Ha, Patta land in Kuppam Village of Pugalur Taluk, Karur District.

**Table 8 Land Use Breakup**

| <b>Sl. No.</b> | <b>Description</b>   | <b>Present Area (Ha.)</b> | <b>Area in use during the quarrying period (Ha.)</b> |
|----------------|----------------------|---------------------------|--|
| 01.            | Area under Quarrying | 0.36.5                    | 1.09.0   |
| 02.            | Infrastructure       | 0.01.0                    | 0.02.0   |
| 03.            | Roads                | 0.01.0                    | 0.03.0   |
| 04.            | Green Belt           | Nil                       | 0.78.0   |
| 05.            | Unutilized Area      | 1.53.5                    | Nil  |
|                | <b>TOTAL</b>         | <b>1.92.0Ha</b>           | <b>1.92.0Ha</b>                                      |

## 11. Human Settlement

There are no habitations within 500m radius. There are villages located in this area within 5km radius of the quarry.

**Table 9 Habitation**

| <b>S.No</b> | <b>Village</b>    | <b>Distance in Kms</b> | <b>Direction</b> | <b>Population</b> |
|-------------|-------------------|------------------------|------------------|-------------------|
| 1           | Andisangilpalayam | 1.6Kms                 | North            | 250               |
| 2           | Punnam            | 5.0Kms                 | East             | 300               |
| 3           | K. Paramathi      | 4.0kms                 | South            | 600               |
| 4           | Munnur            | 5.0Kms                 | West             | 200               |

## 12. Power Requirement

The Rough Stone and gravel 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.

**10 Litre** diesel per hour for excavator for mining and loading for Gravel needed.



|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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 : 17 °C
- ii) Average Maximum Temperature. : 39 °C
- iii) Average Annual Rainfall of the area : 600 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 (PM10), Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>2</sub>) were monitored and the results are summarized below.

The baseline levels of PM10 (67-48 µg/m<sup>3</sup>), PM2.5 (30-24 µg/m<sup>3</sup>), SO<sub>2</sub> (20-12 µg/m<sup>3</sup>), NO<sub>2</sub> (30-21 µg/m<sup>3</sup>), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from March to May 2022.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

### **13.3 Noise Environment**

The maximum Day noise and Night noise were found to be 56 dB(A) and 53 dB(A) respectively in Project site. The minimum Day Noise and Night noise were 40 dB(A) and 40 dB(A) respectively which was observed in Government Primary School, Nedungur and Sri Krishna Mahal, Punnam.

### **13.4 Water Environment**

- The average pH ranges from 7.38 – 7.75.
- TDS value varied from 1295 mg/l to 1770 mg/l
- Hardness varied from 460 to 1357 mg/l
- Chloride varied from 298 to 484 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 6.45 to 8.37 with organic matter 0.26 to 0.42 %. 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 Patta land. There are no displacement of the population within the project area and adjacent nearby area. Social development of nearby villages will be considered in this project.
- The mine area does not cover any habitation. Hence the mining activity does not involve any displacement of human settlement.

## **15. Greenbelt Development**

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

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

- 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.
- Local trees like Neem, Pungam, Naval etc will be planted along the lease boundary and avenues as well as over Non-active dumps at a rate of 100 trees per annum with interval 5m.
- The rate of survival expected to be 80% in this area

**Table.10 Plantation/ Afforestation Program**

| <b>Name of species proposed</b>  | <b>Survival</b> | <b>No of species</b> |
|--|-----------------|----------------------|
| Neem, Pungam, Poovarasu, Naval, Mantharai, Arasa Maram, Magizham, Vilvam, vaagai, Marudha maram, Thandri, Poovarasu, Quaker buttons, Thethankottai maram, Manjadi, Usil, Aathi, Panai, Uzha, Illuppai, Eachai, Vanni Maram | 80%             | 500                  |
| <b>Total</b>   |                 | <b>500</b>           |

## **16. Anticipated Environmental Impacts**

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

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

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

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

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

The responsibilities of the EMC include the following:

- Environmental Monitoring of the surrounding area

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

- 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 92,80,000** 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 .11 Project Cost details**

| <b>S. No.</b> | <b>Description</b> | <b>Cost</b>          |
|---------------|--------------------|----------------------|
| 1             | Fixed Asset Cost   | Rs. 18,60,000        |
| 2             | Operational Cost   | Rs. 30,00,000        |
| 3             | EMP Cost           | Rs. 44,20,000        |
|               | <b>Total</b>       | <b>Rs. 92,80,000</b> |

### 20. Corporate Environmental Responsibility

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

**Table 12 CER Cost**

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

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

|              |  |                 |
|--------------|--|-----------------|
| 1.           | Government School, Salipalayam<br>Provision of <ul style="list-style-type: none"> <li>➤ Solar powered smart class,</li> <li>➤ Infrastructure,</li> <li>➤ Environmental books for library (in Tamil language),</li> <li>➤ Greenbelt facilities and</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 socioeconomics 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 and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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**

The Karur District forms part of the Archean complex of peninsular gneiss. The general rock types of this area are Charnockite, Biotite gneiss, Migmatites and Anorthosites. Karur District is blessed with good reserves of Crystalline Limestone known as “Palayam belt” in Varavanai, Thennilai, Gudalur etc., villages in Kulithalai Taluk and the occurrences of good quality of pegmatite veins constituting with glassy Quartz and potash Feldspar in lensoid patches in Nagampalli and Pungambadi areas in Aravakurichi Taluk. The major mineral such as Limestone, Quartz and Feldspar and Magnesite and Dunite are exploited in Karur District and utilized in the mineral based industries.

The Charnockite and Granite Gneiss rocks are found to occur in K.Paramathi, Athur, Thennilai, Punnam, Kuppam, Munnur, Karudayampalayam, Anjur villages in Karur and Aravakurichi Taluk are exploited to produce building materials and road metal (Jelly) and over burden soil appear as gray to reddish in colour called as graval.

The commercially known “ColoumboZubrana” the unique type in the Multicoloured Granite / Granite Gneiss category is occurring in Thogamalai, Naganur and Kazhugur Villages in Kulithalai Taluk. These rock type belong to minor mineral category. The arrangement of alternate layers of felsic and mafic minerals in linear pattern and exhibits wavy pattern in the rock and giving very good structure for the rock type. The well developed gneissic pattern with linear arrangement, the rock type have attracted the granite market and found to be suitable for the exploitation of granite blocks. Calc-Gneiss

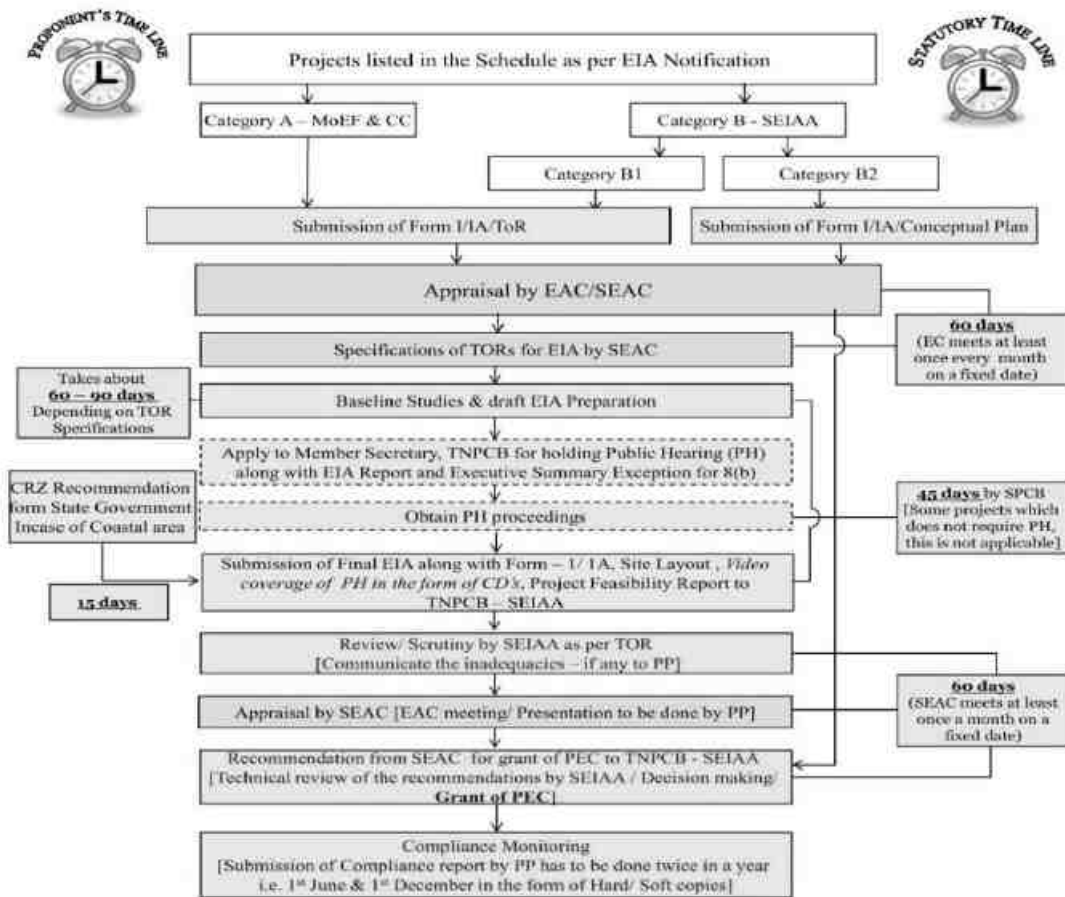
|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

(called as colonial white occurs in Pitchampatti Village of Karur Taluk are of export worthy quality commatity known at K.Pitchampatti Village.

### 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.



- SEIAA : State Level EIA Authority
- EIA : Environmental Impact Assessment
- TNPCB : Tamil Nadu Pollution Control Board
- SEAC : State Level Expert Appraisal Committee
- TOR : Terms of Reference
- PEC : Prior Environmental Clearance
- PP : Project Proponent
- [Light Grey Box] : TNPCB - SEIAA
- [Medium Grey Box] : SEAC
- [Dark Grey Box] : PP

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

#### 1.4 TERMS OF REFERENCE (TOR)

The terms of Reference have been issued by SEAC TN vide Letter No. SEIAA-TN/F. No. 8693/SEAC/ ToR-1077/2021 Dated: 01.03.2022. 33 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.

#### 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



|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

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.

**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

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

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.

### **1.7 DETAILS OF PROJECT PROPONENT**

Project Proponent : M/s. Annai Blue Metals

Status of the Proponent : Private & Individual

Proponent's Name & Address : S.F.No.451, Kaalipalayam,  
Kuppam Village,  
Pugalur Taluk,  
Karur District – 639 111.

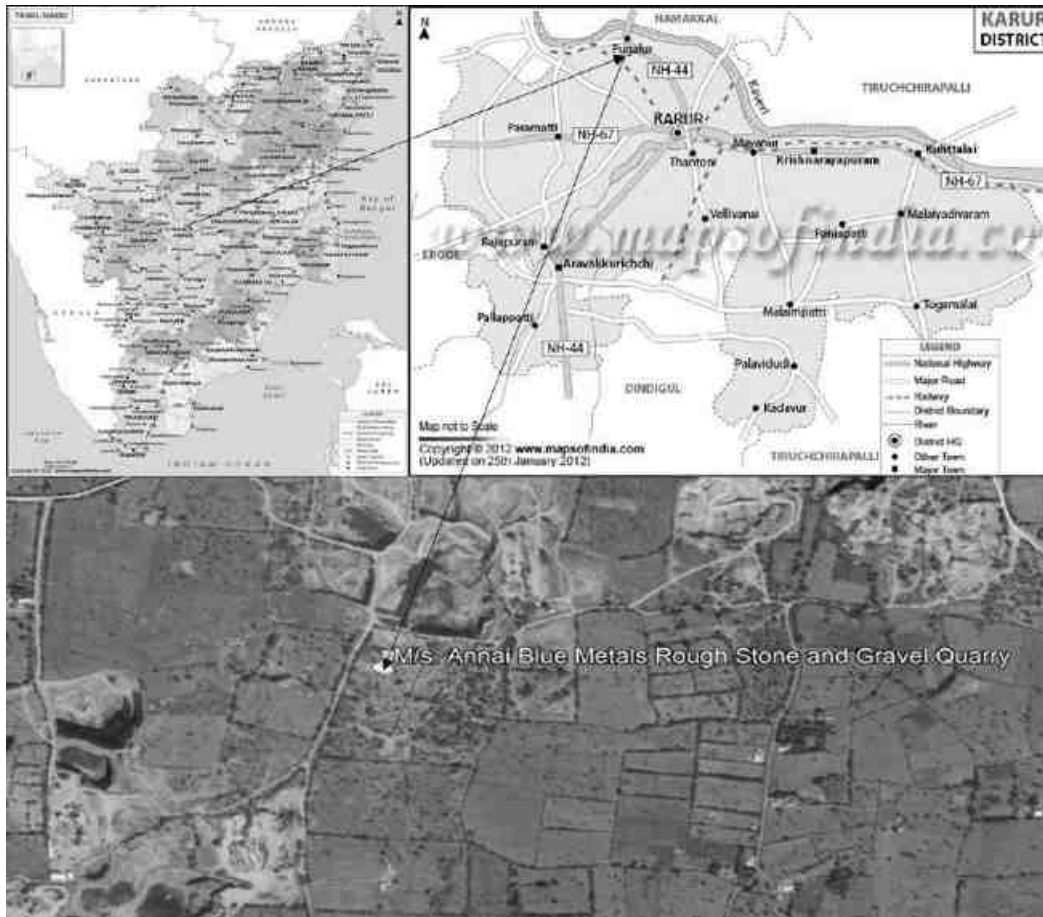
### **1.8 BRIEF DESCRIPTION OF THE PROJECT**

#### ***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) Govt 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 mechanized open cast method on allotted mine lease area at Kuppam Village, Pugalur Taluk of Karur District, Tamil Nadu. It is an undulated terrain. The total allotted mine lease for the proposed project is 1.92.0 Ha with their maximum production capacity i.e. 2,27,340 m<sup>3</sup> of Rough stone and 15,256 m<sup>3</sup> of Gravel Five years only.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |



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

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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 and gravel mining project by open cast mechanized method on allotted mine lease area at Kuppam Village, Pugalur Taluk of Karur District, Tamil Nadu. It is an undulated terrain. We have obtained fresh mining plan from 2021 to 2026 from Department of Geology and Mining, Karur District for 1.92.0 Ha land area in the S.F.Nos. 682 (part) for a proposed mining depth of 47 m below ground level and five years production of 2,27,340 m<sup>3</sup> of Rough stone and 15,256 m<sup>3</sup> of Gravel.

#### **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) Govt 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 Karur 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.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <i>M/s. Annai Blue metals</i>   |                         |
| <b>Project Location</b>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

**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>         |
|---------------|--------------------------|----------------------------|---------------------|------------------------|-----------------------------|
| 1.            | Thiru.S.K.Krishnamurthy  | Thangayur<br>Edapati       | 679,<br>680/1(part) | 1.95.5                 | 04.07.2018 to<br>03.07.2023 |
| 2.            | Tmt.S.Tamilselvi         | Enam Karur<br>Karur        | 706 part            | 3.36.0                 | 18.08.2017 to<br>17.08.2022 |
| 3.            | Thiru.T.Manoharan        | Kuppam<br>Karur            | 665/1,<br>665/2     | 2.66.0                 | 21.02.2018 to<br>20.02.2023 |

**2) Proposed 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> |
|---------------|--------------------------|----------------------------|-----------------|------------------------|---------------------|
| 1.            | M/s. Annai Blue Metals   | Kuppam<br>Pugalur          | 682(part)       | 1.92.0                 | 5 years             |

**3) Lease Expired**

| <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>            |
|---------------|--------------------------|----------------------------|-----------------|------------------------|--------------------------------|
| 1.            | S.Tamilselvi             | K.V.B Nagar,<br>Karur      | 702             | 3.35.5                 | 09.09.2010<br>to<br>08.09.2015 |

The Total extent of the Existing / Lease expired / Proposed quarries are 9.89.5 Ha

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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.

The Karur District forms part of the Archean complex of peninsular gneiss. The general rock types of this area are Charnockite, Biotite gneiss, Migmatites and Anorthosites. Karur District is blessed with good reserves of Crystalline Limestone known as “Palayam belt” in Varavanai, Thennilai, Gudalur etc., villages in Kulithalai Taluk and the occurrences of good quality of pegmatite veins constituting with glassy Quartz and potash Feldspar in lensoid patches in Nagampalli and Pungambadi areas in Aravakurichi Taluk. The major mineral such as Limestone, Quartz and Feldspar and Magnesite and Dunitare exploited in Karur District and utilized in the mineral based industries.

## 2.2 BRIEF DESCRIPTION OF THE PROJECT

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

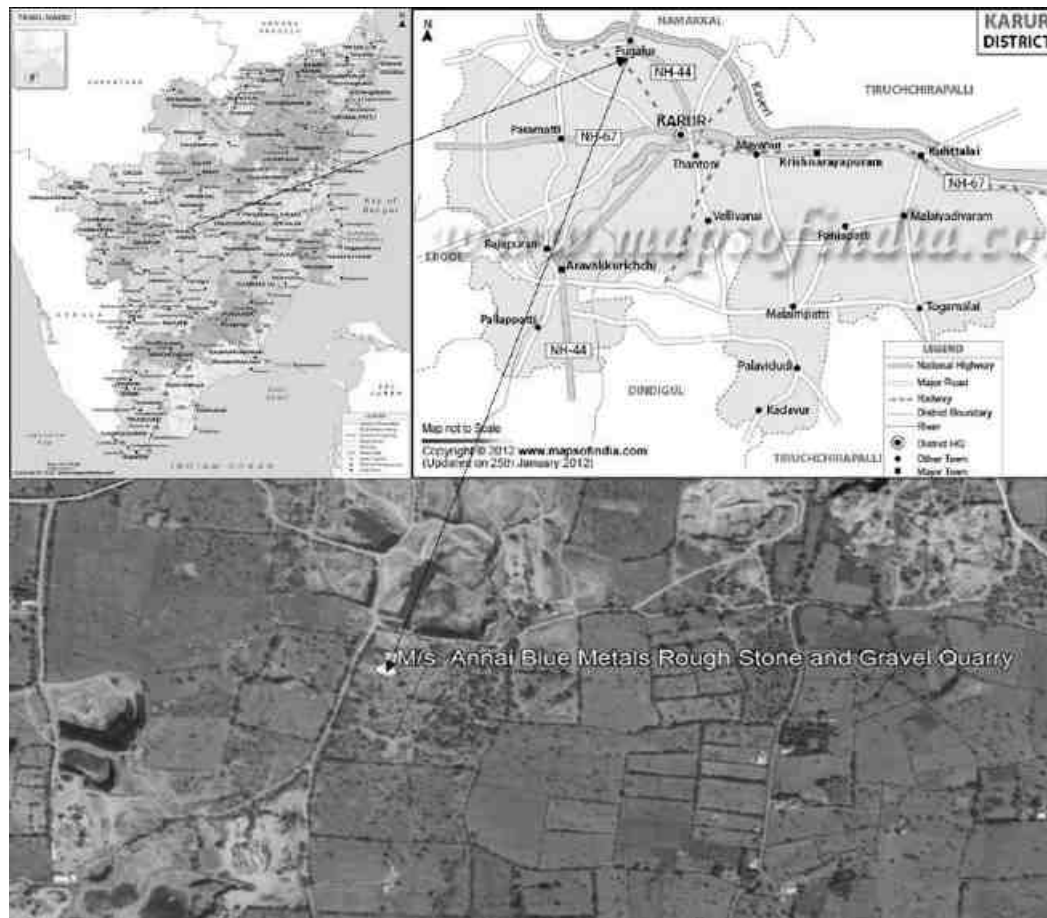
| <b>S. No.</b> | <b>Description</b>       | <b>Details</b>   |
|---------------|--------------------------|--|
| 1             | Project Name             | Rough Stone and Gravel Quarry-1.92.0 ha                            |
| 2             | Proponent                | M/s. Annai Blue Metals   |
| 3             | Mining Lease Area Extent | 1.92.0Ha   |
| 4             | Location                 | S.F.Nos. 682 (part) Kuppam Village, Pugalur Taluk, Karur District. |
| 5             | Latitude                 | 10° 59' 2.28" N to 10° 58' 57.34" N                                |
| 6             | Longitude                | 77° 56' 13.64" E to 77° 56' 8.30" E                                |
| 7             | Topography               | Undulated terrain  |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

|    |                             |  |
|----|-----------------------------|--|
| 8  | Site Elevation above MSL    | 174 m from MSL   |
| 9  | Topo sheet No.              | 58 F/13  |
| 10 | Minerals of Mine            | Rough Stone and Gravel Quarry  |
| 11 | Proposed production of Mine | 2,27,340 m <sup>3</sup> of Rough stone and 15,256 m <sup>3</sup> of Gravel   |
| 12 | Ultimate depth of Mining    | 47 m below ground level  |
| 13 | Method of Mining            | Open cast, mechanized mining   |
| 14 | Water demand                | 1.675 KLD  |
| 15 | Source of water             | Water will be supplied through tankers supply  |
| 16 | Manpower                    | 15 Nos.  |
| 17 | Mining Lease                | Precise area communication from The District Collector Karur vide Roc No: 134/Mines/2020 dated 12.10.2020  |
| 18 | Mining Plan Approval        | Mining Plan was approved by The Deputy Director, Dept. of Geology & Mining, Karur vide Roc No: 134/Mines/2020 dated 17.02.2021   |
| 19 | Production details          | Geological reserves: 7,84,728 m <sup>3</sup> of Rough Stone and 20,592 m <sup>3</sup> of Gravel<br>Proposed year wise recoverable reserves: 2,27,340 m <sup>3</sup> of Rough Stone and 15,256 m <sup>3</sup> of Gravel |
| 20 | Boundary Fencing            | 7.5 m barrier all along the boundary<br>Fencing will be provided.  |
| 21 | Disposal of overburden      | This area is covered 2.0m Gravel in this mine area 15256 m <sup>3</sup> . Gravel formation will be removed, and hydraulic excavators are used for loading the gravel into the tipper from pit head to needy buyers     |
| 22 | Ground water                | The quarry operation is proposed up to a depth of 47 m below ground level. The water table is below 54 m from ground level which is observed from the  |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

|    |  |  |
|----|--|--|
|    |  | nearby open wells and bore wells. Hence the ground water will not be affected in any manner due to the quarrying operation during the entire lease period. |
| 23 | Habitations within 300m radius of the Project Site | There is no Habitation within 300m radius of the project site.   |
| 24 | Drinking water                                     | Water will be supplied through tankers from Kuppam village which is 0.51 Km Northwest of the area  |



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



|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |



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

**2.2.1 Site Connectivity:**

The site is connected to NH 81 - 2.57 km towards Southern side.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur 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                 | 10° 59' 2.28" N to 10° 58' 57.34" N |
| 2.           | Longitude                | 77° 56' 13.64" E to 77° 56' 8.30" E |
| 3.           | Site Elevation above MSI | 174 m from MSL                      |
| 4.           | Topography               | Undulated terrain                   |
| 5.           | Land use of the site     | Patta land                          |
| 6.           | Extent of lease area     | 1.92.0 Ha                           |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

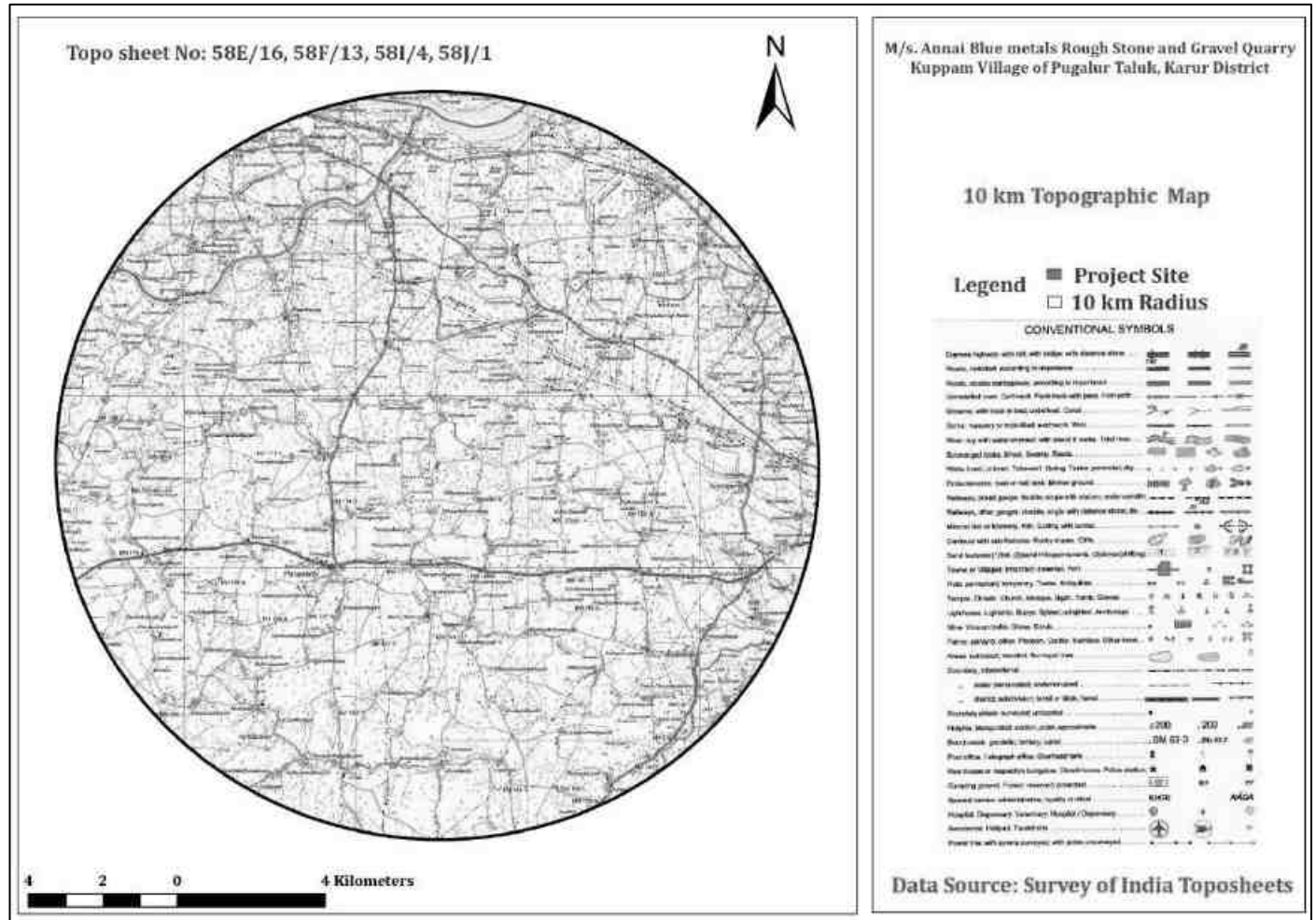


Figure 2.4: Topo Map of Project Site

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

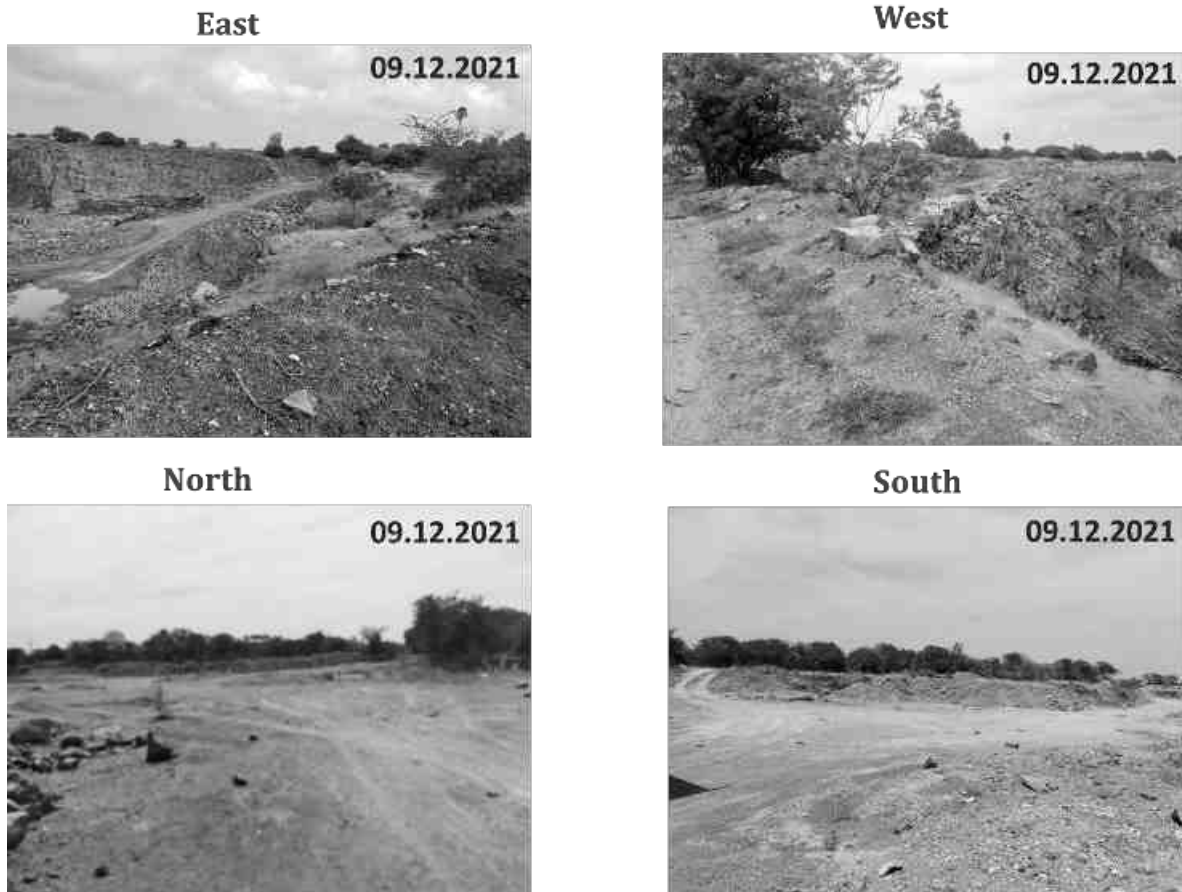


**Figure 2.5: Environmental Sensitivity within 15km radius**

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

### 2.3.1 Site Photographs

The site photographs of the project site are as follows



**Figure 2.6: Site Photographs**

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

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

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

| <b>S.No</b> | <b>Land Use</b> | <b>Present Area (Ha)</b> | <b>Area in use during the quarrying period (Ha)</b> |
|-------------|-----------------|--------------------------|---|
|             |                 |                          |   |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

|   |                      |                 |                 |
|---|----------------------|-----------------|-----------------|
| 1 | Area under Quarrying | 0.36.5          | 1.09.0          |
| 2 | Infrastructure       | 0.01.0          | 0.02.0          |
| 3 | Roads                | 0.01.0          | 0.03.0          |
| 4 | Green Belt & Dump    | Nil             | 0.78.0          |
| 5 | Unutilized area      | 1.53.5          | Nil             |
|   | <b>Total</b>         | <b>1.92.0Ha</b> | <b>1.92.0Ha</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**

| <b>S.No</b> | <b>Village</b>     | <b>Distance in Kms</b> | <b>Direction</b> | <b>Population</b> |
|-------------|--------------------|------------------------|------------------|-------------------|
| 1           | Andisangilipalayam | 1.6Kms                 | North            | 250               |
| 2           | Punnam             | 5.0Kms                 | East             | 300               |
| 3           | K. Paramathi       | 4.0kms                 | South            | 600               |
| 4           | Munnur             | 5.0Kms                 | West             | 200               |

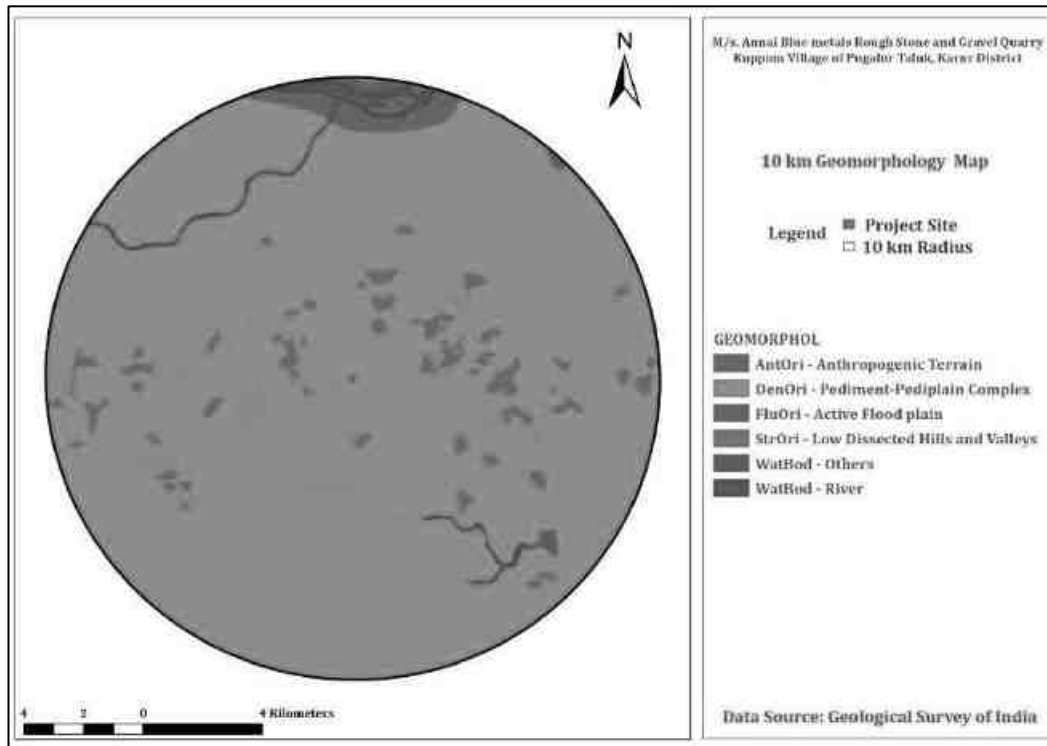
### 2.4 LEASEHOLD AREA

The Rough Stone and Gravel Quarry mine of 1.92.0 Ha is a Patta land. The lease area falls in S.F No: 682 (part) of Kuppam Village, Pugalur Taluk, Karur 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.

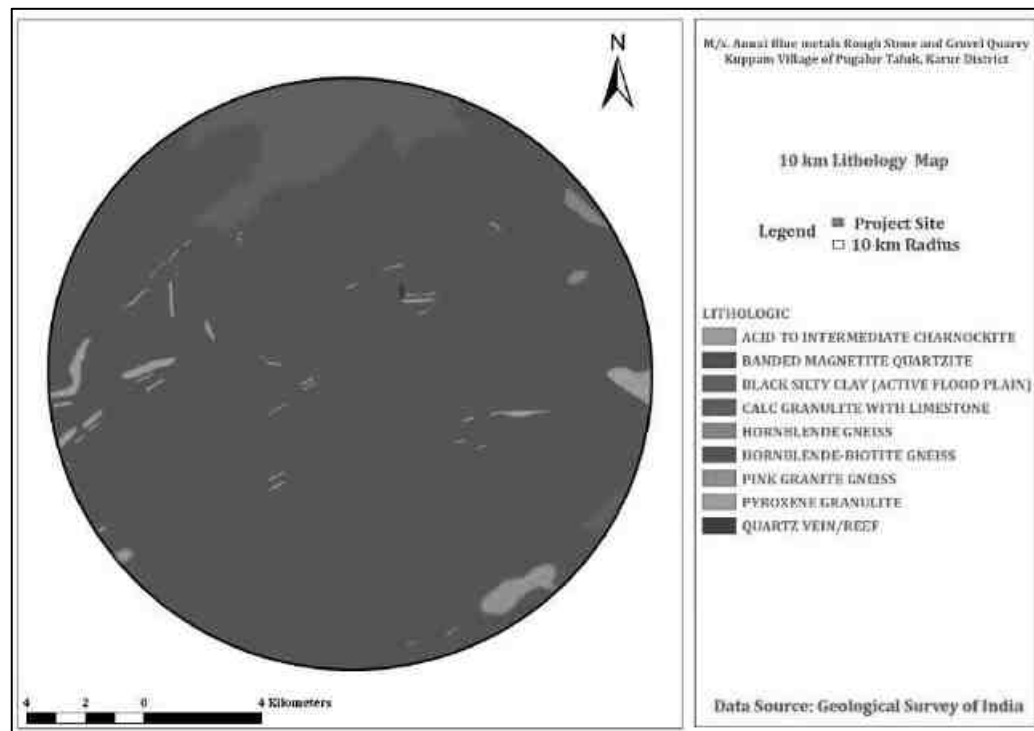
### 2.5 GEOLOGY

Geologically, the entire district can be classified into hard rock and sedimentary formations. Hard rock Formation: - More than 90 percent of the district is underlain by hard rock of Archaean age. The gneissic type of Formation is the major formation among the various types of hard rocks. Charnockite occurs in this district as pockets in Karur and Aravakurichi taluks. Quartzites which are resistant to weathering are also seen as patches in Charnockite and gneissic varieties and the above rock types. Sedimentary Formation: - Recent alluvial deposits such as sand, silt, clay, gravel etc. which are transported sediments by river are found on one side of Cauvery river in Karur, Krishnarayapuram and Kulithalai blocks. These formations are overlying the hard rock.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |



**Figure 2.7: Geomorphology**



**Figure 2.8 Lithology**

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

## 2.6 QUALITY OF RESERVES:

The mining lease area is of 1.92.0 Ha, with production capacity of 2,27,340 m<sup>3</sup> of Rough Stone and 15,256 m<sup>3</sup> of Gravel. Due to significant role in the domestic as well as infrastructural market, making the mining of Stone along with associated minor minerals is economically viable.

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

| S. No | Particulars                      | Details  |
|-------|----------------------------------|--|
| 1     | Method of Mining                 | Open Cast mechanized   |
| 2     | Geological Reserves              | 7,84,728 m <sup>3</sup> of Rough Stone and 20,592 m <sup>3</sup> of Gravel |
| 3     | Recoverable Reserves             | 2,27,340 m <sup>3</sup> of Rough Stone and 15,256 m <sup>3</sup> of Gravel |
| 4     | Proposed Production              | 2,27,340 m <sup>3</sup> of Rough Stone and 15,256 m <sup>3</sup> of Gravel |
| 5     | Elevation Range of the Mine Site | 174 m MSL  |

### 2.6.1 Estimation of Reserves

The practical method of the systematic geological mapping and delineation of Rough stone (Charnockite) within the field was done and careful evaluation of body luster, physical properties, engineering properties, commercial aspects, etc. The Topographical, Geological plan and sections demarcated the commercial marketable Rough stone (Charnockite) deposit has been prepared in 1:1000 scale and the estimated balance Geological Reserves as 7,84,728 m<sup>3</sup> of Rough Stone and 20,592 m<sup>3</sup> of Gravel

### 2.6.2 Geological Reserves

#### **Rough Stone:**

Geological Resources is estimated at 7,84,728 m<sup>3</sup> of Rough Stone and 20,592 m<sup>3</sup> of Gravel up to a depth of 47.0 m(Max) below ground level.

**Table 2-7: Geological Reserves**

| Section | Bench | L (m) | W (m) | D (m) | Volume In M <sup>3</sup> | Recoverable Reserve in m <sup>3</sup> @ 95% | Mine waste in m <sup>3</sup> @ 5% | Gravel in m <sup>3</sup> |
|---------|-------|-------|-------|-------|--------------------------|---|-----------------------------------|--------------------------|
| XY-AB   | I     | 75    | 4     | 2     |                          |   |                                   | 600                      |
|         | II    | 91    | 56    | 5     | 25480                    | 24206                                       | 1274                              |                          |



|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

|                     |               |               |     |   |               |               |               |              |
|---------------------|---------------|---------------|-----|---|---------------|---------------|---------------|--------------|
|                     | III           | 91            | 56  | 5 | 25480         | 24206         | 1274          |              |
|                     | IV            | 91            | 56  | 5 | 25480         | 24206         | 1274          |              |
|                     | V             | 91            | 102 | 5 | 46410         | 44090         | 2320          |              |
|                     | VI            | 91            | 102 | 5 | 46410         | 44090         | 2320          |              |
|                     | VII           | 91            | 102 | 5 | 46410         | 44090         | 2320          |              |
|                     | VIII          | 91            | 102 | 5 | 46410         | 44090         | 2320          |              |
|                     | IX            | 91            | 102 | 5 | 46410         | 44090         | 2320          |              |
|                     | X             | 91            | 102 | 5 | 46410         | 44090         | 2320          |              |
|                     | <b>Total=</b> |               |     |   | <b>354900</b> | <b>337158</b> | <b>17742</b>  | <b>600</b>   |
| XY-CD               | I             | 98            | 102 | 2 |               |               |               | 19992        |
|                     | II            | 98            | 102 | 3 | 29988         | 28489         | 1499          |              |
|                     | III           | 98            | 102 | 5 | 49980         | 47481         | 2499          |              |
|                     | IV            | 98            | 102 | 5 | 49980         | 47481         | 2499          |              |
|                     | V             | 98            | 102 | 5 | 49980         | 47481         | 2499          |              |
|                     | VI            | 98            | 102 | 5 | 49980         | 47481         | 2499          |              |
|                     | VII           | 98            | 102 | 5 | 49980         | 47481         | 2499          |              |
|                     | VIII          | 98            | 102 | 5 | 49980         | 47481         | 2499          |              |
|                     | IX            | 98            | 102 | 5 | 49980         | 47481         | 2499          |              |
|                     | X             | 98            | 102 | 5 | 49980         | 47481         | 2499          |              |
|                     |               | <b>Total=</b> |     |   |               | <b>429828</b> | <b>408337</b> | <b>21491</b> |
| <b>Grand Total=</b> |               |               |     |   | <b>784728</b> | <b>745495</b> | <b>39233</b>  | <b>20592</b> |

### 2.6.3 Mineable Reserves

The available mineable reserves are calculated for the proposed lease period of 5 years based on the total mineable reserves calculated by deducting 10 m safety distances to the boundary.

**Table 2-8: Mineable Reserves**

| Section | Bench | L (m) | W (m) | D (m) | Volume In M <sup>3</sup> | Recoverable Reserve in m <sup>3</sup> @ 95% | Mine waste in m <sup>3</sup> @ 5% | Gravel in m <sup>3</sup> |
|---------|-------|-------|-------|-------|--------------------------|---|-----------------------------------|--------------------------|
| XY-AB   | I     | 68    | 1     | 2     |                          |   |                                   | 136                      |
|         | II    | 82    | 46    | 5     | 18860                    | 17917                                       | 943                               |                          |
|         | III   | 77    | 41    | 5     | 15785                    | 14996                                       | 789                               |                          |
|         | IV    | 72    | 36    | 5     | 12960                    | 12312                                       | 648                               |                          |
|         | V     | 67    | 64    | 5     | 21440                    | 20368                                       | 1072                              |                          |
|         | VI    | 62    | 54    | 5     | 16740                    | 15903                                       | 837                               |                          |
|         | VII   | 57    | 44    | 5     | 12540                    | 11913                                       | 627                               |                          |
|         | VIII  | 52    | 34    | 5     | 8840                     | 8398  | 442                               |                          |
|         | IX    | 47    | 24    | 5     | 5640                     | 5358  | 282                               |                          |
|         | X     | 42    | 14    | 5     | 2940                     | 2793  | 147                               |                          |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

|                     |               |    |    |   |               |               |              |              |
|---------------------|---------------|----|----|---|---------------|---------------|--------------|--------------|
|                     | <b>Total=</b> |    |    |   | <b>115745</b> | <b>109958</b> | <b>5787</b>  | <b>136</b>   |
| XY-CD               | I             | 90 | 84 | 2 |               |               |              | 15120        |
|                     | II            | 88 | 80 | 3 | 21120         | 20064         | 1056         |              |
|                     | III           | 83 | 70 | 5 | 29050         | 27598         | 1453         |              |
|                     | IV            | 78 | 60 | 5 | 23400         | 22230         | 1170         |              |
|                     | V             | 73 | 50 | 5 | 18250         | 17338         | 913          |              |
|                     | VI            | 68 | 40 | 5 | 13600         | 12920         | 680          |              |
|                     | VII           | 63 | 30 | 5 | 9450          | 8978          | 473          |              |
|                     | VIII          | 58 | 20 | 5 | 5800          | 5510          | 290          |              |
|                     | IX            | 53 | 10 | 5 | 2650          | 2518          | 133          |              |
|                     | X             | 48 | 1  | 5 | 240           | 228           | 12           |              |
|                     | <b>Total=</b> |    |    |   | <b>123560</b> | <b>117382</b> | <b>6178</b>  | <b>15120</b> |
| <b>Grand Total=</b> |               |    |    |   | <b>239305</b> | <b>227340</b> | <b>11965</b> | <b>15256</b> |

#### 2.6.4 Year wise Production Plan

The year wise production to be carry out 2,27,340 m<sup>3</sup> of Rough Stone and 15,256 m<sup>3</sup> of Gravel for the period of five years.

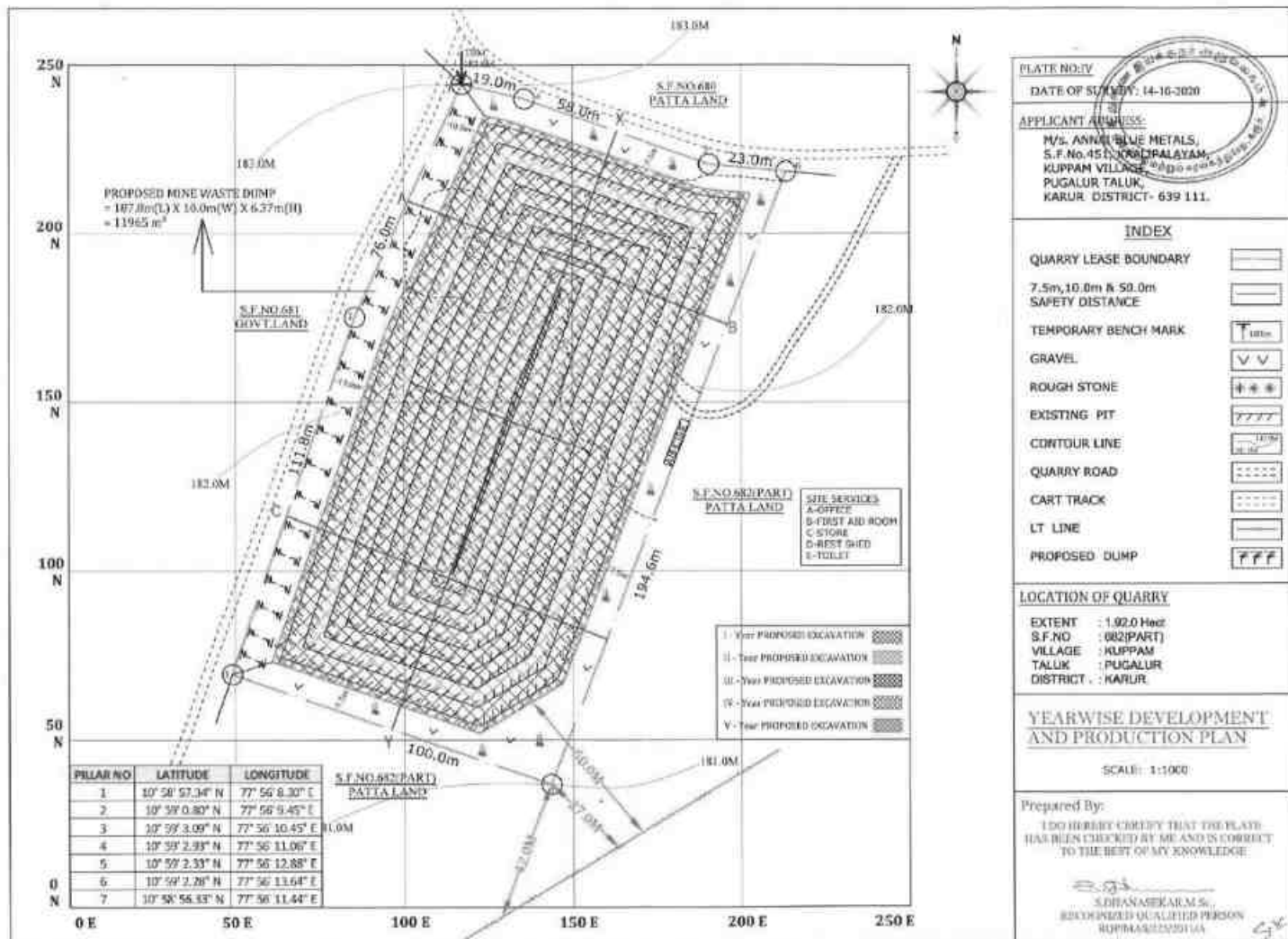
**Table 2-9: Year wise Production Plan**

| YEAR     | Section       | Bench         | L (m) | W (m) | D (m)        | Volume In M <sup>3</sup> | Recoverable Reserve in m <sup>3</sup> @ 95% | Mine waste in m <sup>3</sup> @ 5% | Gravel in m <sup>3</sup> |
|----------|---------------|---------------|-------|-------|--------------|--------------------------|---|-----------------------------------|--------------------------|
| I-YEAR   | XY-AB         | I             | 68    | 1     | 2            |                          |   |                                   | 136                      |
|          |               | II            | 82    | 46    | 5            | 18860                    | 17917                                       | 943                               |                          |
|          | XY-CD         | I             | 90    | 84    | 2            |                          |   |                                   | 15120                    |
|          |               | II            | 88    | 80    | 3            | 21120                    | 20064                                       | 1056                              |                          |
|          | <b>Total=</b> |               |       |       | <b>39980</b> | <b>37981</b>             | <b>1999</b>                                 | <b>15256</b>                      |                          |
| II-YEAR  | XY-AB         | III           | 77    | 41    | 5            | 15785                    | 14996                                       | 789                               |                          |
|          | XY-CD         | III           | 83    | 70    | 5            | 29050                    | 27598                                       | 1453                              |                          |
|          | <b>Total=</b> |               |       |       | <b>44835</b> | <b>42593</b>             | <b>2242</b>                                 |                                   |                          |
| III-YEAR | XY-AB         | IV            | 72    | 36    | 5            | 12960                    | 12312                                       | 648                               |                          |
|          |               | IV            | 78    | 60    | 5            | 23400                    | 22230                                       | 1170                              |                          |
|          | XY-CD         | V             | 73    | 50    | 5            | 18250                    | 17338                                       | 913                               |                          |
|          |               | <b>Total=</b> |       |       |              | <b>54610</b>             | <b>51880</b>                                | <b>2731</b>                       |                          |
| IV-YEAR  | XY-AB         | V             | 67    | 64    | 5            | 21440                    | 20368                                       | 1072                              |                          |
|          |               | VI            | 62    | 54    | 5            | 16740                    | 15903                                       | 837                               |                          |
|          | XY-CD         | VI            | 68    | 40    | 5            | 13600                    | 12920                                       | 680                               |                          |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

|            |                     |      |    |    |   |               |               |              |              |
|------------|---------------------|------|----|----|---|---------------|---------------|--------------|--------------|
|            | <b>Total=</b>       |      |    |    |   | <b>51780</b>  | <b>49191</b>  | <b>2589</b>  |              |
| V-<br>YEAR | XY-AB               | VII  | 57 | 44 | 5 | 12540         | 11913         | 627          |              |
|            |                     | VIII | 52 | 34 | 5 | 8840          | 8398          | 442          |              |
|            |                     | IX   | 47 | 24 | 5 | 5640          | 5358          | 282          |              |
|            |                     | X    | 42 | 14 | 5 | 2940          | 2793          | 147          |              |
|            | XY-CD               | VII  | 63 | 30 | 5 | 9450          | 8978          | 473          |              |
|            |                     | VIII | 58 | 20 | 5 | 5800          | 5510          | 290          |              |
|            |                     | IX   | 53 | 10 | 5 | 2650          | 2518          | 133          |              |
|            |                     | X    | 48 | 1  | 5 | 240           | 228           | 12           |              |
|            | <b>Total=</b>       |      |    |    |   | <b>48100</b>  | <b>45695</b>  | <b>2405</b>  |              |
|            | <b>Grand Total=</b> |      |    |    |   | <b>239305</b> | <b>227340</b> | <b>11965</b> | <b>15256</b> |

|                          |   |  |
|--------------------------|---|--|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Chapter 2<br/>Project Description</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |  |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |  |



**Figure 2.9 Year wise Production Plan**

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

## 2.7 TYPE OF MINING

The proposed project is an open cast mechanized mining with one 5.0 m bench for Top soil & Gravel followed by 5.0m vertical bench with a bench width not less than the bench height. 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 and gravel are proposed to quarry at 5m bench height & width with conventional Open cast mechanized method. The quarry operation involves Shallow jack hammer drilling, Blasting, Loading & transportation of Rough Stone to the nearby crusher units/road formation works. The production of Rough Stone in this quarry involves the following method which is typical for Rough Stone quarrying in contrast to other major mineral mining.

Splitting of rock mass of considerable volume from the parent rocks by jackhammer drilling and blasting by manually braking and loading the Rough Stone from pit head to the needy crushing units/civil works for the needy sectors.

### 2.7.2 Overburden

This area is covered 2.0m Gravel in this mine area 15256 m<sup>3</sup>. Gravel formation will be removed, and hydraulic excavators are used for loading the gravel into the tipper from pit head to needy buyers.

### 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 1.2 Cu.m bucket capacity<br>Jack Hammer (25.5 mm dia)<br>Tractor mounted compressor |
| Loading Equipment    | Excavator of 1.2 Cu.m bucket capacity  |
| Transportation       | Tipper 2 Nos. of 10 M.T capacity   |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

## 2.7.4 *Blasting:*

### 2.7.4.1 **Blasting Pattern:**

The quarrying operation will be carried out by Mechanized Opencast method in conjunction with conventional method of mining using jack hammer drilling and blasting for shattering effect and loosen the rough stone.

### 2.7.4.2 **Drilling & Blasting:**

Drilling and Blasting Parameters are as follows

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

| <b>Parameters</b>       | <b>Details</b>   |
|-------------------------|--|
| Depth of each hole      | 1.0m to 1.5m   |
| Diameter of hole        | 32-36mm  |
| Spacing between holes   | 60 cms   |
| Pattern of hole         | Zigzag   |
| Charge/Hole             | D.Cord with water or 70 gms of gun powder or Gelatine. |
| Inclination of holes    | 70° from horizontal                                    |
| Use of delay detonators | 25 milli seconds delays                                |
| Detonating fuse         | “Detonating” Cord                                      |

### 2.7.4.3 **Types of Explosives to be used:**

Small diameter of 25mm Slurry explosives 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.

### 2.7.4.4 **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.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

**Table 2-12: Blasting Details**

| <b>Parameters</b>   | <b>Details</b>                        |
|---------------------|---------------------------------------|
| Diameter of holes   | 32-36mm                               |
| Spacing             | 60 cms                                |
| Powder factor       | 6 to 7 tons/kg of explosives          |
| Pattern of hole     | Zig Zag                               |
| Charge/hole         | 140 gms of 25 mm dia cartridge        |
| Blasted at day time | 12 to 12:30 pm (or whenever required) |

**2.7.4.5 Storage & Safety measures taken during blasting:**

The project proponent “M/s. Annai Blue metals” 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**

|    |                                |                  |        |
|----|--------------------------------|------------------|--------|
| 1. | Skilled                        | Operator         | 2 No.  |
|    |                                | Mechanic         | 1 No.  |
|    |                                | Blaster/Mat      | 1 No.  |
| 2. | Semi – skilled                 | Driver           | 2 Nos  |
| 3. | Unskilled                      | Musdoor / Labors | 4 Nos  |
|    |                                | Cleaners         | 2Nos   |
|    |                                | Office Boy       | 1No    |
| 4. | Management & Supervisory staff |                  | 2No.   |
|    | Total =                        |                  | 15 Nos |

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

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

### 2.8.1 Water Requirement

Total water requirement for the mining project is 1.675 KLD. Domestic water will be sourced from nearby Kuppam village and other water will be source from nearby road tankers supply.

**Table 2-14: Water Requirement**

| <b>Purpose</b>   | <b>Quantity</b> | <b>Sources</b>   |
|------------------|-----------------|--|
| Drinking Water   | 0.675 KLD       | Packaged Drinking water vendors available in Kuppam which is about 0.51 Km Northwest of the area |
| Green belt       | 0.5KLD          | Other domestic activities through road tankers supply  |
| Dust suppression | 0.5KLD          | From road tankers supply   |
| <b>Total</b>     | <b>1.675LD</b>  |  |

### 2.9 PROJECT IMPLEMENTATION SCHEDULE

The implementation schedule of the proposed Mine Lease of M/s. Annai Blue Metals (1.92.0 ha) is as follows.

**Table 2-15: Mining Schedule**

| <b>MINING SCHEDULE</b>                        |               |               |               |               |               |
|---|---------------|---------------|---------------|---------------|---------------|
| <b>Activity</b>                               | <b>Dec-22</b> | <b>Dec-23</b> | <b>Dec-24</b> | <b>Dec-25</b> | <b>Dec-26</b> |
| Site Clearance                                |               |               |               |               |               |
| Excavation - Top Soil Removal/Overburden      |               |               |               |               |               |
| I Year Production – 28030 Cum - Rough Stone   |               |               |               |               |               |
| II Year Production – 22971Cum - Rough Stone   |               |               |               |               |               |
| III Year Production – 18387 Cum - Rough Stone |               |               |               |               |               |
| IV Year Production - 24924 Cum - Rough Stone  |               |               |               |               |               |
| V Year Production – 26886 Cum - Rough Stone   |               |               |               |               |               |

### 2.10 SOLID WASTE MANAGEMENT



|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <b>Project Proponent</b> | <i>M/s. Annai Blue metals</i>   |                         |
| <b>Project Location</b>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

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

| <b>S.No</b> | <b>Type</b> | <b>Quantity</b> | <b>Disposal Method</b>             |
|-------------|-------------|-----------------|------------------------------------|
| 1           | Organic     | 2.7 kg/day      | Municipal bin including food waste |
| 2           | Inorganic   | 4.05 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 47 m below ground level. The water table is below 54 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.

**10 Litre** diesel per hour for excavator for mining and loading for Gravel needed.

### **2.13 PROJECT COST**

|   |   |                                      |  |
|---|---|--------------------------------------|--|
| 1 | <b>A. Fixed Asset Cost:</b><br>1. Land Cost<br>2. Labour Shed<br>3. Sanitary Facility<br>4. Refilling/Fencing cost<br>Total=  | :<br>:<br>:<br>:<br>:<br>:           | Rs.16,00,000/- (Amount for Patta Land)<br>Rs. 1,00,000/-<br>Rs. 60,000/-<br>Rs.1,00,000/-<br><b>Rs.18,60,000/-</b> |
| 2 | <b>B. Operational Cost:</b><br><b>Machinery cost</b>  | :                                    | <b>Rs.30,00,000/-</b>  |
| 3 | <b>C. EMP Cost:</b><br>Display board in site;<br>Monitoring-Air, Water,<br>Noise; Dust Supression<br>-Water sprinkling by<br>own water tankers;<br>Vehicle Tyres Wash;<br>Green Belt<br>Development; Road | :<br>:<br>:<br>:<br>:<br>:<br>:<br>: | Rs. 44,20,000/-  |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

|  |  |   |                       |
|--|--|---|-----------------------|
|  | Development & Management; Occupational Health And Safety; Solid Waste Management; Strom Water; Renewable Energy, CCTV Installation, Salary for mines manager and blaster | : |                       |
|  | <b>Total Project Cost(A+B+C)</b>   | : | <b>Rs.92,80,000/-</b> |

#### 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, Pungam, Naval etc will be planted along the lease boundary and avenues as well as over non-active dumps at a rate of 100 trees per annum with interval 5m.
4. The rate of survival expected to be 80% in this area

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

| <b>Name of species proposed</b>  | <b>Survival</b> | <b>No of species</b> |
|--|-----------------|----------------------|
| Neem, Pungam, Poovarasu, Naval, Mantharai, Arasa Maram, Magizham, Vilvam, vaagai, Marudha maram, Thandri, Poovarasu, Quaker buttons, Thethankottai maram, Manjadi, Usil, Aathi, Panai, Uzha, Illuppai, Eachai, Vanni Maram | 80%             | 500                  |
| <b>Total</b>   |                 | <b>500</b>           |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

### 3 Description of the Environment

#### 3.1 GENERAL:

The method of mining for extracting rough stone quarry 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. Letter No. SEIAA-TN/F. No. 8693/SEAC/ ToR-1077/2021 Dated: 01.03.2022. The baseline monitoring is carried out in March to May 2022 and the analysis is briefed in the EIA report. The proponent has engaged M/s. Ecotech labs Pvt. Ltd for carrying out the existing baseline study.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

### 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 March to May 2022.

### 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)<br>pH, Temperature, Turbidity,<br>Magnesium Hardness, Total<br>Alkalinity, Chloride, Sulphate, | 5 locations     | Once in 5 locations  |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

|   |                                  |                     |
|---|----------------------------------|---------------------|
| 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   |

### 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

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

- 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**

| <b>S. No</b>   | <b>Description</b>         | <b>Details</b>  | <b>Source</b>             |
|--|----------------------------|---|---------------------------|
| 1.   | Project Location           | 682 (part) - 1.92.0 Ha , Kuppam Village, Pugalur Taluk, Karur District, Tamil Nadu State        | Field Study               |
| 2.   | Latitude & Longitude       | Latitude: 10° 59' 2.28" N to 10° 58' 57.34" N<br>Longitude: 77° 56' 13.64" E to 77° 56' 8.30" E | Topo Sheet                |
| 3.   | Topo Sheet No.             | 58 F/13   | Survey of India Toposheet |
| 4.   | Mine Lease Area            | 1.92.0 Ha   | --                        |
| <b>Demography in the study area (as per Census 2011)</b> |                            |   |                           |
| 5.   | Total Population           | 3503  | Census Survey of India    |
| 6.   | Total Number of Households | 1120  |                           |
| 7.   | Maximum Temperature (°C)   | 39  | IMD                       |
| 8.   | Minimum Temperature (°C)   | 17  |                           |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

| 9.                            | Ecological Sensitive Areas - Wetlands, watercourses or other waterbodies, coastal zone, biospheres, mountains, forests | <ul style="list-style-type: none"> <li>❖ Noyyal Irrigation Canal – 5.88 km, NW</li> <li>❖ Noyyal River – 6.90 km, NW</li> <li>❖ Kaveri River – 8.90 km, N</li> <li>❖ Kodaganar River – 10.20 km, SE</li> </ul>  | Google Earth/Field Study |        |                         |                               |  |  |   |                                |            |   |                                     |            |   |                                |            |   |   |             |   |  |            |                          |
|-------------------------------|--|---|--------------------------|--------|-------------------------|-------------------------------|--|--|---|--------------------------------|------------|---|-------------------------------------|------------|---|--------------------------------|------------|---|---|-------------|---|--|------------|--------------------------|
| 10.                           | Densely Populated area   | Kuppam - 0.51Km -NW   |                          |        |                         |                               |  |  |   |                                |            |   |                                     |            |   |                                |            |   |   |             |   |  |            |                          |
| 11.                           | Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)           | <table border="1"> <thead> <tr> <th>S. No</th> <th>Places</th> <th>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>1</td> <td>Government School, Salipalayam</td> <td>1.15 km, N</td> </tr> <tr> <td>2</td> <td>Government Primary School, Nedungur</td> <td>4.11 km, S</td> </tr> <tr> <td>3</td> <td>Naduppalayam Government school</td> <td>5.96 km, E</td> </tr> <tr> <td>4</td> <td>Government Elementary School Olapalayam</td> <td>6.22 km, NE</td> </tr> <tr> <td>5</td> <td>P.E.V.R Government Higher Secondary School</td> <td>8.56 km, N</td> </tr> </tbody> </table> | S. No                    | Places | Dist. From Project Site | <b>Schools &amp; Colleges</b> |  |  | 1 | Government School, Salipalayam | 1.15 km, N | 2 | Government Primary School, Nedungur | 4.11 km, S | 3 | Naduppalayam Government school | 5.96 km, E | 4 | Government Elementary School Olapalayam | 6.22 km, NE | 5 | P.E.V.R Government Higher Secondary School | 8.56 km, N | Google Earth/Field Study |
| S. No                         | Places   | Dist. From Project Site   |                          |        |                         |                               |  |  |   |                                |            |   |                                     |            |   |                                |            |   |   |             |   |  |            |                          |
| <b>Schools &amp; Colleges</b> |  |   |                          |        |                         |                               |  |  |   |                                |            |   |                                     |            |   |                                |            |   |   |             |   |  |            |                          |
| 1                             | Government School, Salipalayam   | 1.15 km, N  |                          |        |                         |                               |  |  |   |                                |            |   |                                     |            |   |                                |            |   |   |             |   |  |            |                          |
| 2                             | Government Primary School, Nedungur  | 4.11 km, S  |                          |        |                         |                               |  |  |   |                                |            |   |                                     |            |   |                                |            |   |   |             |   |  |            |                          |
| 3                             | Naduppalayam Government school   | 5.96 km, E  |                          |        |                         |                               |  |  |   |                                |            |   |                                     |            |   |                                |            |   |   |             |   |  |            |                          |
| 4                             | Government Elementary School Olapalayam  | 6.22 km, NE   |                          |        |                         |                               |  |  |   |                                |            |   |                                     |            |   |                                |            |   |   |             |   |  |            |                          |
| 5                             | P.E.V.R Government Higher Secondary School   | 8.56 km, N  |                          |        |                         |                               |  |  |   |                                |            |   |                                     |            |   |                                |            |   |   |             |   |  |            |                          |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

|  |  |                  |   |              |  |  |
|--|--|------------------|---|--------------|--|--|
|  |  | 6                | VSB Engineering College                             | 3.54 km, SE  |  |  |
|  |  | 7                | Karur Velalar College of Arts and Science for Women | 4.78 km, NE  |  |  |
|  |  | 8                | Cheran College of Education                         | 6.37 km, NE  |  |  |
|  |  | 9                | Cambridge College Of Arts and Science               | 7.64 km, NE  |  |  |
|  |  | 10               | Arasu College of Arts & Science For Women           | 14.64 km, NE |  |  |
|  |  | 11               | M.Kumarasamy College of Engineering                 | 14.54 km, NE |  |  |
|  |  | <b>Hospitals</b> |   |              |  |  |
|  |  | 1                | Government Primary Health Center K Paramathi        | 4.62 km, SW  |  |  |
|  |  | 2                | Government Hospital, Olapalayam                     | 6.13 km, NE  |  |  |
|  |  | 3                | Government Hospital Viswanathapuri                  | 9.30 km, SE  |  |  |

### 3.1.7 Site Connectivity:

The site is connected to NH 81 - 2.57 km towards Southern side.



|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |



**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.

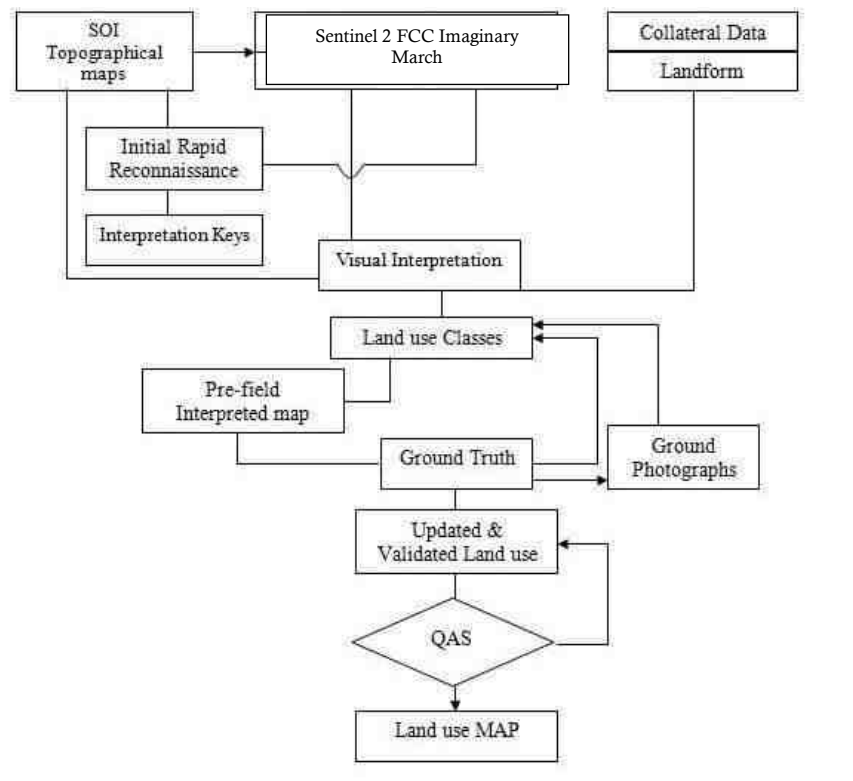
### **3.2.2 Methodology**

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

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

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.



|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

**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 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 sentinal 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

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

The LULC Classification has been done at three levels where level -1 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 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.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

### **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 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.

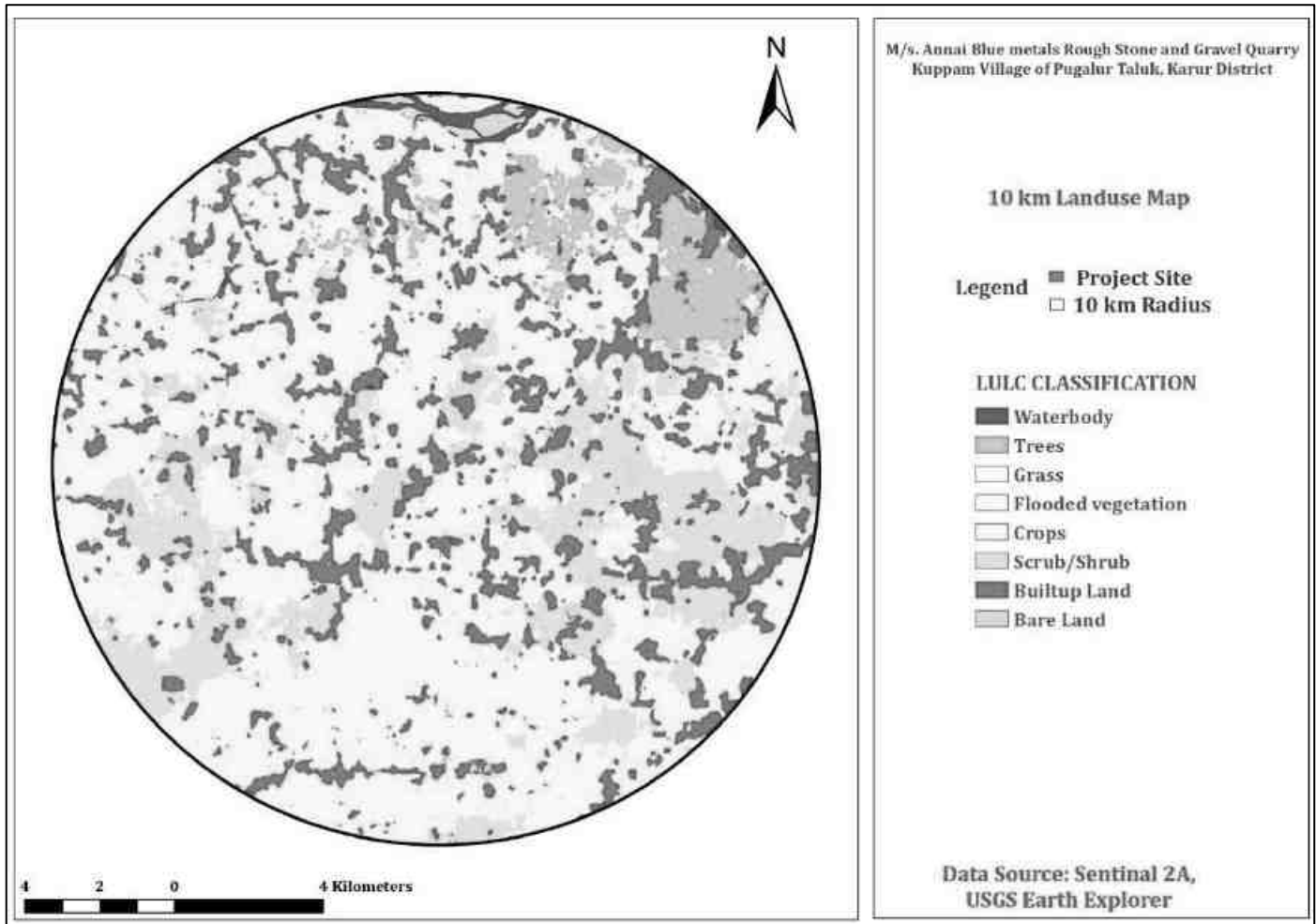
### **3.2.7.6 Scrub/Shrub**

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

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

### 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 / ities, paved roads, asphalt.



**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      | 2.12         |
| 2     | Trees      | 15.44        |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

|   |                    |        |
|---|--------------------|--------|
| 3 | Grass              | 0.1    |
| 4 | Flooded Vegetation | 0.008  |
| 5 | Crops              | 198.63 |
| 6 | Scrub/Shrub        | 50.1   |
| 7 | Built Area         | 51.21  |
| 8 | Barren Land        | 1.44   |

### 3.3 WATER ENVIRONMENT

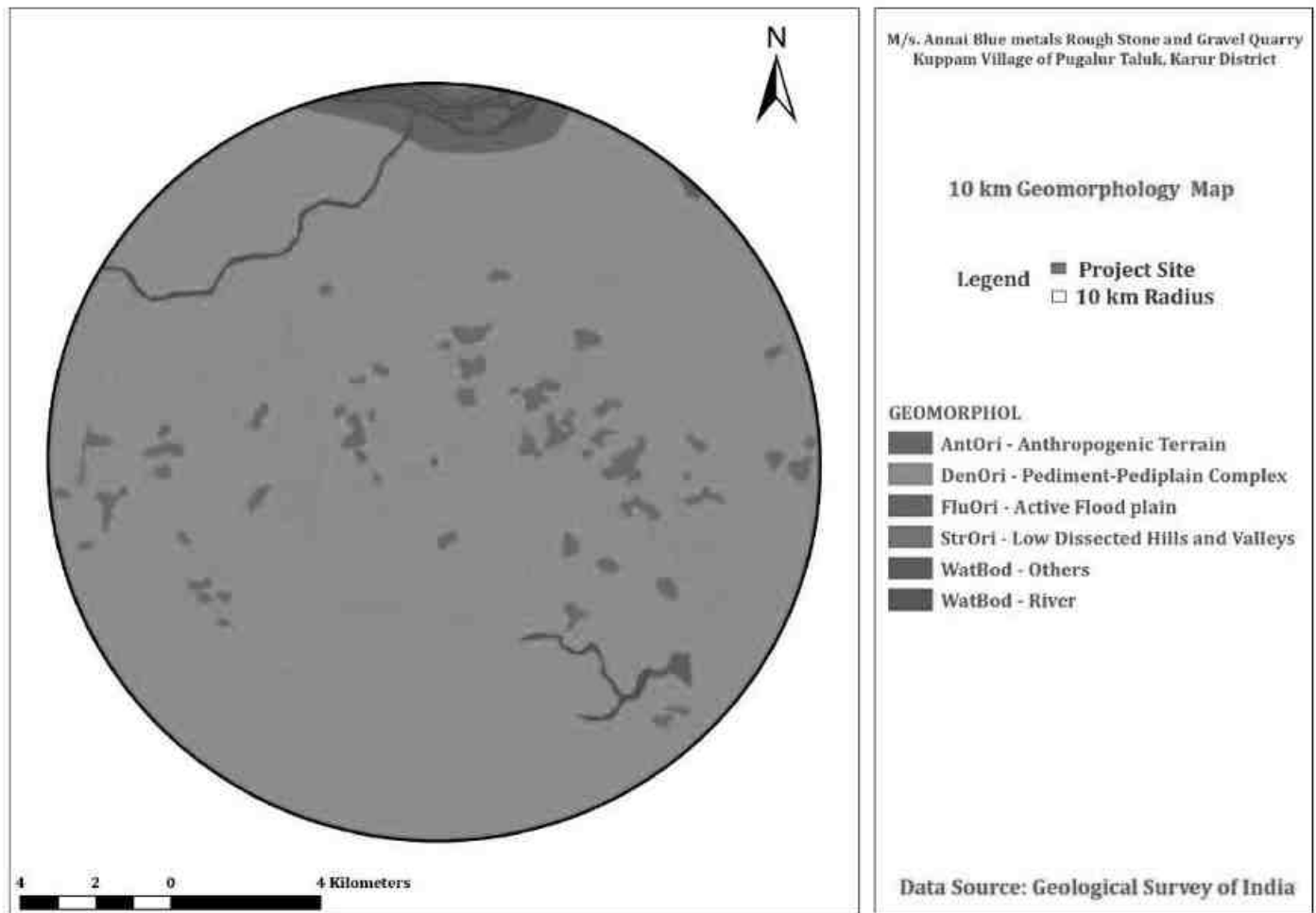
#### 3.3.1 *Contour & Drainage*

The project site is 174 m AMSL. The drainage pattern within in the 10 km of the project site is dendritic.

#### 3.3.2 *Geomorphology*

The entire area of the district is a pediplain. The Rangamalai hills and Kadavur hills occurring in the southern side of the district constitutes the remnants of the much-denuded Eastern Ghats and rise to heights of over 1031m above mean sea level. There are numerous small residual hills represented by Ayyarmalai, Thanthonimalai and Velayuthampalayam hills. The general elevation of the area is ranging between 100 m and 200m above mean sea level. The prominent geomorphic units identified in the district through interpretation of Satellite imagery are 1) Structural hill, 2) Pediments, 3) Shallow Pediments, 4) Buried Pediments and 5) Alluvial plain. An overall appraisal of groundwater occurrence in each geomorphic unit and the significance of its hydro geological characters are given, geomorphology and lineament details are given.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |



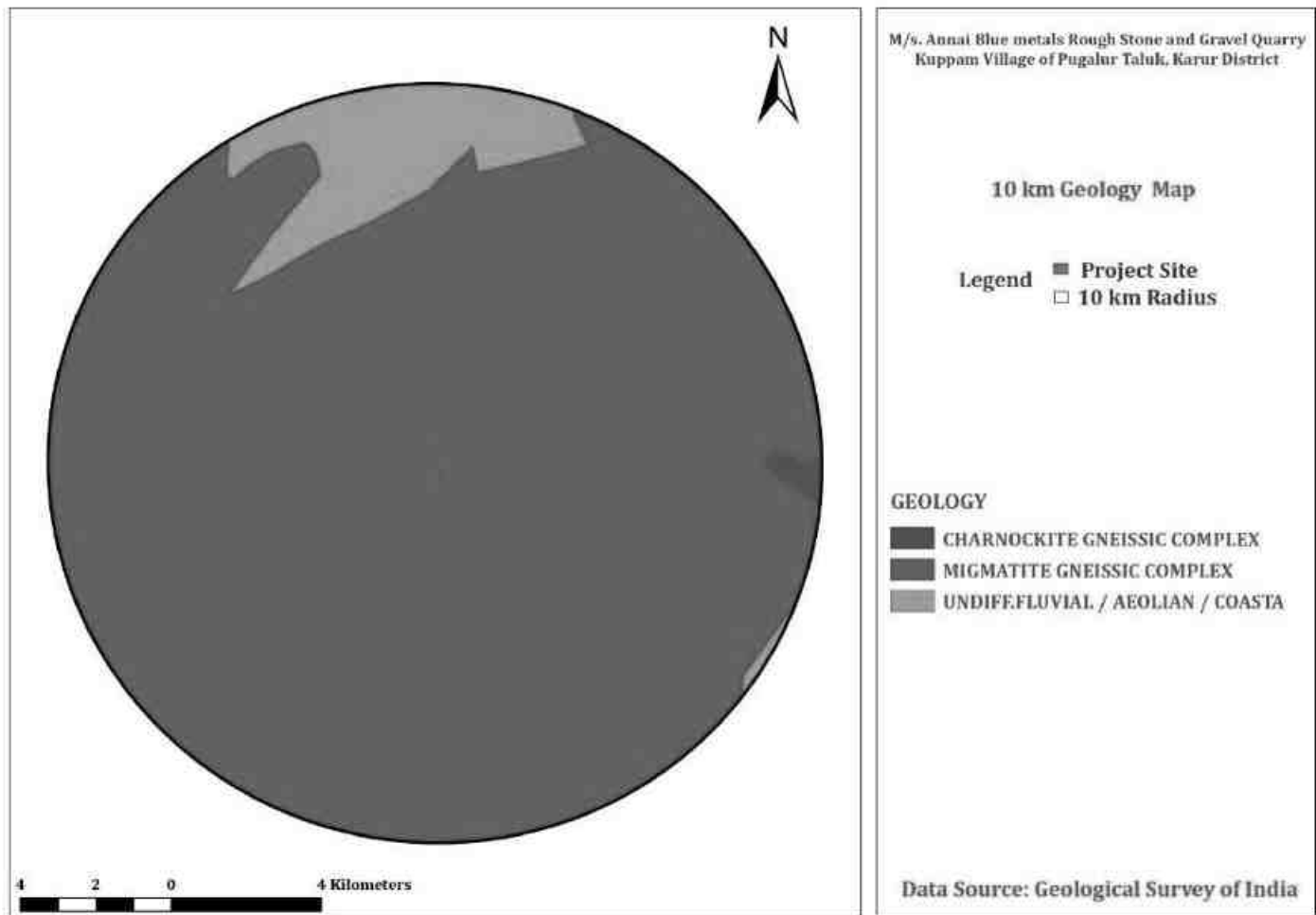
**Figure 3.4 Geomorphology within 10km from the project site**

### 3.3.3 Geology:

Geologically, the entire district can be classified into hard rock and sedimentary formations. Hard rock Formation: - More than 90 percent of the district is underlain by hard rock of Archaean age. The gneissic type of Formation is the major formation among the various types of hard rocks. Charnockite occurs in this district as pockets in Karur and Aravakurichi taluks. Quartzites which are resistant to weathering are also seen as patches in Charnockite and gneissic varieties and the above rock types. Sedimentary Formation: - Recent alluvial deposits such as sand, silt, clay, gravel etc. which are transported sediments by river are found on either side of Cauvery river in Karur, Krishnarayapuram and Kulithalai blocks. These formations are overlying the hard rock.



|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |



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

### 3.3.4 Hydrogeology

#### a) Hard rock formations

More than 90% of the district is underlain by hard rock of Archaean age. The gneissic type of formation is the major formation among the various types of hard rocks Charnockite occurs in this district as pockets in Karur and Aravakurichitaluks. Quartzites which are resistant to weathering are also seen as patches in charnockite and gneissis varieties.

#### b) Sedimentary formations

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

Recent alluvial deposits such as sand, silt, clay, gravel, etc., which are transported sediments by river are found on either side of Cauvery river in Karur, Krishnarayapuram and Kulithalai blocks. These formations are overlying the hard rock.

#### **Drilling of bore holes:**

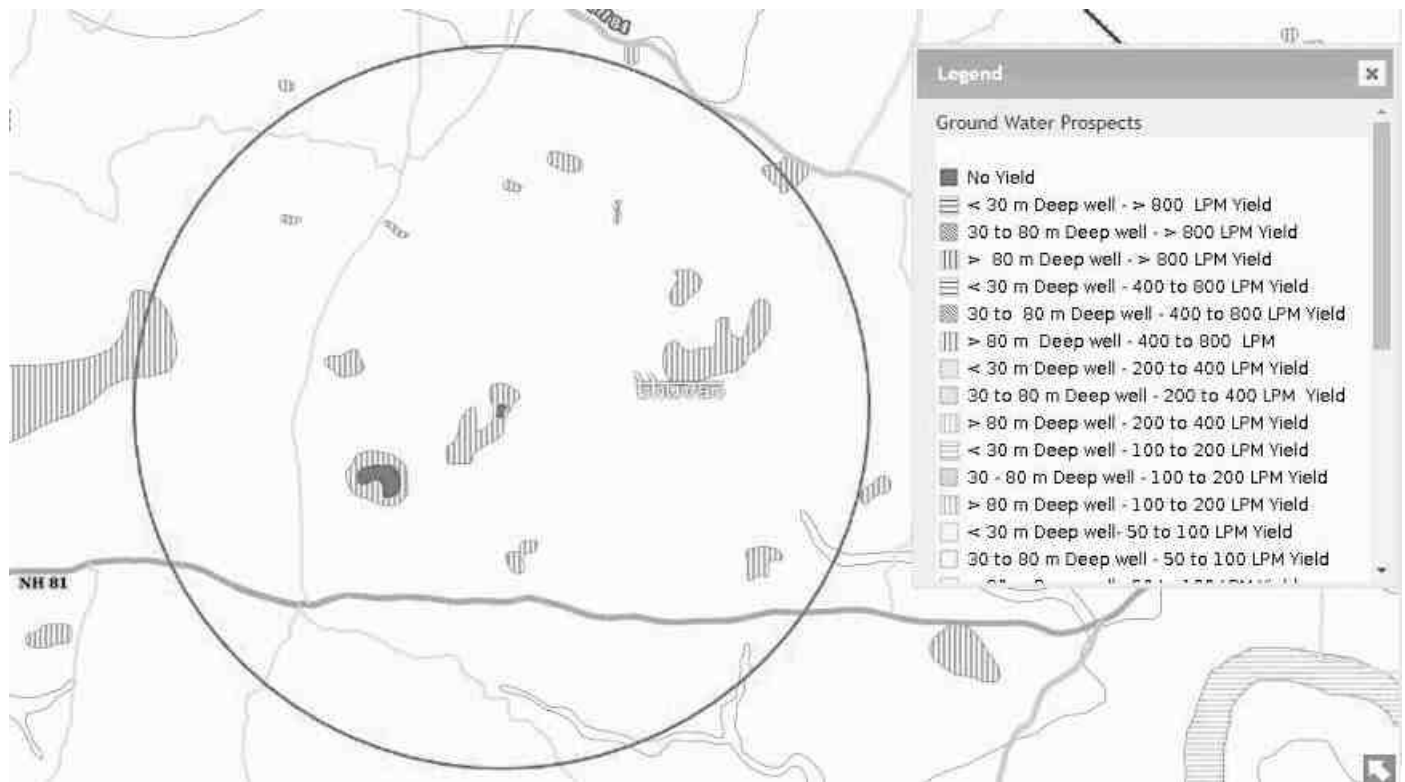
The occurrence and movement of groundwater in hard rock formations are restricted to the porous zones of weathered formations and the open systems of fractures, fissures and joints. Generally, in hard rock regions, occurrence of weathered thickness is discontinuous both in space and depth. Hence recharge of groundwater in hard rock formations is influenced by the intensity and depth of weathering. The subsurface lithological condition and the aquifer characters can be ascertained by drilling exploratory boreholes and conducting pump tests.

The State Ground and Surface Water Resources Data Centre, during the course of investigation has drilled more than 85 boreholes spread over the entire district to find out the nature and behaviour of the subsurface material and their water holding and water yielding capability. There is considerable diversity in the nature of formalities even within the short distance. The lithology of the boreholes indicate that in Kulithalaid and Krishnarayapuramtaluks, there is considerable thickness of weathering ranging from 16m to 20 m below ground level. The sedimentary tract of Cauvery alluvium is restricted to either side of the river Cauvery and the thickness of Alluvium is estimated to be around 10-12 m.

#### **Aquifer parameters:**

More or less, 90 percent of Karur district is covered by crystalline formation of Archaean age. The thickness of aquifer in hard rock formation varies from 15 to 35 m. The inter granular porosity is essentially depend upon the intensity and degree of weathering and fracture development in the bed rock. Deep weathering is developed in gneissic formations and moderate weathering in charnockite formation. The alluvial formation stretches mainly along the river course of Cauvery.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur 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                                       | March to May 2022  |
| Design Criteria   | Based on the Environmental settings in the study area  |
| Monitoring Locations                                    | <ol style="list-style-type: none"> <li>1. Project Site – GW 1</li> <li>2. Sri Annamaliyar Maligai, Munnur– GW 2</li> <li>3. Sri Krishna Mahal, Punnam - GW 3</li> <li>4. Government Primary School, Nedungur - GW 4</li> <li>5. Vettamanagalam East – GW5</li> </ol> |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur 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> -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                                   |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

|    |        |                      |
|----|--------|----------------------|
| 20 | E.coli | IS:1622:1981:RA:2014 |
|----|--------|----------------------|

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

| S. No | Parameters                            | Units      | Project Site | GW 2        | GW 3        | GW 4        | GW 5        |
|-------|---------------------------------------|------------|--------------|-------------|-------------|-------------|-------------|
| 1     | pH (at 25°C)                          | -          | 7.38         | 7.58        | 7.8         | 7.46        | 7.75        |
| 2     | Electrical Conductivity               | µS/cm      | 2990         | 2750        | 2550        | 2170        | 2680        |
| 3     | Colour                                | Hazen Unit | 1            | 1           | 2           | 2           | 2           |
| 4     | Turbidity                             | NTU        | BQL(LOQ1]    | BQL(LOQ1]   | BQL(LOQ1]   | BQL(LOQ1]   | BQL(LOQ1]   |
| 5     | Total Dissolved Solids                | mg/L       | 1645         | 1545        | 1495        | 1295        | 1770        |
| 6     | Total Suspended Solids                | mg/L       | BQL(LOQ2]    | BQL(LOQ2]   | BQL(LOQ2]   | BQL(LOQ2]   | BQL(LOQ2]   |
| 7     | Total Hardness as CaCO <sub>3</sub>   | mg/L       | 1357         | 935         | 460         | 828         | 513         |
| 8     | Calcium as Ca                         | mg/L       | 347          | 187         | 114         | 204         | 85.3        |
| 9     | Magnesium as Mg                       | mg/L       | 119          | 113         | 42.5        | 77.6        | 73          |
| 10    | Chloride as Cl                        | mg/L       | 338          | 416         | 484         | 298         | 470         |
| 11    | Sulphate as SO <sub>4</sub>           | mg/L       | 245          | 188         | 192         | 179         | 317         |
| 12    | Total Alkalinity as CaCO <sub>3</sub> | mg/L       | 315          | 255         | 234         | 275         | 485         |
| 13    | Iron as Fe                            | mg/L       | BQL(LOQ0.1]  | BQL(LOQ0.1] | BQL(LOQ0.1] | BQL(LOQ0.1] | BQL(LOQ0.1] |
| 14    | Silica as SiO <sub>2</sub>            | mg/L       | 88.5         | 75.2        | 84.3        | 79.5        | 65.3        |
| 15    | Potassium as K                        | mg/L       | 245          | 318         | 326         | 202         | 380         |
| 16    | Sodium as Na                          | mg/L       | 75           | 85.5        | 102         | 85.2        | 88.5        |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

### 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).

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

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

##### **pH:**

Value observed in the Project Site:7.38

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:1645 mg/L.

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

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

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 topsoil 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,

#### **Calcium:**

Value observed in the Project Site: 347 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: 119 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: 338 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: 315mg/L.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

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.

### **Hardness:**

Value observed in the Project Site: 1357 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 Noyyal River and Kaveri River. The results are summarized below.

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

| <b>S. No</b> | <b>Parameters</b>                     | <b>Units</b> | <b>Noyyal River</b> | <b>Kaveri River</b> |
|--------------|---------------------------------------|--------------|---------------------|---------------------|
| 1            | pH (at 25°C)                          | -            | 8.49                | 8.45                |
| 2            | Electrical Conductivity               | µS/cm        | 2510                | 2410                |
| 3            | Colour                                | Hazen Unit   | 45                  | 50                  |
| 4            | Turbidity                             | NTU          | 18                  | 21                  |
| 5            | Total Dissolved Solids                | mg/L         | 1660                | 1605                |
| 6            | Total Suspended Solids                | mg/L         | 27.2                | 31.5                |
| 7            | Total Hardness as CaCO <sub>3</sub>   | mg/L         | 422                 | 407                 |
| 8            | Calcium as Ca                         | mg/L         | 57.9                | 59.4                |
| 9            | Magnesium as Mg                       | mg/L         | 67.5                | 62.8                |
| 10           | Chloride as Cl                        | mg/L         | 504                 | 450                 |
| 11           | Sulphate as SO <sub>4</sub>           | mg/L         | 289                 | 305                 |
| 12           | Total Alkalinity as CaCO <sub>3</sub> | mg/L         | 311                 | 343                 |
| 13           | Iron as Fe                            | mg/L         | BQL(LOQ0.1]         | BQL(LOQ0.1]         |
| 14           | Silica as SiO <sub>2</sub>            | mg/L         | 60.5                | 85.3                |
| 15           | Potassium as K                        | mg/L         | 396                 | 325                 |
| 16           | Sodium as Na                          | mg/L         | 99.5                | 110                 |



|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

**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 (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.

### 3.3.8 *Climatology & Meteorology:*

The temperature in Karur district ranges from a maximum of 39 °C (102 °F) to a minimum of 17 °C (63 °F). Like the rest of the state, April to June is the hottest months and December to January are the coldest. Karur receives an average of 590–600 mm (23–24 in) annually, which is lesser than the state average of 1,008 mm (39.7 in). The South west monsoon, with an onset in June and lasting up to August, brings scant rainfall since Karur being a rain shadow region. The bulk of the rainfall comes during summer months (late April, May) and the North East monsoon in the months of October, November and December.

Meteorology is the key to understand the Air quality. The essential relationship between meteorological condition and atmospheric dispersion involves the wind in the broadest sense. Wind fluctuations over a very wide range of time, accomplish dispersion and strongly influence other processes associated with them.

A temporary meteorological station was installed at project site by covering cluster quarries. The station was installed at a height of 3 m above the ground level in such a way that there are no obstructions facilitating flow of wind, wind speed, wind direction, humidity and temperature are recorded on hourly basis.

The district receives the rain under the influence of both southwest and North east monsoon. The Northeast monsoon chiefly contributes to the rainfall in the district. Most of the precipitation occurs in the form of cyclonic storms caused due to the depressions in Bay of Bengal. The Southwest monsoon rainfall is highly erratic and summer rains are negligible. The average annual rainfall over the district varies from about 328.8 mm to 784.1 mm. (Average Rainfall is 655.0 mm).

### **KARUR DISTRICT -NORMAL AND ACTUAL RAINFALL**

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

**Unit in mm.**

| <b>Year</b> | <b>JAN</b> | <b>FEB</b> | <b>MAR</b> | <b>APR</b> | <b>MAY</b> | <b>JUN</b> | <b>JUL</b> | <b>AUG</b> | <b>SEP</b> | <b>OCT</b> | <b>NOV</b> | <b>DEC</b> |
|-------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 2016        | 0          | 0          | 0.5        | 2.4        | 131.5      | 16.9       | 78.2       | 16.1       | 13.8       | 24.9       | 13.2       | 31.2       |
| 2017        | 17.2       | 0          | 49         | 10.2       | 68.6       | 9.8        | 18.6       | 132.4      | 175.3      | 87.2       | 54         | 93.1       |
| 2018        | 1.2        | 14.5       | 12.3       | 3.3        | 125.6      | 11.4       | 24.2       | 20.9       | 107.9      | 63.9       | 82.1       | 1.4        |
| 2019        | 0          | 0          | 0.5        | 7.9        | 30.3       | 33.4       | 11.7       | 20.7       | 144        | 122        | 69         | 85.1       |
| 2020        | 0.1        | 0          | 1.4        | 27.7       | 7.6        | 78.4       | 77.9       | 87.1       | 144        | 58.1       | 124.1      | 78.1       |

Source: *IMD*

### **Metrological Data**

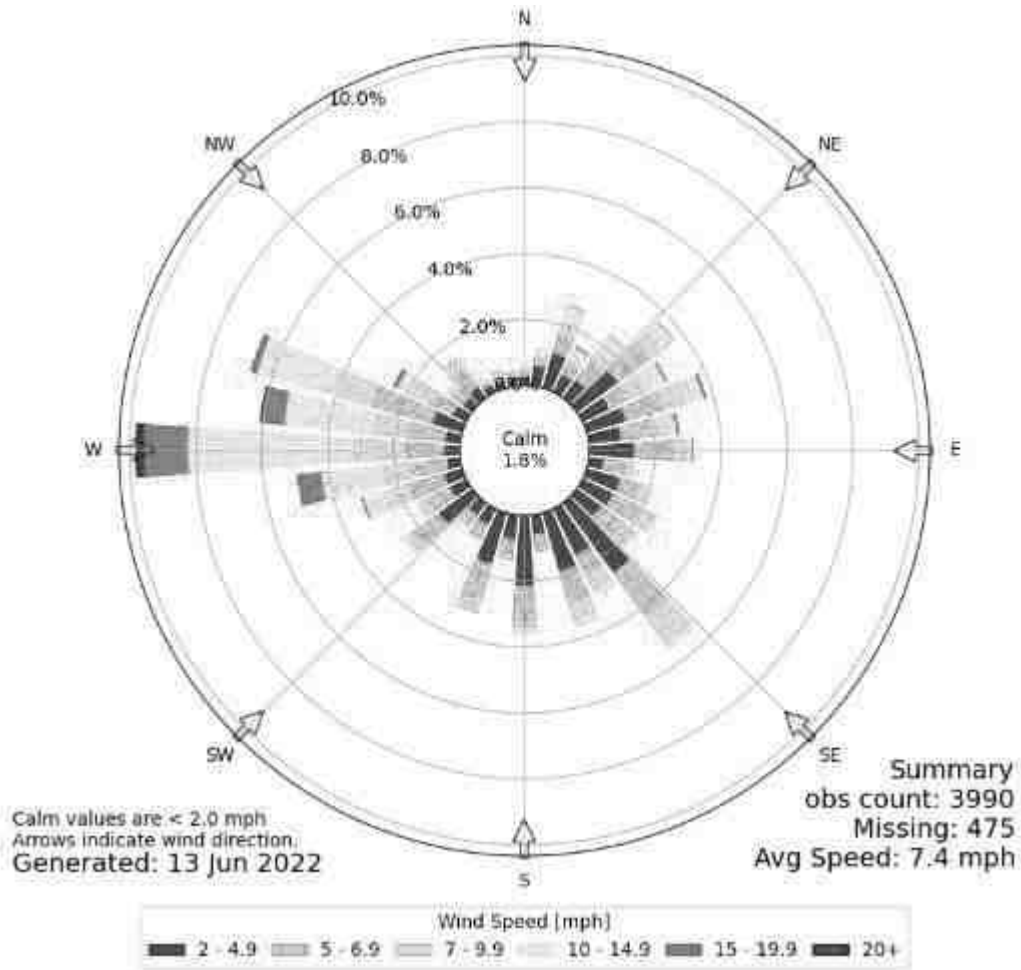
The meteorological data – Temperature, rainfall, Wind Speed, Wind direction are recorded through AWS by setting it up in the site.

#### **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 March to May 2022.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |



**Figure 3.7 Wind rose**

**3.3.9 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.

**3.4 AMBIENT AIR QUALITY**

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

|  |                   |
|--|-------------------|
| Environmental Parameters: <i>Ambient Air</i> |                   |
| Monitoring Period                            | March to May 2022 |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

|                         |  |                      |                  |
|-------------------------|--|----------------------|------------------|
| Design Criteria         | The monitoring stations are selected based on factors like topography/terrain, prevailing meteorological conditions like predominant wind direction (March to May 2022), 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   | -                    | -                |
|                         | Sri Annamaliyar Maligai, Munnur  | 2.75 km              | Upwind W         |
|                         | Sri Krishna Mahal, Punnam  | 6.12 km              | Downwind E       |
|                         | Government Primary School, Nedungur  | 4.12 km              | Crosswind S      |
|                         | Vettamanagalam East  | 4.72 km              | Crosswind N      |
| 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.

|                          |  |                         |
|--------------------------|--|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>                                  |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>           |                         |

**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                        | 52                                 | 67  | 59.0 | 66.54         | 21                                  | 30  | 24.6 | 29.54         | 11                               | 20  | 15.3 | 19.54         | 18                               | 30  | 23.1 | 29.08         |
| AAQ 2                             | Sri Annamaliyar Maligai, Munnur     | 44                                 | 54  | 49.3 | 54            | 15                                  | 24  | 19.9 | 24            | 6                                | 13  | 10.0 | 13            | 11                               | 21  | 16.5 | 21            |
| AAQ 3                             | Sri Krishna Mahal, Punnam           | 44                                 | 52  | 48.1 | 51.54         | 13                                  | 24  | 18.2 | 23.08         | 6                                | 12  | 9.0  | 12            | 12                               | 23  | 16.7 | 22.08         |
| AAQ 4                             | Government Primary School, Nedungur | 41                                 | 48  | 44.9 | 48            | 14                                  | 24  | 19.8 | 23.54         | 6                                | 12  | 8.3  | 11.54         | 12                               | 21  | 15.5 | 20.54         |
| AAQ 5                             | Vettamanagalam East                 | 44                                 | 53  | 48.7 | 52.54         | 14                                  | 26  | 20.3 | 25.54         | 6                                | 15  | 9.9  | 14.54         | 14                               | 25  | 17.8 | 24.54         |
| 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- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>                                  |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>           |                         |

### 3.4.2 Interpretation of ambient air quality:

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

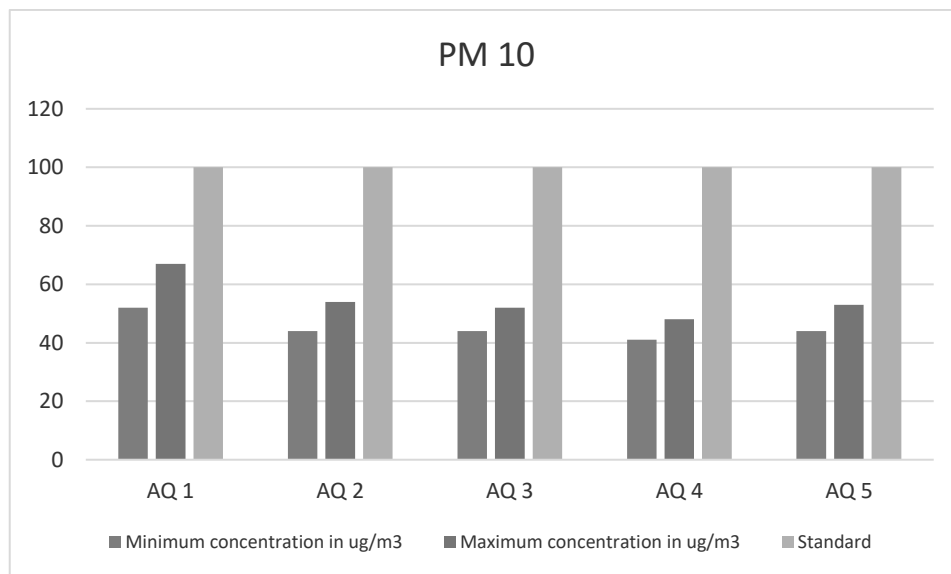
#### Observation:

The Maximum value of PM10 (67  $\mu\text{g}/\text{m}^3$ ), PM 2.5(30  $\mu\text{g}/\text{m}^3$ ), SOx 20 ( $\mu\text{g}/\text{m}^3$ ) ,NOx (30  $\mu\text{g}/\text{m}^3$ ) is observed in project site.

#### Inference:

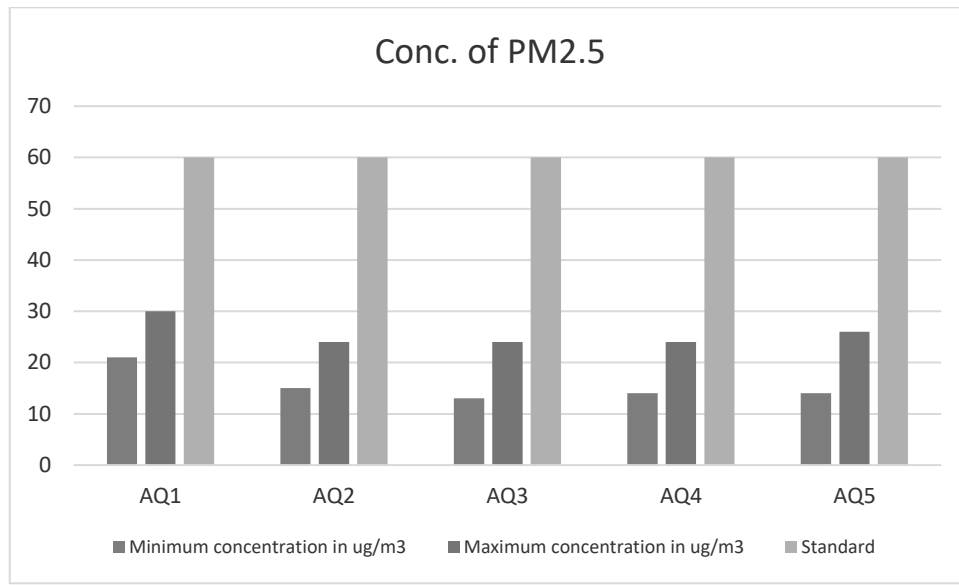
The monitoring results for PM10, PM2.5, Sox, NOx was found to be high in project area which is due to existing mining activity. The only contributing factor to the higher values is due to the existing mines. In the absence of existing mining, the values of PM10, PM2.5, Sox, NOx was found to be less.

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

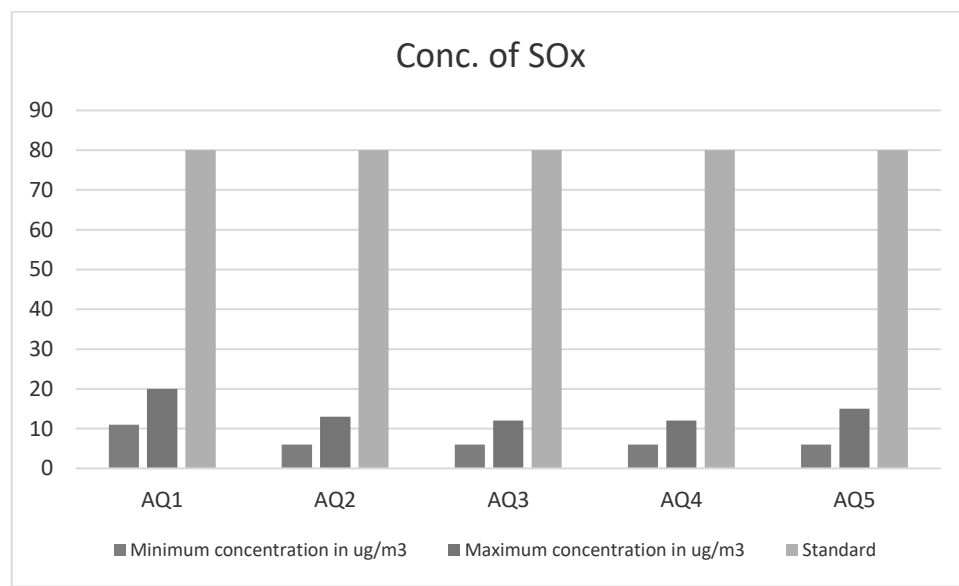


**Figure 3.8 Concentration of PM10 ( $\mu\text{g}/\text{m}^3$ ) in Study Area**

|                          |  |                         |
|--------------------------|--|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>                                  |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>           |                         |

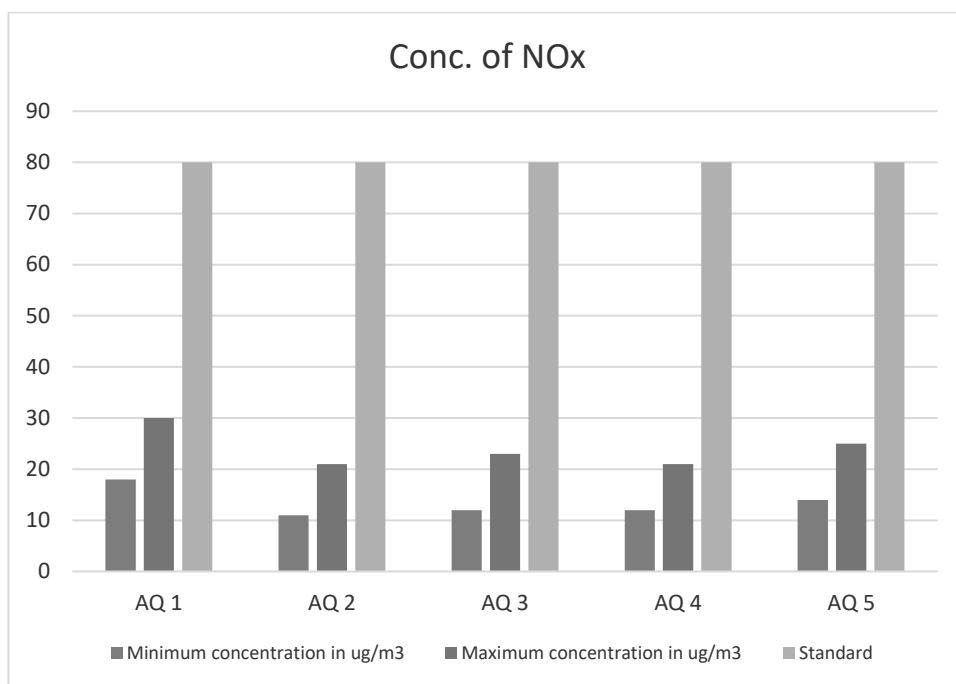


**Figure 3.9 Concentration of PM2.5 ( $\mu\text{g}/\text{m}^3$ ) in Study Area**



**Figure 3.10 Concentration of SOx ( $\mu\text{g}/\text{m}^3$ ) in Study Area**

|                          |  |                         |
|--------------------------|--|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>                                  |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur 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                               | March to May 2022   |
| Design Criteria                                 | Based on the Sensitivity of the area  |
| Monitoring Locations                            | 1. Project Site – N1<br>2. Sri Annamaliyar Maligai, Munnur– N2<br>3. Sri Krishna Mahal, Punnam - N3<br>4. Government Primary School, Nedungur - N4<br>5. Vettamanagalam East – 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 |



|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

|                         |   |
|-------------------------|---|
| Frequency of Monitoring | Noise samples were collected from 5 locations - Once season |
|-------------------------|---|

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

### 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               | 50  | 53      |
| Sri Annamaliyar Maligai, Munnur     | 50               | 42  | 45      |
| Sri Krishna Mahal, Punnam           | 52               | 41  | 47      |
| Government Primary School, Nedungur | 49               | 40  | 45      |
| Vettamanagalam East                 | 55               | 42  | 51      |

### 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                        | 53                 | 48  | 50      |
| Sri Annamaliyar Maligai, Munnur     | 46                 | 41  | 43      |
| Sri Krishna Mahal, Punnam           | 46                 | 40  | 43      |
| Government Primary School, Nedungur | 46                 | 42  | 44      |
| Vettamanagalam East                 | 48                 | 44  | 46      |

#### Observation:

The maximum Day noise and Night noise were found to be 56 dB(A) and 53 dB(A) respectively in Project site. The minimum Day Noise and Night noise were 40 dB(A) and 40 dB(A) respectively which

|                          |  |                         |
|--------------------------|--|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>                                  |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>           |                         |

was observed in Government Primary School, Nedungur and Sri Krishna Mahal, Punnam. The observed values are all well within the Standards prescribed by CPCB.

### 3.6 SOIL ENVIRONMENT

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

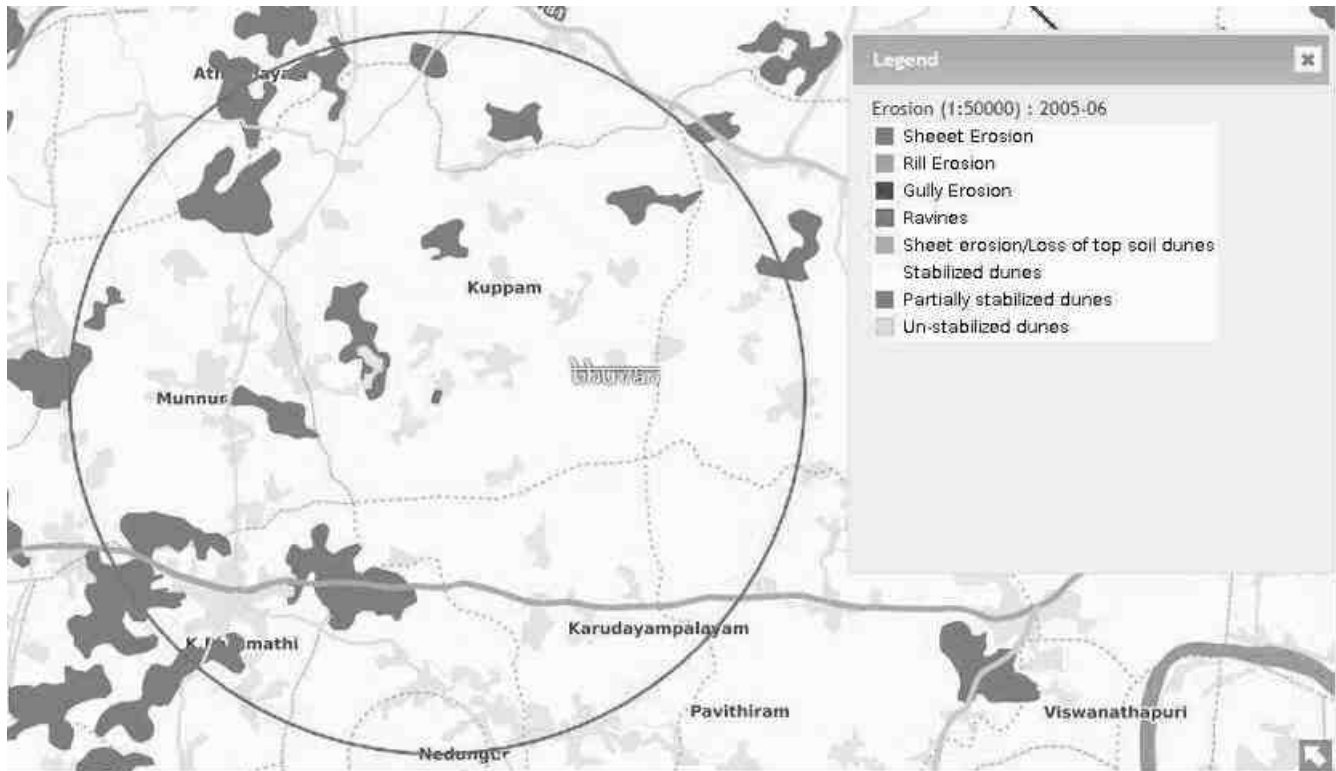


Figure 3.12 Soil Erosion pattern within 5 km radius of the project site

#### 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:

- 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.

|                          |  |                         |
|--------------------------|--|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>                                  |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>           |                         |

**Table 3-13 Soil Quality Analysis**

|  |   |
|--|---|
| <b>Environmental Parameters: Soil Quality Analysis</b> |   |
| Monitoring Period                                      | March to May 2022   |
| Design Criteria  | Based on the environmental settings of the study area   |
| Monitoring Locations                                   | 1. Project Site – SQ 1<br>2. Sri Annamaliyar Maligai, Munnur– SQ 2<br>3. Sri Krishna Mahal, Punnam - SQ 3<br>4. Government Primary School, Nedungur - SQ 4<br>5. Vettamanagalam East – 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**

| <b>Parameters</b>                | <b>Unit</b>       | <b>Project Site SQ 1</b> | <b>SQ 2</b> | <b>SQ 3</b> | <b>SQ 4</b> | <b>SQ5</b> |
|----------------------------------|-------------------|--------------------------|-------------|-------------|-------------|------------|
| pH (at 25°C)                     | -                 | 7.3                      | 6.62        | 8.37        | 6.45        | 7.15       |
| Specific Electrical Conductivity | mS/cm             | 0.27                     | 0.07        | 0.24        | 0.09        | 0.24       |
| Water Holding Capacity           | ml/l              | 3.8                      | 4.2         | 3.2         | 2.8         | 4.8        |
| Chloride                         | g/cm <sup>3</sup> | 42                       | 25.1        | 38.5        | 31.2        | 37.9       |
| Soluble Calcium                  | mg/kg             | 12.2                     | 8.2         | 8.4         | 7.2         | 10.3       |
| Soluble Sodium                   | mg/kg             | 118                      | 96          | 121         | 95.8        | 182        |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

|                          |          |       |        |        |        |        |
|--------------------------|----------|-------|--------|--------|--------|--------|
| Soluble Potassium        | mg/kg    | 10.6  | 16.8   | 14.2   | 16     | 32     |
| Organic matter           | %        | 0.26  | 0.3    | 0.42   | 0.3    | 0.28   |
| Soluble Magnesium        | mg/kg    | 8.6   | 5      | 5.1    | 4.2    | 6.3    |
| Total Soluble Sulphates  | %        | 116   | 68     | 186    | 126    | 190    |
| Cation Exchange Capacity | mg/kg    | 36    | 24.2   | 21.6   | 11.8   | 51.6   |
| Total Nitrogen           | %        | 0.031 | 0.028  | 0.021  | 0.026  | 0.038  |
| Bulk Density             | meq/100g | 1.156 | 1.1412 | 1.1586 | 1.1316 | 1.1413 |
| Phosphorous              | meq/kg   | 218   | 182    | 190    | 180    | 216    |
| Sand                     | %        | 57    | 65     | 52     | 54     | 64     |
| Clay                     | mg/kg    | 25    | 16.6   | 32     | 30     | 17.8   |
| Silt                     | mg/kg    | 18    | 18.4   | 16     | 16     | 18.2   |
| SAR                      | mg/kg    | 7.6   | 8.8    | 7.92   | 6.5    | 7.88   |
| Silicon                  | %        | 0.9   | 0.96   | 0.82   | 0.86   | 0.72   |

### 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 1.1316 to 1.1586 meq/100g which indicates favorable physical condition for plant growth. The water holding capacity was found in the range of 2.8 ml/1 to 4.8 ml/1.

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

### 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 6.45 to 8.37, 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 0.26 to 0.42 %, 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.

#### 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.

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

- 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 quadrat 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                         |
| 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 |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

|                       |   |
|-----------------------|---|
| 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 Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>                                  |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur 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             |



|                          |  |                         |
|--------------------------|--|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>                                  |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>           |                         |

|       |                          |              |     |    |   |      |       |   |      |      |      |      |      |               |
|-------|--------------------------|--------------|-----|----|---|------|-------|---|------|------|------|------|------|---------------|
| 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 |      |      |      |      |               |

**Table 3-17 Shrubs 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      | Jatropagossypifolia | Kaatamanaku | 32                   | 17                              | 24                     | 1.17    | 0.71          | 1.65      | 14.43            | 17.17              |      | Not Assessed        |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>                                  |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>           |                         |

|    |                           |                 |    |    |    |      |      |      |       |       |               |
|----|---------------------------|-----------------|----|----|----|------|------|------|-------|-------|---------------|
| 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  | Stachytarpheartificifolia | 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  |

**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             |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

|    |                     |                        |    |    |    |      |      |       |       |       |               |
|----|---------------------|------------------------|----|----|----|------|------|-------|-------|-------|---------------|
| 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  |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>                                  |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>           |                         |

### 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            |
| 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             |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>                                  |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>           |                         |

|                          |              |            |          |          |                    |
|--------------------------|--------------|------------|----------|----------|--------------------|
| 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           |
| <b>Total</b>             |              | <b>110</b> |          |          | <b>-3.02215005</b> |

H (Shannon Diversity Index) =3.02

### Shrubs

| <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> |
|---------------------------|--------------------|-----------------------|-----------|----------------|---------------------|
| 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            |
| Stachytarphaurticifolia   | Rat tail           | 13                    | 0.074713  | -2.59411       | -0.19381            |
| Woodfordiafruiticosa      | Velakkai           | 4                     | 0.022989  | -3.77276       | -0.08673            |
| Hibiscus rosa sinensis    | Sembaruthi         | 3                     | 0.017241  | -4.06044       | -0.07001            |
| Lantana camara            | Unnichi            | 8                     | 0.045977  | -3.07961       | -0.14159            |
| Parthenium hysterophorous | Vishapoondu        | 45                    | 0.258621  | -1.35239       | -0.34976            |
| Euphorbia geniculata      | Amman Pacharisi    | 5                     | 0.028736  | -3.54962       | -0.102              |
| <b>Total</b>              |                    | <b>174</b>            |           |                | <b>-2.2234</b>      |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

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. Species diversity calculation

| Details | H    | Hmax | Evenness | Species Richness (Margalef) |
|---------|------|------|----------|-----------------------------|
| 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

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

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:** Paddy, Maize are the main crop grown. Different fruits like Banana, papaya, mangoes, guava and vegetables like brinjal, drumsticks, onion, Coriander 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), *Aegle marmelos* (golden apple), *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.

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.

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

### **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 stripped 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.

**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> |
|------------------------|------------------------------|---|---------------------------------|
| Mammals                |                              |   |                                 |
| 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                   |



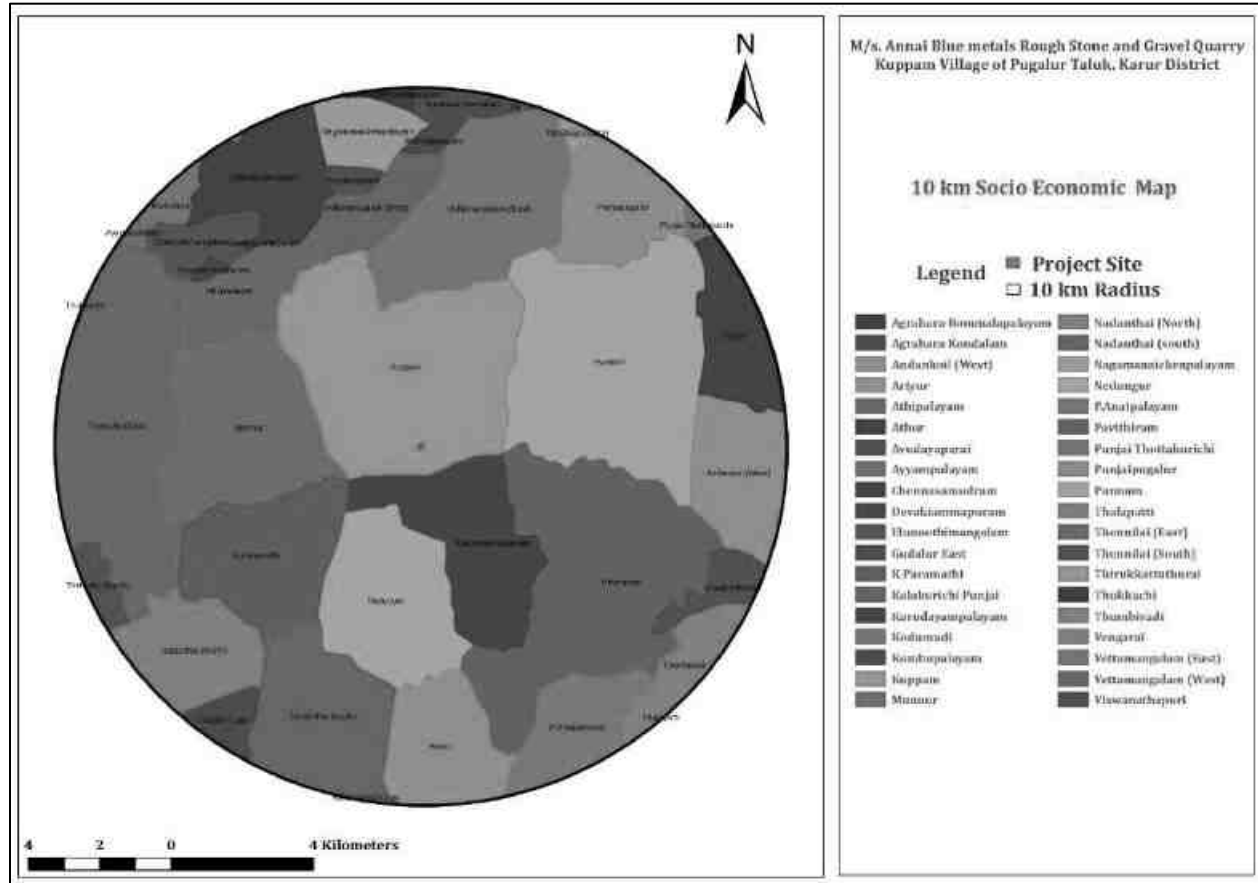
|                          |  |                         |               |
|--------------------------|--|-------------------------|---------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |               |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |               |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |               |
| 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    |
| Birds                    |  |                         |               |
| Milvus migrans           | Black kite   | IV                      | Least concern |
| Saxicoloides fulicatus   | Indian Robin   | IV                      | Least concern |
| Pycnonotus cafer         | Red vented Bulbul  | IV                      | Least concern |
| Phragmaticola 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 |
| 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    |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>                                  |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>           |                         |

|                  |                    |    |               |
|------------------|--------------------|----|---------------|
| 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.



**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 |    |    |
|          |           |            |           |        |               |        |    |    |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

|                      |      |      |      |      |      |      |      |   |
|----------------------|------|------|------|------|------|------|------|---|
| Kuppam               | 1120 | 3503 | 1697 | 1806 | 1143 | 804  | 600  | 0 |
| Punnam               | 1452 | 5446 | 2839 | 2607 | 2208 | 1471 | 906  | 0 |
| Vettamangalam (West) | 1827 | 5882 | 2887 | 2995 | 2225 | 1728 | 816  | 7 |
| Vettamangalam (East) | 807  | 2657 | 1310 | 1347 | 900  | 621  | 714  | 5 |
| Munnur               | 826  | 2582 | 1289 | 1293 | 980  | 669  | 931  | 0 |
| K.Paramathi          | 1093 | 3488 | 1709 | 1779 | 1380 | 1174 | 1256 | 0 |
| Karudayampalayam     | 577  | 2347 | 1211 | 1136 | 977  | 637  | 438  | 0 |
| Nedungur             | 403  | 1190 | 586  | 604  | 469  | 331  | 298  | 6 |
| Pavithram            | 1799 | 5881 | 2862 | 3019 | 2165 | 1573 | 1546 | 0 |
| Athipalayam          | 730  | 2062 | 1014 | 1048 | 757  | 514  | 762  | 0 |
| Nadanthai (South)    | 161  | 500  | 251  | 249  | 151  | 116  | 81   | 0 |

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

|                          |  |                         |
|--------------------------|--|-------------------------|
| <b>Project</b>           | <b>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>                                  |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>           |                         |



**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 |
|-------|-----------------------|-------------------------------------|--------------------------|--------------------------------|
|       |                       | NH 81                               | -                        | Nh 81                          |
| 1     | Cars                  | 1129                                | 1                        | 1129                           |
| 2     | Buses                 | 426                                 | 3                        | 1278                           |
| 3     | Trucks                | 403                                 | 3                        | 1209                           |
| 4     | Two wheelers          | 916                                 | 0.5                      | 458                            |
| 5     | Three wheelers        | 600                                 | 1.5                      | 900                            |
|       | <b>Total</b>          | <b>3474</b>                         | <b>-</b>                 | <b>4974</b>                    |

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

| Road | V (Volume | C (Capacity in | Existing V/C | LOS |
|------|-----------|----------------|--------------|-----|
|------|-----------|----------------|--------------|-----|

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

|      | <b>in<br/>PCU/hr)</b> | <b>PCU/hr)</b> | <b>Ratio</b> |          |
|------|-----------------------|----------------|--------------|----------|
| NH45 | 4974/24=207           | 481            | 0.43         | <b>C</b> |

**Note:** The existing level may be "Good" for NH--81.

| <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 Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

#### 4.2 LAND ENVIRONMENT:

| Aspect                       | Impact   | Mitigation Measures    |       |       |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |   |
|------------------------------|--|------------------------|-------|-------|--|--|---------|-------|-------|-------|-------|-----|---|-----|----|---|----|-----|----|---|-----|-----|----|---|----|-----|----|---|---|-----|----|---|----|-----|----|---|-----|-----|----|---|------|-----|----|---|----|-----|----|---|---|----|---|---|---|
| <i>Mining of rough stone</i> | <p>The proposed 1.92.0 Ha mine located in Kuppam Village having 227340 m<sup>3</sup> of Rough stone and 15256 m<sup>3</sup> of Gravel respectively. The quarry operation is proposed to carry out with conventional open cast semi mechanized mining with 5.0 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;"> <thead> <tr> <th colspan="5" style="text-align: center;">ULTIMATE PIT DIMENSION</th> </tr> <tr> <th style="text-align: center;">Section</th> <th style="text-align: center;">Bench</th> <th style="text-align: center;">L (m)</th> <th style="text-align: center;">W (m)</th> <th style="text-align: center;">D (m)</th> </tr> </thead> <tbody> <tr> <td rowspan="10" style="text-align: center;">PIT</td> <td style="text-align: center;">I</td> <td style="text-align: center;">158</td> <td style="text-align: center;">42</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: center;">II</td> <td style="text-align: center;">170</td> <td style="text-align: center;">63</td> <td style="text-align: center;">5</td> </tr> <tr> <td style="text-align: center;">III</td> <td style="text-align: center;">160</td> <td style="text-align: center;">55</td> <td style="text-align: center;">5</td> </tr> <tr> <td style="text-align: center;">IV</td> <td style="text-align: center;">150</td> <td style="text-align: center;">48</td> <td style="text-align: center;">5</td> </tr> <tr> <td style="text-align: center;">V</td> <td style="text-align: center;">140</td> <td style="text-align: center;">57</td> <td style="text-align: center;">5</td> </tr> <tr> <td style="text-align: center;">VI</td> <td style="text-align: center;">130</td> <td style="text-align: center;">47</td> <td style="text-align: center;">5</td> </tr> <tr> <td style="text-align: center;">VII</td> <td style="text-align: center;">120</td> <td style="text-align: center;">37</td> <td style="text-align: center;">5</td> </tr> <tr> <td style="text-align: center;">VIII</td> <td style="text-align: center;">110</td> <td style="text-align: center;">27</td> <td style="text-align: center;">5</td> </tr> <tr> <td style="text-align: center;">IX</td> <td style="text-align: center;">100</td> <td style="text-align: center;">17</td> <td style="text-align: center;">5</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">90</td> <td style="text-align: center;">7</td> <td style="text-align: center;">5</td> </tr> </tbody> </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 and Gravel Quarry.</p> | ULTIMATE PIT DIMENSION |       |       |  |  | Section | Bench | L (m) | W (m) | D (m) | PIT | I | 158 | 42 | 2 | II | 170 | 63 | 5 | III | 160 | 55 | 5 | IV | 150 | 48 | 5 | V | 140 | 57 | 5 | VI | 130 | 47 | 5 | VII | 120 | 37 | 5 | VIII | 110 | 27 | 5 | IX | 100 | 17 | 5 | X | 90 | 7 | 5 | <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 500 Nos of local tree species (Neem, Magizham, Tamarind, Elandhai and Vilvam) 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>This area is covered 2.0m Gravel in this mine area 15256 m<sup>3</sup>. Gravel formation will be removed and hydraulic excavators are used for loading the gravel into the tipper from pit head to needy buyers</p> |
| ULTIMATE PIT DIMENSION       |  |                        |       |       |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |   |
| Section                      | Bench  | L (m)                  | W (m) | D (m) |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |   |
| PIT                          | I  | 158                    | 42    | 2     |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |   |
|                              | II   | 170                    | 63    | 5     |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |   |
|                              | III  | 160                    | 55    | 5     |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |   |
|                              | IV   | 150                    | 48    | 5     |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |   |
|                              | V  | 140                    | 57    | 5     |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |   |
|                              | VI   | 130                    | 47    | 5     |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |   |
|                              | VII  | 120                    | 37    | 5     |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |   |
|                              | VIII   | 110                    | 27    | 5     |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |   |
|                              | IX   | 100                    | 17    | 5     |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |   |
|                              | X  | 90                     | 7     | 5     |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |   |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

|  |  |  |
|--|--|--|
|  | <p>Impact on soil of the study area will be minimal as there are no wastewater generated, heavy metal infusion, stack emissions.</p> <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 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> <p>The proposed mining activity is carried out in almost Undulated terrain where the contour level difference is above 174 m.</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:

| Aspect | Impact | Mitigation Measures |
|--------|--------|---------------------|
|--------|--------|---------------------|



|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

|  |   |  |
|--|---|--|
| <i>Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.</i> | <p>The mining in the area may cause ground water contamination due to intersection of the water table and mine runoff.</p> <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>The water table will not be intersected during mining, as the ultimate depth is limited upto 47 m below ground level, whereas the ground water table is at 54m below the ground level. The municipal wastewater will be disposed into 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 54m 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> |
|--|---|--|

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

|  |  |   |
|--|--|---|
|  | Improper management of Domestic wastewater in the Mine lease may create unhygienic conditions in the site thereby causing health impacts to the labours. | 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 |
|--|--|---|

#### 4.4 AIR ENVIRONMENT:

| <b>Aspect</b>  | <b>Impact</b>   | <b>Mitigation Measures</b>   |
|--|---|--|
| <i>Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.</i> | <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. 2 No of Tipper will be used for loading and unloading, 1 No of Excavator (1.2 m<sup>3</sup> bucket capacity (with rock breaker attachment) 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 500 Nos of local species (with 100 Nos each year) 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 NH 81.</p> <p>Alternatively, gravelled road may be</p> |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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>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> <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> |
|--|---|---|

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

### **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)

#### **4.4.1 Source Characterization**

A detailed listing of all emission sources and their corresponding modelling input release parameters and emission rates is listed 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 are typically include dust collectors, hot water heaters, and emergency generator(s). Since at the present project the following sources are anticipated.

1. Hydraulic excavator –1.2 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 March to May 2022 emissions were estimated. Emissions due to haul road and general plant traffic on the unpaved road network were modelled as volume

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

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 replicated 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

**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 March to May 2022 are superimposed on the maximum baseline concentrations obtained during the study period to estimate the post project scenario, which would prevail at

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

the post operational phase. The overall scenario with predicted concentrations over the maximum baseline concentrations is shown in the following table along with isopleths.

**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>  |
|                       | 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<br>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- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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 500 Nos. of local species (Neem, Mandharai, Athi, Tamarind, Ashoka, Casuarinas and Villam) to reduce the</li> </ul> |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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. NH 81 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- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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. | 10 m safety distance will be provided all along the boundary of the mine lease area and safety. Around 0.78.0 Ha of land is utilized for greenbelt development (500 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 Patta land of M/s. Annai Blue metals 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 Kuppam village which is 0.51 km 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 movement of the vehicles may affect/injure the animals | 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- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

|  |   |  |
|--|---|--|
| 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 toilet, Water filter facilities to Government School, Salipalayam.  |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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 labor  |
| 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 – 12 P.M to 12:30 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 and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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 has been approved by the Assistant Director, Department of Mining and Geology, Karur District prior to submission of the Form-1 and PFR. ToR issued by the SEIAA-TN vide Letter No. SEIAA-TN/F. No. 8693/SEAC/ ToR-1077/2021 Dated: 01.03.2022. 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 and Gravel 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 |
|--------|------------|-------------------------|-------------------------|---------|
|        |            |                         |                         |         |

|                          |   |                             |
|--------------------------|---|-----------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA<br/>Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                             |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                             |

|    |                         |                                 |                            |   |
|----|-------------------------|---------------------------------|----------------------------|---|
| 1. | Technology              | Opencast semi mechanized mining | Opencast mechanized mining | Opencast mechanized Involving drilling and blasting are preferred.<br>Benefits:<br>Material is hard so to make it loose and to bring it to appropriate size.                      |
| 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/ housing is required.                  |
| 3. | Labour transportation   | Public transport                | Private transport          | Local labours will be deployed from Kuppam 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 Kuppam village which is 0.51 km from site  |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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 week<br>4 hourly.<br>Twice a week, One non<br>monsoon season<br>8 hourly, twice a week<br>24 hourly, twice a week | 1. Project site,<br>2. Sri Annamaliyar<br>Maligai, Munnur<br>3. Sri Krishna Mahal,<br>Punnam |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

|  |             |                               |  |
|--|-------------|-------------------------------|--|
| NO <sub>x</sub><br>Lead in PM  |             |                               | 4. Government Primary School, Nedungur<br>5. Vettamanagalam East   |
| Noise  | 5 locations | 24 hourly Once in 5 locations | 1. Project site,<br>2. Sri Annamaliyar Maligai, Munnur<br>3. Sri Krishna Mahal, Punnam<br>4. Government Primary School, Nedungur<br>5. Vettamanagalam East |
| 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           | 1. Project site,<br>2. Sri Annamaliyar Maligai, Munnur<br>3. Sri Krishna Mahal, Punnam<br>4. Government Primary School, Nedungur<br>5. Vettamanagalam East |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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   | Noyyal River<br>Kaveri River   |
| Soil (Organic matter, Texture, pH, Electrical Conductivity, Permeability, Water holding capacity, Porosity)   | 5 locations                     | Once in 5 locations | 1. Project site,<br>2. Sri Annamaliyar Maligai, Munnur<br>3. Sri Krishna Mahal, Punnam<br>4. Government Primary School, Nedungur<br>5. Vettamanagalam East |
| Ecology and biodiversity Study  | Study area covering 5 km radius | One time Sampling   |  |



|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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 and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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- Thiru.S.K.Krishnamurthy- 1.95.5 Ha, Tmt.S.Tamilselvi - 3.36.0 Ha, Thiru.T.Manoharan – 2.66.0 Ha

**Proposed Quarries** - M/s. Annai Blue Metals– 1.92.0 Ha

**Lease Expired Quarries** - S.Tamilselvi – 3.35.5Ha.

The Total extent of the Existing / Proposed quarries are 9.89.5 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 Karur 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 and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

### 7.1.3 Identification of Hazard

#### 7.1.3.1 Blasting Pattern:

The quarrying operation will be carried out by Opencast Semi Mechanized method 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:

|                         |                        |
|-------------------------|------------------------|
| Diameter of Hole        | 32-36mm                |
| Spacing between holes   | 60 cms                 |
| Depth                   | 1 to 1.5 m             |
| Pattern of hole         | Zigzag                 |
| Inclination of holes    | 70° from horizontal    |
| Use of delay detonators | 25 milli-second delays |
| Detonating fuse         | “Detonating” Cord      |

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

Small dia of 25mm Slurry explosives 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.

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

The quarry is situated more than 0.51 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 mainly to give the shattering effect in rough stone for easy excavation and to control fly of rocks.

|                   |   |                              |
|-------------------|---|------------------------------|
| Diameter of Holes | = | 32-36mm                      |
| Powder factor     | = | 6 to 7 Tons/Kg of explosives |
| Depth             | = | 1 to 1.5 m                   |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

Charge/Hole = 140 gms of 25mm dia cartridge

Blasted at day time = 12 to 12:30 PM (or whenever required)

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 1.2 Cum Bucket capacity (with Rock Breaker attachment), Jack Hammers (32 mm Dia) of 2 Nos.
- Loading Equipment – Excavator of 1.2 Cum Bucket Capacity (with Bucket attachment)
- Transportation (includes within the mine and mine to destination) – Tipper 2 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.

**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:

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

- 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 (15 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 willfully do anything likely to endanger life or limb in the mine, or negligently or willfully 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 footwear and safety helmets;
- Cleaning of mine faces will be regularly done;
- Handling of explosives, charging and blasting will be carried out by highly skilled laborers 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 laborers periodically.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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 and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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 and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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 500 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:

Developing Sports facilities and providing Toilet, Water Filter Facilities to Government School, Salipalayam.

### 8.3 PROJECT COST / INVESTMENT DETAILS

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

|   |   |
|---|---|
| 1 | <b><u>D. Fixed Asset Cost:</u></b><br>1. Land Cost : Rs.16,00,000/- (Amount for Patta Land )<br>2. Labour Shed : Rs. 1,00,000/-<br>3. Sanitary Facility : Rs. 60,000/-<br>4. Refilling/Fencing cost : Rs.1,00,000/-<br>Total= : Rs.18,60,000/-  |
| 2 | <b><u>E. Operational Cost:</u></b><br><b><u>Machinery cost</u></b> : <b>Rs.30,00,000/-</b>  |
| 3 | <b><u>F. EMP Cost:</u></b><br>Display board in site; : Rs. 44,20,000/-<br>Monitoring-Air, Water, :<br>Noise; Dust Supression :<br>-Water sprinkling by :<br>own water tankers; :<br>Vehicle Tyres Wash; :<br>Green Belt :<br>Development; Road :<br>Development & :<br>Management; :<br>Occupational Health :<br>And Safety; Solid :<br>Waste Management; :<br>Strom Water; :<br>Renewable Energy, :<br>CCTV Installation, :<br>Salary for mines :<br>manager and blaster : |
|   | <b>Total Project</b> : <b>Rs.92,80,000/-</b><br><b>Cost(A+B+C)</b>  |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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, Karur. Subsidence/slope failures are not envisaged because there are no loose strata overlying the deposit (mineral to be excavated). The bench height will be average 5m. 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- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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, M/s. Annai Blue metals will work in association with M/s. Ecotech Labs Pvt Ltd.

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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 | <ul style="list-style-type: none"> <li>• Use of locally available construction materials.</li> </ul>   |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

|  |  |  |   |  |
|--|--|--|---|--|
|  |  |  | resources & increase in carbon footprint. |  |
|--|--|--|---|--|

**Table 9-2: Budgetary Allocation for EMP during Mining**

| <b>Year</b> | <b>Description</b>   | <b>Cost (Rs)</b> |
|-------------|--|------------------|
| I YEAR      | Display board in site; Monitoring-Air, Water, Noise; Dust Supression -Water sprinkling by own water tankers; Vehicle Tyres Wash; Green Belt Development; Road Development & Management; Occupational Health And Safety; Solid Waste Management; Strom Water; Renewable Energy, CCTV Installation, Salary for mines manager and blaster | 870200           |
| II YEAR     | Monitoring-Air, Water, Noise; Dust Supression -Water sprinkling by own water tankers; Vehicle Tyres Wash; Green Belt Development; Haul Road Development & Management; Occupational Health And Safety; Solid Waste Management; Strom Water; Renewable Energy, Salary for mines manager and blaster                                      | 877200           |
| III YEAR    | Monitoring-Air, Water, Noise; Dust Supression -Water sprinkling by own water tankers; Vehicle Tyres Wash; Green Belt Development; Road Development & Management; Occupational Health And Safety; Solid Waste Management; Strom Water; Renewable Energy, Salary for mines manager and blaster   | 880200           |
| IV YEAR     | Monitoring-Air, Water, Noise; Dust Supression -Water sprinkling by own water tankers; Vehicle Tyres Wash; Green Belt Development; Road Development & Management; Occupational Health And Safety; Solid Waste Management; Strom Water; Renewable Energy, Salary for mines manager and blaster   | 892200           |

|                          |  |                         |
|--------------------------|--|-------------------------|
| <i>Project</i>           | <i>Rough stone Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>                                  |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>           |                         |

|              |  |           |
|--------------|--|-----------|
| V YEAR       | Monitoring-Air, Water, Noise; Dust Supression -Water sprinkling by own water tankers; Vehicle Tyres Wash; Green Belt Development; Road Development & Management; Occupational Health And Safety; Solid Waste Management; Strom Water; Renewable Energy, Salary for mines manager and blaster | 900200    |
| <b>Total</b> |  | 44,20,000 |



|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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

M/s. Annai Blue Metals site is a cluster of five mining project. The individual mine lease area is 1.92.0 Ha of Rough Stone Quarry located at S.F.Nos. 682 (part) of Kuppam Village, Pugalur Taluk in Karur District.

### 10.2 PROJECT OVERVIEW

**Table 10-1: Project Overview**

| <b>S. No.</b> | <b>Description</b>          | <b>Details</b>   |
|---------------|-----------------------------|--|
| 1             | Project Name                | Rough Stone and Gravel Quarry-1.92.0 ha                                    |
| 2             | Proponent                   | M/s. Annai Blue Metals   |
| 3             | Mining Lease Area Extent    | 1.92.0Ha   |
| 4             | Location                    | S.F.Nos. 682 (part) Kuppam Village, Pugalur Taluk, Karur District.         |
| 5             | Latitude                    | 10° 59' 2.28" N to 10° 58' 57.34" N  |
| 6             | Longitude                   | 77° 56' 13.64" E to 77° 56' 8.30" E  |
| 7             | Topography                  | Undulated terrain  |
| 8             | Site Elevation above MSL    | 174 m from MSL   |
| 9             | Topo Sheet No.              | 58 F/13  |
| 10            | Minerals of Mine            | Rough Stone and Gravel Quarry  |
| 11            | Proposed production of Mine | 2,27,340 m <sup>3</sup> of Rough stone and 15,256 m <sup>3</sup> of Gravel |
| 12            | Ultimate depth of Mining    | 47 m below ground level  |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

|    |                        |  |
|----|------------------------|--|
| 13 | Method of Mining       | Open cast, mechanized mining   |
| 14 | Water demand           | 1.675 KLD  |
| 15 | Source of water        | Water will be supplied through tankers supply  |
| 16 | Man power              | 15 Nos.  |
| 17 | Mining Lease           | Precise area communication from The District Collector Karur vide Roc No: 134/Mines/2020 dated 12.10.2020  |
| 18 | Mining Plan Approval   | Mining Plan was approved by The Deputy Director, Dept. of Geology & Mining, Karur vide Roc No: 134/Mines/2020 dated 17.02.2021   |
| 19 | Production details     | Geological reserves: 7,84,728 m <sup>3</sup> of Rough Stone and 20,592 m <sup>3</sup> of Gravel<br>Proposed year wise recoverable reserves: 2,27,340 m <sup>3</sup> of Rough Stone and 15,256 m <sup>3</sup> of Gravel   |
| 20 | Boundary Fencing       | 7.5 m barrier all along the boundary Fencing will be provided.   |
| 21 | Disposal of overburden | This area is covered 2.0m Gravel in this mine area 15256 m <sup>3</sup> . Gravel formation will be removed, and hydraulic excavators are used for loading the gravel into the tipper from pit head to needy buyers   |
| 22 | Ground water           | The quarry operation is proposed up to a depth of 47 m below ground level. The water table is below 54 m from ground level which is observed from the nearby open wells and bore wells. Hence the ground water will not be affected in any manner due to the quarrying operation during the entire lease period. |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

|    |  |   |
|----|--|---|
| 23 | Habitations within 500m radius of the Project Site | There is no Habitation within 300m radius of the project site.                                    |
| 24 | Drinking water                                     | Water will be supplied through tankers from Kuppam village which is 0.51 Km Northwest 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.

Since Karur, a city known for its small-scale industries and also the soil in the area near project site is not very fertile making it unsuitable for carrying out agricultural activities. The topography near the lease area is barren dry lands showing only less chance for crop growth and development of vegetation. In addition to that, geological reserves of rough stone is abundant in the lease area which is evident from the mine activities carried out in the nearby sites.

**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, | Proper mitigation measures like water sprinkling on haul roads will be adopted to control dust emissions. |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

|   |   |   |
|---|---|---|
|   | 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   | To control the emissions regular preventive maintenance of equipments will be carried out on contractual basis. 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>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>No other equipments except the transportation vehicles and Excavator (as & when required) for loading will be allowed at site.<br>Noise generated by these equipments shall be intermittent and does not cause much adverse impact.<br>Plantation will be carried out along approach roads. The plantation minimizes propagation of noise and also arrest dust. |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

|   |   |  |
|---|---|--|
| 4 | Solid waste will be generated from the mining activity as there will be refuse after 95% recovery and also generation of domestic waste | 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.  |
| 5 | During mining activities, there are chances of workers getting health issues or may be prone to accidents                               | Dust masks will be provided as additional personal protection equipment to the workers working in the dust prone area.<br>Periodical trainings will be conducted to create awareness about the occupational health hazards due to activities like blasting, drilling, excavation<br>Workers health related problem if any, will be properly addressed. |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur 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.

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

**Declaration by Experts contributing to the EIA of Rough Stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue Metals at S.F.No. 682 (part), Kuppam Village, Pugalur Taluk, Karur District, Tamil Nadu 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:** 01.03.202 to Till now

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





| <b>S. No.</b> | <b>Functional areas</b> | <b>Name of the experts</b> | <b>Involvement (period and task)</b>   | <b>Signature and date</b>   |
|---------------|-------------------------|----------------------------|--|---|
| 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><b>Period: March 2022 – Till now</b> |  |

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |




|   |     |                    |   |   |
|---|-----|--------------------|---|---|
| 2 | WP  | Dr. A. Dhamodharan | <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. Dhamodharan | <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. 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. Dhamodharan | <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>  |  |



|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

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

|                          |   |                         |
|--------------------------|---|-------------------------|
| <b>Project</b>           | <b>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</b> | <b>Draft EIA Report</b> |
| <b>Project Proponent</b> | <b>M/s. Annai Blue metals</b>   |                         |
| <b>Project Location</b>  | <b>Kuppam Village, Pugalur Taluk, Karur District</b>                      |                         |

|    |    |                       |   |   |
|----|----|-----------------------|---|---|
| 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. 682 (part) Kuppam Village, Pugalur Taluk, Karur District. I also confirm that the consultant organization shall be fully accountable for any misleading information mentioned in this statement.

**Signature:**




|                          |   |                         |
|--------------------------|---|-------------------------|
| <i>Project</i>           | <i>Rough stone and Gravel Quarry- 1.92.0 Ha by M/s. Annai Blue metals</i> | <i>Draft EIA Report</i> |
| <i>Project Proponent</i> | <i>M/s. Annai Blue metals</i>   |                         |
| <i>Project Location</i>  | <i>Kuppam Village, Pugalur Taluk, Karur District</i>                      |                         |

**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

**ANNEXURE-I**  
**TOR COPY,**  
**STANDARD TOR CONDITIONS WITH**  
**ADDITIONAL TOR POINTS**





TMT.P.RAJESWARI, I.F.S.,  
MEMBER SECRETARY

STATE LEVEL ENVIRONMENT IMPACT  
ASSESSMENT AUTHORITY – TAMIL NADU

3rd Floor, Panagal Maaligai,  
No.1, Jeenis Road, Saidapet,  
Chennai-15.

Phone No. 044-24359973

Fax No. 044-24359975

**TERMS OF REFERENCE (ToR)**

**Lr No.SEIAA-TN/F.No.8693/SEAC/ToR-1077/2021 Dated:01.03.2022**

To

M/s. Annai Blue metals  
S.F.No.451, Kaalipalayam  
Kuppam Village  
Pugalur Taluk  
Karur District-639111

Sir / Madam,

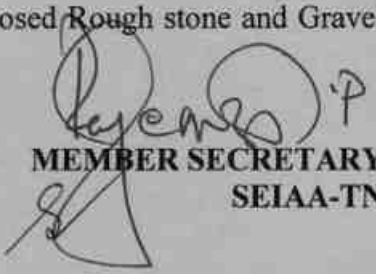
**Sub:** SEIAA, Tamil Nadu – Terms of Reference with Public Hearing (ToR) for the proposed Rough stone and Gravel over an extent of 1.92.0ha in S.F.Nos. 682 (Part) of Kuppam Village, Pugalur Taluk, Karur District, Tamil Nadu by M/s. Annai Blue Metals - under project category – “B1” and Schedule S.No. 1(a) – ToR issued along with Public Hearing- preparation of EIA report – Regarding.

- Ref:**
1. Online proposal No.SIA/TN/MIN/66211/2021, dated: 02.08.2021
  2. Your application submitted for Terms of Reference dated: 06.08.2021
  3. Minutes of the 245<sup>th</sup> meeting of SEAC held on 11.02.2022, minutes received on 24.02.2022
  4. Minutes of the 488<sup>th</sup> meeting of SEIAA held on 28.02.2022.

-----

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

The proponent, M/s. Annai Blue metals has submitted application for ToR with public Hearing on 06.08.2021, in Form-I, Pre- Feasibility report for the proposed Rough stone and Gravel

  
MEMBER SECRETARY  
SEIAA-TN

over an extent of 1.92.0ha in S.F.Nos. 682 (Part) of Kuppam Village, Pugalur Taluk, Karur District, Tamil Nadu.

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

The proposal was placed in 245th SEAC meeting held on 11.2.2022. The project proponent has given a detailed presentation. The details of the project furnished by the proponent are given in the website (parivesh.nic.in).

The project proponent gave detailed presentation. SEAC noted the following:

1. The Project Proponent, M/s Annai Blue Metals has applied for Terms for Reference for the proposed Rough stone & gravel quarry lease over an extent of 1.92.0 Ha in SF.No. 682(Part), Kuppam Village, Pugalur Taluk, Karur District, Tamil Nadu.
2. The project/activity is covered under Category "B1" of Item 1(a) "Mining Projects" of the Schedule to the EIA Notification, 2006.
3. The Production furnished approved mining plan for 5 years and states that total quantity should not exceed 227340 m<sup>3</sup> of rough stone and 15256 m<sup>3</sup> of Gravel with ultimate depth of mining is 47m(2m gravel &45m rough stone) below ground level.

Based on the presentation made by the proponent and the documents furnished, SEAC decided to recommend the proposal for the grant of **Terms of Reference (TOR) with Public Hearing for the Production furnished approved mining plan for 5 years and states that total quantity should not exceed 227340 m<sup>3</sup> of rough stone and 15256 m<sup>3</sup> of Gravel with ultimate depth of mining is 47m(2m gravel &45m rough stone) below ground level**, Subject to the following TORs is in annexure of this minutes, 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 Proponent shall carry out the cumulative & comprehensive impact study due to mining operations carried out in the quarry cluster specifically with reference to the environment in terms of air pollution, water pollution, health impacts, & impact on poultry farms located in the vicinity of the quarrying operations accordingly the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.
2. 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,

  
MEMBER SECRETARY  
SEIAA-TN

- 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.
3. 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).
  4. 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.
  5. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment and the remedial measures for the same.
  6. 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.
  7. 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.
  8. The proponent shall furnish the baseline data for the environmental and ecological

  
**MEMBER SECRETARY**  
**SEIAA-TN**



- parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.
9. 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.
  10. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.
  11. The Public hearing advertisement shall be published in one major National daily and one most circulated vernacular daily.
  12. 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.
  13. The recommendation for the issue of "Terms of Reference" is subjected to the outcome of the Hon'ble NGT, Principal Bench, New Delhi in O.A No.186 of 2016 (M.A.No.350/2016) and O.A. No.200/2016 and O.A.No.580/2016 (M.A.No.1182/2016) and O.A.No.102/2017 and O.A.No.404/2016 (M.A.No. 758/2016, M.A.No.920/2016, M.A.No.1122/2016, M.A.No.12/2017 & M.A. No. 843/2017) and O.A.No.405/2016 and O.A.No.520 of 2016 (M.A.No. 981/2016, M.A.No.982/2016 & M.A.No.384/2017).
  14. 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** 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.
  15. Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted in proper spacing as per the advice of local forest 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
  16. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.

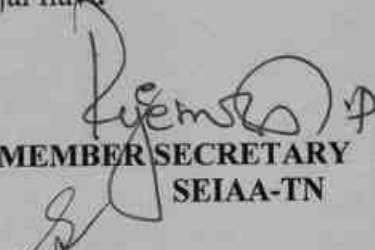
  
MEMBER SECRETARY  
SEIAA-TN

17. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report.
18. 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.
19. 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.
20. 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 Reference besides attracting penal provisions in the Environment (Protection) Act, 1986.

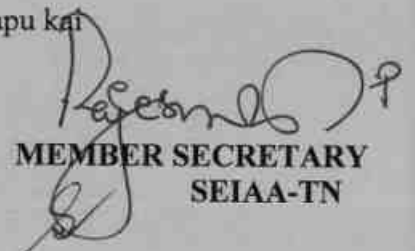
### Appendix

#### List of Native Trees for Planting

1. Aegle marmelos – Vilvam
2. Adenaanthera pavonina - Manjadi
3. Albizia lebbeck – Vaagai
4. Albizia amara - Usil
5. Bauhinia purpurea - Mantharai
6. Bauhinia racemosa - Aathi
7. Bauhinia tomentosa – Iruvathi
8. Buchanania aillaris - Kattuma
9. Borassus flabellifer - Panai
10. Butea monosperma - Murukka maram
11. Bobax ceiba – Ilavu, Sevvilavu
12. Calophyllum inophyllum - Punnai
13. Cassia fistula - Sarakondrai
14. Cassia roxburghii- Sengondrai
15. Chloroxylon sweitenia - Purasa maram
16. Cochlospermum religiosum – Kongu, Manjal Ilavu
17. Cordia dichotoma – Mookuchali maram

  
MEMBER SECRETARY  
SEIAA-TN

18. *Creteva adansonii* – Mavalingum
19. *Dillenia indica* – Uva, Uzha
20. *Dillenia pentagyna* – Siru Uva, Sitruzha
21. *Diospyros ebenum* - Karungali
22. *Diospyros chloroxylon* – Vaganai
23. *Ficus amplissima* – Kal Itchi
24. *Hibiscus tiliaceous* – Aatru poovarasu
25. *Hardwickia binata* – Aacha
26. *Holoptelia integrifolia* - Aayili
27. *Lanea coromandelica* - Odhiam
28. *Lagerstroemia speciosa* - Poo Marudhu
29. *Lepisanthus tetraphylla* - Neikottai maram
30. *Limonia acidissima* - Vila maram
31. *Litsea glutinosa* –Pisin pattai
32. *Madhuca longifolia* - Illuppai
33. *Manilkara hexandra* – Ulakkai Paalai
34. *Mimusops elengi* - Magizha maram
35. *Mitragyna parvifolia* - Kadambu
36. *Morinda pubescens* – Nuna
37. *Morinda citrifolia* – Vellai Nuna
38. *Phoenix sylvestre* - Eachai
39. *Pongamia pinnata* – Pungam
40. *Premna mollissima* – Munnai
41. *Premna serratifolia* – Narumunnai
42. *Premna tomentosa* - Purangai Naari, Pudanga Naari
43. *Prosopis cinerea* - Vanni maram
44. *Pterocarpus marsupium* - Vengai
45. *Pterospermum canescens* – Vennangu, Tada
46. *Pterospermum xylocarpum* - Polavu
47. *Puthranjiva roxburghii* – Puthranjivi
48. *Salvadora persica* – Ugaa Maram
49. *Sapindus emarginatus* - Manipungan, Soapu kai
50. *Saraca asoca* - Asoca

  
MEMBER SECRETARY  
SEIAA-TN

51. Streblus asper - Piraya maram
52. Strychnos nuxvomica – Yetti
53. Strychnos potatorum - Therthang Kottai
54. Syzygium cumini - Naval
55. Terminalia bellerica - Thandri
56. Terminalia arjuna - Ven marudhu
57. Toona ciliate – Sandhana vembu
58. Thespesia populnea - Puvarasu
59. Walsura trifoliata – valsura
60. Wrightia tinctoria - Vep

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

The subject was placed in the 488<sup>th</sup> Authority meeting held on 28.02.2022. 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 condition in addition to the following conditions:

1. 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.
2. 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.
3. 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.
4. Action should specifically suggested for sustainable management of the area and restoration of ecosystem for flow of goods and services.
5. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.
6. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.

  
**MEMBER SECRETARY**  
**SEIAA-TN**

7. The Environmental Impact Assessment should study impact on biodiversity, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.
8. The Environmental Impact Assessment should study impact on standing trees and the trees should be numbered.
9. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.
10. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.
11. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.
12. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways.
13. The project proponent shall conduct detail study on impact on the 11 wells around the project site.

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

- 1) Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
- 2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
- 3) All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
- 4) All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ topo sheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
- 5) Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
- 6) Details about the land proposed for mining activities should be given with information as to

  
**MEMBER SECRETARY**  
**SEIAA-TN**

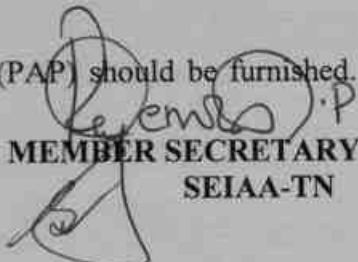
whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.

- 7) It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.
- 8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.
- 9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.
- 10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
- 11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.
- 12) Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
- 13) Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA)

  
MEMBER SECRETARY  
SEIAA-TN

should be indicated. A copy of the forestry clearance should also be furnished.

- 14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
- 15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
- 16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
- 17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
- 18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.
- 19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.
- 20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- 21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished.

  
MEMBER SECRETARY  
SEIAA-TN

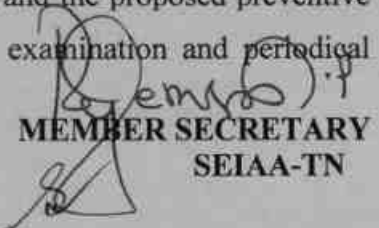
While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

- 22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.
- 23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
- 24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
- 25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
- 26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
- 27) Impact of the Project on the water quality, both surface and groundwater, should be assessed

  
**MEMBER SECRETARY**  
**SEIAA-TN**



- and necessary safeguard measures, if any required, should be provided.
- 28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
  - 29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
  - 30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.
  - 31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.
  - 32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.
  - 33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
  - 34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
  - 35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical

  
MEMBER SECRETARY  
SEIAA-TN

medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.

- 36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
- 37) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
- 38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
- 39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
- 40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- 41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- 42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
- 43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
- 44) Besides the above, the below mentioned general points are also to be followed:-
  - a) Executive Summary of the EIA/EMP Report
  - b) All documents to be properly referenced with index and continuous page numbering.
  - c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
  - d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
  - e) Where the documents provided are in a language other than English, an English translation should be provided.

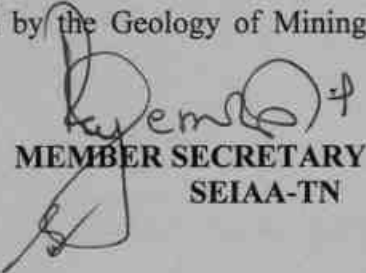
  
MEMBER SECRETARY  
SEIAA-TN

- f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
- g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
- h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.
- i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.
- j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

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

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

1. Project name and location (Village, District, State, Industrial Estate (if applicable)).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.
7. Details of village map, "A" register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be submitted along with EIA report.

  
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 is acquisition, nearby (in 2-3 km.) water body, population, with in 10km other industries, forest , eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies
22. Issues raised during public hearing (if applicable) and response given
23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan
26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions

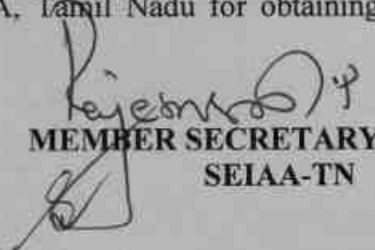
  
**MEMBER SECRETARY**  
**SEIAA-TN**

during the operations of the mines.

29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.
31. A detailed plan on plastic waste management shall be furnished. Further, the proponent should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986. In this connection, the project proponent has to furnish the action plan.

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

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

  
MEMBER SECRETARY  
SEIAA-TN

- The TORs with public hearing prescribed shall be **valid for a period of three years** from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29<sup>th</sup> August, 2017.

  
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, Karur District.
7. Stock File.

TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

COMPLIANCE OF TOR CONDITIONS

**Point wise compliance of TOR points issued by SEIAA, TN vide letter No. SEIAA-TN/F. No. 8693/SEAC/ ToR-1077/2021 Dated: 01.03.2022 for Mining of Minor Minerals in the Mine of “Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha at S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu 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>This is an existing mining project of Proposed Rough stone and gravel quarry</p> <p>Precise area communication from The District Collector Karur vide Roc No: 134/Mines/2020 dated 12.10.2020.</p> <p>Mining Plan was approved by The Deputy Director, Dept. of Geology &amp; Mining, Karur vide Roc No: 134/Mines/2020 dated 17.02.2021.</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 and gravel for five years is proposed in the EIA/EMP in chapter no-2.</p> | <p>Chapter-2</p> <p>Table No.2.9</p> <p>Page No.45</p> |

**TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha**

|    |   | <b>Year</b>  | <b>Rough stone volume(m<sup>3</sup>)</b>  |  |
|----|---|--|---|--|
|    |   | I-Year   | 37981                                     |  |
|    |   | II-Year  | 42593                                     |  |
|    |   | III-Year   | 51880                                     |  |
|    |   | IV-Year  | 49191                                     |  |
|    |   | V-Year   | 45695                                     |  |
| 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 1.92.0 hectare in Kuppam Village for Rough stone and gravel quarry approved by Deputy Director, Dept. of Geology & Mining, Karur vide Roc No: 134/Mines/2020 dated 17.02.2021.  | 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 Deputy Director, Dept. of Geology & Mining, Karur. | 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   | Details of coordinates of all corner 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>Page. no. 36 |  |



## TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|    |  |  |   |
|----|--|--|---|
|    | the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).   |  |   |
| 5  | Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, important water bodies, streams and rivers and soil characteristics  | Topo map as attached in Chapter-2  | Chapter-2,<br>Fig no. 2.4<br>Page. no. 38 |
| 6. | 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   | Details about the land proposed for mining activities should be given Chapter 2. | Chapter-2<br>Page 41                      |
| 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?<br><br>The hierarchical system or administrative order of the | Noted.   |   |

## TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|    |   |  |   |
|----|---|--|---|
|    | <p>Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large may also be detailed in the EIA report.</p> |  |   |
| 8  | <p>Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.</p>  | <p>It is an open cast mining project. Blasting details are incorporated in chapter 2</p>                                       | <p>Chapter-2,<br/>Page no.49</p>                |
| 9  | <p>The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc should be for the life of the mine / lease period.</p>  | <p>Study area comprises of 10 km radius from the mine lease boundary. Key Plan showing core zone (ML area).</p>                | <p>Chapter-2<br/>Fig no. 2.5<br/>Page no.39</p> |
| 10 | <p>Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national</p>  | <p>Land Use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, National park,</p> | <p>Chapter-2, Table no. 2.4<br/>Page no.40</p>  |

## TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|    |  |  |                                  |
|----|--|--|----------------------------------|
|    | <p>park, migratory routes of fauna, water bodies, human settlements and other 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>migratory routes of fauna, water bodies, human settlements and other ecological features has been prepared and incorporated in Chapter-3 of EIA/ EMP Report.</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>This area is covered 2.0m Gravel in this mine area 15256 m<sup>3</sup>. Gravel formation will be removed, and hydraulic excavators are used for loading the gravel into the tipper from pit head to needy buyers</p>  | <p>Chapter-2,<br/>Page no.48</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 Department along with the Regional Office of the Ministry to ascertain the status of forests,</p> | <p>The proposed mining lease area is not falling under forest land.</p>  |                                  |

TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|    |   |  |                        |
|----|---|--|------------------------|
|    | 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 should be indicated.  | 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 given.   | Details of flora have been discussed in Chapter-3 of the EIA/EMP Report.           | Chapter-3<br>Pg No. 88 |

TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|           |   |   |  |
|-----------|---|---|--|
| <p>16</p> | <p>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</p>  | <p>There is a relatively poor sighting of animals in the core and buffer areas of the mining lease.<br/>No significant impact is anticipated</p>  |  |
| <p>17</p> | <p>Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, 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 State Wildlife Department/Chief Wildlife Warden under the Wildlife (Protection) Act, 1972 and copy furnished.</p> | <p>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.</p> |  |

TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|           |  |   |                                  |
|-----------|--|---|----------------------------------|
| <p>18</p> | <p>A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, 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>Details biological study (flora &amp; fauna) 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. 88</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 required, clearance certifications from</p>  | <p>The proposed mining lease area is not falling under critically polluted area.</p>  |                                  |

TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|    |  |  |  |
|----|--|--|--|
|    | 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 & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections   | There is no Rehabilitation and resettlement is involved. Land classified as patta land |  |

TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|    |   |   |           |
|----|---|---|-----------|
|    | <p>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 (Summar Season),(Post monsoon) primary baseline data on ambient air quality CPCB Notidfication 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.</p>   | <p>Baseline data collected during Pre Monsoon Season and Monsoon (March to May 2022) 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 downwind direction and location of the sensitive receptors and also that they</p> | Chapter 3 |



TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|           |   |   |                                     |
|-----------|---|---|-------------------------------------|
|           | <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 500 m of the mine lease in the pre- dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.</p> | <p>represent whole of the study area.</p>   |                                     |
| <p>23</p> | <p>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.</p> <p>The air quality contours may be shown on a location map</p>  | <p>Air quality modeling &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; SH-71 through dumpers and the impact of movement of vehicles are incorporated in EIA/EMP report.</p> <p>Air quality modelling &amp; Impact of Air quality will be furnished in Final EIA report</p> | <p>Chapter-4</p> <p>Page No.111</p> |

## TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|    |  |   |                             |
|----|--|---|-----------------------------|
|    | 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.          |   |                             |
| 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. | Total water requirement: 1.675 KLD<br>Dust Suppression: 0.5 KLD<br>Domestic Purpose: 0.675 KLD<br>Plantation :0.5 KLD<br>Domestic Water will be sourced from nearby Kuppam which is about 0.51 Km Northwest of the area | Chapter-2<br><br>Page no.51 |
| 25 | Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.  | Not Applicable<br>Water will be taken from nearby villages  |                             |
| 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.                 | 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.  |                             |
| 27 | Impact of the project on the water quality, both surface and groundwater should be   | Impact of the project on the water quality & its mitigation measures has been incorporated in Chapter-4   | Chapter-4<br>Page No.105    |

TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|    |   |   |   |
|----|---|---|---|
|    | assessed and necessary safeguard measures, if any required, should be provided.   | of EIA/EMP report.  |   |
| 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: 47 m<br>BGL<br><br>The ground water table is reported as 54 m 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. 34              |
| 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 Summary                         |
| 30 | Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may   | Highest elevation: 174 AMSL<br><br>Depth: 54 m Below Ground Water Level   | Chapter-2<br>Table no. 2.2<br>Page no. 34 |

TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|    |  |   |                                  |
|----|--|---|----------------------------------|
|    | also be provided for the same.   |   |                                  |
| 31 | <p>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 pollution</p> | <p>Green Belt Development plan is proved given in Chapter 2.</p>  | <p>Chapter-2</p>                 |
| 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</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</p> | <p>Chapter-3<br/>Page No.103</p> |

TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|    |  |  |                           |
|----|--|--|---------------------------|
|    | (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 | incorporated in EIA/EMP report.  |                           |
| 33 | Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA report.  | Adequate infrastructure & other facilities shall be provided to the mine workers.<br>Details are given in chapter-2 of EIA/EMP   | Chapter-2                 |
| 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 Annexure VI |
| 35 | Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre- placement   | 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<br>Pg No. 144  |

TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|    |   |  |                          |
|----|---|--|--------------------------|
|    | medical examination and periodical medical examination schedules should be incorporated in the EMP. The project in the mining area may be detailed  | chapter-10 of EIA/EMP.   |                          |
| 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. 144 |
| 37 | Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.                                    | Suitable measures has benn discussed in Chapter 4  | Chapter-4<br>Pg No. 116  |
| 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. 138  |

TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

| 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 also 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>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 should clearly be spelt out.  | <table border="1"> <thead> <tr> <th>S. No.</th> <th>Description</th> <th>Cost</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Fixed Asset Cost</td> <td>18,60,000</td> </tr> <tr> <td>2</td> <td>Operational Cost</td> <td>30,00,000</td> </tr> <tr> <td>3</td> <td>EMP Cost</td> <td>44,20,000</td> </tr> <tr> <td></td> <td><b>Total</b></td> <td><b>92,80,000</b></td> </tr> </tbody> </table> | S. No.                  | Description | Cost | 1 | Fixed Asset Cost | 18,60,000 | 2 | Operational Cost | 30,00,000 | 3 | EMP Cost | 44,20,000 |  | <b>Total</b> | <b>92,80,000</b> | Chapter-8<br>Pg No. 133 |
| S. No. | Description   | Cost   |                         |             |      |   |                  |           |   |                  |           |   |          |           |  |              |                  |                         |
| 1      | Fixed Asset Cost  | 18,60,000  |                         |             |      |   |                  |           |   |                  |           |   |          |           |  |              |                  |                         |
| 2      | Operational Cost  | 30,00,000  |                         |             |      |   |                  |           |   |                  |           |   |          |           |  |              |                  |                         |
| 3      | EMP Cost  | 44,20,000  |                         |             |      |   |                  |           |   |                  |           |   |          |           |  |              |                  |                         |
|        | <b>Total</b>  | <b>92,80,000</b>   |                         |             |      |   |                  |           |   |                  |           |   |          |           |  |              |                  |                         |
| 42     | Disaster Management Plan  | Disaster Management and Risk Assessment has be incorporated in Chapter-7   | Chapter-7<br>Pg No. 129 |             |      |   |                  |           |   |                  |           |   |          |           |  |              |                  |                         |
| 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. 132 |             |      |   |                  |           |   |                  |           |   |          |           |  |              |                  |                         |

TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|     |   |  |  |
|-----|---|--|--|
| 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.11 -26 |  |
| (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 etc. using the MoEF & CC NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the project. | Complied   |  |
| (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 be prepared                   |  |



TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|     |  |  |  |
|-----|--|--|--|
| (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 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 | There are no changes in prepared EIA as per submitted Form-1 & PFR   |  |
| (i) | As per the circular no. J- 11011/618/2010-IA.II(I) dated 30.5.2012, report on the status of compliance of  | Will be complied after grant environment clearance form SEIAA, Tamilnadu   |  |

TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|     |  |   |  |
|-----|--|---|--|
|     | <p>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>   |   |  |
| (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 adjoining area.</p> | <p>All Sectional Plates of Quarry is enclosed in Mining Plan.</p> |  |

TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

**Additional ToR Compliance**

| <b>S.No.</b> | <b>Condition</b>  | <b>Compliance</b>  |
|--------------|---|--|
| 1.           | The Proponent shall carry out the cumulative & comprehensive impact study due to mining operations carried out in the quarry cluster specifically with reference to the environment in terms of air pollution, water pollution & health impacts, accordingly the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.   | The anticipated impacts due to mining operations carried out in the quarry cluster and its mitigation measures have been discussed in Chapter 4 of Draft EIA Report.   |
| 2.           | <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> <p>a) What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?</p> <p>b) Quantity of minerals mined out.</p> <p>c) Highest production achieved in any one year</p> <p>d) Detail of approved depth of mining.</p> <p>e) Actual depth of the mining achieved earlier.</p> <p>f) Name of the person already mined in that leases area.</p> <p>g) If EC and CTO already obtained, the copy of the same shall be submitted.</p> <p>h) Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.</p> | <p>It is an existing quarry, and mining activity has been carried out before 2016.</p> <p>Existing pit letter has been obtained from deputy director and the same has been attached in Annexure 11.</p>            |
| 3.           | All corner coordinates of the mine lease area, superimposed on 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   | <p>All maps have been provided in chapter 2 and chapter 3 of Draft EIA report</p> <p>Topo map – Pg No.38<br/>                     Geology map – Pg No.68<br/>                     Geomorphology map – Pg No.42</p> |

## TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|    |  |  |
|----|--|--|
|    | show the land use and other ecological features of the study area (core and buffer zone).  | Lithology map – Pg No.43<br>Landuse map – Pg No.65   |
| 4. | 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.   | It is an existing quarry, fencing and green belt photos will be attached along with Final EIA report.  |
| 5. | The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment and the remedial measures for the same.  | The geological reserves, mineable reserves and Yearwise production details has been discussed in Chapter 2 – Pg No. 43, 44, 45<br><br>The anticipated impacts due to mining operations carried out in the quarry cluster and its mitigation measures have been discussed in Chapter 4 of Draft EIA Report. |
| 6. | 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.   | The Organization chart has been discussed in Chapter 2 – Pg No. 50   |
| 7. | 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. | The hydro-geological study will be conducted and submitted in final EIA report.  |
| 8. | The proponent shall furnish the baseline data  | The baseline data for the  |

## TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|     |   |   |
|-----|---|---|
|     | 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.  | environmental and ecological parameters about surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study have been incorporated in Chapter 3. |
| 9.  | 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.  | The list of trees in the core and buffer zone have been discussed in chapter 3 -Pg No. 91   |
| 10. | A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.  | Mine closure plan has been attached as Annexure VI  |
| 11. | The Public hearing advertisement shall be published in one major National daily and one most circulated vernacular daily.   | The Public hearing advertisement will be published in one major National daily and one most circulated vernacular daily.  |
| 12. | 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.   | Noted and will be complied in final EIA report  |
| 13. | The recommendation for the issue of "Terms of Reference" is subjected to the outcome of the Hon'ble NGT, Principal Bench, New Delhi in O.A No.186 of 2016 (M.A.No.350/2016) and O.A. No.200/2016 and O.A.No.580/2016 (M.A.No.1182/2016) and O.A.No.102/2017 and O.A.No.404/2016 (M.A.No.758/2016, M.A.No.920/2016, M.A.No.1122/2016, M.A.No:12/2017 & M.A. No. 843/2017) and O.A.No.405/2016 and O.A.No.520 of 2016 (M.A.No.981/2016, M.A.No.982/2016 & M.A.No.384/2017). | Noted.  |

## TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|     |   |  |
|-----|---|--|
| 14. | 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 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. | Around 500 trees will be planted around the site. The list of trees to be planted are given below:<br><br>Neem, Pungam, Poovarasu, Naval, Mantharai, Arasa Maram, Magizham, Vilvam, vaagai, Marudha maram, Thandri, Poovarasu, Quaker buttons, Thethankottai maram, Manjadi, Usil, Aathi, Panai, Uzha, Illuppai, Eachai, Vanni Maram |
| 15. | Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted in proper espacement as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall carmark 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.   | The green belt plan is enclosed along with mining plates in Annexure VI  |
| 16. | A Disaster management Plan shall be prepared and included in the EIA/EMP Report.  | A Disaster management Plan has been discussed in chapter 7 – Pg No. 129  |
| 17. | A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report.   | A Risk Assessment and management Plan will be prepared and included in the final EIA/EMP Report.   |
| 18. | 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.   | The socio-economic study has been discussed in chapter 3 – Pg No. 107.   |
| 19. | If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall   | It is an existing quarry, and mining activity has been carried out before 2016.  |

## TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|     |   |   |
|-----|---|---|
|     | 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.  | We have not obtained EC and hence EC compliance is not applicable for this project.   |
| 20. | 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 Reference besides attracting penal provisions in the Environment (Protection) Act, 1986.   | Noted.  |
| 21. | 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.  |
| 22. | 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.   |
| 23. | 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. 88.   |
| 24. | Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.  | It is a Rough Stone and gravel Quarry with a Mineable depth of 47m only and hence, no need of mitigation and restoration / reclamation of the applied lease area.<br><br>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 |

## TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|     |  |   |
|-----|--|---|
|     |  | at deeper level.  |
| 25. | The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.  | There is no lakes within 1km surrounding the project site. Hence there won't be much impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.  |
| 26. | 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 – Pg No. 85.<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 – Pg No. 86. |
| 27. | The Environmental Impact Assessment should study impact on biodiversity, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.                    | The biological environment impacts, and its mitigation measures has been given in Chapter 4 – Pg No. 115  |
| 28. | 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.   |
| 29. | The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.  | The water environment impacts, and its mitigation measures has been given in Chapter 4 – Pg No. 107   |
| 30. | The Environmental Impact Assessment 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 – Pg No. 138  |
| 31. | The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.                       | Noted and will be complied in Final EIA report.   |



TOR Reply of Proposed Rough stone and Gravel Quarry Over an Extent of 1.92.0 Ha

|            |  |   |
|------------|--|---|
| <p>32.</p> | <p>The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways.</p> | <p>There is no reserve forest within 10km. Hence our project will not cause any damage to reserve forest. Also, we will get letter from DFO indicating the nearest reserve forest and submit along final EIA report.</p> <p>There is no protected areas, National Parks, Corridors and Wildlife pathways near project site.</p>   |
| <p>33.</p> | <p>The project proponent shall conduct detail study on impact on the 11 wells around the project site.</p>   | <p>The average depth of the wells in the nearby areas is 30 feet to 35 feet. During monsoon Rainwater is stored in the open well and used for irrigation and cattle farming.</p> <p>The impact due to quarrying on the water quality is expected to be insignificant because of no use of chemicals or hazardous substances during the quarrying process. The quarrying activity will not intersect groundwater table.</p> <p>The mining depth below surface ground level is 47 meters, wherein the water table is reported at 54 m below ground level and hence there will be no any impact on Ground Water due to quarrying activity and the same has been noticed in the nearby mining area.</p> |

**ANNEXURE-II**  
**PRECISE AREA COMMUNICATION LETTER**



ந.க.எண்.134/ கனிமம் / 2020

Annexure I  
புவியியல் மற்றும் சுரங்கத்துறை,  
மாவட்ட ஆட்சியர் அலுவலகம்,  
கரூர்.  
நாள்: 2.10.2020.

குறிப்பாணை

பொருள்: கனிமங்களும், குவாரிகளும் - கரூர் மாவட்டம் - புகளூர் வட்டம் - குப்பம் கிராமம் - பட்டா புல எண்.682(பகுதி) 1.92.0 ஹெக்டேர் நிலப்பரப்பில் தி/ள்.அன்னை புளூ மெட்டல்ஸ் என்ற நிறுவனத்திற்கு 5 ஆண்டுகளுக்கு சாதாரணக்கள் மற்றும் கிராவல் குத்தகை உரிமம் வழங்குவது - அரிதியிட்ட பரப்பு தெரிவித்தல் (Precise Area Communication Letter) - தொடர்பாக.

பார்வை:

1. தி/ள்.அன்னை புளூமெட்டல்ஸ், சர்வே எண்.451, காளிபாயைம், குப்பம் கிராமம், புகளூர் வட்டம், கரூர் மாவட்டம் என்பவரின் மனு நாள்: 10.12.2020 இவ்வலுவலகத்தில் கிடைக்கப்பெற்ற நாள்:19.02.2020.
2. கரூர் வருவாய் கோட்டாட்சியரின் அறிக்கை ந.க.அ/995/2020, நாள்.11.07.2020.
3. துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, புலத்தணிக்கை அறிக்கை நாள்: 28.9.2020.
4. புது டில்லி, உச்ச நீதிமன்ற உத்தரவு SLP© எண் 19628-19629/2009 with SLP(c) No.729-731/2011 etc devided on 27.02.2012(citation No.2012 STPL(web) 149 SC).
5. மத்திய சுற்றுச் சூழல் மற்றும் வனத்துறை அமைச்சகம், புது தில்லி, அலுவலக கடிதம் எண் L-11011/47/2011/1All(M) நாள்: 18.05.2012.
6. தமிழ்நாடு அரசு தொழில் (எம்.எம்.சி-1)துறை, தலைமைச் செயலகம், சென்னை கூடுதல் செயலாளர் அவர்களின் கடிதம் எண் 4719 / எம்எம்சி-1 / 2012-2 நாள்: 03.08.2012.
7. சென்னை புவியியல் மற்றும் சுரங்கத்துறை ஆணையர் அவர்களின் கடிதம் ந.க. 3868 / LC / 2012 நாள்: 19.11.2012.

கரூர் மாவட்டம் - புகளூர் வட்டம் - குப்பம் கிராமம் - பட்டா புல எண்.682(பகுதி) 1.92.0 ஹெக்டேர் பட்டா நிலப்பரப்பில் ஐந்து ஆண்டுகளுக்கு சாதாரண கற்கள் மற்றும் கிராவல் வெட்டி எடுக்க குவாரி குத்தகை உரிமம் வழங்கிடக் கோரி பார்வை 1-ல் காணும் விண்ணப்பத்தில் தி/ள்.அன்னை புளூமெட்டல்ஸ் என்ற நிறுவனத்தினர் விண்ணப்பித்துள்ளார்.

Sweets

மேற்படி விண்ணப்பத்தின் மீது கரூர் வருவாய் கோட்டாட்சியர் மற்றும் து.

இயக்குநர் (கனிமம்) கரூர் ஆகியோர் அனுமதி கோரும் புலத்தினை தணிக்கை செய்து விண்ணப்பதாரருக்கு 5 ஆண்டுகளுக்கு பின்வரும் சிறப்பு நிபந்தனைகளுக்குட்பட்டு கல் மற்றும் கிராவல் குத்தகை உரிமம் வழங்க பரிந்துரை செய்துள்ளார்கள்.

1. குத்தகைக்காலத்தில் விண்ணப்ப புலத்திற்கு தெற்கே அமைந்துள்ள தாழ்வழுத்த மின்பாதைக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குவாரிப்பணி செய்ய வேண்டும்.
2. குத்தகைக்காலத்தில் விண்ணப்ப புலத்திற்கு மேற்கே அமைந்துள்ள நடைபாதைக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குவாரிப்பணி செய்ய வேண்டும்.
3. குத்தகைக்காலத்தில் அருகில் உள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு யாதொரு சேதமுமின்றி முறையாக குவாரிப்பணி செய்ய வேண்டும்.
4. குத்தகைக்காலத்தில் கைத்துளைப்பான் கருவி கொண்டு பாறைகளை துளையிட்டும், மிதமான வெடிபொருள் பயன்படுத்தியும், பொதுமக்களுக்கோ, பொது சொத்துக்களுக்கோ யாதொரு சேதமுமின்றி விதிமுறைகளின்படி குவாரிப்பணி செய்ய வேண்டும்.
5. குவாரித் தொழிலாளர்களின் பாதுகாப்பினை உறுதி செய்ய Mettalliferous Mines, விதிகளின்படி அகலமானதும், பாதுகாப்பானதுமான Benches அமைத்து பாதுகாப்பான முறையில் குவாரிக்குள் வாகனங்கள் சென்றுவரவும் மற்றும் குவாரி தொழிலாளர்களின் பாதுகாப்பினை உறுதி செய்தும் குவாரிப்பணி செய்ய வேண்டும்.
6. குவாரி குத்தகை வழங்க ஏதுவாக துணை இயக்குநர் (சுரங்கம்) அவர்களால் ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தினையும், மாநில அளவிலான சுற்றுச்சூழல் செயல் மதிப்பீட்டு அதிகார அமைப்பு (SEIAA) மற்றும் தமிழ்நாடு மாசுக்கட்டுப்பாட்டு வாரியம் (TNPCB) ஆகியவற்றின் தடையின்மை சான்று பெற்றும், மாவட்ட நிர்வாகத்திற்கு விண்ணப்பதாரரால் சமர்ப்பிக்கப்பட வேண்டும்.

இந்நேர்வில், விண்ணப்பதாரருக்கு கல் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் வழங்குதல் தொடர்பான இறுதி உத்திரவுகள் பிறப்பிக்க ஏதுவாக பார்வை 4 முதல் 7 வரை காணும் கடிதங்களில் கண்ட வழிகாட்டுதலின்படி துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கரூர் அவர்களால் ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தினை மூன்று மாத

காலத்திற்குள்ளும், அதனைத் தொடர்ந்து மாநில அளவிலான சுற்றுப்புற சூழ்நிலை செயல் விளைவு மதிப்பீடு அதிகார அமைப்பு (State level Environment impact Assessment Authority), சென்னை அவர்களிடமிருந்து பெறப்பட்ட சுற்றுப்புற சூழ்நிலை செயல் விளைவு மதிப்பீடு சான்று மற்றும் அதனை தொடர்ந்து தமிழ்நாடு மாசுக்கட்டுப்பாட்டு வாரியத்தின் பரிந்துரை ஆகியவற்றை பெற்று சமீபத்தில் குமாறு விண்ணப்பதாரருக்கு இதன் மூலம் அறிவுறுத்தப்படுகிறது.



துணை இயக்குநர்,  
புவியியல் மற்றும் சுரங்கத்துறை,  
கரூர்.

பெறுநர்,

தி/ள். அன்னை புளூமெட்டல்ஸ்,  
சர்வே எண்.451,  
காளிபாயைம்,  
குப்பம் கிராமம்,  
புகளூர் வட்டம்,  
கரூர் மாவட்டம்.

12/10/20

S. Dhanasekar  
S.DHANASEKAR, M.Sc., (Geo)  
RQP/MAS/225/2011/A

S.10003



**ANNEXURE-III**  
**MINING PLAN APPROVED LETTER**





From  
Dr.P.Jayapal M.Sc., Ph.D.,  
Deputy Director,  
Geology and Mining,  
Karur.

To  
M/s.Annai Blue Metals,  
S.F.No.451, Kaalipalayam,  
Kuppam Village,  
Pugalur Taluk,  
Karur District - 639 111.

**Rc.No.134/Mines/2020, Dated: 17.02.2021**

Sir,

Sub: Mines and Minerals – Minor Mineral – Karur District – Pugalur Taluk – Kuppam Village- S.F.No. 682(Part)- Over an Extent 1.92.0 Hectares. Quarry lease application – Rough stone and Gravel – preferred by M/s.Annai Blue Metals – Submission of mining plan for approval – Approved – Regarding.

- Ref:
1. Quarry lease application for Rough stone and Gravel preferred by M/s.Annai blue Metals, S.F.No.451, Kaalipalayam, Kuppam Village, Pugalur Taluk, Karur District, dated: 10.12.2020.
  2. Order of the Hon'ble Supreme Court of India in I.A.Nos.12-13/2011 in SLP (C) No.19628-19629/2009, dt: 27.02.2012.
  3. Government of India, Ministry of Environment and Forest Office Memorandum, Dated:18.05.2012.
  4. The Chairman, State Level Environment Impact Assessment Authority, Tamil Nadu D.O.Lr.No.SEIAA-TN/Minor Minerals/2012, Dated: 17.09.2012.
  5. The Commissioner of Geology and Mining, Chennai letter Rc.No.3868/LC/2012, dt: 19.11.2012.
  6. Deputy Director, Geology and Mining, Karur Notice Rc.No.134/Mines/2020, Dated: 12.10.2020.
  7. Mining Plan submitted by M/s.Annai blue Metals Dated: 08.01.2021.

\*\*\*\*\*

In the reference 7<sup>th</sup> cited, as directed by the Deputy Director, Karur, M/s.Annai blue Metals had submitted three copies of draft mining plan for approval in respect of Rough stone and Gravel quarry lease applied areas, over an extent 1.92.0 Hects., of patta lands in S.F.No. 682(Part) in Kuppam Village, Pugalur Taluk, Karur District.

The above submitted mining plan for the grant of Rough stone and Gravel quarry lease of patta lands in S.F.No. 682(Part)- Over an Extent 1.92.0 hectares in Kuppam Village, Pugalur Taluk, Karur District has been examined in detail.

As per the guidelines/ instructions issued by the Commissioner of Geology and Mining, Chennai vide letter Rc.No.3868/LC/2012, dt: 19.11.2012., the mining plan submitted by the applicant is hereby approved, subject to the following conditions:

- (I) 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 or any other provisions of the Mines and Minerals (Development and Regulation) Act, 1957, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Explosives Act, 1884 (Central Act IV of 1884) Minor Mineral Concession and Development Rules, 2010 and the Rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.
- (III) The mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
- (IV) As per the Deputy Director, Geology and Mining, Karur notice in Rc.No. 134/Mines/2020, Dated: 12.10.2020 the following conditions are incorporated in the Mining Plan plates.
  - i. விண்ணப்ப புலத்திற்கு தெற்கே அமைந்துள்ள தாழ்வழுத்த மின்பாதைக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குத்தகைக்காலத்தில் குவாரிப்பணி செய்ய வேண்டும்.
  - ii. விண்ணப்ப புலத்திற்கு மேற்கே அமைந்துள்ள நடைபாதைக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குத்தகைக்காலத்தில் குவாரிப்பணி செய்ய வேண்டும்.

- iii. அருகில் உள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு யாதொரு சேதமுமின்றி முறையாக குத்தகைக்காலத்தில் குவாரிப்பணி செய்ய வேண்டும்.
- iv. குத்தகைக்காலத்தில் கைத்துளைப்பான் கருவி கொண்டு பாறைகளை துளையிட்டும், மிதமான வெடிபொருள் பயன்படுத்தியும், பொதுமக்களுக்கோ, பொது சொத்துக்களுக்கோ யாதொரு சேதமுமின்றி விதிமுறைகளின்படி குவாரிப்பணி செய்ய வேண்டும்.
- v. குவாரித் தொழிலாளர்களின் பாதுகாப்பினை உறுதி செய்ய Metalliferous Mines, விதிகளின்படி அகலமானதும், பாதுகாப்பானதுமான Benches அமைத்து பாதுகாப்பான முறையில் குவாரிக்குள் வாகனங்கள் சென்றுவரவும் மற்றும் குவாரி தொழிலாளர்களின் பாதுகாப்பினை உறுதி செய்தும் குவாரிப்பணி செய்ய வேண்டும்.
- vi. குவாரி குத்தகை வழங்க ஏதுவாக துணை இயக்குநர் (சுரங்கம்) அவர்களால் ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தினையும், மாநில அளவிலான சுற்றுச்சூழல் செயல் மதிப்பீட்டு அதிகார அமைப்பு (SEIAA) மற்றும் தமிழ்நாடு மாசுக்கட்டுப்பாட்டு வாரியம் (TNPCB) ஆகியவற்றின் தடையின்மை சான்று பெற்றும், மாவட்ட நிர்வாகத்திற்கு விண்ணப்பதாரரால் சமர்ப்பிக்கப்பட வேண்டும்.

- (V) Quarrying shall be done as per the approved Mining Plan and 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.
- (VI) If anything is found to be concealed as required by the Mines Act in the contents of the Mining Plan and the proposal for rectification has not been made, the approval shall be deemed to have been withdrawn with immediate effect.

Encl: Two copies of Approved Mining Plan.

*[Handwritten Signature]*  
17/02/24  
Deputy Director,  
Geology and Mining,  
Karur.

Copy to:  
Thiru.S.Dhanasekar, M.Sc.,  
RQP/MAS/225/2011/A,  
8/3, Kullappan Street, Opp.Indian Bank Line,  
Omalar Post & Taluk - 636 455, Salem District.

*[Handwritten Signature]*  
12/02/2024



**ANNEXURE-IV**  
**500M Radius letter**



From  
Dr.P.Jayapal M.Sc., Ph.D.,  
Deputy Director,  
Geology and Mining,  
Karur.

To  
M/s.Annai Blue Metals,  
S.F.No.451, Kaalipalayam,  
Kuppam Village,  
Pugalur Taluk,  
Karur District - 639 111.

Re.No.134/Mines/2020, Dated: .03.2021

Sir,

Sub: Mines and Minerals – Minor Mineral – Karur District – Pugalur Taluk – Kuppam Village- S.F.No. 682(Part)- Over an Extent 1.92.0 Hectares. Quarry lease application – Rough stone and Gravel – preferred by M/s.Annai blue Metals – Mining Plan approved - Existing/ proposed/ abandoned quarries situated within 500 mts radial distance - details furnished – Regarding.

- Ref:
1. Quarry lease application for Rough stone and Gravel preferred by M/s.Annai blue Metals, S.F.No.451, Kaalipalayam, Kuppam Village, Pugalur Taluk, Karur District, dated: 10.12.2020
  2. Precise Area Communication Notice 134/Mines/2020, Dated: 12.10.2020
  3. Mining Plan submitted by M/s.Annai blue Metals, Letter dated:08.01.2021.
  4. The Deputy Director, Geology and Mining, Karur Mining Plan approved letter No.134/Mine/2020, dated: 17.02.2021

-----  
In the reference 1<sup>st</sup> cited, M/s.Annai blue Metals have applied for quarry lease for quarrying Rough stone and Gravel quarry lease in patta lands of S.F.No. 682(Part)- Over an Extent 1.92.0 Hectares in Kuppam village, Pugalur Taluk. Karur District. The Deputy Director have issued precise area for the applied area vide reference 2<sup>nd</sup> cited.

Accordingly, the applicant has submitted Mining Plan and it was approved by the Deputy Director, Geology and Mining, Karur vide reference 4<sup>th</sup> cited.

2. Details of Existing, Proposed and abandoned quarries located within 500 meters radial distance from subject area are furnished as follows:-



I. Existing Other Quarries: -

| Sl No. | Name of the Owner  | S.F.No.                        | Extent (hect)                             | Lease Period                   | Remarks. |
|--------|--|--------------------------------|---|--------------------------------|----------|
| 1      | Thiru.S.K.Krishnamurthy,<br>1/22, Kavadikaranur,<br>Thangayur village,<br>Edapati Taluk,<br>Karur District.      | 679,<br>680/1(Part)            | 1.09.5<br><u>0.86.0</u><br><b>01.95.5</b> | 04.7.2018<br>to<br>03.7.2023   | ---      |
| 2      | Tmt.S.Tamilselvi<br>w/o.Sapapathi<br>Ganesa Nagar<br>1 <sup>st</sup> Street Enam Karur<br>Karur Taluk & District | 706 part                       | 3.36.0                                    | 18.08.2017<br>to<br>17.08.2022 | ---      |
| 3      | T.Manoharan,<br>S/o.Moorthi,<br>Salipalayam,<br>Kuppam Post,<br>Aravakurich Taluk,<br>Karur District.            | 665/1<br>665/2<br><b>Total</b> | 1.39.5<br><u>1.26.5</u><br><b>2.66.0</b>  | 21.2.2018 to<br>20.2.2023      | ---      |

II. Proposed Area: -

| Sl No. | Name of the Owner   | S.F.No.   | Extent (hect) | Lease Period | Remarks. |
|--------|---|-----------|---------------|--------------|----------|
| 1      | M/s.Annai blue Metals,<br>S.F.No.451, Kaalipalayam,<br>Kuppam Village, Pugalur<br>Taluk, Karur District | 682(Part) | 1.92.0        | 5<br>Years   | ---      |

III. Lease Expired and abandoned Area: -

| Sl No. | Name of the Owner   | S.F.No. | Extent (hect) | Lease Period                | Remarks. |
|--------|---|---------|---------------|-----------------------------|----------|
| 1      | S.Tamilselvi,<br>W/o.S.Sapabathi,<br>16B, Ganesa Nagar,<br>K.V.B Nagar,<br>Karur. | 702     | 3.35.5        | 09.09.2010 to<br>08.09.2015 | ----     |

*[Handwritten Signature]*  
Deputy Director,  
Geology and Mining,  
Karur.

*[Handwritten Signature]*  
12/05/2024

**ANNEXURE-V**  
**FMB, A REGISTER, VILLAGE MAP AND**  
**DEED OF AGREEMENT**



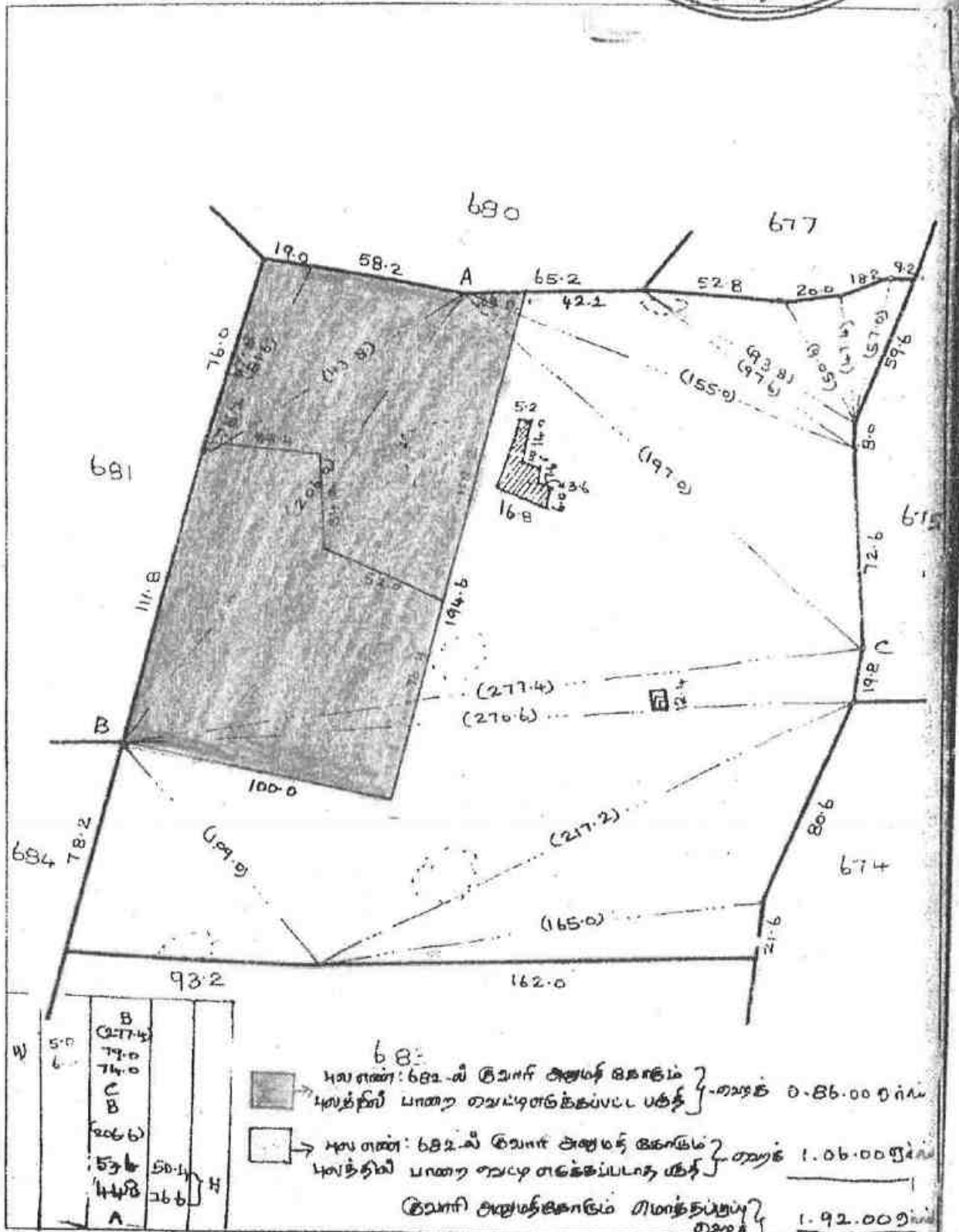
மாவட்டம். திருச்சிராப்பள்ளி

வட்டம். கடுர்

புல எண். 682



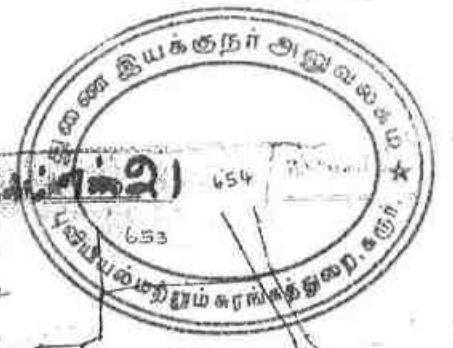
பரப்பு: 1.0



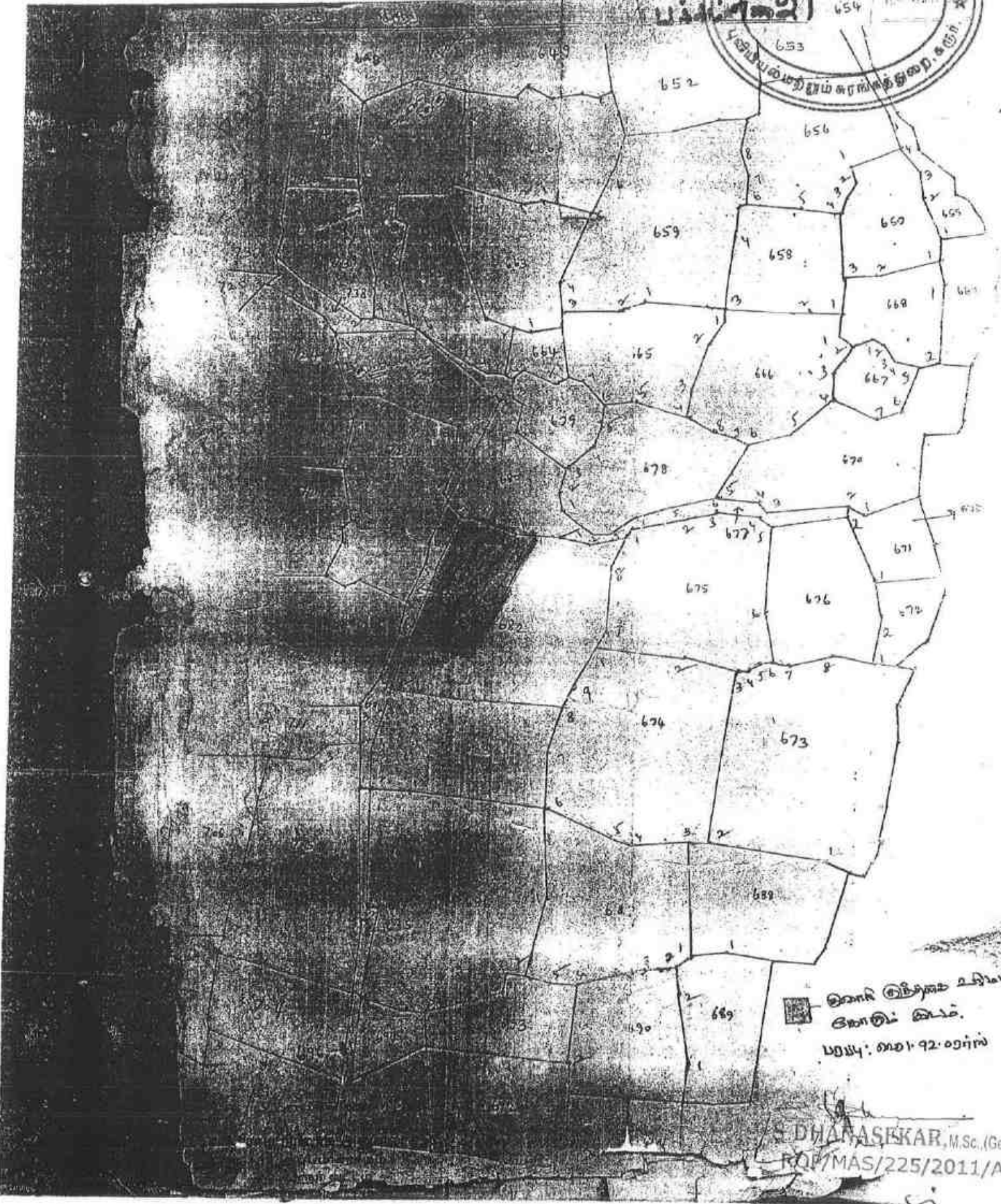
வாரியத்தினர்  
 சி. சேனா குமாரபாண்டி  
 16.4.85  
 அளவன்/வாரியவாரியர்

அளவு. 1: 2000  
 S. DHANASEKAR, M.Sc., (Geo)  
 RQP/MAS/225/2011/A

செ. சேனாபதி, தஞ்சாவூர்  
 18.12.19.  
 செ. சி. சேனாபதி  
 செ. பழனிச்சாமி



பட்டியல் 2)



சென்னை இராணுவப் பகுதி  
சென்னை இராணுவப் பகுதி  
பெரிய: 1001.92.0910

S. DHANASEKAR, M.Sc., (Geo)  
RQP/MAS/225/2011/A

S. K. K. S.



தமிழக அரசு

வருவாய்த் துறை

நில உரிமை விபரங்கள் : இ. எண் 10(1) பிரிவு

மாவட்டம் : கரூர்

வட்டம் : புகளூர்

வருவாய் கிராமம் : குப்பம்

பட்டா எண் : 3707

உரிமையாளர்கள் பெயர்

1. செல்வகுமார் மனைவி அன்னை புளுமெட்டல் என்ற நிறுவனத்திற்காக பங்குதாரர் கார்த்திகா
2. செல்வகுமார் மகன் அன்னை புளுமெட்டல் என்ற நிறுவனத்திற்காக பங்குதாரர் சிவகுமார்

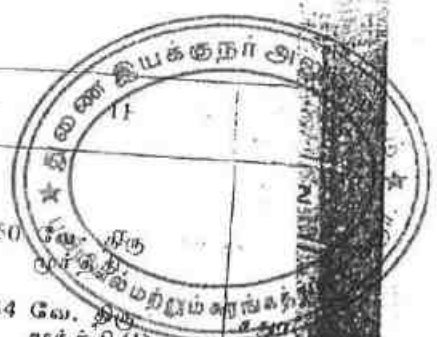
| புல எண் | உட்பிரிவு | புன்செய்    |         | நன்செய்     |         | மற்றவை      |         | குறிப்புரைகள்                         |
|---------|-----------|-------------|---------|-------------|---------|-------------|---------|---------------------------------------|
|         |           | பரப்பு      | தீர்வை  | பரப்பு      | தீர்வை  | பரப்பு      | தீர்வை  |                                       |
|         |           | ஹெக்ட - ஏர் | ரூ - பை | ஹெக்ட - ஏர் | ரூ - பை | ஹெக்ட - ஏர் | ரூ - பை |                                       |
| 682     | -         | 6 - 21.00   | 8.59    | -           | -       | -           | -       | 2018/0103/14/063204-<br>-- 18-07-2018 |
| 451     | 2         | 0 - 81.00   | 1.12    | -           | -       | -           | -       | 2018/0103/14/063204-<br>-- 18-07-2018 |
| 451     | 3         | 2 - 37.50   | 3.29    | -           | -       | -           | -       | 2018/0103/14/063204-<br>-- 18-07-2018 |
|         |           | 9 - 39.50   | 13.00   |             |         |             |         |                                       |

குறிப்பு2:



1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 14/07/018/03707/30847 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 08-01-2021 அன்று 11:34:55 AM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

S.Keerthi



| 1   | 2   | 3      | 4 | 5 | 6   | 7   | 8   | 9    | 10     |      |  |
|-----|-----|--------|---|---|-----|-----|-----|------|--------|------|--|
| 678 | 1   | 678-பா | ர | 4 | ... | 8-3 | 5   | 2 00 | 1 96.5 | 3 93 | 250 வே. திரு முர்த்தி  |
|     | 2   | -பா    | ர | 4 | ... | 8-3 | 5   | 2 00 | 0 02.5 | 0 06 | 734 வே. திரு முர்த்தி (1), வே. ராம சாமி (2).   |
|     | 3   | -பா    | ர | 4 | ... | 8-3 | 5   | 2 00 | 1 18.0 | 2 06 | 538 வே. ராமசாமி.   |
|     |     |        |   |   |     |     |     |      | 3 17.0 | 6 35 |  |
| 679 | ... | 679    | ர | 4 | ... | 8-3 | 5   | 2 00 | 1 09.9 | 2 20 | 886 ப. சின்ன ராமண கவுண்டர் (1), சி. மொட்டையப்ப கவுண்டர் (2), சி. கருப்பண கவுண்டர் (3). |
| 680 | ... | 680    | ர | 4 | ... | 8-3 | 5   | 2 00 | 2 29.5 | 4 59 | 1009 வே. திரு முர்த்தி மற்றும் முன்று பேர்களும்.                                       |
| 681 | ... | 681    | அ | 4 | ... | ... | ... | ...  | 0 34.5 | ...  | ...  |
| 682 | ... | 682    | ர | 4 | ... | 8-4 | 6   | 1 38 | 6 21.0 | 8 59 | 578 கு. வரங்கலி பப்பன்.  |
| 683 | ... | 683    | ர | 4 | ... | 8-4 | 6   | 1 38 | 3 64.5 | 5 05 | 540 மொ. ராமசாமி.   |
| 684 | ... | 684    | அ | 4 | ... | ... | ... | ...  | 0 45.5 | ...  | ...  |
| 685 | ... | 685    | அ | 4 | ... | ... | ... | ...  | 0 33 0 | ...  | ...  |
| 686 | ... | 686    | ர | 4 | ... | 8-4 | 6   | 1 38 | 7 08.0 | 9 79 | 887 வே. முத்து சாமி (1), வே. ராம சாமி (2), ரா. செல்லப்பன் (3).                         |
| 687 | 1   | 687-பா | ர | 4 | ... | 8-4 | 6   | 1 38 | 2 03.0 | 2 80 | 451 மொ. முனியப்பன்.  |
|     | 2   | -பா    | ர | 4 | ... | 8-4 | 6   | 1 38 | 0 11.0 | 0 15 | 567 மொ. லட்சுமணன்.   |
|     | 3   | -பா    | ர | 4 | ... | 8-4 | 6   | 1 38 | 0 11.0 | 0 15 | 536 மொ. ராமசாமி.   |
|     | 4   | -பா    | ர | 4 | ... | 8-4 | 6   | 1 38 | 0 23.5 | 0 33 | 280 ப. நாச்சப்ப கவுண்டர்.  |
|     | 5   | -பா    | ர | 4 | ... | 8-4 | 6   | 1 38 | 0 08.0 | 0 11 | 567 மொ. லட்சுமணன்.   |

சீராம நிராச அலுவலர்  
18, குப்பம் சீராமம்  
புகளூர் வட்டம்  
கரூர் மாவட்டம்

\* விவரப்பட்டியலைப் பார்க்கவும்.

S. 100

**ANNEXURE-VI MINING PLAN REPORT &  
PLATES**



# MINING PLAN

FOR

GRANT OF ROUGH STONE & GRAVEL QUARRY LEASE IN PATTALAND

PROPOSED PERIOD OF MINING 5 YEARS

(Prepared Under Rules 41 & 42 as amended in Tamil Nadu Minor Mineral Con



## LOCATION OF THE APPLIED AREA

EXTENT : 1.92.0Ha.  
S.F. No : 682 (PART)  
VILLAGE : KUPPAM.  
TALUK : PUGALUR.  
DISTRICT : KARUR.  
STATE : TAMIL NADU.

## APPLICANT

M/s. ANNAI BLUE METALS,

S.F. No.451, KAALIPALAYAM,

KUPPAM VILLAGE, this Mining Plan is approved subject  
PUGALUR TALUK, to the conditions / stipulations

KARUR DISTRICT - 639 111. Indicated in the Mining Plan approval

Letter No:

Dated:

## PREPARED BY:

S.DHANASEKAR, M.Sc.,

RQP/MAS/225/2011/A

8/3, KULLAPPAN STREET,

OPP, INDIAN BANK LINE,

OMALUR POST & TALUK - 636 455,

SALEM DISTRICT.

Email: [geodhana@yahoo.co.in](mailto:geodhana@yahoo.co.in)

CELL : 98946-28970 & 73733-74702.

S. Kethi

## CONTENTS



| SL. NO. | DESCRIPTION  | PAGE NO. |
|---------|--|----------|
| 1.0     | INTRODUCTION   | 8        |
| 2.0     | EXECUTIVE SUMMARY                                    | 10       |
| 3.0     | GENERAL INFORMATION                                  | 10       |
| 4.0     | LOCATION   | 11       |
| 5.0     | GEOLOGY AND MINERAL RESERVES                         | 12       |
| 6.0     | MINING   | 16       |
| 7.0     | BLASTING   | 19       |
| 8.0     | MINE DRAINAGE  | 21       |
| 9.0     | OTHER PERMANENT STRUCTURES                           | 21       |
| 10.0    | EMPLOYMENT POTENTIALS & WELFARE MEASURES             | 22       |
| 11.0    | ENVIRONMENT MANAGEMENT PLAN                          | 24       |
| 12.0    | MINE CLOSURE PLAN                                    | 27       |
| 13.0    | ANY OTHER DETAILS INTEND TO FURNISH BY THE APPLICANT | 28       |

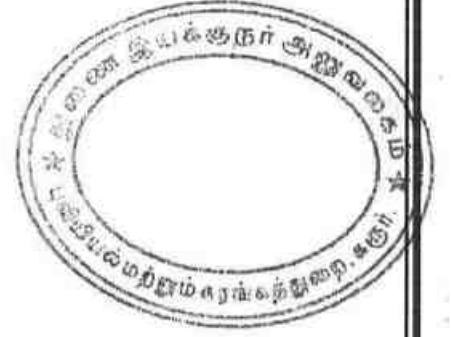
*S.irefj*  
1

## ANNEXURES



| SL. NO. | DESCRIPTION                               | ANNEXURE NO. |
|---------|---|--------------|
| 1.      | COPY OF PRECISE AREA COMMUNICATION LETTER | I            |
| 2.      | COPY OF FMB                               | II           |
| 3.      | COPY OF COMBINED SKETCH                   | III          |
| 4.      | COPY OF PATTI, ADANGAL, 'A' REGISTER      | IV           |
| 5.      | COPY OF LAND REGISTRATION DOCUMENT        | V            |
| 6.      | COPY OF FIRM REGISTRATION                 | VI           |
| 7.      | COPY OF PARTNERSHIP DEED                  | VII          |
| 8.      | COPY OF ID PROOF                          | VIII         |
| 9.      | COPY OF RQP CERTIFICATE                   | IX           |
| 10.     | COPY OF PROPOSED LEASE AREA PHOTOS        | X            |

*S. Kethi*  
2

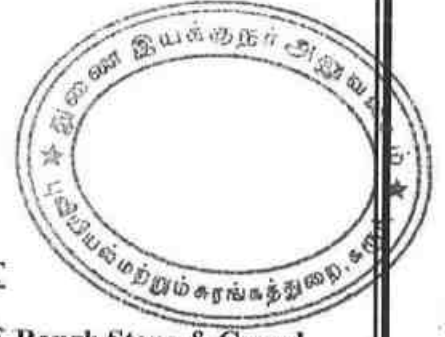


**LIST OF PLATES**

| SL. NO. | DESCRIPTION   | PLATE NO. | SCALE                 |
|---------|---|-----------|-----------------------|
| 1       | LOCATION PLAN                                       | I         | Not to Scale          |
| 2       | ROUTE MAP   | IA        | Not to Scale          |
| 3       | TOPOSHEET MAP OF THE LEASE AREA                     | IB        | Not to Scale          |
| 4.      | SATELLITE IMAGE (LEASE AREA)                        | IC        | Not to Scale          |
| 5.      | SATELLITE IMAGE (500m RADIUS)                       | ID        | 1:5000                |
| 6.      | MINE LEASE PLAN                                     | II        | 1:1000                |
| 7.      | SURFACE AND GEOLOGICAL PLAN                         | III       | 1:1000                |
| 8.      | GEOLOGICAL SECTIONS                                 | III-A     | HOR1:1000<br>VER1:500 |
| 9.      | YEAR WISE DEVELOPMENT AND PRODUCTION PLAN           | IV        | 1:1000                |
| 10.     | YEAR WISE DEVELOPMENT AND PRODUCTION SECTIONS       | IV- A     | HOR1:1000<br>VER1:500 |
| 11.     | MINE LAYOUT , LAND USE PATTERN & AFFORESTATION PLAN | V         | 1:1000                |
| 12.     | CONCEPTUAL/FINAL MINE CLOSURE PLAN                  | VI        | 1:1000                |
| 13.     | CONCEPTUAL/FINAL MINE CLOSURE SECTIONS              | VI- A     | HOR1:1000<br>VER1:500 |
| 14.     | ENVIRONMENT PLAN                                    | VII       | 1:5000                |
| 15.     | PROGRESSIVE MINE CLOSURE PLAN                       | VIII      | 1:1000                |

*S. Ketty*  
3

M/s. ANNAI BLUE METALS,  
S.F. No.451, KAALIPALAYAM,  
KUPPAM VILLAGE,  
PUGALUR TALUK,  
KARUR DISTRICT - 639 111.



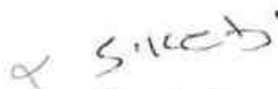
**CONSENT LETTER FROM THE APPLICANT**

I hereby give my consent for preparing the Mining Plan in respect of **Rough Stone & Gravel** quarry over an extent of **1.92.0Hectares** of **Patta Land** in **S.F. No.682 (Part)** of **Kuppam Village, Pugalur Taluk, Karur District, Tamilnadu State** by **Shri. S. Dhanasekar, M.Sc., Regn.No. RQP/MAS/225/2011/A.**

I request the Assistant Director, Department of Geology and Mining, Karur District to make further correspondence regarding modifications if any in the Mining Plan with the said Recognized Qualified Person on this following address.

**S.DHANASEKAR, M.Sc.,**  
RQP/MAS/225/2011/A  
8/3, Kullappan Street,  
Opposite Indian bank Line,  
Omalur Post & Taluk - 636455  
Salem District.  
E-Mail: [geodhana@yahoo.co.in](mailto:geodhana@yahoo.co.in)  
Cell: 98946-28970

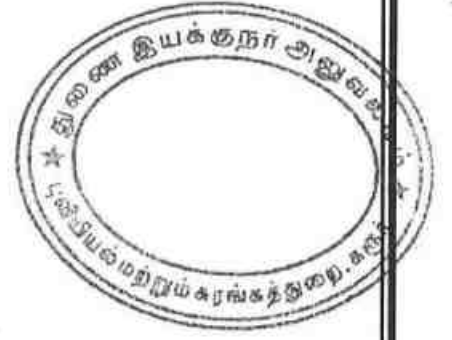
I hereby undertake that all modifications so made in the Mining Plan by the Recognized Qualified Person may be deemed to have been made with my knowledge and consent and shall be acceptable to me and binding on me in all respects.

  
Signature of the Applicant

Place: KARUR

Date:

M/s. ANNAI BLUE METALS,  
S.F. No.451, KAALIPALAYAM,  
KUPPAM VILLAGE,  
PUGALUR TALUK,  
KARUR DISTRICT - 639 111.



**DECLARATION**

I hereby declare that the Mining Plan in respect of **Rough Stone & Gravel** quarry over an extent **1.92.0 Hectares** of **Patta Land** in **S.F. No.682 (Part)** of **Kuppam Village, Pugalur Taluk, Karur District and Tamilnadu 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. K. S.*  
Signature of the Applicant

Place: KARUR

Date:



# KRK MEMORIAL MINING SERVICES

S.DHANASEKAR  
M.Sc. (Geo)-MMAEI  
Senior Geologist /  
Recognized Qualified Person

Off  
86680 20217

GST: 33ALIPD6733A1Z0



## 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 & Gravel** quarry lease over an extent of **1.92.0 Hectares** of **Patta Land** in S.F. No.682 (Part) of **Kuppam Village, Pugalur Taluk, Karur District, Tamilnadu State** obtained by **M/S. ANNAI BLUE METALS.**

Wherever specific permission / exemptions / relaxations or approvals are required, the Applicant will approach the concerned authorities of State and Central Governments for obtaining such permissions etc.

Certified

Signature of Recognized Qualified Person.

S.DHANASEKAR, M.Sc. (Geo)  
RQP/MAS/225/2011/A

Place: SALEM

Date:

*S. K. S.*

11°41'29.45" N  
78°07'13.58" E

98946 28970  
73733 74702

krkmemorialminingservices@gmail.com  
geodhana@yahoo.co.in

**Branch**  
8/3, Kullappan Street,  
Opp. Indian Bank Line,  
Omalar, Salem - 636 455.



# KRK MEMORIAL MINING SERVICES

S.DHANASEKAR

M.Sc. (Geo) M.M.E.A.I

Senior Geologist /  
Recognized Qualified Person



Off

86680 20217

No.5/30-7B, Avval Nagar,  
Ponkumar Mines Road,  
Jagir Ammapalayam,  
Salem - 636 302.

GST : 33ALIPD6733A1ZO

## CERTIFICATE

This is to certify that during preparation of Mining Plan for **Rough Stone & Gravel** quarry over an extent of **1.92.0 Hectares** of **Patta Land** in **S.F. No.682 (Part)** of **Kuppam** Village, **Pugalur** Taluk, **Karur** District, **Tamilnadu** State for **M/s. ANNAI BLUE METALS**, 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.DHANASEKAR, M.Sc., (Geo)

RQP/MAS/225/2011/A

Place: SALEM

Date:

*S. Ketan*



11°41'29.45" N  
78°07'13.58" E



98946 28970  
73733 74702



krkmemorialminingservices  
@gmail.com  
geodhana@yahoo.co.in



**Branch**  
8/3, Kullappan Street.  
Opp. Indian Bank Line,  
Omalar, Salem - 636 455.



**MINING PLAN FOR MINOR MINERALS**

**ROUGH STONE & GRAVEL QUARRY**

**PROPOSED PERIOD OF MINING 5 YEARS**


Over an extent 1.92.0 Hectares of Patta Land in S.F. No.682 (Part) of KUPPAM Village,  
PUGALUR Taluk, KARUR District and TAMILNADU State

(Prepared Under Rules 41 & 42 as amended in Tamil Nadu Minor Mineral Concession Rules, 1959)



**1.0 INTRODUCTION :**

1. M/s. ANNAI BLUE METALS, Office at S.F. No.451, Kaalipalayam, Kuppam Village, Pugalur Taluk, Karur District – 639 111 has obtained quarry lease for **Rough Stone & Gravel** over an extent of 1.92.0 Hectares of Patta Land in S.F. No.682 (Part) of Kuppam Village, Pugalur Taluk, Karur District of Tamilnadu State for a period of Five Years.
2. The Assistant Director(G&M), Karur in his letter Roc. No.134/Mines/2020 dated 12.10.2020 has directed the applicant to produce approved Mining Plan and Environmental Clearance certificate from the State Level Environmental Impact Assessment Authority (SEIAA) for the grant of quarry lease for the applied area.
3. Accordingly, Mining Plan is prepared under Rules 41 & 42 as amended in Tamil Nadu Minor Mineral Concession Rules, 1959 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.
4. In the above circumstances M/s. ANNAI BLUE METALS, is here by preparing the Mining Plan for approval for Fresh Rough Stone & Gravel Quarry. And subsequent submission of Form-I and pre-Feasibility report to obtain environmental clearance from the SEIAA of Tamil Nadu.
5. This Mining Plan is prepared for the Fresh Rough Stone & Gravel Quarry for a period of Five Years.
6. This Mining Plan is prepared by considering the TNMMCR 1959, and as per the EIA Notification 2006 and subsequent amendments and judgments.

  
S.DHANASEKAR, M.Sc. (Geo)  
RQP/MAS/225/2011/A



7. The Geological Reserves available in the lease period is 784728M<sup>3</sup> Mineable & recoverable Reserves is estimated as 239305M<sup>3</sup> and 227340M<sup>3</sup> of Rough Stone after leaving necessary safety distance from the lease boundary as indicated lease granted proceedings and relevant mining laws in force.

8. The proposed production scheduled for the five years about 227340M<sup>3</sup> of Rough Stone and 15256 m<sup>3</sup> of Gravel.

Proposed average annual production is 45468m<sup>3</sup> of Rough stone & 3051m<sup>3</sup> of Gravel.

9. Environmental parameters,

- i) There is no interstate boundary around 10Kms radius.
- ii) There is no wild life animal sanctuary within 10Kms radius form the project site area under the Wildlife (Protection) Act, 1972. Therefore the project seeks clearance only from State Environment Impact Assessment Authority (SEIAA), under B2 Category.

10. Environmental measures already adopted are,

- i) Dust Control at source while drilling and blasting,
- ii) Dust suppression at loading point and transport haul roads,
- iii) Noise Control in blasting, control of fly rock missiles and vibration by doing peak particle velocity with in standard as prescribed by the DGMS and MoEF.
- iv) Unnecessary land degradation should be avoided or damaged land should be reclaimed or rehabilitated.
- v) Uneven rat hole mining is avoided and follow scientific and systematic mining by safe bench system of open cast mining.
- vi) Mining near major fracture zones already avoided to control ground water fluctuation in the adjacent agricultural lands.
- vii) Emission test of vehicles should be in stack maintain minimum emission level of flue gases.
- viii) Noise level should not exceed 80db and the vehicles use only permitted Air Horn while on road near residential areas.
- ix) Safety zones as prescribed by the Department of Geology and Mining from adjacent infrastructures should be strictly adhering to.
- x) And any other conditions as stipulated by the concerned authorities will be followed to protect the environment.

S. K. S. 9

## 2.0 EXECUTIVE SUMMARY:

|    |  |   |  |
|----|--|---|--|
| a. | Name of the Village  | : | <b>Kuppam</b>  |
| b. | Name of the Panchayat / Union  | : | <b>Kuppam / K.Paramathi</b>  |
| c. | The proposed total Mineable Reserves   | : | <b>239305M<sup>3</sup></b>   |
| d. | The proposed quantity of reserves (level of production) <b>Rough stone &amp; Gravel</b> for <b>Five Years</b> to be mined is (Recoverable reserves)        | : | <b>227340M<sup>3</sup> - Rough stone</b><br><b>15256M<sup>3</sup> - Gravel</b>   |
| e. | Total extent of the area   | : | <b>1.92.0Ha</b>  |
| f. | Proposed Period of mining  | : | <b>Five Years</b>  |
| g. | Proposed Depth of mining   | : | <b>47m (Gravel 2m + Rough stone 45m).</b>  |
| h. | Existing Pit Dimension   | : | <b>97.0m(L) X 50.0m(W)(Avg) X 15.0m(H)</b>   |
| i. | Average Production Per Year  | : | <b>45468M<sup>3</sup> - Rough stone &amp; 3051M<sup>3</sup> - Gravel</b>   |
| j. | Method of mining / level of mechanization  | : | Opencast, Semi-mechanized Mining with a bench height of <b>5m</b> and bench width of <b>5m</b> 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<br>a. Fixed Cost<br>b. Operational Cost<br>c. EMP Cost   | : | Rs. 18,60,000/-<br>Rs. 30,00,000/-<br>Rs. 3,40,000/-   |
| m. | The Applied lease area is bounded by four corners and the coordinates are<br>Latitude<br>Longitude<br>North East<br>South East<br>North West<br>South West | : | Toposheet No. <b>58- F/13</b><br><b>10° 59' 2.28" N to 10° 58' 57.34" N</b><br><b>77° 56' 13.64" E to 77° 56' 8.30" E</b><br><b>10° 59' 2.28" N 77° 56' 13.64" E</b><br><b>10° 58' 56.33" N 77° 56' 11.44" E</b><br><b>10° 59' 3.09" N 77° 56' 10.45" E</b><br><b>10° 58' 57.34" N 77° 56' 8.30" E</b> |

## 3.0. GENERAL INFORMATION:

|     |    |   |   |  |
|-----|----|---|---|--|
| 3.1 | a. | Name of the Applicant                                       | : | <b>M/s. ANNAI BLUE METALS,</b>   |
|     | b. | Address of the Applicant with phone No and e-mail id if any | : | <b>S.F. No.451, KAALIPALAYAM,<br/>KUPPAM VILLAGE,<br/>PUGALUR TALUK,<br/>KARUR DISTRICT - 639 111.</b> |
|     | c. | Status of the Applicant                                     | : | <b>Partnership Firm</b>  |
| 3.2 | a. | Mineral Which the Applicant intends to mine                 | : | <b>Rough Stone &amp; Gravel</b>  |

S. K. S. 10

|    |   |   |  |
|----|---|---|--|
| b. | Precise area letter                               | : | <b>Roc. No.134/MINES/2020 dated 12.10.2020</b>   |
| c. | Period of permission                              | : | 5 Years  |
| e. | Name and Address of the RQP preparing Mining Plan | : | <b>S.Dhanasekar, M.Sc.,</b><br>RQP/MAS/225/2011/A<br>8/3, Kullappan Street,<br>Opposite Indian bank Line,<br>Omalar Post & Taluk -636 455,<br>Salem District.<br>Email: geodhana@yahoo.co.in |
| f. | RQP Regn. No.                                     | : | RQP/MAS/225/2011/A<br>Valid up to 12.01.2021.  |

#### 4.0 LOCATION: DETAILS AREA:

| STATE     | DISTRICT  | PANCHAT / UNION      | TALUK  | VILLAGE | S.F.NO    | EXTENT IN HECTARE |
|-----------|---|----------------------|--|---------|-----------|-------------------|
| Tamilnadu | Karur   | Kuppam / K.Paramathi | Pugalur  | Kuppam  | 682(Part) | 1.92.0            |
| TOTAL =   |   |                      |  |         |           | <b>1.92.0Ha</b>   |
| b.        | Classification of the Area (Ryotwari / Poramboke / others)                              | :                    | It is a Patta Land, which is not fit for vegetation/cultivation.   |         |           |                   |
| c.        | Ownership / Occupancy of the Applied Lease area (Surface rights)                        | :                    | It is a Patta Land in S.F. No.682(Part) registered in the name of <b>M/s. Annai Blue Metals</b> , vide Patta No. 3707.       |         |           |                   |
| d.        | Toposheet No. with Latitude and Longitude   | :                    | Toposheet No. 58 -F/13<br>: 10° 59' 2.28" N to 10° 58' 57.34" N<br>: 77° 56' 13.64" E to 77° 56' 8.30" E                     |         |           |                   |
| e.        | Existence of Public Road / Railway line if any nearby the area and approximate distance | :                    | Karur- K. Paramathi = 19.0kms<br>Quarry site is located in Northern side at a distance of 4.0 kms from K. Paramathi village. |         |           |                   |

S. Kethi 11

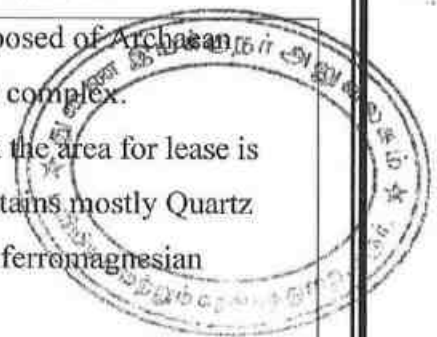
**PART - A**

**5.0 GEOLOGY AND MINERAL RESERVES:**

| 5.1 | a.                   | Topography   | : | <p>1. The area is situated on a slightly undulated terrain sloping towards Southeast side covered with Rough Stone &amp; Gravel which does not sustain any type of vegetation. The altitude of the area is 183m above MSL.</p> <p>2. No major river is found nearby the fresh area.</p> <p>3. Water table is noticed at a depth of <b>54m</b> from below the surface in the adjacent open well and bore well.</p> <p>4. Temperature of the area is reported to be 18°C to a maximum of 38°C during summer.</p> <p>5. Rainfall of this area is about 800mm to 900 mm during the monsoons in a year.</p>   |  |     |                |    |                      |                |    |          |   |
|-----|----------------------|--|---|--|--|-----|----------------|----|----------------------|----------------|----|----------|---|
|     | 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>K. Paramathi – 4.0kms</p> <p>K. Paramathi – 4.0kms</p> <p>Karur – 16.0kms</p> <p>Velayuthampalayam – 13.0kms</p> <p>Pugalur – 13.0kms</p> <p>Andisangilipalayam – 1.6kms</p> <p>Trichirapalli – 90.0 kms</p> <p>Thoothukudi – 260.0kms</p>  |  |     |                |    |                      |                |    |          |   |
|     | c.                   | Regional Geology   | : | <p><b>KARUR</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.</p> <p>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.</p> <p>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> |  | 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  |   |  |  |     |                |    |                      |                |    |          |   |

*S. K. S.*  
12

|     | d.                   | Geology of the Lease Area                         | : | <p>1. The area is mainly composed of Archaean crystalline metamorphic complex.</p> <p>2. The rock type noticed in the area for lease is <b>Charnockite</b> which contains mostly Quartz and Feldspar with some ferromagnesian minerals.</p> <p>3. The Charnockite is part of peninsular Gneisses, a high grade metamorphic rock.</p> <p>4. The general trend of formation is NE – SW and dip towards SE-80°.</p> <p>5. The general geological succession of the area is given as under.</p> <p>The general geological succession of the area is given 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                |   |  |  |     |                |    |                      |                |    |          |              |    |          |                                    |
| 5.2 |                      | Details of Exploration already carried out if any | : | Since the <b>Rough Stone &amp; Gravel</b> is seen from the Surface itself, No needed to exploration. However, the area was personally examined by the Geologist who prepared the Mining Plan.  |  |     |                |    |                      |                |    |          |              |    |          |                                    |
| 5.3 | a.                   | Already excavated in pit dimensions               |   | <b>97.0m(L) X 50.0m(W)(Avg) X 15.0m(H)</b>   |  |     |                |    |                      |                |    |          |              |    |          |                                    |



*Sheet*  
13

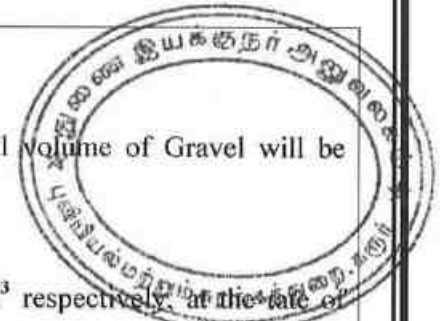
b. Geological Reserves:

**Gravel :**

The Thickness of Gravel in this area is 2.0m and the total Volume of Gravel will be 20592m<sup>3</sup>.

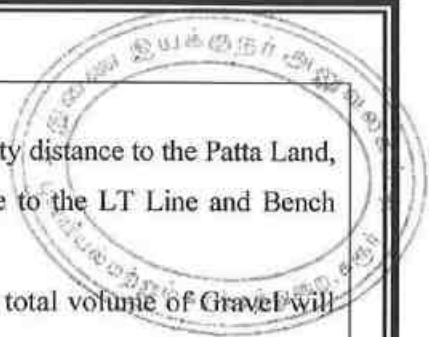
**Rough Stone :**

The Available Geological Reserve is estimated as 784728m<sup>3</sup> respectively at the rate of 95% Recovery upto the permissible depth. Gravel is calculated upto a depth of 2m and Rough Stone at a depth of 45m. Total Depth-47m.



| GEOLOGICAL RESERVES |        |       |       |       |                          |   |                                   |                          |
|---------------------|--------|-------|-------|-------|--------------------------|---|-----------------------------------|--------------------------|
| Section             | Bench  | L (m) | W (m) | D (m) | Volume In M <sup>3</sup> | Recoverable Reserve in m <sup>3</sup> @ 95% | Mine waste in m <sup>3</sup> @ 5% | Gravel in m <sup>3</sup> |
| XY-AB               | I      | 75    | 4     | 2     |                          |   |                                   | 600                      |
|                     | II     | 91    | 56    | 5     | 25480                    | 24206                                       | 1274                              |                          |
|                     | III    | 91    | 56    | 5     | 25480                    | 24206                                       | 1274                              |                          |
|                     | IV     | 91    | 56    | 5     | 25480                    | 24206                                       | 1274                              |                          |
|                     | V      | 91    | 102   | 5     | 46410                    | 44090                                       | 2320                              |                          |
|                     | VI     | 91    | 102   | 5     | 46410                    | 44090                                       | 2320                              |                          |
|                     | VII    | 91    | 102   | 5     | 46410                    | 44090                                       | 2320                              |                          |
|                     | VIII   | 91    | 102   | 5     | 46410                    | 44090                                       | 2320                              |                          |
|                     | IX     | 91    | 102   | 5     | 46410                    | 44090                                       | 2320                              |                          |
|                     | X      | 91    | 102   | 5     | 46410                    | 44090                                       | 2320                              |                          |
|                     | Total= |       |       |       |                          | 354900                                      | 337158                            | 17742                    |
| XY-CD               | I      | 98    | 102   | 2     |                          |   |                                   | 19992                    |
|                     | II     | 98    | 102   | 3     | 29988                    | 28489                                       | 1499                              |                          |
|                     | III    | 98    | 102   | 5     | 49980                    | 47481                                       | 2499                              |                          |
|                     | IV     | 98    | 102   | 5     | 49980                    | 47481                                       | 2499                              |                          |
|                     | V      | 98    | 102   | 5     | 49980                    | 47481                                       | 2499                              |                          |
|                     | VI     | 98    | 102   | 5     | 49980                    | 47481                                       | 2499                              |                          |
|                     | VII    | 98    | 102   | 5     | 49980                    | 47481                                       | 2499                              |                          |
|                     | VIII   | 98    | 102   | 5     | 49980                    | 47481                                       | 2499                              |                          |
|                     | IX     | 98    | 102   | 5     | 49980                    | 47481                                       | 2499                              |                          |
|                     | X      | 98    | 102   | 5     | 49980                    | 47481                                       | 2499                              |                          |
|                     | Total= |       |       |       |                          | 429828                                      | 408337                            | 21491                    |
| Grand Total=        |        |       |       |       | 784728                   | 745495                                      | 39233                             | 20592                    |

S. Keethi 14



c. Mineable Reserves:

The Mineable reserves are calculated by deducting 7.5m Safety distance to the Patta Land, 10.0m Safety distance to the Cart Track, 50.0m Safety distance to the LT Line and Bench Loss.

**Gravel :** The Thickness of Gravel in this area is 2.0m and the total volume of Gravel will be 15256m<sup>3</sup>.

**Rough Stone :**

The mineable reserves and the Recoverable Reserves are 239305m<sup>3</sup> and 227340m<sup>3</sup> respectively, at the rate of 95% recovery upto the permissible depth. **Total Depth-47m (2m Gravel + 45m Rough Stone).**

| MINEABLE RESERVES   |               |       |       |       |                          |   |                                   |                          |
|---------------------|---------------|-------|-------|-------|--------------------------|---|-----------------------------------|--------------------------|
| Section             | Bench         | L (m) | W (m) | D (m) | Volume In M <sup>3</sup> | Recoverable Reserve in m <sup>3</sup> @ 95% | Mine waste in m <sup>3</sup> @ 5% | Gravel in m <sup>3</sup> |
| XY-AB               | I             | 68    | 1     | 2     |                          |   |                                   | 136                      |
|                     | II            | 82    | 46    | 5     | 18860                    | 17917                                       | 943                               |                          |
|                     | III           | 77    | 41    | 5     | 15785                    | 14996                                       | 789                               |                          |
|                     | IV            | 72    | 36    | 5     | 12960                    | 12312                                       | 648                               |                          |
|                     | V             | 67    | 64    | 5     | 21440                    | 20368                                       | 1072                              |                          |
|                     | VI            | 62    | 54    | 5     | 16740                    | 15903                                       | 837                               |                          |
|                     | VII           | 57    | 44    | 5     | 12540                    | 11913                                       | 627                               |                          |
|                     | VIII          | 52    | 34    | 5     | 8840                     | 8398  | 442                               |                          |
|                     | IX            | 47    | 24    | 5     | 5640                     | 5358  | 282                               |                          |
|                     | X             | 42    | 14    | 5     | 2940                     | 2793  | 147                               |                          |
|                     | <b>Total=</b> |       |       |       |                          | <b>115745</b>                               | <b>109958</b>                     | <b>5787</b>              |
| XY-CD               | I             | 90    | 84    | 2     |                          |   |                                   | 15120                    |
|                     | II            | 88    | 80    | 3     | 21120                    | 20064                                       | 1056                              |                          |
|                     | III           | 83    | 70    | 5     | 29050                    | 27598                                       | 1453                              |                          |
|                     | IV            | 78    | 60    | 5     | 23400                    | 22230                                       | 1170                              |                          |
|                     | V             | 73    | 50    | 5     | 18250                    | 17338                                       | 913                               |                          |
|                     | VI            | 68    | 40    | 5     | 13600                    | 12920                                       | 680                               |                          |
|                     | VII           | 63    | 30    | 5     | 9450                     | 8978  | 473                               |                          |
|                     | VIII          | 58    | 20    | 5     | 5800                     | 5510  | 290                               |                          |
|                     | IX            | 53    | 10    | 5     | 2650                     | 2518  | 133                               |                          |
|                     | X             | 48    | 1     | 5     | 240                      | 228   | 12                                |                          |
|                     | <b>Total=</b> |       |       |       |                          | <b>123560</b>                               | <b>117382</b>                     | <b>6178</b>              |
| <b>Grand Total=</b> |               |       |       |       | <b>239305</b>            | <b>227340</b>                               | <b>11965</b>                      | <b>15256</b>             |

S. Kesav  
15



## 6.0 MINING:

|     |   |   |   |
|-----|---|---|---|
| 6.1 | Method of Mining  | : | <p>1. Opencast method of semi mechanized mining is being adopted to extract Rough Stone &amp; Gravel of required size</p> <p>2. Machineries like Tractor mounted compressor attached with Jack hammers is used for drilling and blasting. Excavators are used for quarrying of Rough Stone and Gravel Tippers / Lorries are used for the transportation of Rough Stone &amp; Gravel 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 &amp; Gravel are removed using Hydraulic excavator. Rough stone will be loaded directly to the tippers and transported to the needy end users.</p>   |
| 6.3 | Proposed bench height & Width                                   | : | <p>Bench height = 5mts.<br/>Bench width = 5mts.</p>   |
| 6.4 | Details of Gravel / Mineral Production proposed for FIVE YEARS. | : | <p><b>Gravel/ Overburden production details follows:</b></p> <p>This area is covered 2.0m Gravel in this mine area <math>15256m^3</math>. Gravel formation will be removed and hydraulic excavators are used for loading the gravel into the tipper from pit head to needy buyers. This will be done only after obtaining permission and paying necessary seigniorage fees to the Government.</p>           |

S. Ketj  
16

a. Year wise reserves calculations :

**Rough stone & Gravel production details as follows:**

The proposed rate of production of **Rough Stone & Gravel** is about **227340m<sup>3</sup> & 15256m<sup>3</sup>** for **Five Years**.

The average proposed rate of production of **Rough Stone & Gravel** is about **45468m<sup>3</sup> & 3051 m<sup>3</sup>** per year at the rate of 95% recovery upto the permissible depth, **Total Depth-47m. (2m Gravel + 45m Rough Stone)**.

| YEARWISE DEVELOPMENT & PRODUCTION RESERVES |               |               |       |       |       |                          |   |                                   |                          |
|--|---------------|---------------|-------|-------|-------|--------------------------|---|-----------------------------------|--------------------------|
| YEAR                                       | Section       | Bench         | L (m) | W (m) | D (m) | Volume In M <sup>3</sup> | Recoverable Reserve in m <sup>3</sup> @ 95% | Mine waste in m <sup>3</sup> @ 5% | Gravel in m <sup>3</sup> |
| I-YEAR                                     | XY-AB         | I             | 68    | 1     | 2     |                          |   |                                   | 136                      |
|  |               | II            | 82    | 46    | 5     | 18860                    | 17917                                       | 943                               |                          |
|  | XY-CD         | I             | 90    | 84    | 2     |                          |   |                                   | 15120                    |
|  |               | II            | 88    | 80    | 3     | 21120                    | 20064                                       | 1056                              |                          |
|  | <b>Total=</b> |               |       |       |       |                          | <b>39980</b>                                | <b>37981</b>                      | <b>1999</b>              |
| II-YEAR                                    | XY-AB         | III           | 77    | 41    | 5     | 15785                    | 14996                                       | 789                               |                          |
|  | XY-CD         | III           | 83    | 70    | 5     | 29050                    | 27598                                       | 1453                              |                          |
|  | <b>Total=</b> |               |       |       |       |                          | <b>44835</b>                                | <b>42593</b>                      | <b>2242</b>              |
| III-YEAR                                   | XY-AB         | IV            | 72    | 36    | 5     | 12960                    | 12312                                       | 648                               |                          |
|  |               | IV            | 78    | 60    | 5     | 23400                    | 22230                                       | 1170                              |                          |
|  | XY-CD         | V             | 73    | 50    | 5     | 18250                    | 17338                                       | 913                               |                          |
|  |               | <b>Total=</b> |       |       |       |                          |   | <b>54610</b>                      | <b>51880</b>             |
| IV-YEAR                                    | XY-AB         | V             | 67    | 64    | 5     | 21440                    | 20368                                       | 1072                              |                          |
|  |               | VI            | 62    | 54    | 5     | 16740                    | 15903                                       | 837                               |                          |
|  | XY-CD         | VI            | 68    | 40    | 5     | 13600                    | 12920                                       | 680                               |                          |
|  |               | <b>Total=</b> |       |       |       |                          |   | <b>51780</b>                      | <b>49191</b>             |
| V-YEAR                                     | XY-AB         | VII           | 57    | 44    | 5     | 12540                    | 11913                                       | 627                               |                          |
|  |               | VIII          | 52    | 34    | 5     | 8840                     | 8398  | 442                               |                          |
|  |               | IX            | 47    | 24    | 5     | 5640                     | 5358  | 282                               |                          |
|  |               | X             | 42    | 14    | 5     | 2940                     | 2793  | 147                               |                          |
|  | XY-CD         | VII           | 63    | 30    | 5     | 9450                     | 8978  | 473                               |                          |
|  |               | VIII          | 58    | 20    | 5     | 5800                     | 5510  | 290                               |                          |
|  |               | IX            | 53    | 10    | 5     | 2650                     | 2518  | 133                               |                          |
|  |               | X             | 48    | 1     | 5     | 240                      | 228   | 12                                |                          |
| <b>Total=</b>                              |               |               |       |       |       | <b>48100</b>             | <b>45695</b>                                | <b>2405</b>                       |                          |
| <b>Grand Total=</b>                        |               |               |       |       |       | <b>239305</b>            | <b>227340</b>                               | <b>11965</b>                      | <b>15256</b>             |

S. Ketan 17

b. **Energy:**  
Electricity for mines and lights only at nights (working is restricted on day time only between 8Am to 4Pm). Diesel (HSD) will be used for quarrying machines around **184412 liters** for the entire project life. Diesel will be brought from nearby diesel pumps. No power is required for the project. Lightings on the night is taken from nearby electric poles after obtaining permission from concerned authorities.

**For Gravel:**

Per hour excavator will consume = 10 litres / hour  
 Per hour excavator will excavate = 60m<sup>3</sup> of Gravel  
 For 15256m<sup>3</sup> = 15256 / 60 = 254.26 hours  
 Diesel consumption 254 working hours = 254 x 10 litres  
 Total diesel consumption = **2540 litres of HSD will be utilized for Gravel**

**For Rough stone:**

Per hour excavator will consume = 16 litres / hour  
 Per hour excavator will excavate = 20m<sup>3</sup> of rough stone  
 For 227340m<sup>3</sup> = 227340 / 20 = 11367 hours  
 Diesel consume 11367 working hours = 11367 hours x 16 litres  
 Total diesel consumption = **181872 liters of HSD will be utilized for Rough stone**  
 Total diesel consumption is around = **184412 liters of HSD for the entire period of life.**

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 | 5   | 25.5 mm     | Hand held       | Atlas copco 2Nos | Diesel       | 60  |

b. Loading : Loading of waste and rough stone & gravel is being carried out by Excavator into 10 tonne capacity tippers from the working 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 10 tonnes tipper

| Type   | Nos | Size / Capacity | Make          | Motive power | H.P. |
|--------|-----|-----------------|---------------|--------------|------|
| Tipper | 2   | 10 M.T          | Ashok Leyland | Diesel       | 110  |

6.6 Disposal of Gravel : The Gravel of the lease area is **15256m<sup>3</sup>**. Gravel formation will be removed and transported to the needy end user, only after obtaining permission and paying necessary seigniorage fees to the Government.

*S. K. S.*  
18

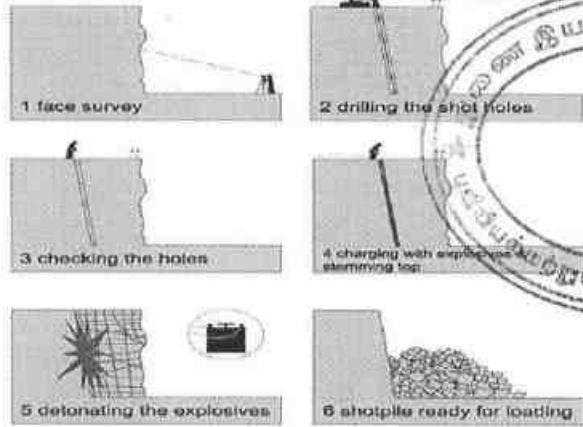
| 6.7                    | Brief Note on Conceptual Mining Plan for the entire lease period | <p>Conceptual Mining Plan is prepared with an object of Five Years of systematic development of bench lay outs. Selection of ultimate pit limit, depth of quarrying, ultimate pit slope, etc.,</p> <p>Average Ultimate Pit dimension in given as Under,</p> <table border="1"> <thead> <tr> <th colspan="5">ULTIMATE PIT DIMENSION</th> </tr> <tr> <th>Section</th> <th>Bench</th> <th>L (m)</th> <th>W (m)</th> <th>D (m)</th> </tr> </thead> <tbody> <tr><td rowspan="10">PIT</td><td>I</td><td>158</td><td>42</td><td>2</td></tr> <tr><td>II</td><td>170</td><td>63</td><td>5</td></tr> <tr><td>III</td><td>160</td><td>55</td><td>5</td></tr> <tr><td>IV</td><td>150</td><td>48</td><td>5</td></tr> <tr><td>V</td><td>140</td><td>57</td><td>5</td></tr> <tr><td>VI</td><td>130</td><td>47</td><td>5</td></tr> <tr><td>VII</td><td>120</td><td>37</td><td>5</td></tr> <tr><td>VIII</td><td>110</td><td>27</td><td>5</td></tr> <tr><td>IX</td><td>100</td><td>17</td><td>5</td></tr> <tr><td>X</td><td>90</td><td>7</td><td>5</td></tr> </tbody> </table> <p>Ultimate pit size is designed based on certain practical factors such as the economical depth of mining, safety zones, permissible areas etc. 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 are being carried out every year as per the MOEF norms.</p> | ULTIMATE PIT DIMENSION |       |  |  |  | Section | Bench | L (m) | W (m) | D (m) | PIT | I | 158 | 42 | 2 | II | 170 | 63 | 5 | III | 160 | 55 | 5 | IV | 150 | 48 | 5 | V | 140 | 57 | 5 | VI | 130 | 47 | 5 | VII | 120 | 37 | 5 | VIII | 110 | 27 | 5 | IX | 100 | 17 | 5 | X | 90 | 7 | 5 |
|------------------------|--|--|------------------------|-------|--|--|--|---------|-------|-------|-------|-------|-----|---|-----|----|---|----|-----|----|---|-----|-----|----|---|----|-----|----|---|---|-----|----|---|----|-----|----|---|-----|-----|----|---|------|-----|----|---|----|-----|----|---|---|----|---|---|
| ULTIMATE PIT DIMENSION |  |  |                        |       |  |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |
| Section                | Bench  | L (m)  | W (m)                  | D (m) |  |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |
| PIT                    | I  | 158  | 42                     | 2     |  |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |
|                        | II   | 170  | 63                     | 5     |  |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |
|                        | III  | 160  | 55                     | 5     |  |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |
|                        | IV   | 150  | 48                     | 5     |  |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |
|                        | V  | 140  | 57                     | 5     |  |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |
|                        | VI   | 130  | 47                     | 5     |  |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |
|                        | VII  | 120  | 37                     | 5     |  |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |
|                        | VIII   | 110  | 27                     | 5     |  |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |
|                        | IX   | 100  | 17                     | 5     |  |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |
|                        | X  | 90   | 7                      | 5     |  |  |  |         |       |       |       |       |     |   |     |    |   |    |     |    |   |     |     |    |   |    |     |    |   |   |     |    |   |    |     |    |   |     |     |    |   |      |     |    |   |    |     |    |   |   |    |   |   |

**7.0 BLASTING:**

|                                  |                                   |   |                      |   |          |         |   |        |       |   |           |               |   |  |                 |   |         |                     |   |                                      |                         |   |                         |                                  |   |                            |                 |   |                               |                                 |   |                        |
|----------------------------------|-----------------------------------|---|----------------------|---|----------|---------|---|--------|-------|---|-----------|---------------|---|--|-----------------|---|---------|---------------------|---|--------------------------------------|-------------------------|---|-------------------------|----------------------------------|---|----------------------------|-----------------|---|-------------------------------|---------------------------------|---|------------------------|
| 7.1                              | Proposed Control Blasting Pattern | <p>The massive formation shall be broken into pieces of portable size by drilling and Proposed Control Blasting using jack hammers and shot hole Blasting. Powder factor of explosives for breaking such hard rock shall be in the order of 6 to 7 tonnes per K.g of explosives.</p> <p><b>Proposed Control Blasting parameters are as follows.</b></p> <table border="1"> <tr><td>Diameter of the hole</td><td>:</td><td>32-36 mm</td></tr> <tr><td>Spacing</td><td>:</td><td>60 Cms</td></tr> <tr><td>Depth</td><td>:</td><td>1 to 1.5m</td></tr> <tr><td>Charge / Hole</td><td>:</td><td>D.Cord with water or 70 gms of gun powder or Gelatine.</td></tr> <tr><td>Pattern of hole</td><td>:</td><td>Zig Zag</td></tr> <tr><td>Inclination of hole</td><td>:</td><td>70<sup>o</sup> from the horizontal.</td></tr> <tr><td>Quantity of rock broken</td><td>:</td><td>0.45 MT x 2.6 = 1.17 MT</td></tr> <tr><td>Control Blasting efficiency @90%</td><td>:</td><td>1.17 x 90% = 1.05MT / hole</td></tr> <tr><td>Charge per hole</td><td>:</td><td>140 gms of 25mm dia cartridge</td></tr> <tr><td>Quantity of rock broken per day</td><td>:</td><td>151.56M<sup>3</sup>.</td></tr> </table> | Diameter of the hole | : | 32-36 mm | Spacing | : | 60 Cms | 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 <sup>o</sup> 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 | : | 151.56M <sup>3</sup> . |
| Diameter of the hole             | :                                 | 32-36 mm  |                      |   |          |         |   |        |       |   |           |               |   |  |                 |   |         |                     |   |                                      |                         |   |                         |                                  |   |                            |                 |   |                               |                                 |   |                        |
| Spacing                          | :                                 | 60 Cms  |                      |   |          |         |   |        |       |   |           |               |   |  |                 |   |         |                     |   |                                      |                         |   |                         |                                  |   |                            |                 |   |                               |                                 |   |                        |
| 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 <sup>o</sup> 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  | :                                 | 151.56M <sup>3</sup> .  |                      |   |          |         |   |        |       |   |           |               |   |  |                 |   |         |                     |   |                                      |                         |   |                         |                                  |   |                            |                 |   |                               |                                 |   |                        |

S. Keerthi 19

**ROCK BLASTING**



7.2 Types of Explosives :

Following explosives are recommended for efficient blasting with safe practice.

| S. No | Description | Class / Division | Type                               | Size     |
|-------|-------------|------------------|------------------------------------|----------|
| 1.    | Slurry      | Class - 3        | Nitro Compound                     | 25 x 200 |
| 2.    | Detonators  | Class - 3        | Ordinary and elec (OD & ED)        | 6.5 x 32 |
| 3.    | Safety fuse | Class - 6        | Blue sump fuse coils of 10mts each |          |

7.3 Measures proposed to minimize ground vibration due to blasting :

The following steps are being adopted to control ground vibration due to blasting.

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 is less.
2. Use of Ammonium nitrate fuel oil mixture for shot holes is avoided because which cause high fly of rocks in view critical diameter problem. Only high strength explosives like slurry are used in the form of cartridge.
3. Charge per hole will exceed the powder factor designed for each hole based on the quantum of blasting, strength of rocks, fracture pattern etc.

7.4 Storage of Explosives and safety measures to be taken while blasting. :

1. The Applicant stores the explosives as per the Indian Explosives Act, 1958.
2. The explosives to be used in mines being a small quantity, the District collector may be approached to keep the stocks not exceeding 5kgs at time or any other quantity permitted by the concerned authorities in a portable magazine of S & B types.
3. An authorized explosive agency is engaged to carry out blasting.

|  |  |  |   |
|--|--|--|---|
|  |  |  | <p>4. The blasting time in a day is between 5 PM to 6 PM.</p> <p>5. First Aid Box is kept ready at all the time.</p> <p>6. Necessary precautionary announcement is being carried out before the blasting operation.</p> |
|--|--|--|---|

**8.0 MINE DRAINAGE:**

|     |  |   |  |
|-----|--|---|--|
| 8.1 | Depth of Water table   | : | The ground water table is reported as <b>54m</b> below ground level in nearby open wells and bore wells of this area. (Mining depth taken as <b>47m</b> ). 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 about 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                               | :               | <p>There are no villages within a radius of 500m. The nearest habitations with the population is given as under,</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Direction</th> <th>Village</th> <th>Distance in kms</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>North</td> <td>Andisangilpalayam</td> <td>1.6Kms</td> <td>250</td> </tr> <tr> <td>East</td> <td>Punnam</td> <td>5.0Kms</td> <td>300</td> </tr> <tr> <td>South</td> <td>K. Paramathi</td> <td>4.0kms</td> <td>600</td> </tr> <tr> <td>West</td> <td>Munnur</td> <td>5.0Kms</td> <td>200</td> </tr> </tbody> </table> | Direction | Village | Distance in kms | Population | North | Andisangilpalayam | 1.6Kms | 250 | East | Punnam | 5.0Kms | 300 | South | K. Paramathi | 4.0kms | 600 | West | Munnur | 5.0Kms | 200 |
|-----------|---|-----------------|--|-----------|---------|-----------------|------------|-------|-------------------|--------|-----|------|--------|--------|-----|-------|--------------|--------|-----|------|--------|--------|-----|
| Direction | Village   | Distance in kms | Population   |           |         |                 |            |       |                   |        |     |      |        |        |     |       |              |        |     |      |        |        |     |
| North     | Andisangilpalayam                                   | 1.6Kms          | 250  |           |         |                 |            |       |                   |        |     |      |        |        |     |       |              |        |     |      |        |        |     |
| East      | Punnam  | 5.0Kms          | 300  |           |         |                 |            |       |                   |        |     |      |        |        |     |       |              |        |     |      |        |        |     |
| South     | K. Paramathi  | 4.0kms          | 600  |           |         |                 |            |       |                   |        |     |      |        |        |     |       |              |        |     |      |        |        |     |
| West      | Munnur  | 5.0Kms          | 200  |           |         |                 |            |       |                   |        |     |      |        |        |     |       |              |        |     |      |        |        |     |
| 9.2       | Power lines (HT/LT)                                 | :               | A safety distance of 50m should be left out for the LT line situated on the southern side of the applied area.   |           |         |                 |            |       |                   |        |     |      |        |        |     |       |              |        |     |      |        |        |     |
| 9.3       | Water bodies (River, Pond, Lake, Odai, Channel etc) | :               | There are no other Water bodies (River, Pond, Lake, Channel etc) is located in this area.  |           |         |                 |            |       |                   |        |     |      |        |        |     |       |              |        |     |      |        |        |     |
| 9.4       | Archeological / Historical Monuments                | :               | There are no Archeological / Historical Monuments within a radius of 500m.   |           |         |                 |            |       |                   |        |     |      |        |        |     |       |              |        |     |      |        |        |     |

*S. Kethi* 21

|     |  |   |  |
|-----|--|---|--|
| 9.5 | Road (NH, SH, Village Road etc)  | : | Karur- K. Paramathi = 19.0kms<br>Quarry site is located in Northern side at a distance of 4.0 kms from K. Paramathi 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.,   | : | There are no Social Forest / Wild Life Sanctuary etc within a radius of 10kms.   |
| 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 inter State border within a radius of 10 kms.   |
| 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 under the provisions of MMR, 1961 under the Mines Act, 1952, whenever the workers are employed more than 10, it is preferred to have a qualified Mining Mate to keep all the production workers directly under his control and supervision.</p> <p>2. The following man power is proposed for quarrying Rough Stone &amp; Gravel during the five years period to achieve the proposed production and to comply the provisions of the Government norms.</p> <table border="1"> <tr> <td>1.</td> <td>Skilled</td> <td>Operator</td> <td>2 No.</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>2 Nos</td> </tr> <tr> <td>3.</td> <td>Unskilled</td> <td>Musdoor / Labors</td> <td>4 Nos</td> </tr> <tr> <td></td> <td></td> <td>Cleaners</td> <td>2Nos</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>2No.</td> </tr> <tr> <td></td> <td>Total =</td> <td></td> <td>15Nos</td> </tr> </table> | 1. | Skilled | Operator | 2 No. |  |  | Mechanic | 1 No. |  |  | Blaster/Mat | 1 No. | 2. | Semi – skilled | Driver | 2 Nos | 3. | Unskilled | Musdoor / Labors | 4 Nos |  |  | Cleaners | 2Nos |  |  | Office Boy | 1No | 4. | Management & Supervisory staff |  | 2No. |  | Total = |  | 15Nos |
| 1.   | Skilled  | Operator         | 2 No.   |    |         |          |       |  |  |          |       |  |  |             |       |    |                |        |       |    |           |                  |       |  |  |          |      |  |  |            |     |    |                                |  |      |  |         |  |       |
|      |  | Mechanic         | 1 No.   |    |         |          |       |  |  |          |       |  |  |             |       |    |                |        |       |    |           |                  |       |  |  |          |      |  |  |            |     |    |                                |  |      |  |         |  |       |
|      |  | Blaster/Mat      | 1 No.   |    |         |          |       |  |  |          |       |  |  |             |       |    |                |        |       |    |           |                  |       |  |  |          |      |  |  |            |     |    |                                |  |      |  |         |  |       |
| 2.   | Semi – skilled   | Driver           | 2 Nos   |    |         |          |       |  |  |          |       |  |  |             |       |    |                |        |       |    |           |                  |       |  |  |          |      |  |  |            |     |    |                                |  |      |  |         |  |       |
| 3.   | Unskilled  | Musdoor / Labors | 4 Nos   |    |         |          |       |  |  |          |       |  |  |             |       |    |                |        |       |    |           |                  |       |  |  |          |      |  |  |            |     |    |                                |  |      |  |         |  |       |
|      |  | Cleaners         | 2Nos  |    |         |          |       |  |  |          |       |  |  |             |       |    |                |        |       |    |           |                  |       |  |  |          |      |  |  |            |     |    |                                |  |      |  |         |  |       |
|      |  | Office Boy       | 1No   |    |         |          |       |  |  |          |       |  |  |             |       |    |                |        |       |    |           |                  |       |  |  |          |      |  |  |            |     |    |                                |  |      |  |         |  |       |
| 4.   | Management & Supervisory staff                           |                  | 2No.  |    |         |          |       |  |  |          |       |  |  |             |       |    |                |        |       |    |           |                  |       |  |  |          |      |  |  |            |     |    |                                |  |      |  |         |  |       |
|      | Total =  |                  | 15Nos   |    |         |          |       |  |  |          |       |  |  |             |       |    |                |        |       |    |           |                  |       |  |  |          |      |  |  |            |     |    |                                |  |      |  |         |  |       |

*S. K. Reddy* 22

|      |    |   |   |   |
|------|----|---|---|---|
| 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 shall also be 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 is 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. | Labor Health                                  | : | As per Mines Rule, Periodic medical examination has been arranged for occupational health once in a year in addition to attending medical treatment of occupational injuries under the Rule 45 (A), MR, 1960.   |
|      | e. | Precautionary safety measures to the Laborers | : | <p>Safety provisions like helmet, goggles, safety shoes, Dust mask, Ear muffs etc have to be provided as per the circulars and amendments made for Mine labours under the guidance of DGMS being a mechanized operation.</p> <p>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.</p> |

S. K. S. 23



**PART – B**

**11.0 ENVIRONMENTAL MANAGEMENT PLAN:**

| 11.1           | Area Land Use Pattern          | <p align="center">The applied land use pattern is given as under.</p> <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>0.36.5</td> <td>1.09.0</td> </tr> <tr> <td>2.</td> <td>Infrastructure</td> <td>0.01.0</td> <td>0.02.0</td> </tr> <tr> <td>4.</td> <td>Roads</td> <td>0.01.0</td> <td>0.03.0</td> </tr> <tr> <td>5.</td> <td>Green Belt &amp; Dump</td> <td>Nil</td> <td>0.78.0</td> </tr> <tr> <td>6.</td> <td>Unutilized area</td> <td>1.53.5</td> <td>Nil</td> </tr> <tr> <td colspan="2"><b>Total =</b></td> <td><b>1.92.0Ha</b></td> <td><b>1.92.0Ha</b></td> </tr> </tbody> </table> | SL. NO.  | LAND USE | PRESENT AREA (HECT) | AREA IN USE DURING THE QUARRYING PERIOD (HECT) | 1.           | Area Under Quarrying | 0.36.5 | 1.09.0 | 2.          | Infrastructure | 0.01.0 | 0.02.0 | 4.           | Roads        | 0.01.0 | 0.03.0 | 5.          | Green Belt & Dump | Nil    | 0.78.0 | 6. | Unutilized area | 1.53.5 | Nil | <b>Total =</b> |  | <b>1.92.0Ha</b> | <b>1.92.0Ha</b> |
|----------------|--------------------------------|---|--|----------|---------------------|--|--------------|----------------------|--------|--------|-------------|----------------|--------|--------|--------------|--------------|--------|--------|-------------|-------------------|--------|--------|----|-----------------|--------|-----|----------------|--|-----------------|-----------------|
| SL. NO.        | LAND USE                       | PRESENT AREA (HECT)   | AREA IN USE DURING THE QUARRYING PERIOD (HECT) |          |                     |  |              |                      |        |        |             |                |        |        |              |              |        |        |             |                   |        |        |    |                 |        |     |                |  |                 |                 |
| 1.             | Area Under Quarrying           | 0.36.5  | 1.09.0   |          |                     |  |              |                      |        |        |             |                |        |        |              |              |        |        |             |                   |        |        |    |                 |        |     |                |  |                 |                 |
| 2.             | Infrastructure                 | 0.01.0  | 0.02.0   |          |                     |  |              |                      |        |        |             |                |        |        |              |              |        |        |             |                   |        |        |    |                 |        |     |                |  |                 |                 |
| 4.             | Roads                          | 0.01.0  | 0.03.0   |          |                     |  |              |                      |        |        |             |                |        |        |              |              |        |        |             |                   |        |        |    |                 |        |     |                |  |                 |                 |
| 5.             | Green Belt & Dump              | Nil   | 0.78.0   |          |                     |  |              |                      |        |        |             |                |        |        |              |              |        |        |             |                   |        |        |    |                 |        |     |                |  |                 |                 |
| 6.             | Unutilized area                | 1.53.5  | Nil  |          |                     |  |              |                      |        |        |             |                |        |        |              |              |        |        |             |                   |        |        |    |                 |        |     |                |  |                 |                 |
| <b>Total =</b> |                                | <b>1.92.0Ha</b>   | <b>1.92.0Ha</b>                                |          |                     |  |              |                      |        |        |             |                |        |        |              |              |        |        |             |                   |        |        |    |                 |        |     |                |  |                 |                 |
| 11.2           | Water Regime                   | <p>Water table in this area is noticed at a depth of <b>54m</b> below the surface ground level and presently, the quarrying of Rough Stone &amp; Gravel is proposed up to a depth of <b>47m</b>. hence, it will not affect the ground water depletion of this area.</p>   |  |          |                     |  |              |                      |        |        |             |                |        |        |              |              |        |        |             |                   |        |        |    |                 |        |     |                |  |                 |                 |
| 11.3           | Flora and Fauna                | <p>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.</p>  |  |          |                     |  |              |                      |        |        |             |                |        |        |              |              |        |        |             |                   |        |        |    |                 |        |     |                |  |                 |                 |
| 11.4           | Climatic conditions            | <p>Generally sub tropical climatic condition prevails throughout the year and this District receives rain both in South west and North east monsoon. The average rainfall is about 800mm to 900mm and the temperature ranges from 18<sup>0</sup>C during winter and to a maximum of 38<sup>0</sup>C during the summer.</p>  |  |          |                     |  |              |                      |        |        |             |                |        |        |              |              |        |        |             |                   |        |        |    |                 |        |     |                |  |                 |                 |
| 11.5           | Human Settlement               | <p align="center">The nearest habitations with the population.</p> <table border="1"> <thead> <tr> <th>Direction</th> <th>Village</th> <th>Distance in Kms</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td><b>North</b></td> <td>Andisangilpalayam</td> <td>1.6Kms</td> <td>250</td> </tr> <tr> <td><b>East</b></td> <td>Punnam</td> <td>5.0Kms</td> <td>300</td> </tr> <tr> <td><b>South</b></td> <td>K. Paramathi</td> <td>4.0kms</td> <td>600</td> </tr> <tr> <td><b>West</b></td> <td>Munnur</td> <td>5.0Kms</td> <td>200</td> </tr> </tbody> </table>   | Direction                                      | Village  | Distance in Kms     | Population                                     | <b>North</b> | Andisangilpalayam    | 1.6Kms | 250    | <b>East</b> | Punnam         | 5.0Kms | 300    | <b>South</b> | K. Paramathi | 4.0kms | 600    | <b>West</b> | Munnur            | 5.0Kms | 200    |    |                 |        |     |                |  |                 |                 |
| Direction      | Village                        | Distance in Kms   | Population                                     |          |                     |  |              |                      |        |        |             |                |        |        |              |              |        |        |             |                   |        |        |    |                 |        |     |                |  |                 |                 |
| <b>North</b>   | Andisangilpalayam              | 1.6Kms  | 250  |          |                     |  |              |                      |        |        |             |                |        |        |              |              |        |        |             |                   |        |        |    |                 |        |     |                |  |                 |                 |
| <b>East</b>    | Punnam                         | 5.0Kms  | 300  |          |                     |  |              |                      |        |        |             |                |        |        |              |              |        |        |             |                   |        |        |    |                 |        |     |                |  |                 |                 |
| <b>South</b>   | K. Paramathi                   | 4.0kms  | 600  |          |                     |  |              |                      |        |        |             |                |        |        |              |              |        |        |             |                   |        |        |    |                 |        |     |                |  |                 |                 |
| <b>West</b>    | Munnur                         | 5.0Kms  | 200  |          |                     |  |              |                      |        |        |             |                |        |        |              |              |        |        |             |                   |        |        |    |                 |        |     |                |  |                 |                 |
| 11.6           | Plan for Air, Dust Suppression | <p>Air or dust expected to be generated from drilling process, hauling roads, places of excavation etc., is being suppressed by periodical wetting of land by water spraying.</p>   |  |          |                     |  |              |                      |        |        |             |                |        |        |              |              |        |        |             |                   |        |        |    |                 |        |     |                |  |                 |                 |

*S. Keerthi* 24

|      |   |  |
|------|---|--|
|      |   | 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.   |
| 11.7 | Plan for Noise Control  | : Quarrying of Rough Stone is being carried out by drilling and blasting by using low power explosives, and hence, noise is 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 Salem. Adequate number of observations were made in all the selected sites by using the sound level meter (LT Lutron SL-4001). |
| 11.8 | Environmental Impact Assessment Statement Describing Impact on mining on the next Five Years. | : Factors to be considered for EIA are, <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 it will be suppressed by periodical wetting of lands.   |
|      | b. Land degradation   | : Land degradation is by means of cutting the trees and removal of fertile soil does not arise. Proposed usage of land for the next five years shall be less than 1.92.0Ha Afforestation will be started during the first year of mining operation itself.   |
|      | c. Stabilization and vegetation of dumps  | : The soil 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.  |

S. Kesari

|   |   |   |  |   |   |
|---|---|---|--|---|---|
|   | d. Socio economic benefits arising out of mining  | : | 1. To provide Employment opportunities of the nearby villagers.<br>2. For the cultural development of the nearby villagers.  |   |   |
|   | e. Noise and vibration  | : | Since, no deep hole blasting is proposed with small dia explosives are used for breaking the hard rock and boulders, the noise and vibration is very minimum and are within the permissible limits.  |   |   |
| 11.9  | Proposal for Waste Management   | : | The wastes are generated during the mining period is <b>11965m<sup>3</sup></b> will be proposed to dump into Western side 10.0m boundary barrier of the lease area.<br><br><table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"><b>Proposed Mine waste dump Dimensions:</b></td> </tr> <tr> <td style="text-align: center;">187.8m(L) X 10.0m(W) X 6.37m(H) = 11965m<sup>3</sup></td> </tr> </table> | <b>Proposed Mine waste dump Dimensions:</b> | 187.8m(L) X 10.0m(W) X 6.37m(H) = 11965m <sup>3</sup> |
| <b>Proposed Mine waste dump Dimensions:</b>           |   |   |  |   |   |
| 187.8m(L) X 10.0m(W) X 6.37m(H) = 11965m <sup>3</sup> |   |   |  |   |   |
| 11.10.  | Proposal of Reclamation of Land affected during mining activities and at the end of mining. | : | The present mining is proposed to a depth of <b>47m</b> . 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 were planted along the lease boundary and avenues as well as over non active dumps at a rate 50 trees per Year with an interval of 5m. The rate of survival expected to be 70% in this area.   |   |   |
| 11.12   | Proposed Financial Estimate / Budget for (EMP) Environment Management                       | : |  |   |   |
|   | <b><u>Fixed Asset Cost:</u></b>   |   |  |   |   |
|   | 1. Land Cost  | : | Rs.16,00,000/- (Amount for Patta Land)   |   |   |
|   | 2. Labour Shed  | : | Rs. 1,00,000/-   |   |   |
|   | 3. Sanitary Facility  | : | Rs. 60,000/-   |   |   |
|   | 4. Fencing cost   | : | Rs.1,00,000/-  |   |   |
|   | Total=  | : | <b>Rs.18,60,000/-</b>  |   |   |
|   | <b><u>Operational Cost:</u></b>   |   |  |   |   |
|   | <b><u>Machinery cost</u></b>  | : | <b>Rs.30,00,000/-</b>  |   |   |

*S. K. S.*

|                            |   |                       |
|----------------------------|---|-----------------------|
| <b>EMP Cost:</b>           |   |                       |
| 1. Drinking water facility | : | Rs. 1,00,000/-        |
| 2. Safety kits             | : | Rs. 50,000/-          |
| 3. Water sprinkling        | : | Rs. 40,000/-          |
| 4. Afforestation           | : | Rs. 30,000/-          |
| 5. Water quality test      | : | Rs. 40,000/-          |
| 6. Air quality test        | : | Rs. 40,000/-          |
| 7. Noise/vibration test    | : | Rs. 40,000/-          |
| Total=                     | : | <b>Rs. 3,40,000/-</b> |
| <b>Total Project Cost</b>  | : | <b>Rs.52,00,000/-</b> |



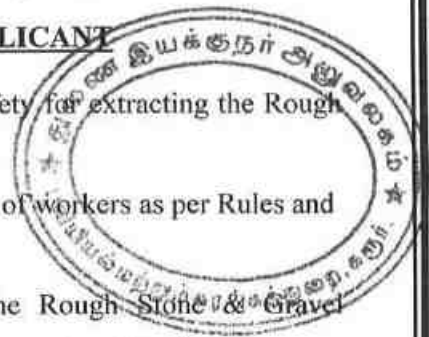
**12.0 MINE CLOSURE PLAN:**

|      |  |   |  |
|------|--|---|--|
| 12.1 | Steps proposed for phased restoration, reclamation of already mined out area.                              | : | The present mining is proposed to a depth of 47m. 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 | : | The area applied for quarry lease was already held under the quarry lease and the pits were already opened. Hence, the quarrying operation will be continued in the existing pit after making proper benches within the Existing area for lease. |

*S. Iyer*

**13.0 ANY OTHER DETAILS INTEND TO FURNISH BY THE APPLICANT**

- (i) Permission will be obtained from the Director of Mines Safety for extracting the Rough Stone & Gravel 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 endeavor every attempt to quarry the Rough Stone & Gravel economically without any wastage and to improve the environment and ecology.
- (iv) Accordingly, Mining Plan is prepared under Rule 41 & 42 as amended in Tamil Nadu Minor Mineral Concession Rules, 1959 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) In the above circumstances M/s. ANNAI BLUE METALS, is hereby submitting the Mining Plan for approval for **Rough Stone & Gravel Quarry** for a period of **Five Years**.
- (vi) The proposed production of Rough stone & Gravel for **Five Years** is **227340M<sup>3</sup> & 15256M<sup>3</sup>**. Average Rough stone production per year is **45468M<sup>3</sup>** and average Gravel production per year is **3051M<sup>3</sup>**.



*S. Dhanasekar*  
**S.DHANASEKAR**, M.Sc. (Geo)  
RQP/MAS/225/2011/A

This Mining Plan is approved subject to the conditions/stipulations indicated in the Mining Plan approval Letter No:  
Dated:

This Mining Plan is approved based on incorporation of the conditions specified in clause 7 (iv) of the Conservation and Mining Chennai in 2012 dt 19-11-2012 and the Minor Mineral Conservation & Development Rules 2010

*K. S. Senthil*  
17/12/21

**Deputy Director of Geology and Mining**  
Karim C. P. S.

*S*  
17/02/2024

*S. K. S.*

ந.க.எண்.134/ கனிமம் / 2020

Annexure I  
புவியியல் மற்றும் சுரங்கத்துறை,  
மாவட்ட ஆட்சியர் அலுவலகம்,  
கரூர்.  
நாள்: 2.10.2020.

குறிப்பாணை

பொருள்: கனிமங்களும், குவாரிகளும் - கரூர் மாவட்டம் - புகளூர் வட்டம் - குப்பம் கிராமம் - பட்டா புல எண்.682(பகுதி) 1.92.0 ஹெக்டேர் நிலப்பரப்பில் தி/ள்.அன்னை புளூ மெட்டல்ஸ் என்ற நிறுவனத்திற்கு 5 ஆண்டுகளுக்கு சாதாரணக்கள் மற்றும் கிராவல் குத்தகை உரிமம் வழங்குவது - அரிதியிட்ட பரப்பு தெரிவித்தல் (Precise Area Communication Letter) - தொடர்பாக.

பார்வை:

1. தி/ள்.அன்னை புளூமெட்டல்ஸ், சர்வே எண்.451, காளிபாயைம், குப்பம் கிராமம், புகளூர் வட்டம், கரூர் மாவட்டம் என்பவரின் மனு நாள்: 10.12.2020 இவ்வலுவலகத்தில் கிடைக்கப்பெற்ற நாள்:19.02.2020.
2. கரூர் வருவாய் கோட்டாட்சியரின் அறிக்கை ந.க.அ/995/2020, நாள்.11.07.2020.
3. துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, புலத்தணிக்கை அறிக்கை நாள்: 28.9.2020.
4. புது டில்லி, உச்ச நீதிமன்ற உத்தரவு SLP© எண் 19628-19629/2009 with SLP(c) No.729-731/2011 etc devided on 27.02.2012(citation No.2012 STPL(web) 149 SC).
5. மத்திய சுற்றுச் சூழல் மற்றும் வனத்துறை அமைச்சகம், புது தில்லி, அலுவலக கடிதம் எண் L-11011/47/2011/1All(M) நாள்: 18.05.2012.
6. தமிழ்நாடு அரசு தொழில் (எம்.எம்.சி-1)துறை, தலைமைச் செயலகம், சென்னை கூடுதல் செயலாளர் அவர்களின் கடிதம் எண் 4719 / எம்எம்சி-1 / 2012-2 நாள்: 03.08.2012.
7. சென்னை புவியியல் மற்றும் சுரங்கத்துறை ஆணையர் அவர்களின் கடிதம் ந.க. 3868 / LC / 2012 நாள்: 19.11.2012.

கரூர் மாவட்டம் - புகளூர் வட்டம் - குப்பம் கிராமம் - பட்டா புல எண்.682(பகுதி) 1.92.0 ஹெக்டேர் பட்டா நிலப்பரப்பில் ஐந்து ஆண்டுகளுக்கு சாதாரண கற்கள் மற்றும் கிராவல் வெட்டி எடுக்க குவாரி குத்தகை உரிமம் வழங்கிடக் கோரி பார்வை 1-ல் காணும் விண்ணப்பத்தில் தி/ள்.அன்னை புளூமெட்டல்ஸ் என்ற நிறுவனத்தினர் விண்ணப்பித்துள்ளார்.

S. K. S.

மேற்படி விண்ணப்பத்தின் மீது கரூர் வருவாய் கோட்டாட்சியர் மற்றும் து.

இயக்குநர் (கனிமம்) கரூர் ஆகியோர் அனுமதி கோரும் புலத்தினை தணிக்கை செய்து விண்ணப்பதாரருக்கு 5 ஆண்டுகளுக்கு பின்வரும் சிறப்பு நிபந்தனைகளுக்குட்பட்டு கல் மற்றும் கிராவல் குத்தகை உரிமம் வழங்க பரிந்துரை செய்துள்ளார்கள்.

1. குத்தகைக்காலத்தில் விண்ணப்ப புலத்திற்கு தெற்கே அமைந்துள்ள தாழ்வழுத்த மின்பாதைக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குவாரிப்பணி செய்ய வேண்டும்.
2. குத்தகைக்காலத்தில் விண்ணப்ப புலத்திற்கு மேற்கே அமைந்துள்ள நடைபாதைக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குவாரிப்பணி செய்ய வேண்டும்.
3. குத்தகைக்காலத்தில் அருகில் உள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு யாதொரு சேதமுமின்றி முறையாக குவாரிப்பணி செய்ய வேண்டும்.
4. குத்தகைக்காலத்தில் கைத்துளைப்பான் கருவி கொண்டு பாறைகளை துளையிட்டும், மிதமான வெடிபொருள் பயன்படுத்தியும், பொதுமக்களுக்கோ, பொது சொத்துக்களுக்கோ யாதொரு சேதமுமின்றி விதிமுறைகளின்படி குவாரிப்பணி செய்ய வேண்டும்.
5. குவாரித் தொழிலாளர்களின் பாதுகாப்பினை உறுதி செய்ய Mettalliferous Mines, விதிகளின்படி அகலமானதும், பாதுகாப்பானதுமான Benches அமைத்து பாதுகாப்பான முறையில் குவாரிக்குள் வாகனங்கள் சென்றுவரவும் மற்றும் குவாரி தொழிலாளர்களின் பாதுகாப்பினை உறுதி செய்தும் குவாரிப்பணி செய்ய வேண்டும்.
6. குவாரி குத்தகை வழங்க ஏதுவாக துணை இயக்குநர் (சுரங்கம்) அவர்களால் ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தினையும், மாநில அளவிலான சுற்றுச்சூழல் செயல் மதிப்பீட்டு அதிகார அமைப்பு (SEIAA) மற்றும் தமிழ்நாடு மாசுக்கட்டுப்பாட்டு வாரியம் (TNPCB) ஆகியவற்றின் தடையின்மை சான்று பெற்றும், மாவட்ட நிர்வாகத்திற்கு விண்ணப்பதாரரால் சமர்ப்பிக்கப்பட வேண்டும்.

இந்நேர்வில், விண்ணப்பதாரருக்கு கல் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் வழங்குதல் தொடர்பான இறுதி உத்திரவுகள் பிறப்பிக்க ஏதுவாக பார்வை 4 முதல் 7 வரை காணும் கடிதங்களில் கண்ட வழிகாட்டுதலின்படி துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கரூர் அவர்களால் ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தினை மூன்று மாத

காலத்திற்குள்ளும், அதனைத் தொடர்ந்து மாநில அளவிலான சுற்றுப்புற சூழ்நிலை  
செயல் விளைவு மதிப்பீடு அதிகார அமைப்பு (State level Environment impact  
Assessment Authority), சென்னை அவர்களிடமிருந்து பெறப்பட்ட சுற்றுப்புற சூழ்நிலை  
செயல் விளைவு மதிப்பீடு சான்று மற்றும் அதனை தொடர்ந்து தமிழ்நாடு  
மாசுக்கட்டுப்பாட்டு வாரியத்தின் பரிந்துரை ஆகியவற்றை பெற்று சமீபத்தில் குமாறு  
விண்ணப்பதாரருக்கு இதன் மூலம் அறிவுறுத்தப்படுகிறது.



துணை இயக்குநர்,  
புவியியல் மற்றும் சுரங்கத்துறை,  
கரூர்.

பெறுநர்,

தி/ள். அன்னை புளூமெட்டல்ஸ்,  
சர்வே எண்.451,  
காளிபாயைம்,  
குப்பம் கிராமம்,  
புகளூர் வட்டம்,  
கரூர் மாவட்டம்.

12/10/20

S. Dhanasekar  
S.DHANASEKAR, M.Sc., (Geo)  
RQP/MAS/225/2011/A

S.1000

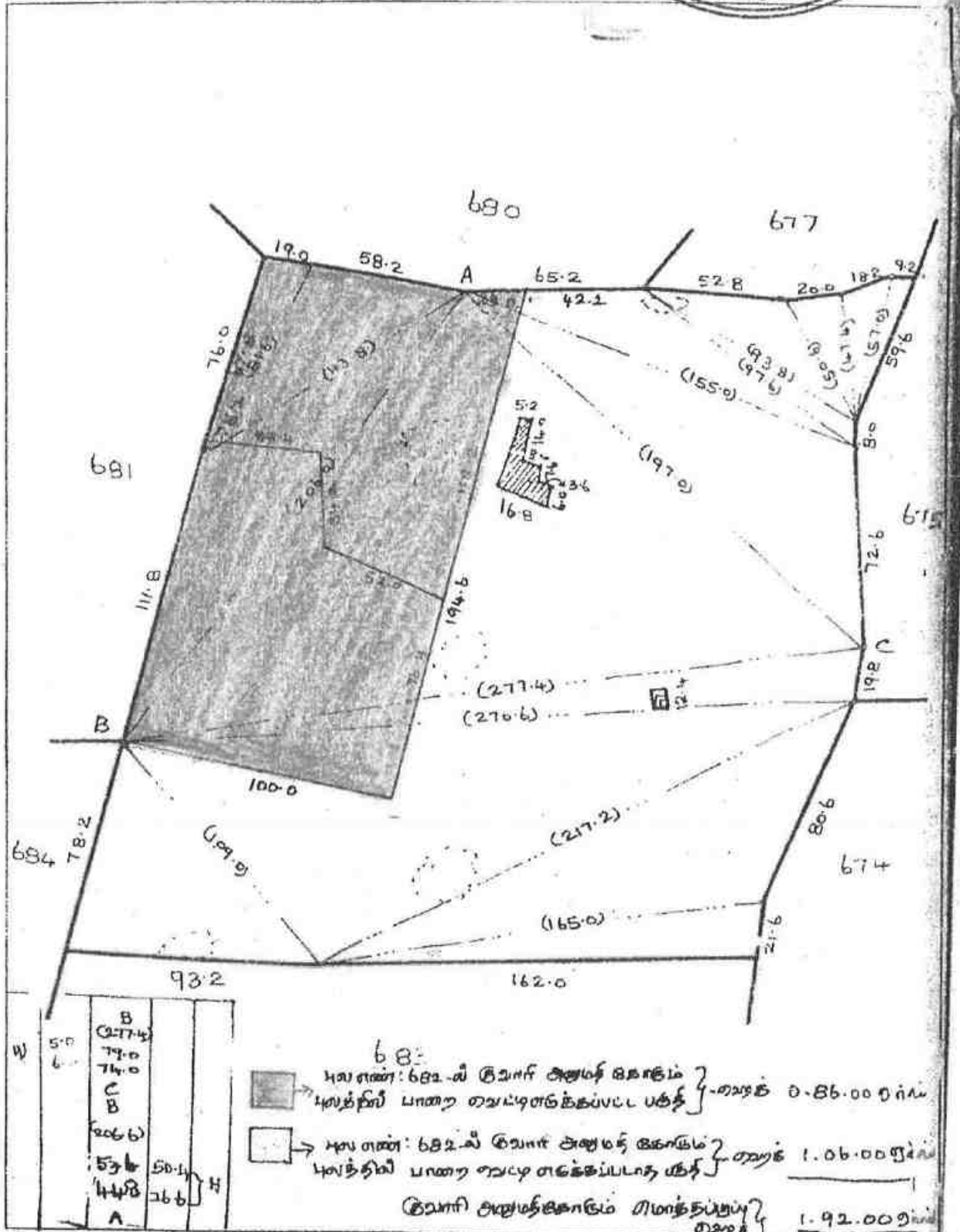


மாவட்டம். திருச்சிராப்பள்ளி

வட்டம். கடுர்

புல எண். 682

பரப்பு: ஏக்கர் 1.0

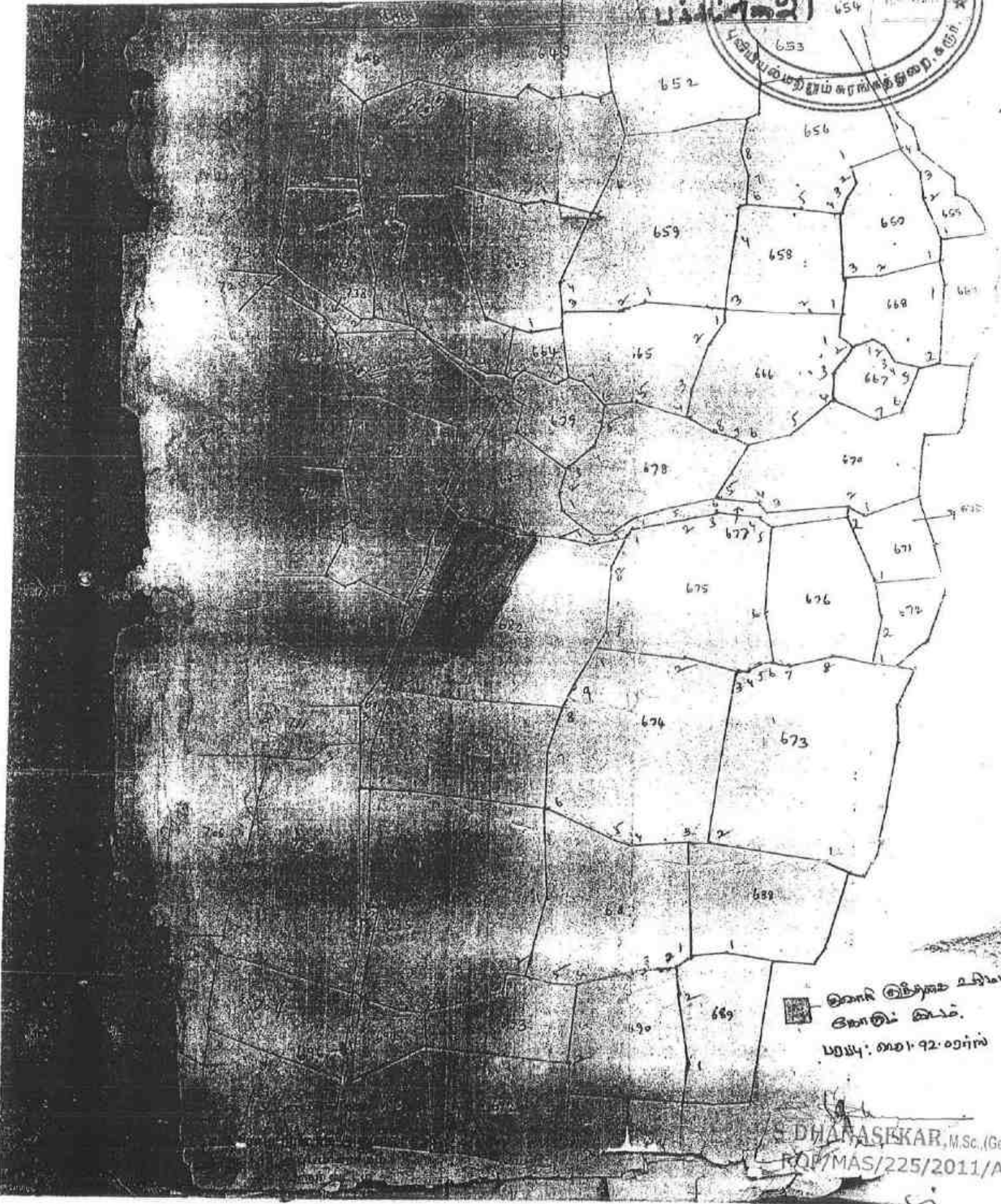
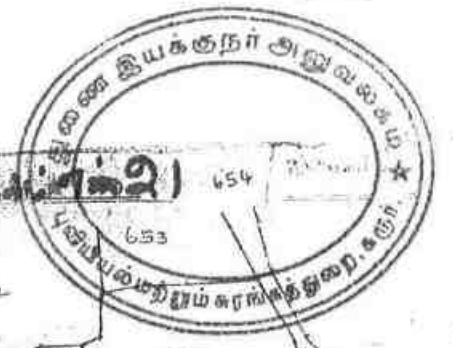


682: புல எண்: 682-ல் குடியர் அடிமத கடைகும் } மொத்த 0.86.00 ஏக்கர்  
 புலத்தில் பணை வாய்ப்பு அளிக்கப்பட்ட பகுதி }  
 புல எண்: 682-ல் குடியர் அடிமத கடைகும் } மொத்த 1.06.00 ஏக்கர்  
 புலத்தில் பணை வாய்ப்பு அளிக்கப்பட்ட பகுதி }  
 குடியர் அடிமத கடைகும் மொத்த பரப்பு } 1.92.00 ஏக்கர்

வரைநீட்டவர்  
 சி. சீனிவாசன்  
 16.4.85  
 அளவன்/வரைவாளன்

அளவு. 1: 2000  
 S. DHANASEKAR, M.Sc., (Geo)  
 RQP/MAS/225/2011/A

செ. சீனிவாசன், தலைவர்  
 18.12.19.  
 செ. சி. சீனிவாசன்  
 ச. ப. ப. ப. ப.



சென்னை இயக்குநர் அலுவலகம்  
புவியியல் துறைமன்றம்  
பெண்: 92-09/10

S. DHANASEKAR, M.Sc., (Geo)  
RQP/MAS/225/2011/A

S. Keethi



தமிழக அரசு

வருவாய்த் துறை

நில உரிமை விபரங்கள் : இ. எண் 10(1) பிரிவு

மாவட்டம் : கரூர்

வட்டம் : புகளூர்

வருவாய் கிராமம் : குப்பம்

பட்டா எண் : 3707

உரிமையாளர்கள் பெயர்

1. செல்வகுமார் மனைவி அன்னை புளுமெட்டல் என்ற நிறுவனத்திற்காக பங்குதாரர் கார்த்திகா
2. செல்வகுமார் மகன் அன்னை புளுமெட்டல் என்ற நிறுவனத்திற்காக பங்குதாரர் சிவகுமார்

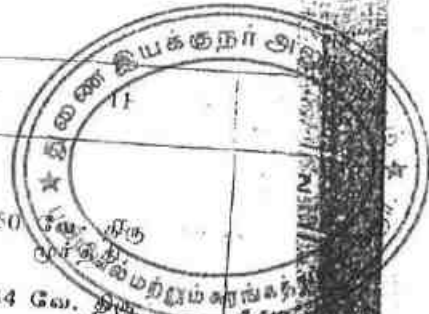
| புல எண் | உட்பிரிவு | புன்செய்    |         | நன்செய்     |         | மற்றவை      |         | குறிப்புரைகள்                         |
|---------|-----------|-------------|---------|-------------|---------|-------------|---------|---------------------------------------|
|         |           | பரப்பு      | தீர்வை  | பரப்பு      | தீர்வை  | பரப்பு      | தீர்வை  |                                       |
|         |           | ஹெக்ட - ஏர் | ரூ - பை | ஹெக்ட - ஏர் | ரூ - பை | ஹெக்ட - ஏர் | ரூ - பை |                                       |
| 682     | -         | 6 - 21.00   | 8.59    | -           | -       | -           | -       | 2018/0103/14/063204-<br>-- 18-07-2018 |
| 451     | 2         | 0 - 81.00   | 1.12    | -           | -       | -           | -       | 2018/0103/14/063204-<br>-- 18-07-2018 |
| 451     | 3         | 2 - 37.50   | 3.29    | -           | -       | -           | -       | 2018/0103/14/063204-<br>-- 18-07-2018 |
|         |           | 9 - 39.50   | 13.00   |             |         |             |         |                                       |

குறிப்பு2:



1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 14/07/018/03707/30847 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 08-01-2021 அன்று 11:34:55 AM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

S.Keerthi

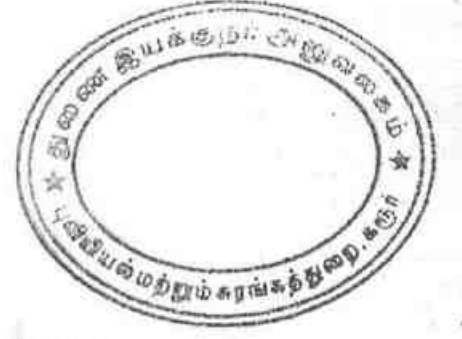


| 1   | 2   | 3      | 4 | 5 | 6   | 7   | 8   | 9    | 10     |      |  |
|-----|-----|--------|---|---|-----|-----|-----|------|--------|------|--|
| 678 | 1   | 678-பா | ர | 4 | ... | 8-3 | 5   | 2 00 | 1 96.5 | 3 93 | 250 வே. திரு முர்த்தி  |
|     | 2   | -பா    | ர | 4 | ... | 8-3 | 5   | 2 00 | 0 02.5 | 0 06 | 734 வே. திரு முர்த்தி (1), வே. சாம சாமி (2).   |
|     | 3   | -பா    | ர | 4 | ... | 8-3 | 5   | 2 00 | 1 18.0 | 2 06 | 538 வே. சாமசாமி.   |
|     |     |        |   |   |     |     |     |      | 3 17.0 | 6 35 |  |
| 679 | ... | 679    | ர | 4 | ... | 8-3 | 5   | 2 00 | 1 09.9 | 2 20 | 886 ப. சின்ன சாமண கவுண்டர் (1); சி. மொட்டையப்ப கவுண்டர் (2); சி. கருப்பண கவுண்டர் (3). |
| 680 | ... | 680    | ர | 4 | ... | 8-3 | 5   | 2 00 | 2 29.5 | 4 59 | 1009 வே. திரு முர்த்தி மற்றும் முன்று பேர்களும்.                                       |
| 681 | ... | 681    | அ | 4 | ... | ... | ... | ...  | 0 34.5 | ...  | ...  |
| 682 | ... | 682    | ர | 4 | ... | 8-4 | 6   | 1 38 | 6 21.0 | 8 59 | 578 கு. வரங்கிவி பப்பன்.   |
| 683 | ... | 683    | ர | 4 | ... | 8-4 | 6   | 1 38 | 3 64.5 | 5 05 | 540 மொ. சாமசாமி.   |
| 684 | ... | 684    | அ | 4 | ... | ... | ... | ...  | 0 45.5 | ...  | ...  |
| 685 | ... | 685    | அ | 4 | ... | ... | ... | ...  | 0 33 0 | ...  | ...  |
| 686 | ... | 686    | ர | 4 | ... | 8-4 | 6   | 1 38 | 7 08.0 | 9 79 | 887 வே. முத்து சாமி (1), வே. சாம சாமி (2), சா. செல்லப்பன் (3).                         |
| 687 | 1   | 687-பா | ர | 4 | ... | 8-4 | 6   | 1 38 | 2 03.0 | 2 80 | 451 மொ. முனியப்பன்.  |
|     | 2   | -பா    | ர | 4 | ... | 8-4 | 6   | 1 38 | 0 11.0 | 0 15 | 567 மொ. லட்சுமணன்.   |
|     | 3   | -பா    | ர | 4 | ... | 8-4 | 6   | 1 38 | 0 11.0 | 0 15 | 536 மொ. சாமசாமி.   |
|     | 4   | -பா    | ர | 4 | ... | 8-4 | 6   | 1 38 | 0 23.5 | 0 33 | 280 ப. நாச்சப்ப கவுண்டர்.  |
|     | 5   | -பா    | ர | 4 | ... | 8-4 | 6   | 1 38 | 0 08.0 | 0 11 | 567 மொ. லட்சுமணன்.   |

சீராம நிராச அலுவலர்  
18, குப்பம் சீராமம்  
புகளூர் வட்டம்  
கரூர் மாவட்டம்

\* விவரப்பட்டியலைப் பார்க்கவும்.

S.1000



மாவட்டம் : கரூர்

வட்டம் : புகளூர்

கிராமம் : குப்பம்

|                              |            |                                |           |
|------------------------------|------------|--------------------------------|-----------|
| 1. புல எண்                   | 682        | 9. மண் வயனமும்<br>ரகமும்       | 8 - 4     |
| 2. உட்பிரிவு எண்             | -          | 10. மண் தரம்                   | 6         |
| 3. பழைய புல உட்பிரிவு<br>எண் | 682        | 11. தீர்வை (ரூ - ஹெ)           | 1.38      |
| 4. பகுதி                     | -          | 12. பரப்பு (ஹெக்டேர் -<br>ஏர்) | 6 - 21.00 |
| 5. அரசு / ரயத்துவாரி         | ரயத்துவாரி | 13. மொத்த தீர்வை (ரூ<br>- னை)  | 8.59      |
| 6. நிலத்தின் வகை             | பஞ்சை      | 14. பட்டா எண்                  | 3707      |
| 7. பாசன ஆதாரம்               | -          | 15. குறிப்பு                   | -         |
| 8. இரு போகமா                 | 1          | 16. பெயர்                      | -         |

1. அன்னை புளுமெட்டல் என்ற  
நிறுவனத்திற்காக பங்குதாரர்  
கார்த்திகா 2. அன்னை  
புளுமெட்டல் என்ற  
நிறுவனத்திற்காக பங்குதாரர்  
சிவகுமார்

குறிப்பு 1:



1.

மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மிகப் பதிவேட்டிலிருந்து பெறப்பட்டவை.  
இவற்றை தாங்கள் <http://eservices.tn.gov.in> என்ற இணைய தளத்தில் 80827 என்ற  
குறிப்பு எண்ணை உள்ளிடு செய்து உறுதி செய்துகொள்ளவும்.

S. K. S.



*Handwritten signature*



தமிழ்நாடு தமிழ்நாடு TAMILNADU

*Handwritten text in Tamil: சிவசாமியின் புகார் (Complaint of Sivaraman)*

15384.  
6.10.2009  
238644  
K. SIVASAMI  
S.V. 19-A, PNEB  
LNO: 3/87KRI  
KARUR.



**கிரைய சாசனம்**

2009-ம் ஆண்டு அக்டோபர் மாதம் 07-ம் தேதி, கரூர் மாவட்டம், அரவக்குறிச்சி வட்டம், குப்பம் கிராமம், காளிமாணையத்தில் நிறுவப்பட்டிருக்கும் அனைத்துமேட்டல் என்ற நிறுவனத்திற்காக மேற்படி நிறுவனத்தின் பங்கதாரர்களும், கரூர் வட்டம், எல்.என்.எஸ்.கிராமம், செங்குந்தபுரம், 6-வது கிராஸ், கதவு எண்.63-ல் வசிக்கும் M.கந்தசாயி அவர்கள் குமாரர்களுமான K.சரவணன் - 1, K.சண்முகசுந்தரம்-2, கரூர் வட்டம், அத்தலாங்காட்டில் கீழ்பாசம் கிராமம், சிந்து நகர், கதவு எண்.267/2-ல் வசிக்கும் R.கய்யிரமணியம் அவர்கள் குமாரர்களுமான S.ராஜேந்திரகுமார் - 3, S.செல்வகுமார் - 4 ஆகிய உட்குழுவாருக்கு.

எழுதி வாங்குபவர்கள்:  
**For Anal Blue Metal,**

*Handwritten signatures:*  
U. Srinivas  
K. Shrinivas  
*Handwritten signature*

எழுதிக்கொடுப்பவர்கள்:

*Handwritten signatures:*  
1. P. Srinivas  
2. S. கண்ணமணம்  
3. K. பஞ்சவர்ணம்  
*Handwritten signature: S. Iyer*

1614/2009



புத்தகம் 20.09.09  
வருத்தியல் பதிவுகள் ஆலயம்  
125 சாமிநாதர் தெரு  
காரூர் நகர்

*[Signature]*  
2009 ஜூன் 25

20.09.09 அன்று 2009 ஜூன் 25 அன்று  
நகல் V-2 பதிவு செய்து கொடுக்கப்பட்டது  
இவ்வாறு பதிவு செய்து கொடுக்கப்பட்டது  
காரூர் நகர்

இடது பெருவிரல்



For Anna Blue Metal,

*[Signature]*  
Partner.

*[Signature]*  
(அறிவிப்பு)  
இவ்வாறு பதிவு செய்து கொடுக்கப்பட்டது  
காரூர்.

எழுதிச் சொடுக்காக ஒயர் கொண்டார்கள்

இடது பெருவிரல்



*[Signature]*

*[Signature]*  
(அறிவிப்பு)  
இவ்வாறு பதிவு செய்து கொடுக்கப்பட்டது  
காரூர்.

பதிவு செய்து கொடுக்கப்பட்டது  
காரூர் நகர்  
143559

இடது பெருவிரல்



ச. சண்முகம் லெனி

*[Signature]*  
(அறிவிப்பு)  
இவ்வாறு பதிவு செய்து கொடுக்கப்பட்டது  
காரூர்.

ச. சண்முகம் லெனி  
143559  
S. S. S. S.



भारतीय गैर न्यायिक INDIA NON JUDICIAL

रु. 25000

पच्चीस हजार रुपये

Rs. 25000

TWENTY FIVE THOUSAND RUPEES

INDIA

தமிழ்நாடு தமிழ்நாடு TAMILNADU

சின்னம் பற்றி உட்படிக்கல்  
K. சிவசுப்பிரமணியன்

15365  
6-10-2007  
25000

23864  
K. SIVASUBRAMANIAN  
S.V. 15-2-2007  
LHQI KARUR.



.. 2 ..

கரூர் மாவட்டம், அரவக்குறிச்சி வட்டம், பனித்திரம் கிராமம், குரும்பட்டியில் வசிக்கும் முன்னியப்ப கவுண்டர் அவர்கள் குமாரர் P. செல்வராஜ் - 1, மேற்படி பனித்திரம் கிராமம், ராஜசாம்பாளையத்தில் வசிக்கும் வேலகப்பிரமணியன் மனைவி S. கண்ணம்மாள் - 2, கரூர் மாவட்டம், அரவக்குறிச்சி வட்டம், குப்பம் கிராமம், காளிபாளையத்தில் வசிக்கும் கந்தசாமி அவர்கள் மனைவி K. தேன்மொழி - 3, கரூர் மாவட்டம், கரூர் வட்டம், கஸ்பா கரூர் டவுன், செங்குந்தபுரம், 6-வது கிராஸ், ரெ.30, ராஜ்விங்குபுரத்தில் வசிக்கும் மாப்பா கவுண்டர் அவர்கள் குமாரர் M. கந்தசாமி - 4, கரூர் மாவட்டம், அரவக்குறிச்சி வட்டம், குப்பம் கிராமம், காளிபாளையத்தில் வசிக்கும் கவுண்டர் அவர்கள் குமாரர்

வாரிசு நாங்குபவர்கள்:  
For Annal Blue Metal,

U. Srinivas  
K. Shylamoni  
S. Srinivas  
P. Srinivas  
Srinivas

வாரிசு கொடுப்பவர்கள்

P. Srinivas  
S. கண்ணம்மாள்  
K. தேன்மொழி  
M. கந்தசாமி  
K. S. Srinivas  
Srinivas

3) இடது பெருவிரல்



\* சூலாசிரி



கலை அமைச்சர்  
சென்னை  
15/12/2016

4) இடது பெருவிரல்



சூலாசிரி

சென்னை  
15/12/2016

5) இடது பெருவிரல்



சூலாசிரி

சென்னை  
15/12/2016

6) இடது பெருவிரல்



சூலாசிரி

சென்னை  
15/12/2016

புதுச்சேரி 20.12.2016  
மாண்புமிகு சட்ட அமைச்சர்  
வினாயகன் கோபால்  
20 தாள் நாள்

இலட்சுமி சார்பியாண்ட்





தமிழ்நாடு தமில்நாடு TAMILNADU



சுயேச்சை பத்திரமளிப்பு செய்து  
K. சிவசுப்ரமணியம்

15366  
6.10.2009  
G 25000

23864

K. SIVASAN  
S.V. 197A, PNB  
L NO: 1/97 K  
KARUR.

..3..

K.S.சுந்தரமூர்த்தி - 5, கருர் மாவட்டம், கருர் வட்டம், ஆண்டாறுகோலில் கீழ்பாக்கம் கிராமம், கதவு எண்.267/2, சிந்துநகரில் வசிக்கும் லேட.சுப்பிரமணியன் அவர்கள் குமாரர் சராஜேஷ்குமார் - 6 ஆகிய நாங்கள் எழுதிக் கொடுத்த கத்தக் கிரைய சாசனம் என்னவென்றால்,

எங்களில் 1 முதல் 4 வரை லக்ஷமிட்டவர்களுக்கும் R.பொன்னுசாமி, P.சிவசுப்பிரமணியம் ஆகியோர்களுக்கும் சேர்ந்து சென்ற 30.01.1995-ம் தேதியிலும், 31.1.1995-ம் தேதியிலும் ஏற்பட்ட கிரையப் பத்திரங்களின்படி (1-72/1995, 1-92/1995, கருர் 2ஆர் இணை சார்பதிவுகம்) எங்களில் 1 முதல் 4 வரை லக்ஷமிட்டவர்களுக்கும் R.பொன்னுசாமி, P.சிவசுப்பிரமணியம் ஆகியோர்களுக்கும் கீழ்க்கண்ட ஏ.க.15.3-1-ம் பத்திரப் பழுதி கீழ்க்குட்பவர்கள்

For Annal Blue Metal,

U. Srinivasan  
K. Srinivasan  
K. Srinivasan  
P. Srinivasan

எழுதிக் கொடுப்பவர்கள்

- 1 P. Srinivasan
- 2 S. Srinivasan
- 3 K. Srinivasan
- 4 M. Srinivasan

கருர் K.S.சுந்தரமூர்த்தி

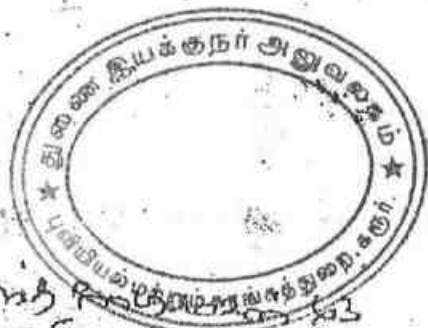
S. K. Srinivasan

சுற்றுலா மற்றும் பொது இயக்குநர் அலுவலகம்

இடது பெருவிரல்

For Annal Blue Metal

*U. Srinivasan*  
Partner



சுற்றுலா மற்றும் பொது இயக்குநர் அலுவலகம்  
புதுச்சேரி  
பி.சி.எ. (பி.சி.எ.)

சுற்றுலா மற்றும் பொது இயக்குநர் அலுவலகம்  
புதுச்சேரி  
பி.சி.எ. (பி.சி.எ.)

இடது பெருவிரல்

For Annal Blue Metal

*K. Shanmugam*  
Partner



சுற்றுலா மற்றும் பொது இயக்குநர் அலுவலகம்  
புதுச்சேரி  
பி.சி.எ. (பி.சி.எ.)

இடது பெருவிரல்

For Annal Blue Metal

*S. Shanmugam*  
Partner



சுற்றுலா மற்றும் பொது இயக்குநர் அலுவலகம்  
புதுச்சேரி  
பி.சி.எ. (பி.சி.எ.)

சுற்றுலா மற்றும் பொது இயக்குநர் அலுவலகம்  
புதுச்சேரி  
பி.சி.எ. (பி.சி.எ.)

புத்தகம் 20.05.19...  
வருடதீய...  
தாள்...  
தாள்...

*S. Shanmugam*  
2014 இலக்கு அலுவலகம்



*S. Shanmugam*



தமிழ்நாடு தமிழ்நாடு TAMILNADU



சென்னை பதிவுகாப்பகம்  
K. சண்முகம்

15367  
6-10-2009  
C/15000

19573  
I. SIVASAMY  
S.V. 18-4. P. NO. 1  
L. NO: 11/97 KARUR  
KARUR.

பட்டுள்ளதில் மேற்படி R. பொன்னுசாமியும், P. சிவசுப்பிரமணியமும் தங்கள் மாத  
சொத்துக்களைப் பொருத்து எங்களில் 2, 6 நபர்களுக்கும் M. பழனிப்பன் என்பவருக்கும்  
சென்ற 18.8.2004-ம் தேதியில் கிரையம் செய்து கொடுத்தும், மேற்படி பத்திரம் கருர் 2நீர்  
இணை சார்பதிவகத்தில் 761/2004-ம் எண்ணாகப் பதிவாகியுள்ளது. மேற்படி கிரையப்படி  
பாத்தியப்பட்டு சொத்தில் மேற்படி M. பழனிப்பன் அவர்கள் தன்பாக நிகரத்தைப் பொருத்து  
எங்களில் 2 நபருக்கு சென்ற 25.4.2007-ம் தேதியில் கிரையம் செய்து கொடுத்தும், மேற்படி  
பத்திரம் கருர் 2நீர் இணை சார்பதிவகத்தில் 753/2007-ம் எண்ணாகப் பதிவாகியுள்ளது.  
எனவே, கீழ்க்கண்ட சொத்து பூராவும் மேற்படி கிரையப் பத்திரங்களின்படி எங்களுக்குப்  
பாத்தியப்பட்டு நாங்கள் சர்வ சுகந்திரமாக அனுபவித்து வருகிறதும், எங்களின் பெயரில்

எழுதி வழங்குபவர்கள்:  
For Anna Blue Metal,

எழுதிக் கொடுப்பவர்கள்:

1. S. Srinivasan  
2. K. Srinivasan  
3. K. Srinivasan

1. S. Srinivasan  
2. S. Srinivasan  
3. K. Srinivasan

4 இடது பெருவிரல்



For Annal Blue Metal,

*[Handwritten signature]*  
Partner.



*[Handwritten text]*  
சம்பந்தமற்ற  
வாங்கியுள்ளார்.

இன்னொருவருக்கு

M. U. S/o S/o ...  
B. U. S/o C. U. S/o ...  
(C. U. S/o ...)

2002-03-07

*[Handwritten signature]*

2002-03-07

*[Handwritten signature]*



2002-03-07  
*[Handwritten signature]*

S. K. S.



தமிழ்நாடு தமிழ்நாடு TAMILNADU 10000/-

சிவசுந்தரன் பாரதி டெலிவரி கார்ட்  
 4937  
 6/10/09

86033  
 K. MOHANDAS, S.M.S. No.  
 R. DIST. No. 31224A  
 KARUR WEST



பட்டி ஏற்பட்டுள்ளதுமான கீழ்க்கண்ட சொத்தை நாங்கள் நாள்து தேதியில் மேற்படி அளவை புகழ்மெட்டில் நிறுவனத்திற்காக உங்களருக்கு சுதந்திர கிரையமும், கலாநீலமும் செய்து கொடுத்து தொகை பெற்றுக் கொண்டது ரூ.12,66,700/- இந்த ரூபாய் பரிசீலனை நடந்து அறுபத்து ஆயிரத்து ஏழுநூறும் நாங்கள் நாள்து தேதியில் உங்களிடம் (மேற்படி நிறுவனத்திடம்) எங்களுடைய குடுமியச் சொத்துகளுக்காக கீழ்க்கண்ட சாட்சிகள் முன் ரொக்கமாகப் பெற்றுக் கொண்டு விட்டமையால் இனி நாள்து தேதி முதல் கீழ்க்கண்ட சொத்தை மேற்படி நிறுவனத்திற்காக நீங்களே சர்வ சுதந்திர பாக்தியங்களுடன் ஆண்டுவழித்துக் கொண்டு நலமாக வாழ்ந்து வரவும்.

எழுதி வாங்குபவர்கள்:  
 For Annar Blue Metal,  
 1. Sharmila  
 2. S. Srinivasan  
 3. S. Srinivasan

எழுதிக் கொடுப்பவர்கள்:  
 P. Srinivasan  
 2, S. Srinivasan  
 K. Srinivasan

Handwritten signatures and notes at the bottom of the document.



भारतीय गैर न्यायिक  
भारत INDIA

₹ 500

FIVE HUNDRED  
RUPEES



पाँच सौ रुपये

Rs. 500

INDIA NON JUDICIAL



தமிழ்நாடு தமில்நாடு TAMILNADU

சின்னம் பதிவு செய்தல் க்காக  
K. சண்முகம் சிங்கராமன் க்கு

15370.  
6.10.2009  
₹ 500

Co. E 517734  
K. SIVASAMY,  
B.V. 13-A, PNB ST,  
L NO: 1/97 KHR,  
KALLAR.

..6..

கீழ்க்கண்ட சொத்தைப் பொருத்து எந்தவிதமான வில்லங்கமும், லீவகாரமும் இல்லை என உறுதி கூறுகிறோம். அப்படி ஏதேனும் வில்லங்கம், லீவகாரம் இருந்து பின்னிட்டு வெளியாகி அதனால் உங்களுக்கு (மேற்படி நிறுவனத்திற்கு) ஏதாவது நஷ்டம் உண்டானால் அவ்வுகை நஷ்டத்தை நாங்கள் எங்களது இதர சொத்தைக் கொண்டு கட்டுப்பட்டு முன்னின்று தீர்த்துக் கொடுப்போமாகவும்.

கீழ்க்கண்ட சொத்தைப் பொருத்து இனி நாள்து தேதி முதல் எங்களுக்குகோ, எங்களுடைய வாரிசுக்குகோ எந்தவிதமான பிரத்தியமும், சம்மந்தமும், பின் தொடர்ச்சியும் கிடையாது என உறுதி கூறுகிறோம்.

எழுதி வாங்குபவர்கள்:  
For Annal Blue Metal,

*[Handwritten signatures]*

எழுதிக்கொடுப்பவர்கள்:

*[Handwritten signatures]*  
K. Sivasamy

*[Handwritten signature]*





भारतीय गैर न्यायिक  
भारत INDIA

रु. 500

FIVE HUNDRED  
RUPEES



पाँच सौ रुपये

Rs. 500

INDIA NON JUDICIAL

தமிழ்நாடு தமிழ்நாடு TAMILNADU

சின்னம் இல்லாதது  
K. சின்னம் இல்லாதது

15371  
6.10.2009  
65000

G 517735

K. SIVASAMY  
B.V. 15-A, PNE ST,  
KNOI 1/87 KNR,  
KARNAR.



..7..

கீழ்க்கண்ட சொத்தை நாங்கள் நானது தேதியில் மேற்படி அன்னை பூவுமொட்டல்  
நியுவனத்திற்காக தங்களின் சுவாதினத்தில் விட்டுவிட்டோம்.

சொத்து விபரம்

|| கரூர் பதிவு மாவட்டம், கரூர் 2ந். இணை சார்பதிவுகம், அரவிக்குறிச்சி வட்டம்,  
குப்பம் கிராமம், (இ.எண்.19(1) பிரிவு பட்டா எண்.578, C.A.No.5367/2009; நாள்:22.09.2009)  
அபு.ச.682 நெ. ஏக்க.15.34 இந்தளவுள்ள பஞ்சை முடி மூலம் சுகிதம்; மேற்படி முடிக்கு  
நான்கெல்லை விபரம்:-

எழுதி வாங்குபவர்கள்:  
For Annal Blue Matol,

எழுதிக் கொடுப்பவர்கள்:

*[Handwritten signatures]*

1. P. Sany  
2. ...  
3. K. Sivasamy

கரூர் பதிவு மாவட்டம்...

S. S. S.



தமிழ்நாடு தமிழ்நாடு TAMILNADU  
சிகரம் புதுமெண்டி சாலை  
K. சண்முகசுந்தரம் கவி

15372  
6-10-2009  
3500/-  
517736  
K. SIVASAMY,  
B.V. 10-A, VHSAT,  
L NO: 1/87 KRR,  
KARUR.



.. 8 ..

பஞ்சாயத்து ரோட்டுக்கும் கிழக்கு, கிழமேல் பொதுத் தடத்திற்கும் தேற்கு, பெரிபசாமி வகையரா பூமிக்கும் மேற்கு, கருப்பண்ணை புஞ்சை நிலத்திற்கும் வடக்கு. இதன் மத்தியில் ஏக்.15.34-க்கு நேற்க.6.21.00 உள்ள புஞ்சை பூம் பூராவும் சகிதம். மேற்படி பூமிக்கு மேற்படி சர்வேயில் உள்ள கிணர் பூராவும், மேற்படி கிணற்றில் இருந்து ஏத்துதுலை மூலம் தண்ணீர் இறைந்து மேற்படி பூமிக்கு பாசனம் செய்து கொள்ளும் பாசன பாத்தியங்களும், சகல சன்மெண்ட் பாத்தியங்கள் சகிதம்.

எழுதி வாங்குபவர்கள்  
For Annal Blue Metal

*(Handwritten signatures)*  
K. Shyamsundar  
K. Sankar  
K. Sankar

எழுதிக்கொடுப்பவர்கள்:

*(Handwritten signature)*  
K. சண்முகசுந்தரம்  
K. சண்முகசுந்தரம்  
K. சண்முகசுந்தரம்

Siketh



TAMIL NADU 15/6/04.  
6.10.2009 33AA 544865  
சொத்து மற்றும் கட்டுமானத்துறை அமைச்சர்  
செய்துள்ள உத்தரவு எண்: 20/...

K. EIVASAMY  
B.V. 15-1, PUS ST,  
MNC: 1357 KALUR,  
KALUR.

சொத்து மதிப்பு  
கிணர் 1-ன் மதிப்பு  
தடபாத்திய மதிப்பு

மேற்படி சொத்து மதிப்பு விபரம்

ரூ.12,41,600-00  
ரூ. 25,000-00  
ரூ. 100-00  
ரூ.12,66,700-00

ஆக மொத்த மதிப்பு

எழுதி வாங்குபவர்கள்:  
For Annaf Blue Metal,

*[Handwritten signatures]*

எழுதி கொடுப்பவர்கள்:

*[Handwritten signatures]*

Partners

பாடசிகள்:-

*[Handwritten notes and signatures at the bottom of the document]*

*[Handwritten signature 'Sireet's']*

19. ஆம் வருவத்திய கமிழக அரசு பத்திரங்களின் (முத்திரை கட்டுப்புச்) சட்ட விதிகள் விதி 3 (1)ல் யுட அறிவிக்கை கிடைவம்



| வரிமை எண் | சரிசெய்தல்  | விவரம் |    | பயிற்சி |    | வெற்றித் தொகை | மொத்த தொகை   |
|-----------|-------------|--------|----|---------|----|---------------|--------------|
|           |             | அ.     | ஆ. | அ.      | ஆ. |               |              |
| 1.        | 682         | 15.    | 24 | 15.     | 54 | 4300          | 1,241,600.00 |
|           |             |        |    |         |    |               | 6,711.00     |
| 2.        | சுமார் 1 ல் |        |    |         |    |               | 55000.00     |
| 3.        | சுமார் 2 ல் |        |    |         |    |               | 100.00       |

மேல்க்கண்ட விவரம் (மேல்க்கண்ட) )  
 ரசீது கிடைக்காத காரணத்தினால்  
 ரசீது கிடைக்காத காரணத்தினால்  
 ->

4 பிர இணை சார்பதிவாளர் தலைவரகம்  
 கருர்.

தமிழ் இணை சார்பதிவாளர்,  
 கருர்.



S. DHANASEKAR, M.Sc. (Geo)  
 RQP/MAS/225/2011/A

முத்திரை கட்டுப்புச் சட்ட விதிகள்  
 19.11.05

சுமார் 1 ல்  
 சுமார் 2 ல்  
 சுமார் 3 ல்

முத்திரை கட்டுப்புச் சட்ட விதிகள்  
 P. S. S. S.  
 K. S. S. S.

Sikethi



படிவம் - 2.

[கிரி 2 (அ) காண்க.]

தொழிற் கூட்டுப் பதிவு அறிவிப்பு

கூட்டு தொழில் நிறுவனப் பதிவாளர், 1923 ஆம் ஆண்டு இந்தியக் கூட்டு வணிகச் சட்டம், 58(1) பிரிவில் குறிப்பிட்படிருக்கும் அறிக்கை வரப்பெற்றுக் கொண்டதை இதனால் அறிவித்துக்கொள்கிறார். அந்த அறிக்கை கோப்பில் சேர்க்கப்பட்டு தொழில் நிறுவனத்தின் பெயரான—

ANNAL BLUE METAL

என்பது தொழில் நிறுவனப் பதிவேட்டில் 20-09 ஆம் ஆண்டு 647 எண்ணாகப் பதிவாயிருக்கிறது.



தொழிற் கூட்டுப் பதிவாளர்.

09 நவம்பர்

2 2/11

20-ஆம் ஆண்டு திங்கள்

நாள்.



S. Dhanasekar  
S.DHANASEKAR, M.Sc. (Geo)  
RQP/MAS/225/2011/A

S. Dhanasekar



தமிழ்நாடு தமிழ்நாடு TAMILNADU

ANNAI BLUE METALS  
KARUR

5248

BD 041627

15.3.2018

₹100/-

R. VIJAYAKUMAR,  
STAMP VENDOR  
Narasimmapuram North,  
KARUR, L.No. 26/97

### DEED OF PARTNERSHIP PARTNERSHIP

This Deed of Partnership and is executed on this 25th day of April 2018  
between:

Mrs. S.Karthika (Age 30), W/o. S.Selvakumar, presently is residing at Door  
No: 267/2 Sinthu Nagar, Kongu Mess Opposite, Covai Road, Andankovil (East),  
Manmangalam Tk., Karur District 639002 (Hereinafter called the Party of the First  
Part).

and

Mr. PS.Sivakumar (Age 33), S/o P.Selvakumar, presently is residing at Door  
No: F1-First Floor. Thirumala Residency, No: 1-A.G.S.Colony. 4<sup>th</sup> Cross Street  
Extension, Velacherry, Chennai 600042 (Hereinafter called the Party of the Second  
Part).

S. Karthika

PS

S. Karthika



தமிழ்நாடு தமிழ்நாடு TAMILNADU

ANNAI BLUE METALS  
KARUR

5249  
15.3.2018  
R/100/

BD 041628  
R. VIJAYAKUMAR,  
STAMP VENDOR  
Narasimmapuram North,  
KARUR, L.No. 26/97



2

Whereas the parties of the first and second parts along with Mr. S.Rajeshkumar (Age 36), S/o. R.Subramaniam, presently is residing at Door No: 267/2 Sinthu Nagar, Kongu Mess Opp, Covai Road, Andankovil (East), Manmangalam Tk., Karur District -639002 (Hereinafter called the Party of the Third Part). Mr. S.Selvakumar (Age 35), S/o. R.Subramaniam, presently is residing at Door No: 267/2 Sinthu Nagar, Kongu Mess Opp, Covai Road, Andankovil (East),

S. I. S. S.

RSW

S. I. S. S.



தமிழ்நாடு தமில்நாடு TAMILNADU

ANNAL BLUE METALS  
KARUR

5250  
15.3.2018  
சிகை

BD 041629  
H. VIJAYAKUMAR,  
STAMP VENDOR  
Narasimmapuram North,  
KARUR, L.No. 28/97

3

Manmangalam Tk., Karur District 639002 (Hereinafter called the Party of the Fourth Part. Mr K.Saravanan (Age 42) S/o. M.Kanthasamy, presently is residing at Door 63 Sengumthapuram 6<sup>th</sup> Cross, Karur Tk., Karur DT 639002 (Hereinafter called the Party of the Fifth Part).Mr K.Shanmugsundaram (Age 39) S/o. M.Kanthasamy, presently is residing at Door 63 Sengumthapuram 6<sup>th</sup> Cross, Karur Tk., Karur DT 639002 (Hereinafter called the Party of the Sixth Part).

1 S. K. a. t. y.

2 AS [Signature]

S. K. a. t. y.



is running a Blue metal Unit manufacturing and selling business in the name and style of M/s. "ANNAI BLUE METAL" (Firm registration No 647/2009) at Kalipalayam Kuppam Village SF No:451, Karudayampalayam, Aravakurichy Tk., Karur District, Tamilnadu- 639111 vide partnership deed dated 23.04.2018. Mr. S.Rajeshkumar Party of the Third Part. Mr. S.Selvakumar Party of the Fourth Part. Mr. K.Saravanan Party of the Fifth Party and Mr K.Shanmugasundaram Party of the Sixth Part have retired from the partnership firm with effect from 25.04.2018. In order to continue the partnership this deed of partnership is executed between us, on this 25<sup>th</sup> day of April 2018, with our mutual consent and unanimous decision subject to the following terms and conditions:.

1. The partners shall continue the partnership business in the same name and address. The business of the partnership firm may be carried out at any other place or places as the partners may decide from time to time.

2. The continuing artners can do any other business in their own name.

3. The terms and conditions of this partnership cdeed come in to force with effect from **25.04.2018**.

4 The partners are contributing the following sum towards capital:

|                     |            |
|---------------------|------------|
| 1. Mrs.S.Karthika   | Rs. 100000 |
| 2. Mr. PS.Sivakumar | Rs. 100000 |
|                     | -----      |
|                     | Rs 200000  |

5. The capital of the partners may either be enhanced or be redcedu on mutual consent between partners in accordance with the profit sharing ratio. If required, the partners may also contribute additional funds to the firm in the form of loans or deposits. The loans, deposits, credit balances standing in the current and credit cof apital accounts of the partners shall be eligible for interest at the rate of 12% (Twelve Percentp.a.) and the relevant interest expenditure shall be debited in the books of accounts of the firm.

1 S.Karthika

2 PS

S.Karthika

6. The objects of the business shall be executed with the above said capital funds and also out of funds mobilised from outsiders, financial institutions and banks.

The objects of the business are:

- a) Manufacture of crushed Blue Metals of various sizes
- b) Marketing of Blue metal aggregates and blue metal stones.
- c) To do any other business in connection with the Blue Metals industry or inconnection with any other industry.

07. Mrs. S.Karthika is appointed as Managing Partner of the firm. She is eligible for a monthly salary of Rs. 10000/- or more along with two months annual bonus. The remuneration of Managing partner may either be enhanced or be reduced according to the provisions of section 40(b) of Income Tax Act or according to any of the new provisions and mendments as be introduced then and there by Income Tax Act. For the time being, the maximum celing towards partner's remuneration as per section 40(b) of Income Tax Act 1961 is as follows.

|  |  |
|--|--|
| On the first Rs. 3,00,000/- of the book profit, or in the case of loss | Rs. 1,50,000/- or at the rate of 90% of the book profit, which ever is more; |
| On the balance of the book profit                                      | At the rate of 60%   |

8. The following powers are individually delegated to Mrs. S.Karthika Managing Partner.

a). To individually borrow loans from any scheduled/nationalised banks, foreign banks, Non Resident Indians, private financiers, NBFCs. third parties and also accept deposit from any third parties or outside entities. The money so borrowed or deposits so accepted shall be accounted in the books of accounts of the firm and necessary loan papers and documents shall be signed by any one of the partners.

b). To individually open and operate current account, S.B account, R.D. account, cash credit account, overdraft loan account, post and pre shipment credits account, any other export credit limits account, bank guarantee account and any other accounts with any bank located both within and outside India in the name of the firm and sign cheques.

1 S.Karthika

2 

S.Karthika

c) To individually receive all tapals, mails, cables, letters and correspondences and reply for the same.

d). To individually enter in to contract with customers, contractors, job workers, logistics operators, third parties and any other entities.

e). To individually contest or compromise court cases, disbutes, settlements etc and sign on all papers relting.

f). To Individually sign, on behalf of the firm, in respect of all tax and levy matters in connection with statutes prevailing on Indian Soil.

g). To individually appoint personnel to the firm with mutual consent of other partner.

h). To individually maintain and keep safe of all records required to meet out business /statutory tax obligations.

i). To individually do all other activities in connection with the business of the firm.

9. The accounts of the business shall be closed at the end of March each year or at the end of December each financial year which is convenient to the firm. The profit/loss arrived after debiting all business expenditure, salary and interest payable to the partners, etc., shall be shared amongst partners as uder:-

|                    |       |
|--------------------|-------|
| 1. Mrs.S.Karthika  | 50%   |
| 2. Mr. S.Sivakumar | 50%   |
|                    | ----- |
|                    | 100%  |

10. The Partners can do any other business either as proprietor or with others. Such business has no connection with the business of the firm.

11. If any of the partners wish to retire from the firm, he/she has to give one month notice in writing to other partner with request to settle his/her accounts on the day when he/she leaves the firm. The remaining partner can carry on the business by himself as proprietor or by admitting new partner(s).

12. The retiring/deceased partner has no right to claim over the good will of the firm. He/she should simply leave the firm after getting settlement for his/her account.

1 S.Karthika

2 P.S.J

S.Karthika

13. The terms and conditions of this deed can be modified or altered with the unanimous and mutual consent between partners.

14. The partnership shall continue "AT WILL"

15. If any dispute arises amongst partners, it shall be referred to a bench consisting of five arbitrators as nominated by partners and the decision of the majority of the arbitrators shall be final and binding.

16. No partner is authorized to sell or assign his partnership to third entities or other persons.

17. If necessary, the partners with unanimous decision can delegate powers to any other person or behalf of the firm.

18. This Partnership firm shall carry on the business as per the terms and conditions stated above and also comply with the provisions of the "INDIAN PARTNERSHIP ACT, 1932".

In witness whereof we the partners, the party of the first and second parnts, have hereunder set our hands with full consent and signed.

1. *S. Kalyan*

2. *[Signature]*

WITNESS:-

1.

*S. Subramanian*  
26/12, SINDHU NAGAR,  
ANJAN KOUDE EAST,  
COVAI ROAD, KARUP-639002

*[Signature]*  
S.DHANASEKAR, M.Sc.(Geol)  
RQP/MAS/225/2011/A

2.

*[Signature]*  
JA. PRABAKARAN  
S/O. ARTHANARI  
(S). VISALAKSHI INTERNATIONAL  
PALANI PURAM. BHAVANI  
PIN- 638301.

*S. Kalyan*

भारत सरकार





**காந்திகா சுவாமிநாதர்**  
**Karthika Subramanian**  
 பிறந்த நாள் / DOB : 25/02/1988  
 Geschlecht / FEMALE



8706 9673 9313

தமிழ்நாடு மக்கள் தொடர்பு அமைச்சு

Annexure VIII



தமிழ்நாடு அரசு

**தலைவர்**  
 சென்னை, 267-2, சிவசு  
 நகர், அரண் கோவில்  
 தெற்கு, கோவை சாலை,  
 (சென்னை), கரூர், தமிழ் நாடு,  
 630002

**Address:**  
 W/O,Subramanian, 267-2, Sivasu  
 Nagar, Arundan Kovil East, Coval  
 Road, Arundankoil East, Karur,  
 Tamil Nadu, 630002



 1967  
 1800 300 1547

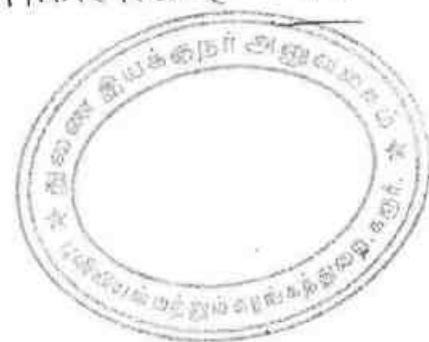
 help@ustn.gov.in

 www.ustn.gov.in P.O. Box No.1947,  
 Bangalore-560 007

  
**S.DHANASEKAR, M.Sc., (Geo)**  
 RQP/MAS/225/2011/A

*S. K. S.*

Annekkure - IX



**CERTIFICATE OF RECOGNITION AS  
QUALIFIED PERSON TO PREPARE MINING PLANS**  
(Under Rule 22 C of Mineral Concession Rules 1960)

*Shri S. DHANASEKAR, resident of Old No.6, New No.8/3, Kullappan Street, Opp. Indian Bank Line, Omalur (P.O), Salem - 636 455, son of Shri A. SUNDARAM having given satisfactory evidence of his qualifications and experience is hereby granted recognition under Rule 22C of the Mineral Concession Rules-1960 as a Qualified Person to prepare Mining Plans.*

*This registration number is*

RQP/MAS/225/2011/A

*recognition is valid for a period of ten years ending 12.01.2021.*

Regional Controller of Mines  
Indian Bureau of Mines  
Chennai Region

Place : Chennai  
Date : 13.01.2011

S. DHANASEKAR, M.Sc. (Gee)  
RQP/MAS/225/2011/A

S. Ketj

PHOTO SHOWN PROPOSED APPLIED LEASE AREA VIEW-1

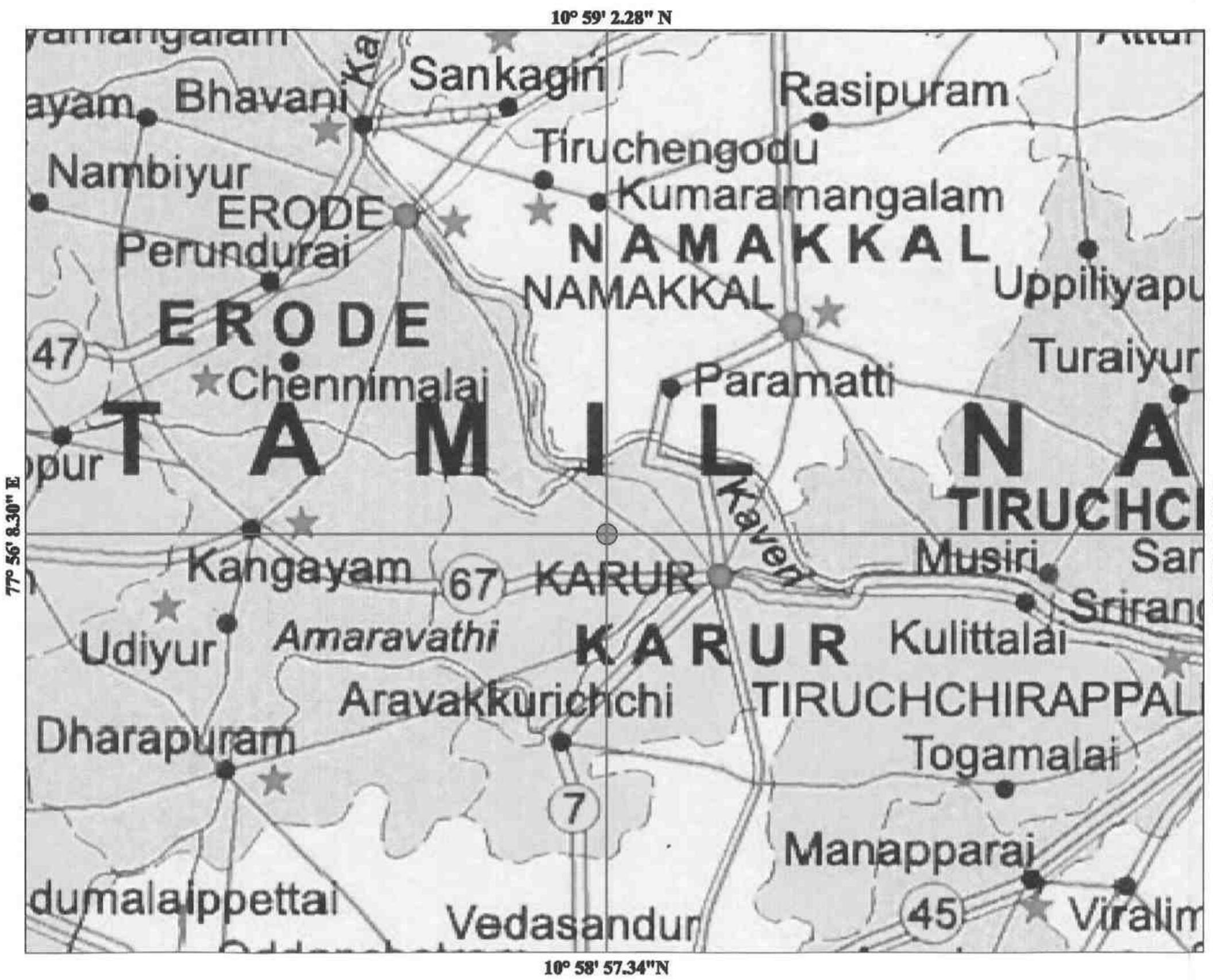
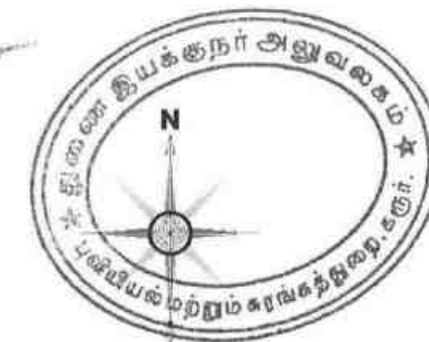


PHOTO SHOWN PROPOSED APPLIED LEASE AREA VIEW-2



  
B. DHANASEKAR, M.Sc., (Geo)  
RQP/MAS/225/2011/A

*S. K. S.*



**PLATE NO: I**

**DATE OF SURVEY: 14-10-2020**

**APPLICANT ADDRESS:**  
 M/s. ANNAI BLUE METALS,  
 S.F.No.451, KAALIPALAYAM,  
 KUPPAM VILLAGE,  
 PUGALUR TALUK,  
 KARUR DISTRICT- 639 111.

**INDEX**

QUARRY LEASE AREA : ●

TOPO SHEET NO. : 58- F/13,

LATITUDE : 10° 59' 2.28" N to 10° 58' 57.34" N

LONGITUDE : 77° 56' 13.64" E to 77° 56' 8.30" E

**LOCATION OF QUARRY**

EXTENT : 1.92.0 Hect

S.F.NO : 682(PART)

VILLAGE : KUPPAM

TALUK : PUGALUR

DISTRICT : KARUR.

**LOCATION PLAN**

NOT TO SCALE

**PREPARED BY:**

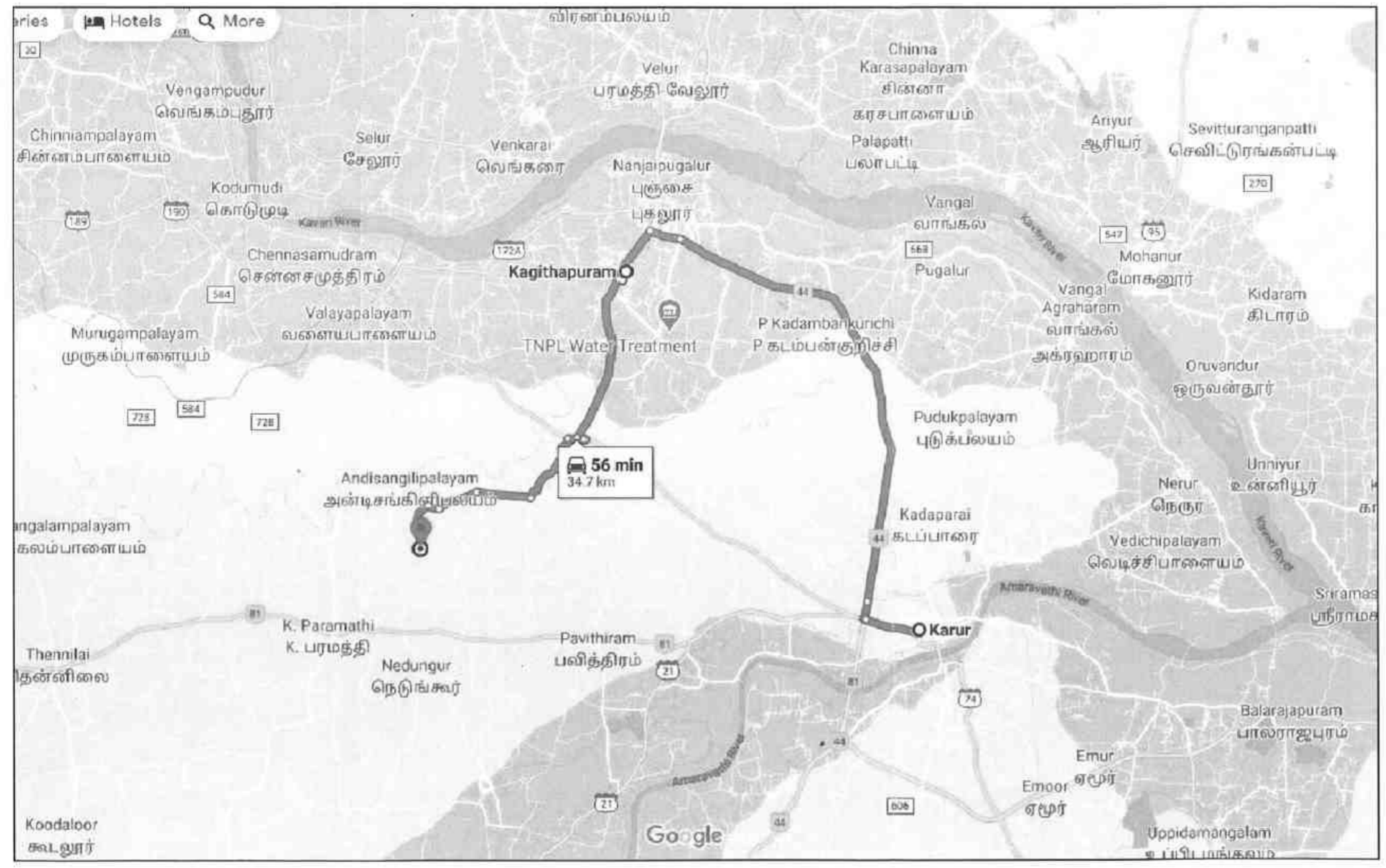
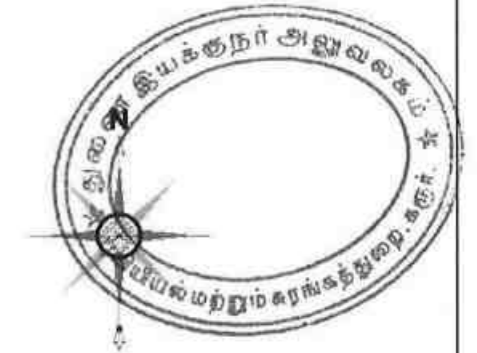
I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

*S. Dhanasekar*

S.DHANASEKAR, M.Sc.,  
 RECOGNIZED QUALIFIED PERSON  
 RQP/MAS/225/2011/A

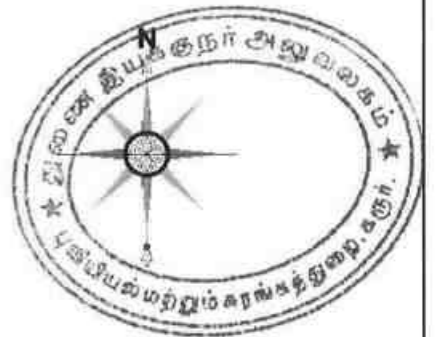
*S. K. S. S.*





|   |               |
|---|---------------|
| <b>PLATE NO:IA</b>  |               |
| DATE OF SURVEY: 14-10-2020  |               |
| <b>APPLICANT ADDRESS:</b>   |               |
| M/s. ANNAI BLUE METALS,<br>S.F.No.451, KAALIPALAYAM,<br>KUPPAM VILLAGE,<br>PUGALUR TALUK,<br>KARUR DISTRICT- 639 111. |               |
| <b>INDEX</b>  |               |
| QUARRY LEASE AREA   |               |
| ROAD  |               |
| <b>LOCATION OF QUARRY</b>   |               |
| EXTENT  | : 1.92.0 Hect |
| S.F.NO  | : 682(PART)   |
| VILLAGE   | : KUPPAM      |
| TALUK   | : PUGALUR     |
| DISTRICT  | : KARUR.      |
| <b>ROUTE MAP</b>  |               |
| NOT TO SCALE  |               |
| <b>PREPARED BY:</b>   |               |
| I DO HEREBY CERTIFY THAT THE PLATE<br>HAS BEEN CHECKED BY ME AND IS CORRECT<br>TO THE BEST OF MY KNOWLEDGE            |               |
| <br>S.DHANASEKAR,M.Sc.,<br>RECOGNIZED QUALIFIED PERSON<br>RQP/MAS/225/2011/A  |               |





**PLATE NO:IC**  
 DATE OF SURVEY: 14-10-2020

**APPLICANT ADDRESS:**  
 M/s. ANNAI BLUE METALS,  
 S.F.No.451, KAALIPALAYAM,  
 KUPPAM VILLAGE,  
 PUGALUR TALUK,  
 KARUR DISTRICT- 639 111.

**INDEX**  
 QUARRY LEASE BOUNDARY

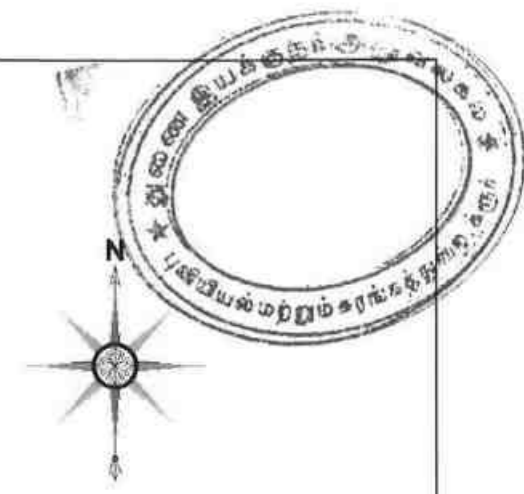
**LOCATION OF QUARRY**  
 EXTENT : 1.92.0 Hect  
 S.F.NO : 682(PART)  
 VILLAGE : KUPPAM  
 TALUK : PUGALUR  
 DISTRICT : KARUR.

**SATELLITE IMAGE**  
 (LEASE AREA)  
 NOT TO SCALE

| PILLAR NO | LATITUDE         | LONGITUDE        |
|-----------|------------------|------------------|
| 1         | 10° 58' 57.34" N | 77° 56' 8.30" E  |
| 2         | 10° 59' 0.80" N  | 77° 56' 9.45" E  |
| 3         | 10° 59' 3.09" N  | 77° 56' 10.45" E |
| 4         | 10° 59' 2.93" N  | 77° 56' 11.06" E |
| 5         | 10° 59' 2.33" N  | 77° 56' 12.88" E |
| 6         | 10° 59' 2.28" N  | 77° 56' 13.64" E |
| 7         | 10° 58' 56.33" N | 77° 56' 11.44" E |

**PREPARED BY:**  
 I DO HEREBY CERTIFY THAT THE PLATE  
 HAS BEEN CHECKED BY ME AND IS CORRECT  
 TO THE BEST OF MY KNOWLEDGE  
  
 S.DHANASEKAR.M.Sc.,  
 RECOGNIZED QUALIFIED PERSON  
 RQP/MAS/225/2011/A

10° 59' 3.09" N  
77° 56' 10.45" E



10° 58' 57.34" N  
77° 56' 8.30" E

10° 59' 2.28" N  
77° 56' 13.64" E

10° 58' 56.33" N  
77° 56' 11.44" E



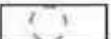
**PLATE NO:ID**

DATE OF SURVEY: 14-10-2020

**APPLICANT ADDRESS:**

M/s. ANNAI BLUE METALS,  
S.F.No.451, KAALIPALAYAM,  
KUPPAM VILLAGE,  
PUGALUR TALUK,  
KARUR DISTRICT- 639 111.

**INDEX**

- QUARRY LEASE BOUNDARY 
- 500M RADIUS 
- 300M RADIUS 

**LOCATION OF QUARRY**

EXTENT : 1.92.0 Hect  
S.F.NO : 682(PART)  
VILLAGE : KUPPAM  
TALUK : PUGALUR  
DISTRICT : KARUR.

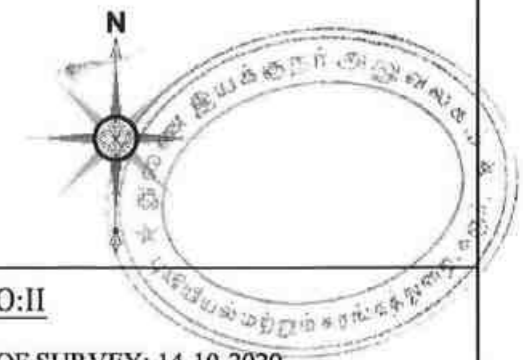
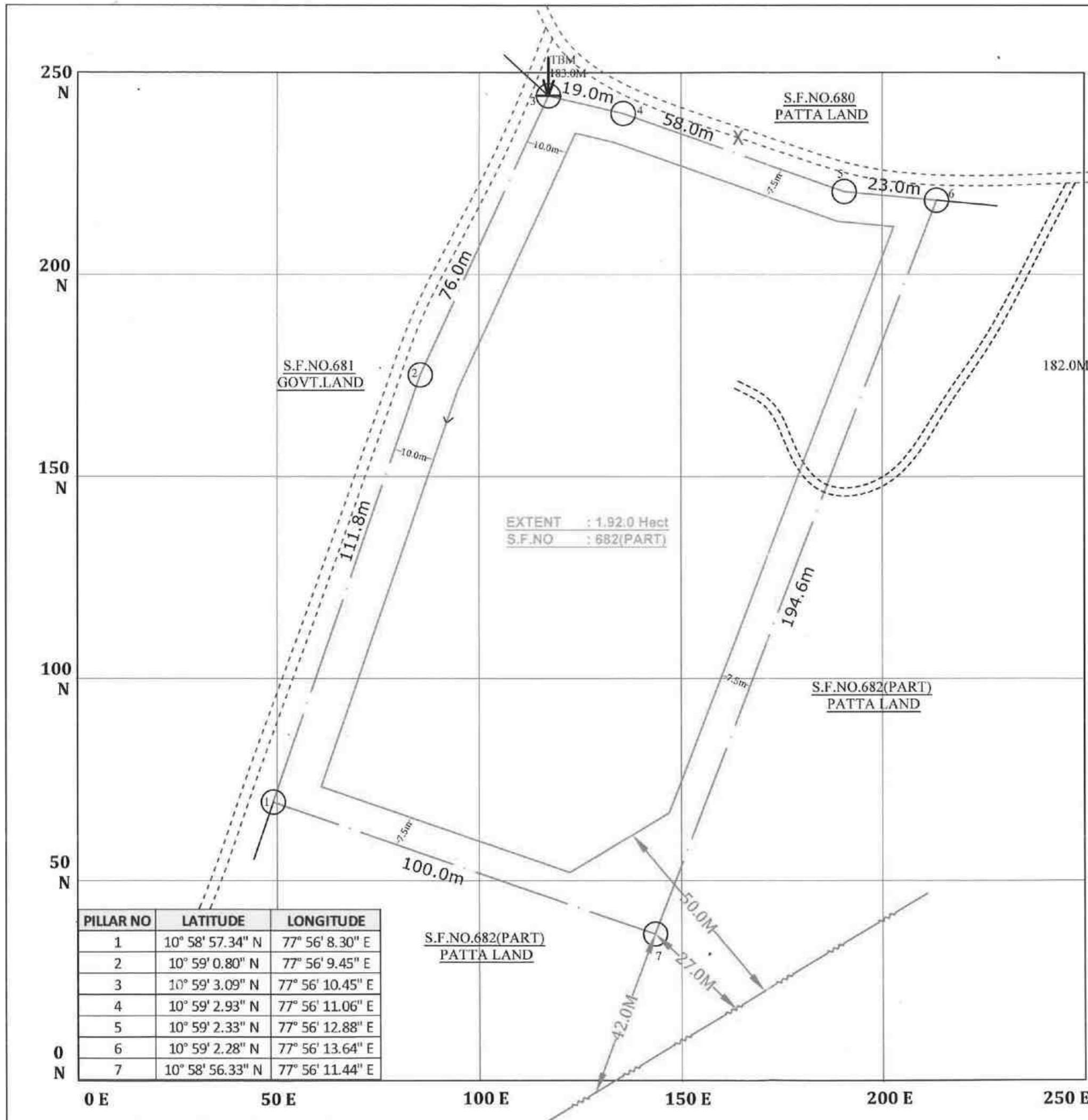
SATELLITE IMAGE  
(500m RADIUS)

SCALE 1:5000

**PREPARED BY:**

I DO HEREBY CERTIFY THAT THE PLATE  
HAS BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

S.DHANASEKAR.M.Sc.,  
RECOGNIZED QUALIFIED PERSON  
RQP/MAS/225/2011/A



**PLATE NO:II**  
 DATE OF SURVEY: 14-10-2020

**APPLICANT ADDRESS:**  
 M/s. ANNAI BLUE METALS,  
 S.F.No.451, KAALIPALAYAM,  
 KUPPAM VILLAGE,  
 PUGALUR TALUK,  
 KARUR DISTRICT- 639 111.

**INDEX**

|                                    |  |
|------------------------------------|--|
| QUARRY LEASE BOUNDARY              |  |
| 7.5m,10.0m & 50.0m SAFETY DISTANCE |  |
| BOUNDARY PILLARS                   |  |
| TEMPORARY BENCH MARK               |  |
| APPROACH ROAD                      |  |
| CART TRACK                         |  |
| LT LINE                            |  |

**LOCATION OF QUARRY**

EXTENT : 1.92.0 Hect  
 S.F.NO : 682(PART)  
 VILLAGE : KUPPAM  
 TALUK : PUGALUR  
 DISTRICT : KARUR.

**MINE LEASE PLAN**

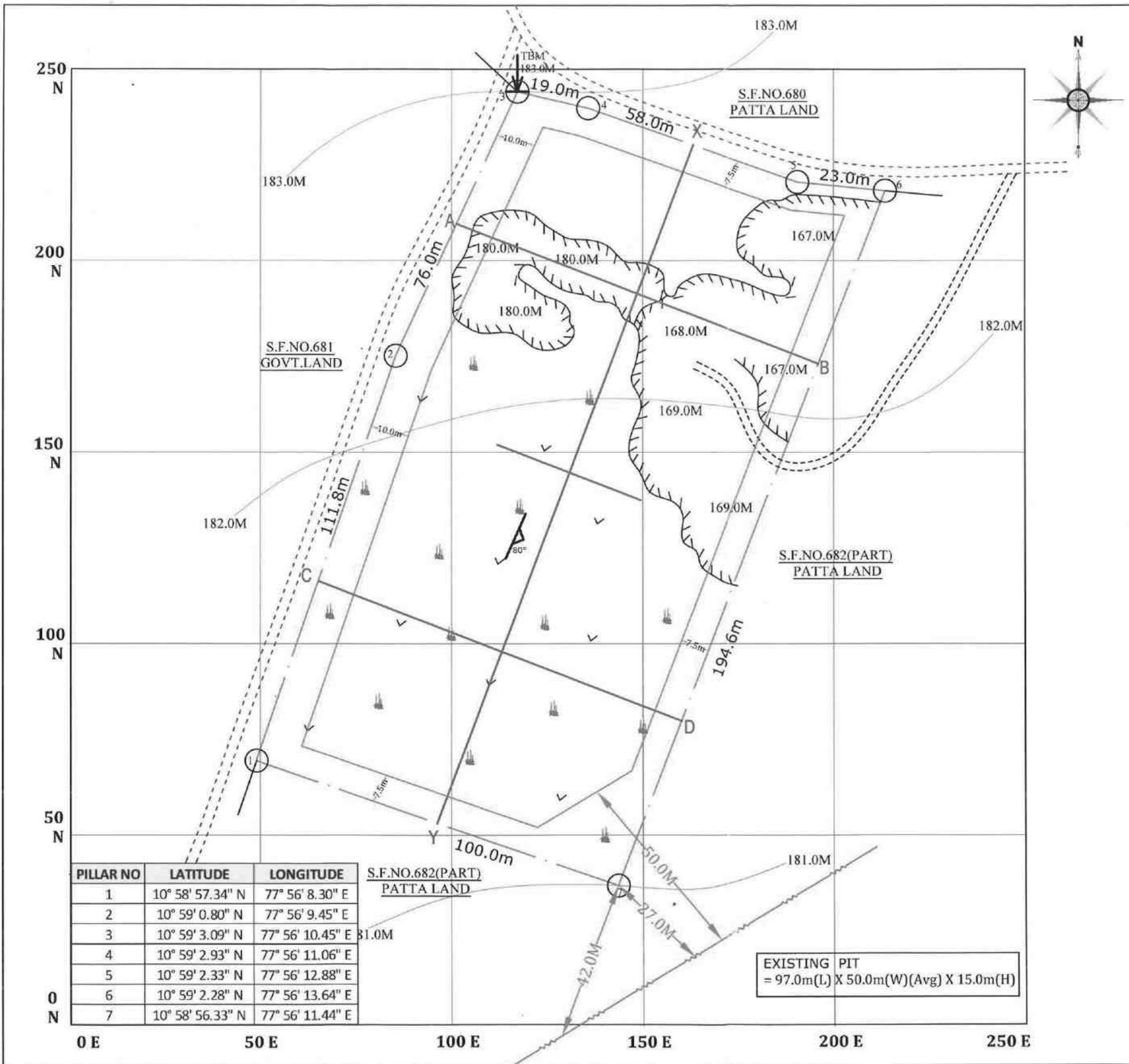
SCALE: 1:1000

**PREPARED BY:**

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE.

S.DHANASEKAR,M.Sc.,  
 RECOGNIZED QUALIFIED PERSON  
 RQP/MAS/225/2011/A

| PILLAR NO | LATITUDE         | LONGITUDE        |
|-----------|------------------|------------------|
| 1         | 10° 58' 57.34" N | 77° 56' 8.30" E  |
| 2         | 10° 59' 0.80" N  | 77° 56' 9.45" E  |
| 3         | 10° 59' 3.09" N  | 77° 56' 10.45" E |
| 4         | 10° 59' 2.93" N  | 77° 56' 11.06" E |
| 5         | 10° 59' 2.33" N  | 77° 56' 12.88" E |
| 6         | 10° 59' 2.28" N  | 77° 56' 13.64" E |
| 7         | 10° 58' 56.33" N | 77° 56' 11.44" E |



**PLATE NO:III**  
**DATE OF SURVEY: 14-10-2020**

**APPLICANT ADDRESS:**  
 M/s. ANNAI BLUE METALS,  
 S.F.No.451, KAALIPALAYAM,  
 KUPPAM VILLAGE,  
 PUGALUR TALUK,  
 KARUR DISTRICT- 639 111.

**INDEX**

- QUARRY LEASE BOUNDARY
- 7.5m,10.0m & 50.0m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- GRAVEL
- ROUGH STONE
- EXISTING PIT
- STRIKE AND DIP
- CONTOUR LINE
- QUARRY ROAD
- CART TRACK
- SHRUB
- LT LINE

**LOCATION OF QUARRY**

EXTENT : 1.92.0 Hect.  
 S.F.NO : 682(PART)  
 VILLAGE : KUPPAM  
 TALUK : PUGALUR  
 DISTRICT : KARUR.

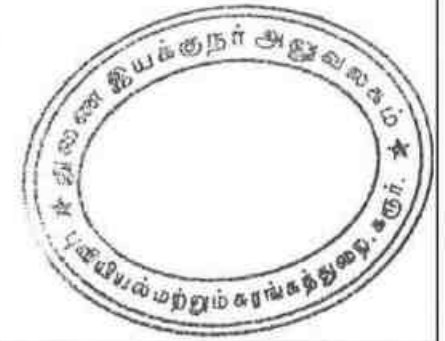
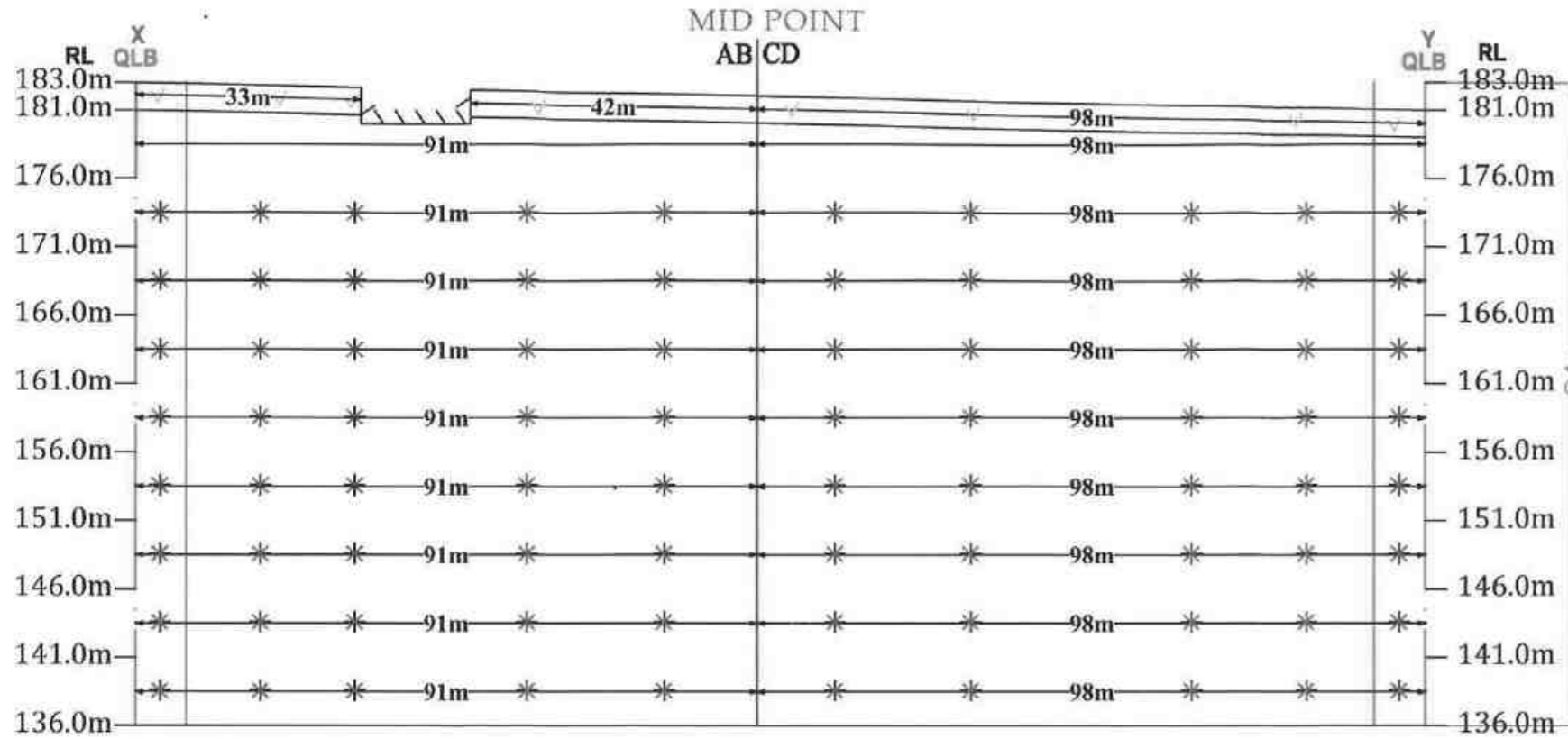
**SURFACE & GEOLOGICAL PLAN**

SCALE: 1:1000

**PREPARED BY:**  
 I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

*S. Dhanasekar*  
 S.DHANASEKAR,M.Sc.,  
 RECOGNIZED QUALIFIED PERSON  
 RQP/MAS/225/2011/A

**SECTION ALONG WITH X-Y**



**PLATE NO:III-A**

DATE OF SURVEY: 14-10-2020

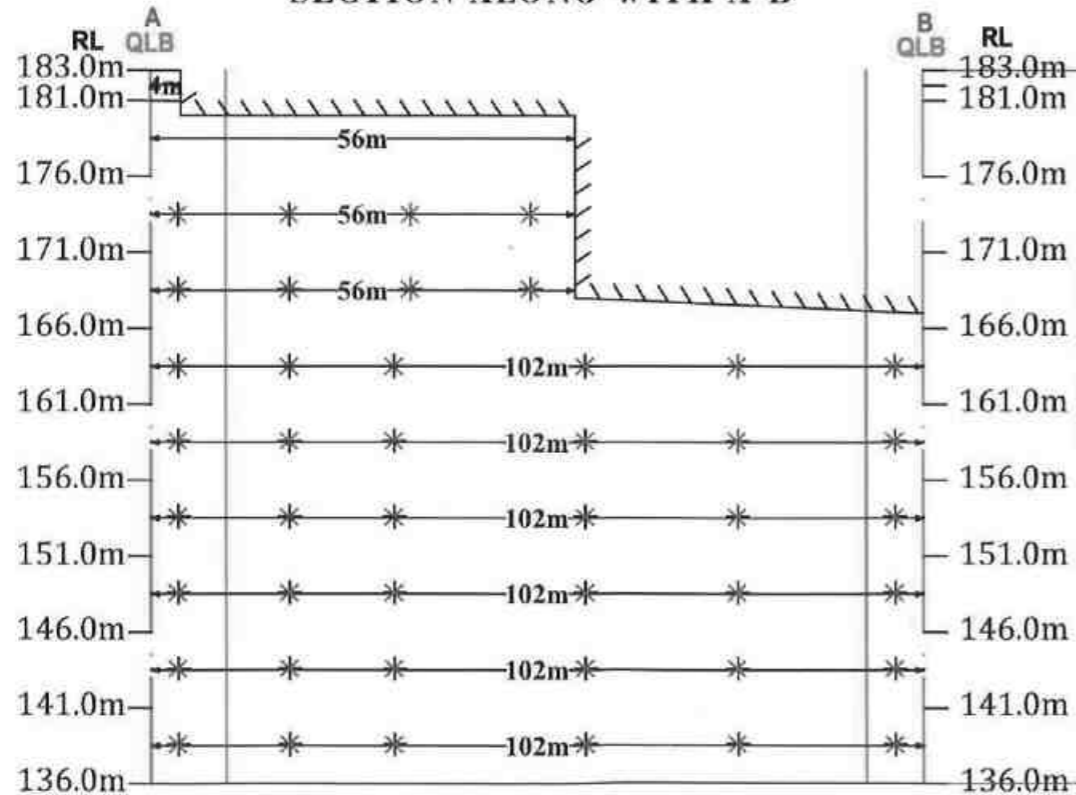
**APPLICANT ADDRESS:**

M/s. ANNAI BLUE METALS,  
S.F.No.451, KAALIPALAYAM,  
KUPPAM VILLAGE,  
PUGALUR TALUK,  
KARUR DISTRICT- 639 111.

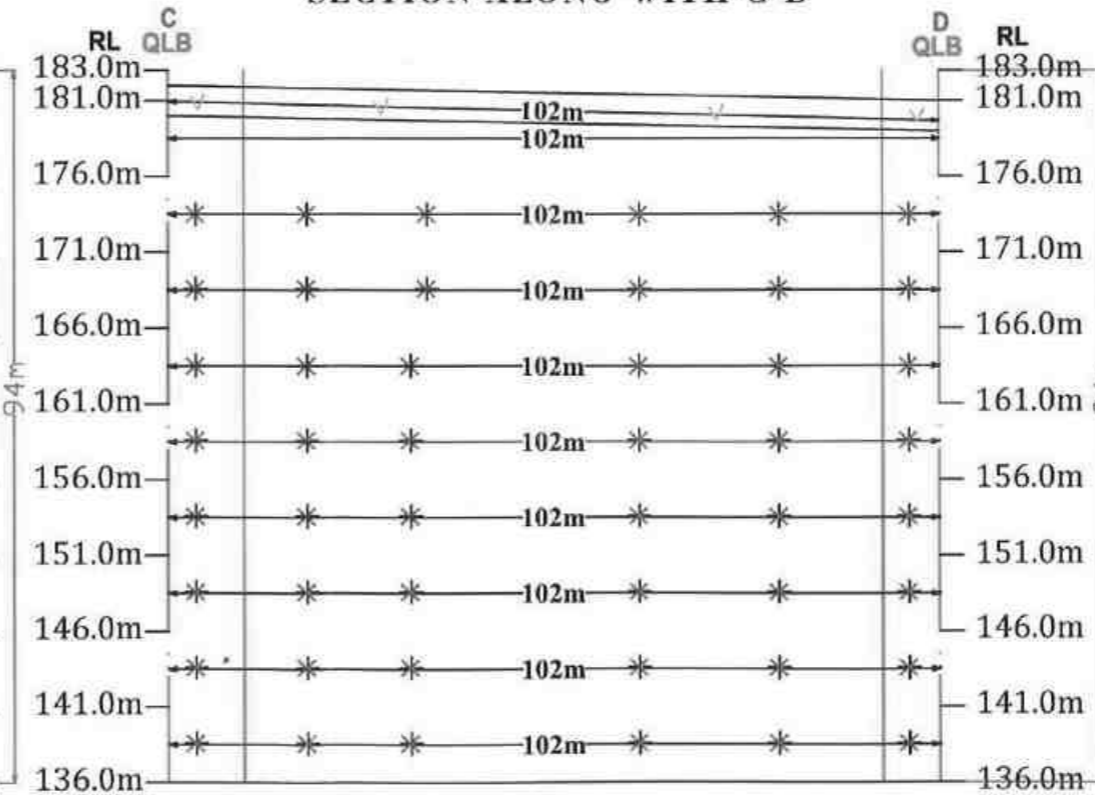
**INDEX**

- QUARRY LEASE BOUNDARY
- 7.5m,10.0m & 50.0m SAFETY DISTANCE
- GRAVEL
- ROUGH STONE

**SECTION ALONG WITH A-B**



**SECTION ALONG WITH C-D**



**LOCATION OF QUARRY**

EXTENT : 1.92.0 Hect  
S.F.NO : 682(PART)  
VILLAGE : KUPPAM  
TALUK : PUGALUR  
DISTRICT : KARUR.

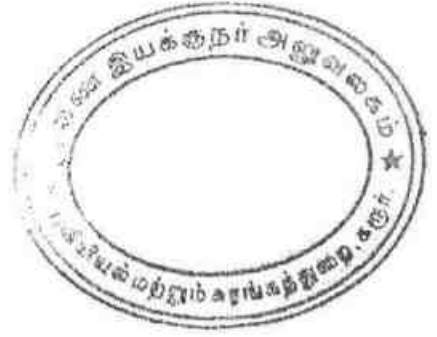
**GEOLOGICAL SECTIONS**

SCALE: HOR-1:1000  
VER-1:500

**PREPARED BY:**

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

S.DHANASEKAR.M.Sc.,  
RECOGNIZED QUALIFIED PERSON  
RQP/MAS/225/2011/A



| GEOLOGICAL RESERVES |       |               |              |              |                          |   |                                   |                          |
|---------------------|-------|---------------|--------------|--------------|--------------------------|---|-----------------------------------|--------------------------|
| Section             | Bench | Length in (m) | Width in (m) | Depth in (m) | Volume In M <sup>3</sup> | Recoverable Reserve in m <sup>3</sup> @ 95% | Mine waste in m <sup>3</sup> @ 5% | Gravel in m <sup>3</sup> |
| XY-AB               | I     | 75            | 4            | 2            |                          |   |                                   | 600                      |
|                     | II    | 91            | 56           | 5            | 25480                    | 24206                                       | 1274                              |                          |
|                     | III   | 91            | 56           | 5            | 25480                    | 24206                                       | 1274                              |                          |
|                     | IV    | 91            | 56           | 5            | 25480                    | 24206                                       | 1274                              |                          |
|                     | V     | 91            | 102          | 5            | 46410                    | 44090                                       | 2320                              |                          |
|                     | VI    | 91            | 102          | 5            | 46410                    | 44090                                       | 2320                              |                          |
|                     | VII   | 91            | 102          | 5            | 46410                    | 44090                                       | 2320                              |                          |
|                     | VIII  | 91            | 102          | 5            | 46410                    | 44090                                       | 2320                              |                          |
|                     | IX    | 91            | 102          | 5            | 46410                    | 44090                                       | 2320                              |                          |
|                     | X     | 91            | 102          | 5            | 46410                    | 44090                                       | 2320                              |                          |
| <b>Total=</b>       |       |               |              |              | <b>354900</b>            | <b>337158</b>                               | <b>17742</b>                      | <b>600</b>               |
| XY-CD               | I     | 98            | 102          | 2            |                          |   |                                   | 19992                    |
|                     | II    | 98            | 102          | 3            | 29988                    | 28489                                       | 1499                              |                          |
|                     | III   | 98            | 102          | 5            | 49980                    | 47481                                       | 2499                              |                          |
|                     | IV    | 98            | 102          | 5            | 49980                    | 47481                                       | 2499                              |                          |
|                     | V     | 98            | 102          | 5            | 49980                    | 47481                                       | 2499                              |                          |
|                     | VI    | 98            | 102          | 5            | 49980                    | 47481                                       | 2499                              |                          |
|                     | VII   | 98            | 102          | 5            | 49980                    | 47481                                       | 2499                              |                          |
|                     | VIII  | 98            | 102          | 5            | 49980                    | 47481                                       | 2499                              |                          |
|                     | IX    | 98            | 102          | 5            | 49980                    | 47481                                       | 2499                              |                          |
|                     | X     | 98            | 102          | 5            | 49980                    | 47481                                       | 2499                              |                          |
| <b>Total=</b>       |       |               |              |              | <b>429828</b>            | <b>408337</b>                               | <b>21491</b>                      | <b>19992</b>             |
| <b>Grand Total=</b> |       |               |              |              | <b>784728</b>            | <b>745495</b>                               | <b>39233</b>                      | <b>20592</b>             |

Prepared By:

  
 S.DHANASEKAR, M.Sc.,  
 RECOGNIZED QUALIFIED PERSON  
 RQP/MAS/225/2011/A

*S. K. S.*



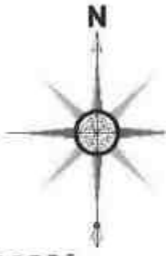
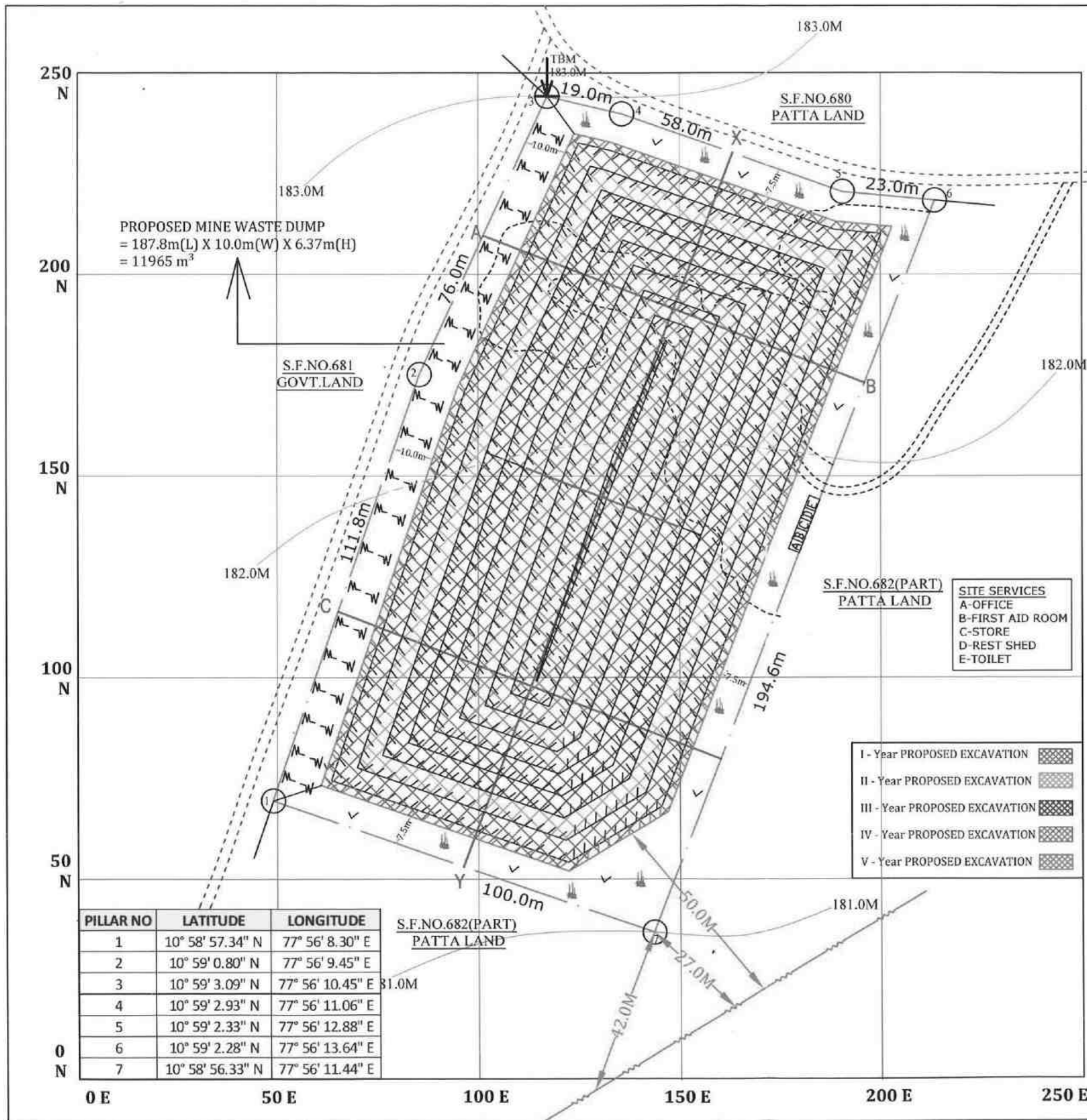


PLATE NO:IV

DATE OF SURVEY: 14-10-2020

APPLICANT ADDRESS:

M/s. ANNAL BLUE METALS,  
S.F.No.451, KUPPALAYAM,  
KUPPAM VILLAGE,  
PUGALUR TALUK,  
KARUR DISTRICT- 639 111.

**INDEX**

|                                     |  |
|-------------------------------------|--|
| QUARRY LEASE BOUNDARY               |  |
| 7.5m, 10.0m & 50.0m SAFETY DISTANCE |  |
| TEMPORARY BENCH MARK                |  |
| GRAVEL                              |  |
| ROUGH STONE                         |  |
| EXISTING PIT                        |  |
| CONTOUR LINE                        |  |
| QUARRY ROAD                         |  |
| CART TRACK                          |  |
| LT LINE                             |  |
| PROPOSED DUMP                       |  |

**LOCATION OF QUARRY**

EXTENT : 1.92.0 Hect  
S.F.NO : 682(PART)  
VILLAGE : KUPPAM  
TALUK : PUGALUR  
DISTRICT : KARUR.

**YEARWISE DEVELOPMENT AND PRODUCTION PLAN**

SCALE: 1:1000

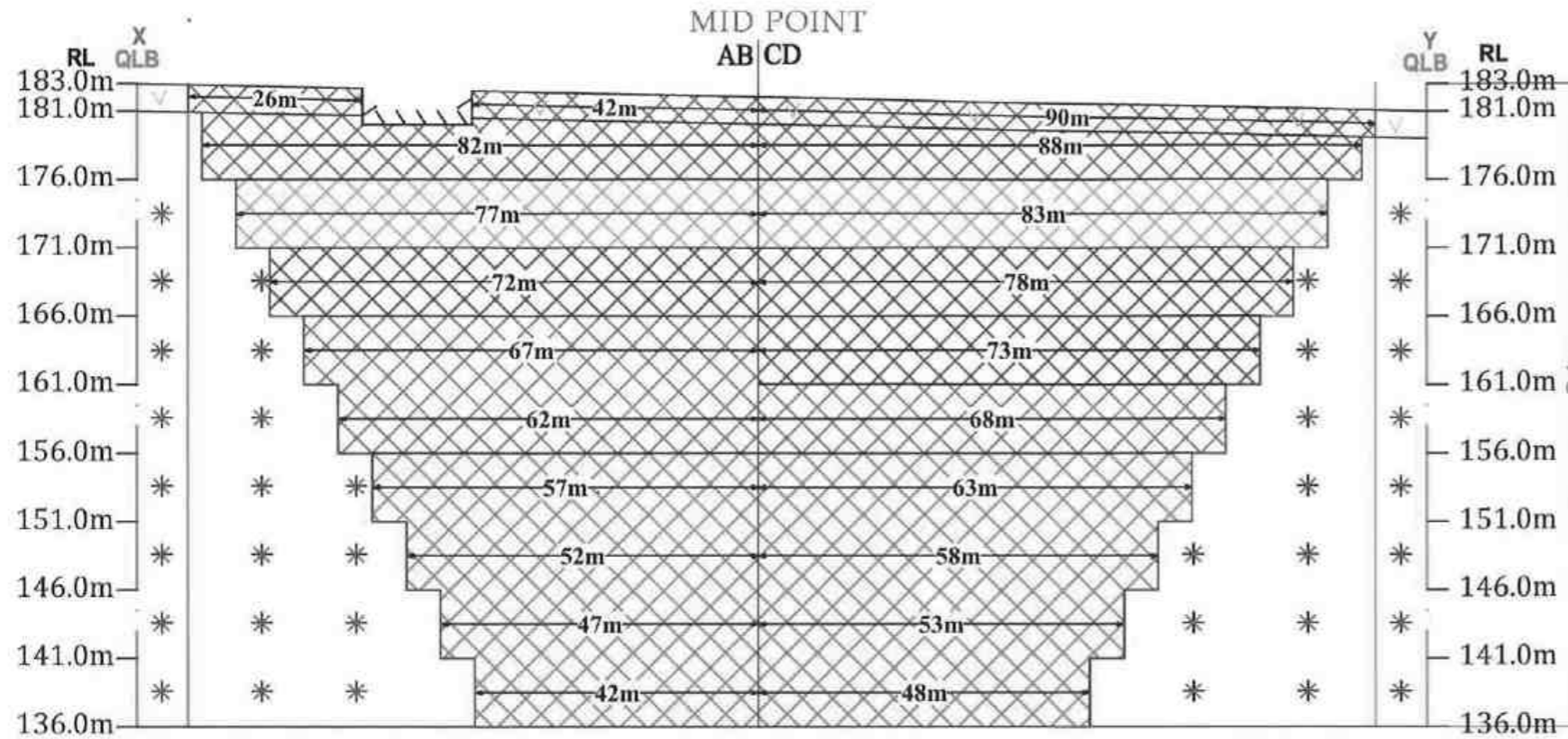
Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

S.DHANASEKAR, M.Sc.,  
RECOGNIZED QUALIFIED PERSON  
RQP/MAS/225/2011/A

*Sketch*

**SECTION ALONG WITH X-Y**



I - Year PROPOSED EXCAVATION

II - Year PROPOSED EXCAVATION

III - Year PROPOSED EXCAVATION

IV - Year PROPOSED EXCAVATION

V - Year PROPOSED EXCAVATION

PLATE NO:IV-A

DATE OF SURVEY: 14-10-2020

APPLICANT ADDRESS:  
 M/s. ANNAI BLUE METALS,  
 S.F.No.451, KAALIPALAYAM,  
 KUPPAM VILLAGE,  
 PUGALUR TALUK,  
 KARUR DISTRICT- 639 111.

**INDEX**

|                                    |  |
|------------------------------------|--|
| QUARRY LEASE BOUNDARY              |  |
| 7.5m,10.0m & 50.0m SAFETY DISTANCE |  |
| GRAVEL                             |  |
| ROUGH STONE                        |  |

**LOCATION OF QUARRY**

EXTENT : 1.92.0 Hect  
 S.F.NO : 682(PART)  
 VILLAGE : KUPPAM  
 TALUK : PUGALUR  
 DISTRICT : KARUR.

**YEARWISE DEVELOPMENT & PRODUCTION SECTIONS**

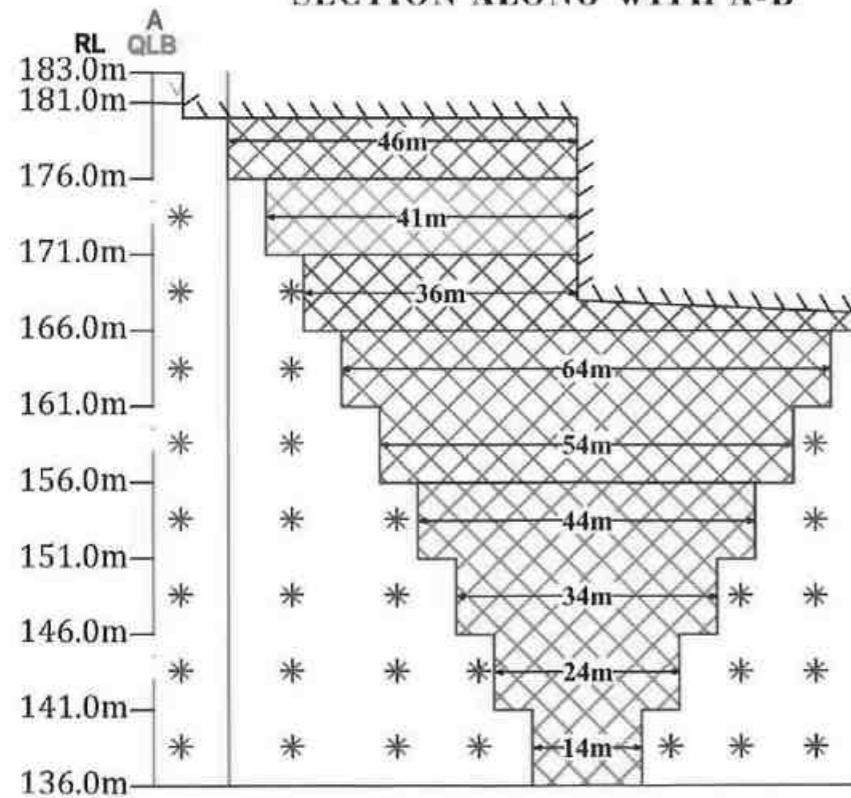
SCALE: HOR-1:1000  
 VER-1:500

Prepared By:

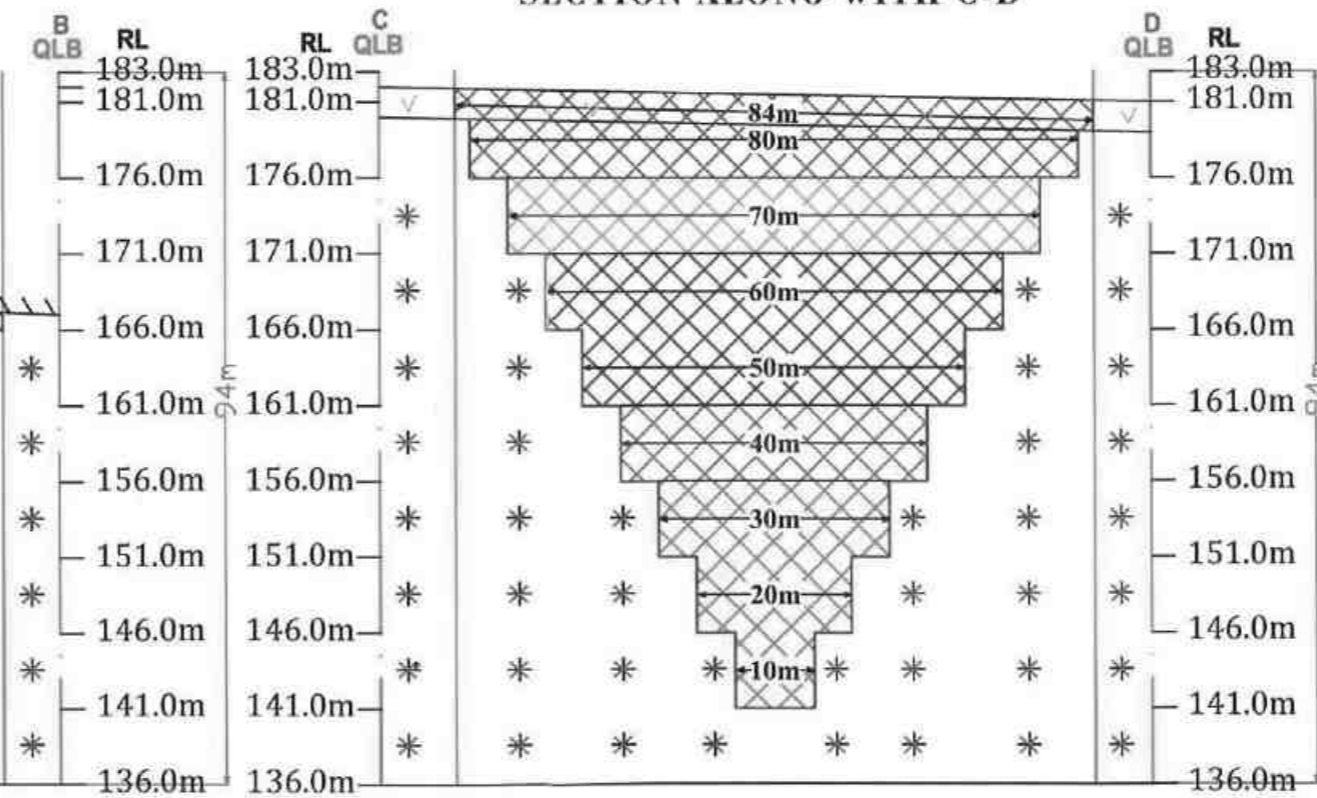
I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

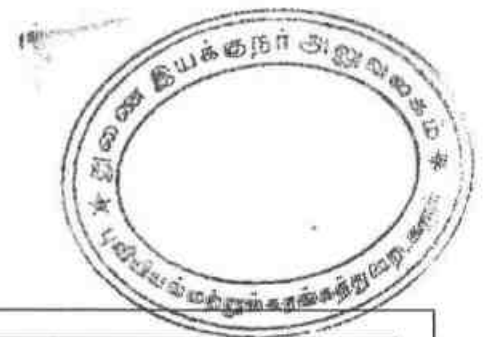
S.DHANASEKAR,M.Sc.,  
 RECOGNIZED QUALIFIED PERSON  
 RQP/MAS/225/2011/A

**SECTION ALONG WITH A-B**



**SECTION ALONG WITH C-D**





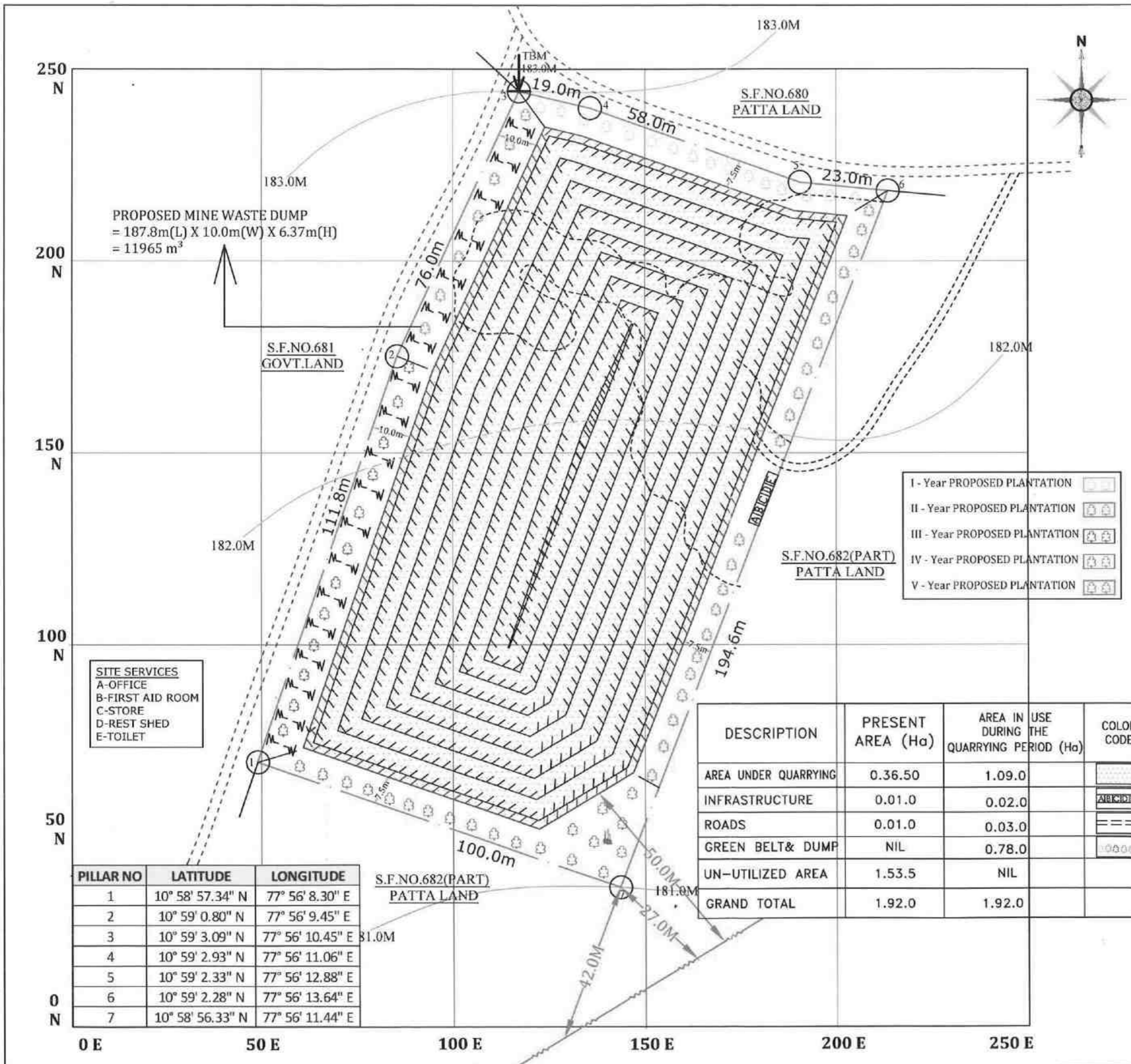
**YEARWISE DEVELOPMENT & PRODUCTION RESERVES**

| 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> @ 95% | Mine waste in m3 @ 5% | Gravel in m <sup>3</sup> |              |              |
|----------|---------------|---------------------|---------------|--------------|--------------|--------------------------|---|-----------------------|--------------------------|--------------|--------------|
| I-YEAR   | XY-AB         | I                   | 68            | 1            | 2            |                          |   |                       | 136                      |              |              |
|          |               | II                  | 82            | 46           | 5            | 18860                    | 17917                                       | 943                   |                          |              |              |
|          | XY-CD         | I                   | 90            | 84           | 2            |                          |   |                       | 15120                    |              |              |
|          |               | II                  | 88            | 80           | 3            | 21120                    | 20064                                       | 1056                  |                          |              |              |
|          | <b>Total=</b> |                     |               |              |              |                          | <b>39980</b>                                | <b>37981</b>          | <b>1999</b>              | <b>15256</b> |              |
| II-YEAR  | XY-AB         | III                 | 77            | 41           | 5            | 15785                    | 14996                                       | 789                   |                          |              |              |
|          | XY-CD         | III                 | 83            | 70           | 5            | 29050                    | 27598                                       | 1453                  |                          |              |              |
|          | <b>Total=</b> |                     |               |              |              |                          | <b>44835</b>                                | <b>42593</b>          | <b>2242</b>              |              |              |
| III-YEAR | XY-AB         | IV                  | 72            | 36           | 5            | 12960                    | 12312                                       | 648                   |                          |              |              |
|          |               | IV                  | 78            | 60           | 5            | 23400                    | 22230                                       | 1170                  |                          |              |              |
|          | XY-CD         | V                   | 73            | 50           | 5            | 18250                    | 17338                                       | 913                   |                          |              |              |
|          |               | <b>Total=</b>       |               |              |              |                          |   | <b>54610</b>          | <b>51880</b>             | <b>2731</b>  |              |
| IV-YEAR  | XY-AB         | V                   | 67            | 64           | 5            | 21440                    | 20368                                       | 1072                  |                          |              |              |
|          |               | VI                  | 62            | 54           | 5            | 16740                    | 15903                                       | 837                   |                          |              |              |
|          | XY-CD         | VI                  | 68            | 40           | 5            | 13600                    | 12920                                       | 680                   |                          |              |              |
|          |               | <b>Total=</b>       |               |              |              |                          |   | <b>51780</b>          | <b>49191</b>             | <b>2589</b>  |              |
| V-YEAR   | XY-AB         | VII                 | 57            | 44           | 5            | 12540                    | 11913                                       | 627                   |                          |              |              |
|          |               | VIII                | 52            | 34           | 5            | 8840                     | 8398  | 442                   |                          |              |              |
|          |               | IX                  | 47            | 24           | 5            | 5640                     | 5358  | 282                   |                          |              |              |
|          |               | X                   | 42            | 14           | 5            | 2940                     | 2793  | 147                   |                          |              |              |
|          | XY-CD         | VII                 | 63            | 30           | 5            | 9450                     | 8978  | 473                   |                          |              |              |
|          |               | VIII                | 58            | 20           | 5            | 5800                     | 5510  | 290                   |                          |              |              |
|          |               | IX                  | 53            | 10           | 5            | 2650                     | 2518  | 133                   |                          |              |              |
|          |               | X                   | 48            | 1            | 5            | 240                      | 228   | 12                    |                          |              |              |
|          |               | <b>Total=</b>       |               |              |              |                          |   | <b>48100</b>          | <b>45695</b>             | <b>2405</b>  |              |
|          |               | <b>Grand Total=</b> |               |              |              |                          |   | <b>239305</b>         | <b>227340</b>            | <b>11965</b> | <b>15256</b> |

Prepared By:

  
 S.DHANASEKAR, M.Sc.,  
 RECOGNIZED QUALIFIED PERSON  
 RQP/MAS/225/2011/A

*S. K. S.*



PROPOSED MINE WASTE DUMP  
= 187.8m(L) X 10.0m(W) X 6.37m(H)  
= 11965 m<sup>3</sup>

**SITE SERVICES**  
A-OFFICE  
B-FIRST AID ROOM  
C-STORE  
D-REST SHED  
E-TOILET

- I - Year PROPOSED PLANTATION
- II - Year PROPOSED PLANTATION
- III - Year PROPOSED PLANTATION
- IV - Year PROPOSED PLANTATION
- V - Year PROPOSED PLANTATION

| PILLAR NO | LATITUDE         | LONGITUDE        |
|-----------|------------------|------------------|
| 1         | 10° 58' 57.34" N | 77° 56' 8.30" E  |
| 2         | 10° 59' 0.80" N  | 77° 56' 9.45" E  |
| 3         | 10° 59' 3.09" N  | 77° 56' 10.45" E |
| 4         | 10° 59' 2.93" N  | 77° 56' 11.06" E |
| 5         | 10° 59' 2.33" N  | 77° 56' 12.88" E |
| 6         | 10° 59' 2.28" N  | 77° 56' 13.64" E |
| 7         | 10° 58' 56.33" N | 77° 56' 11.44" E |

| DESCRIPTION          | PRESENT AREA (Ha) | AREA IN USE DURING THE QUARRYING PERIOD (Ha) | COLOR CODE |
|----------------------|-------------------|--|------------|
| AREA UNDER QUARRYING | 0.36.50           | 1.09.0                                       |            |
| INFRASTRUCTURE       | 0.01.0            | 0.02.0                                       |            |
| ROADS                | 0.01.0            | 0.03.0                                       |            |
| GREEN BELT & DUMP    | NIL               | 0.78.0                                       |            |
| UN-UTILIZED AREA     | 1.53.5            | NIL  |            |
| <b>GRAND TOTAL</b>   | <b>1.92.0</b>     | <b>1.92.0</b>                                |            |

PLATE NO:V

DATE OF SURVEY: 14-10-2020

APPLICANT ADDRESS:  
M/s. ANNAI BLUE METALS,  
S.F.No.451, KAALIPALAYAM,  
KUPPAM VILLAGE,  
PUGALUR TALUK,  
KARUR DISTRICT-639 111.

**INDEX**

- QUARRY LEASE BOUNDARY
- 7.5m,10.0m & 50.0m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- GRAVEL
- ROUGH STONE
- EXISTING PIT
- CONTOUR LINE
- QUARRY ROAD
- CART TRACK
- LT LINE
- PROPOSED DUMP
- MINE LAYOUT

**LOCATION OF QUARRY**

EXTENT : 1.92.0 Hect  
S.F.NO : 682(PART)  
VILLAGE : KUPPAM  
TALUK : PUGALUR  
DISTRICT : KARUR.

**MINE LAYOUT, LAND USE PATTERN & AFFORESTATION PLAN**

SCALE: 1:1000

Prepared By:  
I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

S. DHANASEKAR.M.Sc.,  
RECOGNIZED QUALIFIED PERSON  
RQP/MAS/225/2011/A

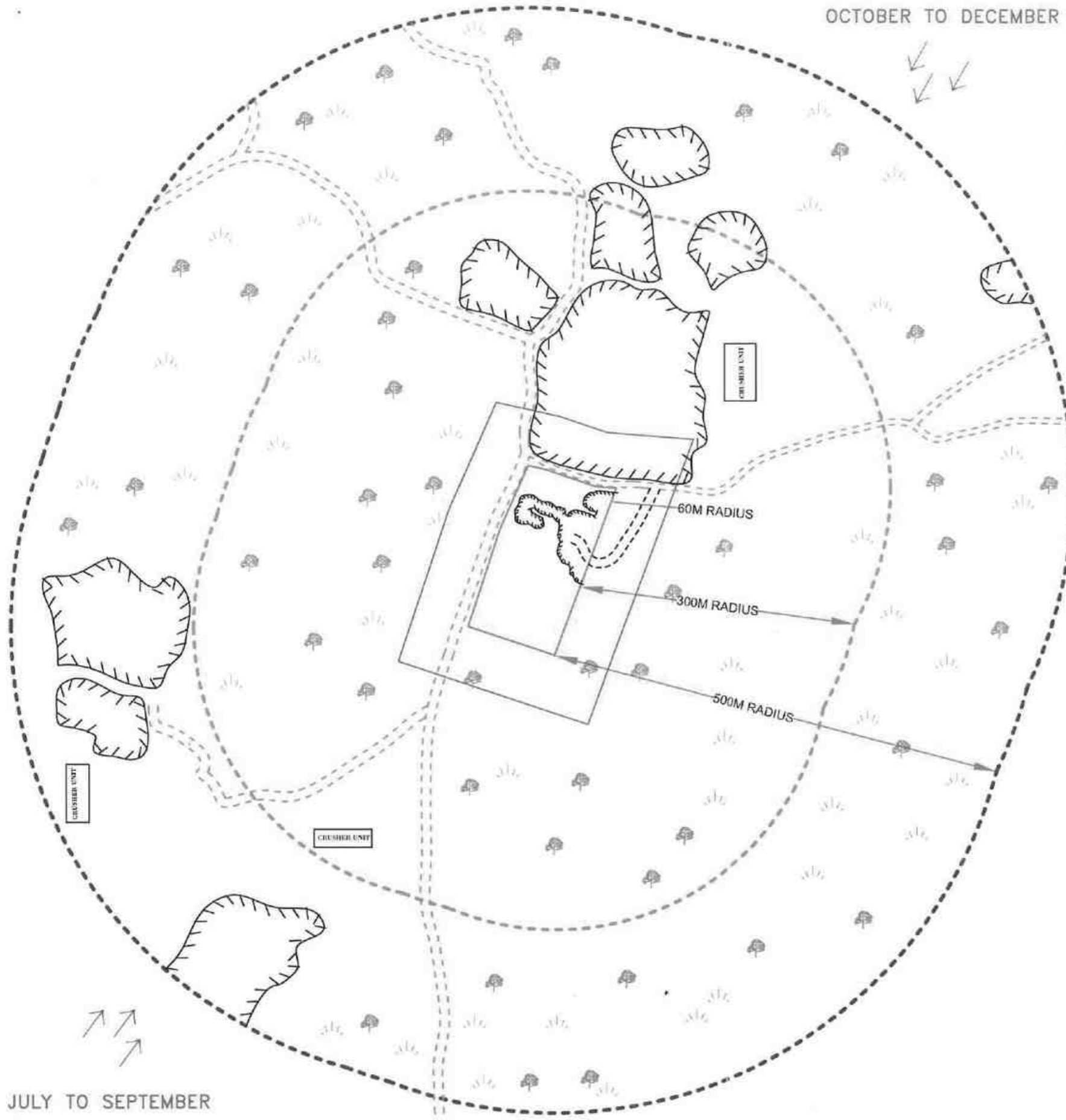


PLATE NO:VI  
 DATE OF SURVEY: 14-10-2020  
 APPLICANT ADDRESS:  
 M/s. ANNAI BLUE METALS,  
 S.F.No.451, KAALIPALAYAM,  
 KUPPAM VILLAGE,  
 PUGALUR TALUK,  
 KARUR DISTRICT-639 411

| INDEX                 |  |
|-----------------------|--|
| Q.L.BOUNDARY          |  |
| 500M RADIUS           |  |
| 300M RADIUS           |  |
| 60M RADIUS            |  |
| CART TRACK            |  |
| QUARRY ROAD           |  |
| TREES                 |  |
| CRUSHER UNIT          |  |
| DRY AGRICULTURAL LAND |  |
| WIND DIRECTION        |  |
| ADJACENT QUARRY       |  |
| CRUSHER UNIT          |  |

**LOCATION OF QUARRY**  
 EXTENT : 1.92.0 Hect  
 S.F.NO : 682(PART)  
 VILLAGE : KUPPAM  
 TALUK : PUGALUR  
 DISTRICT : KARUR.

**ENVIRONMENT PLAN**  
 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. Dhanasekar  
 S.DHANASEKAR, M.Sc.,  
 RECOGNIZED QUALIFIED PERSON  
 RQP/MAS/225/2011/A

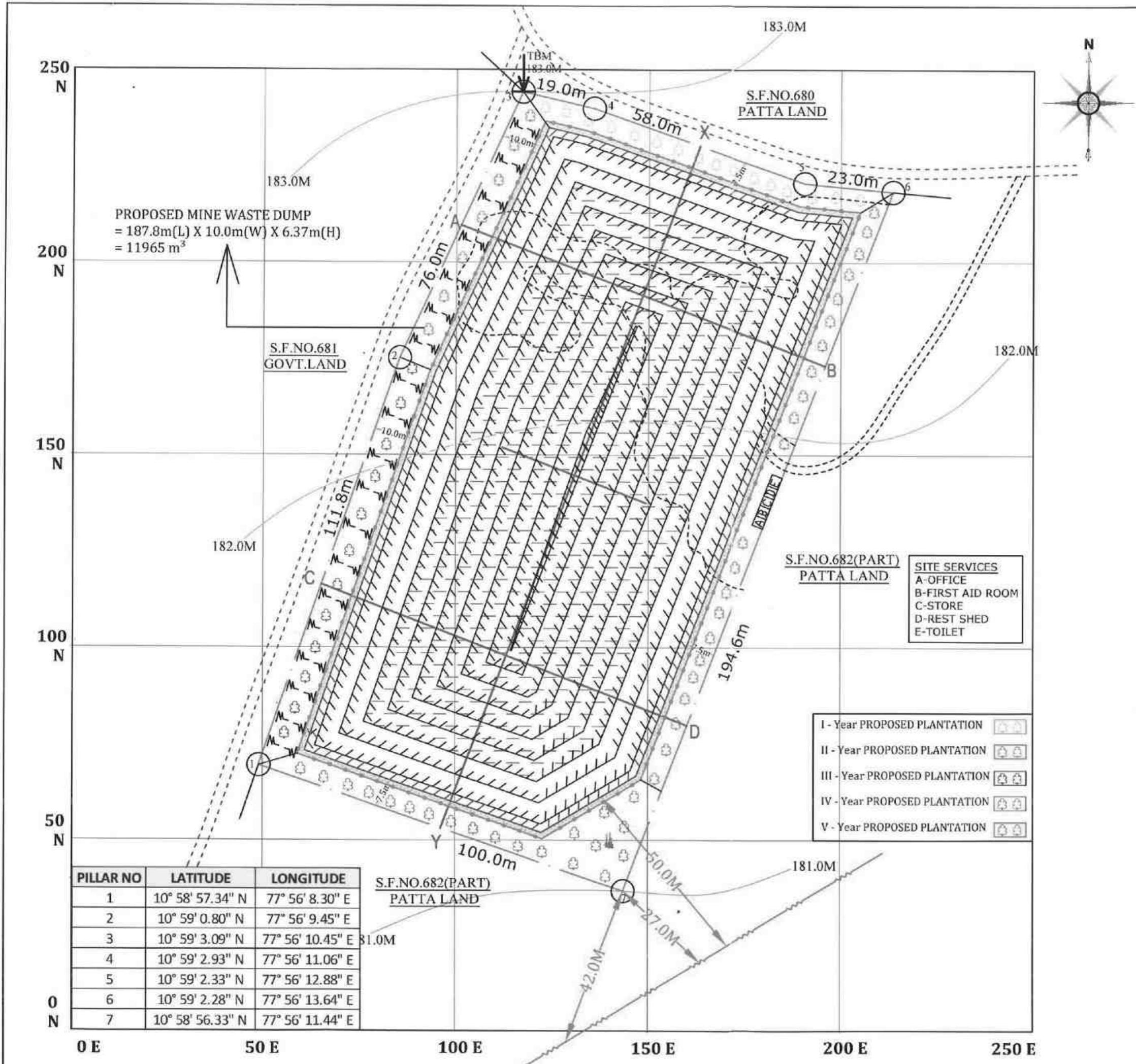


PLATE NO:VII  
 DATE OF SURVEY: 14-10-2020  
 APPLICANT ADDRESS:  
 M/s. ANNAI BLUE METALS,  
 S.F.No.451, KAALIPALAYAM,  
 KUPPAM VILLAGE,  
 PUGALUR TALUK,  
 KARUR DISTRICT- 639 111.

**INDEX**

|                                     |  |
|-------------------------------------|--|
| QUARRY LEASE BOUNDARY               |  |
| 7.5m, 10.0m & 50.0m SAFETY DISTANCE |  |
| TEMPORARY BENCH MARK                |  |
| GRAVEL                              |  |
| ROUGH STONE                         |  |
| EXISTING PIT                        |  |
| CONTOUR LINE                        |  |
| QUARRY ROAD                         |  |
| CART TRACK                          |  |
| LT LINE                             |  |
| PROPOSED DUMP                       |  |
| FENCING                             |  |
| PARAPET WALL                        |  |
| ULTIMATE PIT LIMIT                  |  |
| PROPOSED WATER STORAGE              |  |

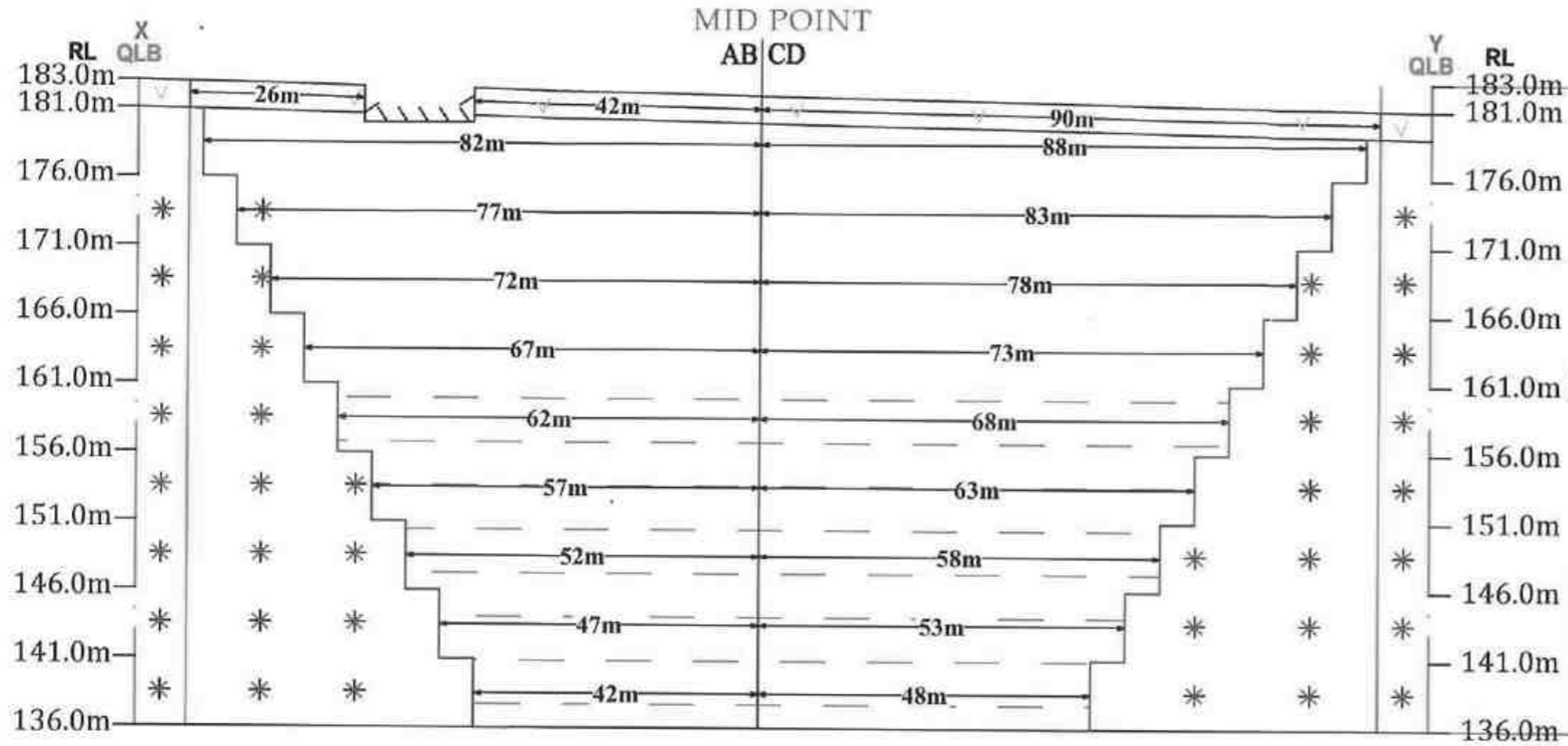
**LOCATION OF QUARRY**  
 EXTENT : 1.92.0 Hect  
 S.F.NO : 682(PART)  
 VILLAGE : KUPPAM  
 TALUK : PUGALUR  
 DISTRICT : KARUR.

**CONCEPTUAL & FINAL  
 MINE CLOSURE PLAN**  
 SCALE: 1:1000

Prepared By:  
 I DO HEREBY CERTIFY THAT THE PLATE  
 HAS BEEN CHECKED BY ME AND IS CORRECT  
 TO THE BEST OF MY KNOWLEDGE  
 S. DHANASEKAR, M.Sc.,  
 RECOGNIZED QUALIFIED PERSON  
 RQP/MAS/225/2011/A

| PILLAR NO | LATITUDE         | LONGITUDE        |
|-----------|------------------|------------------|
| 1         | 10° 58' 57.34" N | 77° 56' 8.30" E  |
| 2         | 10° 59' 0.80" N  | 77° 56' 9.45" E  |
| 3         | 10° 59' 3.09" N  | 77° 56' 10.45" E |
| 4         | 10° 59' 2.93" N  | 77° 56' 11.06" E |
| 5         | 10° 59' 2.33" N  | 77° 56' 12.88" E |
| 6         | 10° 59' 2.28" N  | 77° 56' 13.64" E |
| 7         | 10° 58' 56.33" N | 77° 56' 11.44" E |

SECTION ALONG WITH X-Y



| ULTIMATE PIT DIMENSION |       |               |              |              |
|------------------------|-------|---------------|--------------|--------------|
| Section                | Bench | Length in (m) | Width in (m) | Depth in (m) |
| PIT                    | I     | 158           | 42           | 2            |
|                        | II    | 170           | 63           | 5            |
|                        | III   | 160           | 55           | 5            |
|                        | IV    | 150           | 48           | 5            |
|                        | V     | 140           | 57           | 5            |
|                        | VI    | 130           | 47           | 5            |
|                        | VII   | 120           | 37           | 5            |
|                        | VIII  | 110           | 27           | 5            |
|                        | IX    | 100           | 17           | 5            |
|                        | X     | 90            | 7            | 5            |

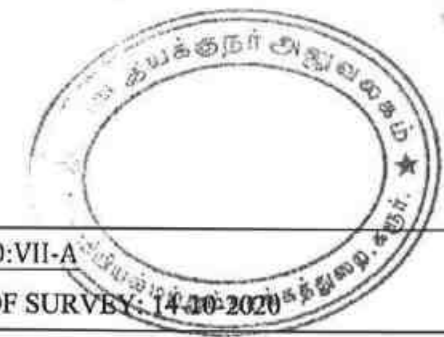


PLATE NO: VII-A

DATE OF SURVEY: 14.10.2020

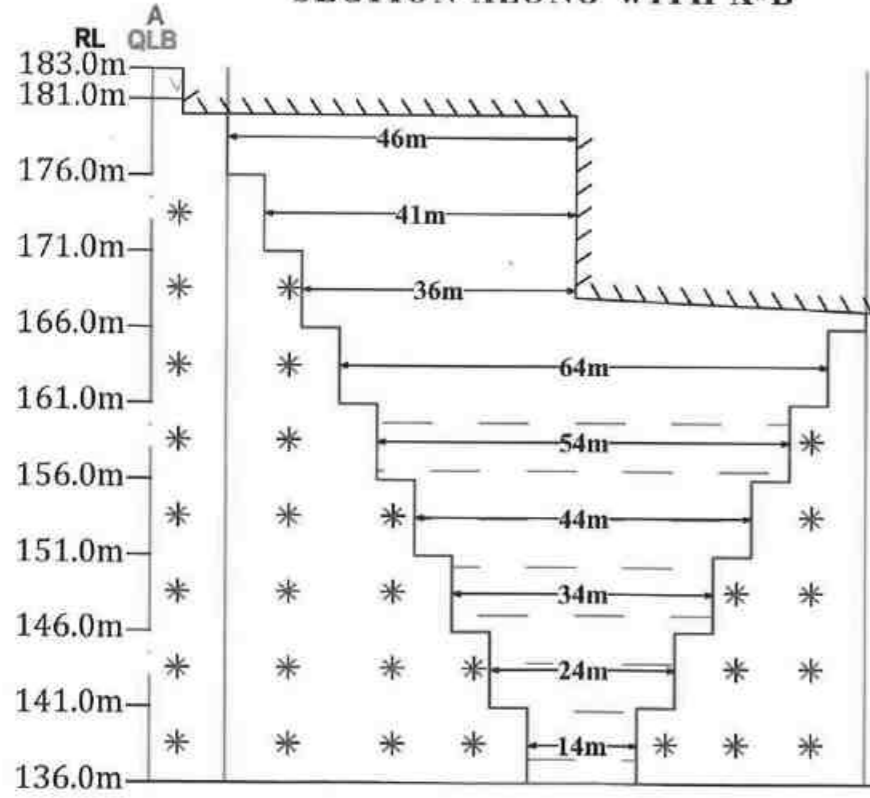
APPLICANT ADDRESS:

M/s. ANNAI BLUE METALS,  
S.F.No.451, KAALIPALAYAM,  
KUPPAM VILLAGE,  
PUGALUR TALUK,  
KARUR DISTRICT- 639 111.

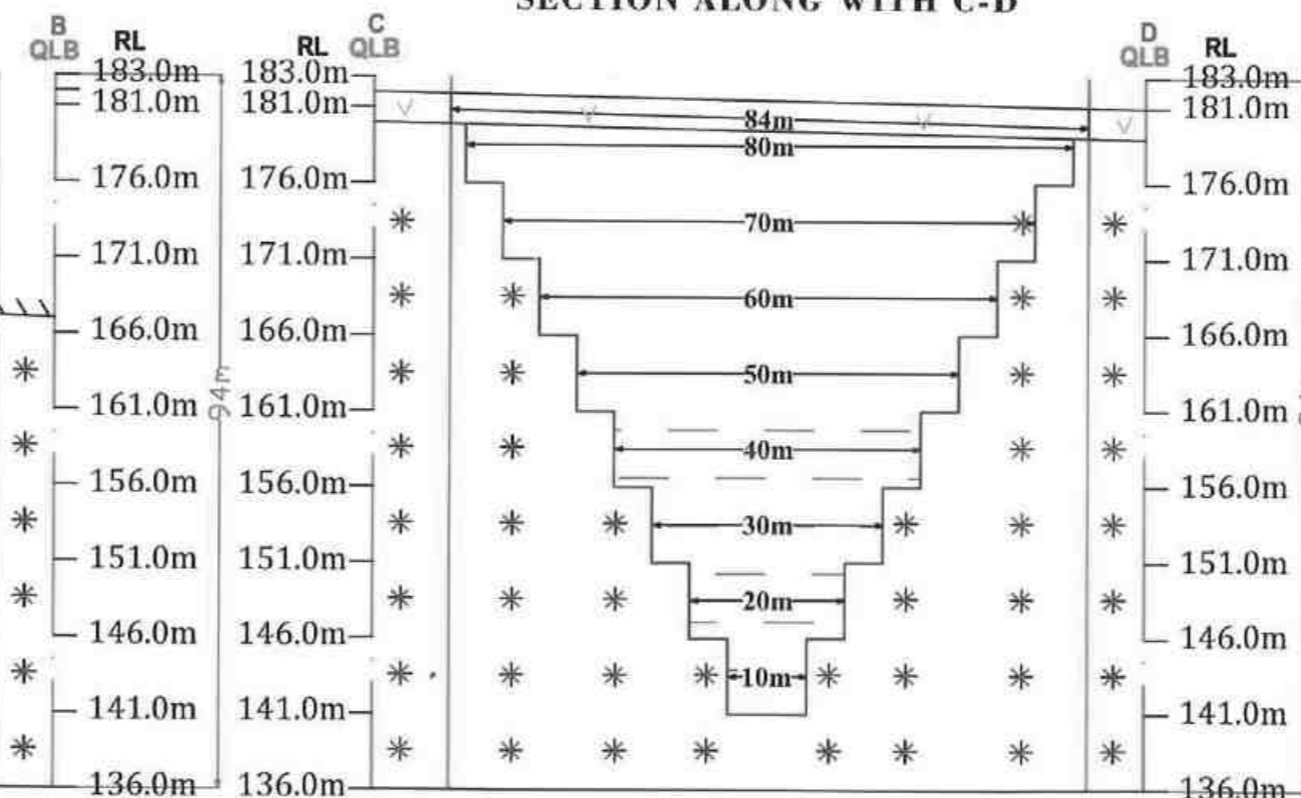
INDEX

- QUARRY LEASE BOUNDARY
- 7.5m, 10.0m & 50.0m SAFETY DISTANCE
- GRAVEL
- ROUGH STONE
- ULTIMATE PIT SLOPE
- PROPOSED WATER STORAGE

SECTION ALONG WITH A-B



SECTION ALONG WITH C-D



LOCATION OF QUARRY

EXTENT : 1.92.0 Hect  
S.F.NO : 682(PART)  
VILLAGE : KUPPAM  
TALUK : PUGALUR  
DISTRICT : KARUR.

CONCEPTUAL & FINAL MINE CLOSURE SECTIONS

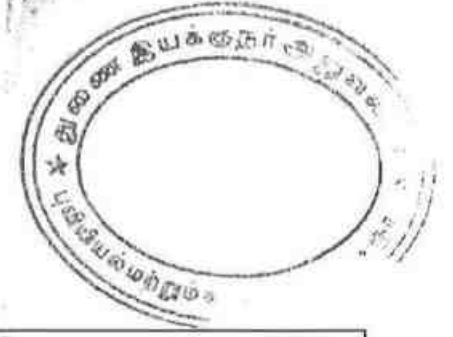
SCALE: HOR-1:1000  
VER-1:500

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

*S. Dhanasekar*  
S.DHANASEKAR, M.Sc.,  
RECOGNIZED QUALIFIED PERSON  
RQP/MAS/225/2011/A

*S. K. S.*



| MINEABLE RESERVES   |       |               |              |              |                          |   |                                   |                          |
|---------------------|-------|---------------|--------------|--------------|--------------------------|---|-----------------------------------|--------------------------|
| Section             | Bench | Length in (m) | Width in (m) | Depth in (m) | Volume In M <sup>3</sup> | Recoverable Reserve in m <sup>3</sup> @ 95% | Mine waste in m <sup>3</sup> @ 5% | Gravel in m <sup>3</sup> |
| XY-AB               | I     | 68            | 1            | 2            |                          |   |                                   | 136                      |
|                     | II    | 82            | 46           | 5            | 18860                    | 17917                                       | 943                               |                          |
|                     | III   | 77            | 41           | 5            | 15785                    | 14996                                       | 789                               |                          |
|                     | IV    | 72            | 36           | 5            | 12960                    | 12312                                       | 648                               |                          |
|                     | V     | 67            | 64           | 5            | 21440                    | 20368                                       | 1072                              |                          |
|                     | VI    | 62            | 54           | 5            | 16740                    | 15903                                       | 837                               |                          |
|                     | VII   | 57            | 44           | 5            | 12540                    | 11913                                       | 627                               |                          |
|                     | VIII  | 52            | 34           | 5            | 8840                     | 8398  | 442                               |                          |
|                     | IX    | 47            | 24           | 5            | 5640                     | 5358  | 282                               |                          |
|                     | X     | 42            | 14           | 5            | 2940                     | 2793  | 147                               |                          |
| <b>Total=</b>       |       |               |              |              | <b>115745</b>            | <b>109958</b>                               | <b>5787</b>                       | <b>136</b>               |
| XY-CD               | I     | 90            | 84           | 2            |                          |   |                                   | 15120                    |
|                     | II    | 88            | 80           | 3            | 21120                    | 20064                                       | 1056                              |                          |
|                     | III   | 83            | 70           | 5            | 29050                    | 27598                                       | 1453                              |                          |
|                     | IV    | 78            | 60           | 5            | 23400                    | 22230                                       | 1170                              |                          |
|                     | V     | 73            | 50           | 5            | 18250                    | 17338                                       | 913                               |                          |
|                     | VI    | 68            | 40           | 5            | 13600                    | 12920                                       | 680                               |                          |
|                     | VII   | 63            | 30           | 5            | 9450                     | 8978  | 473                               |                          |
|                     | VIII  | 58            | 20           | 5            | 5800                     | 5510  | 290                               |                          |
|                     | IX    | 53            | 10           | 5            | 2650                     | 2518  | 133                               |                          |
|                     | X     | 48            | 1            | 5            | 240                      | 228   | 12                                |                          |
| <b>Total=</b>       |       |               |              |              | <b>123560</b>            | <b>117382</b>                               | <b>6178</b>                       | <b>15120</b>             |
| <b>Grand Total=</b> |       |               |              |              | <b>239305</b>            | <b>227340</b>                               | <b>11965</b>                      | <b>15256</b>             |

Prepared By:

  
 S. DHANASEKAR, M.Sc.,  
 RECOGNIZED QUALIFIED PERSON  
 RQP/MAS/225/2011/A

*S. K. S.*



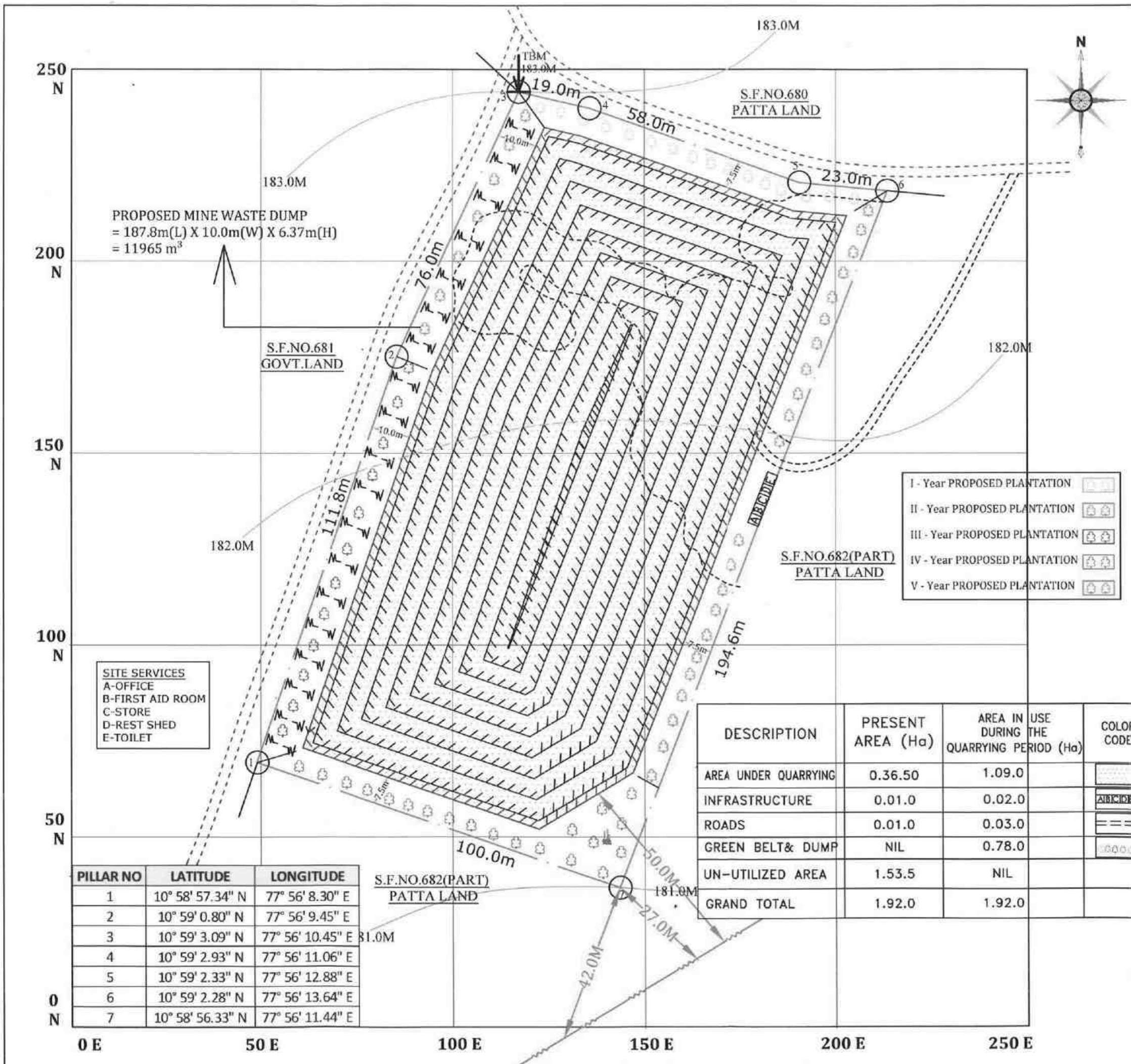


PLATE NO:VIII  
 DATE OF SURVEY: 14-10-2020  
 APPLICANT ADDRESS:  
 M/s. ANNAI BLUE METALS,  
 S.F.No.451, KAALIPALAYAM,  
 KUPPAM VILLAGE,  
 PUGALUR TALUK,  
 KARUR DISTRICT- 639 111.

**INDEX**

|                                    |  |
|------------------------------------|--|
| QUARRY LEASE BOUNDARY              |  |
| 7.5m,10.0m & 50.0m SAFETY DISTANCE |  |
| TEMPORARY BENCH MARK               |  |
| GRAVEL                             |  |
| ROUGH STONE                        |  |
| EXISTING PIT                       |  |
| CONTOUR LINE                       |  |
| QUARRY ROAD                        |  |
| CART TRACK                         |  |
| LT LINE                            |  |
| PROPOSED DUMP                      |  |
| MINE LAYOUT                        |  |

**LOCATION OF QUARRY**

EXTENT : 1.92.0 Hect  
 S.F.NO : 682(PART)  
 VILLAGE : KUPPAM  
 TALUK : PUGALUR  
 DISTRICT : KARUR.

**PROGRESSIVE MINE CLOSURE PLAN**

SCALE: 1:1000

Prepared By:  
 I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

*S. Dhana Sekar*  
 S.DHANASEKAR,M.Sc.,  
 RECOGNIZED QUALIFIED PERSON  
 RQP/MAS/225/2011/A

| PILLAR NO | LATITUDE         | LONGITUDE        |
|-----------|------------------|------------------|
| 1         | 10° 58' 57.34" N | 77° 56' 8.30" E  |
| 2         | 10° 59' 0.80" N  | 77° 56' 9.45" E  |
| 3         | 10° 59' 3.09" N  | 77° 56' 10.45" E |
| 4         | 10° 59' 2.93" N  | 77° 56' 11.06" E |
| 5         | 10° 59' 2.33" N  | 77° 56' 12.88" E |
| 6         | 10° 59' 2.28" N  | 77° 56' 13.64" E |
| 7         | 10° 58' 56.33" N | 77° 56' 11.44" E |

| DESCRIPTION          | PRESENT AREA (Ha) | AREA IN USE DURING THE QUARRYING PERIOD (Ha) | COLOR CODE |
|----------------------|-------------------|--|------------|
| AREA UNDER QUARRYING | 0.36.50           | 1.09.0                                       |            |
| INFRASTRUCTURE       | 0.01.0            | 0.02.0                                       |            |
| ROADS                | 0.01.0            | 0.03.0                                       |            |
| GREEN BELT & DUMP    | NIL               | 0.78.0                                       |            |
| UN-UTILIZED AREA     | 1.53.5            | NIL  |            |
| <b>GRAND TOTAL</b>   | <b>1.92.0</b>     | <b>1.92.0</b>                                |            |

**ANNEXURE-VII**  
**VAO CERTIFICATE**



## சான்றி

சுதிரி லாவட்டம், மதுரை வட்டம்,  
இலயம் கிராமம் புலாண் 682 (யகல)

படியு 1.92.0 ஏர்லில் அமைவுள்ள  
M/S ANNAI BLUE METALS கல் லாண்ட்  
கிராமம் இலாமி சான்றி 500 டீடர்  
சான்றிவல் நகீகம் இயலிவ்யகம், வலியாடலி  
தலவீகம், மதுகாண் சின்னாக்கம், பன்னிக்  
பிடம்கம், லாண்ட் அலா கடபுடம்கம்  
சுஜட் கல்லை சாண் மதுகாணிகை சூட  
அலிவ்ய சான்றி வலுக்கய்யலிவ்ய.

17/7/2021  
கிராம நிர்வாக அலுவலர்  
13, குப்பம் கிராமம்  
புகளூர் வட்டம்  
கருர் மாவட்டம்

S. Ket

M/s. ANNAI BLUE METALS, Roughstone & Gravel quarry in the S.F. No.682(P) over an extent of 1.92.0ha. in Kuppam Village, Pugalur Taluk, Karur District.

**GENERAL VIEW OF THE QUARRY LEASE AREA**



For M/s. Annai Blue Metals,  
For ANNAI BLUE METAL,

S. Ketan  
PARTNER.  
(Deponent)

17/7/2021  
கிராம நிர்வாக அலுவலர்  
18, குடியம் கிராமம்  
புகளூர் வட்டம்  
கருர் மாவட்டம்

# **ANNEXURE-VIII BLASTING AGREEMENT**





தமிழ்நாடு தமில்நாடு TAMILNADU

Sri Veerakumar Explosives

BA 292978

5.4.21  
Rs 50/-

Karunchelli Palayam.

V. M. Subramanian  
V. M. SUBRAMANIAN  
STAMP VENDOR,  
L. NO. 44/97,  
KARUR.



### BLASTING WORK CONTRACT AGREEMENT

M/S SRI VEERAKUMAR EXPLOSIVES, NO 1/199, Union office Road, K.Paramathi, Aravakurichi Taluk, Karur District, having explosives licence No : E/SC/TN/22/652(E83007) and magazine situated at Monjanur Village herein referred as Party 1 entered into blasting contract agreement with M/S. ANNAI BLUE METAL, Kalipalayam, Kuppam village, Pugalur Taluk, Karur Disttict. RC NO.134/mines/2020 Dated 12/10/2020 at S.F.NO.682 (PART) 1.92 hec Herein referred as Party2, on both parties agreed for the followings :

- Party 2 has to place his order by oral or written for requirement of explosives to party 1 and party 1 has to transport the Explosives as per the order from his Explosives magazine to work site of the party2

For ANNAI BLUE METAL,

S. K. S.

PARTNER.

For SRI VEERAKUMAR EXPLOSIVES

S. Balasubramanian

Managing Partner



- b. Party 1 has his own explosives van to transport the explosives from his magazine to the worksite of the party2 and well experience licenced blasters and shot firer for safe blasting work
- c. Party 1 has to use his explosives to do blasting work in the Blue Metal Quarry with an authorized mine mates which is issued by the Govt of India, Department of Explosives or authorized permit holder to carry out the blasting work in mines issued under the mines Act.
- d. Party 2 has to pay the blasting charges (including the cost of the explosives and other expenses related to blasting) to party 1 as agreed by both the parties 1 and 2
- e. Party 2 has to make his own arrangement to remove all the broken materials in the work site at his own cost and risk
- f. This agreement is Valid from the date of signing by both the parties till the completion o blasting contract work form party 2 by giving in writing for clearing the agreement with the acknowledgement by the Party 2.

Party 1

M/S SRI VEEKUMAR EXPLOSIVES  
No.1/199, Union Office Road, K,Paramathi  
Aravakurichi Taluk, Karu District

Signature

For SRI VEERAKUMAR EXPLOSIVES  
S. Baksubraman  
Managing Partner

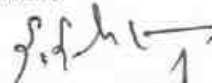

Party 2

M/S. ANNAI BLUE METAL,  
Kalipalayam, Kuppam village  
Pugalur Taluk, Karur District

Signature

For ANNAI BLUE METAL,  
S. Keth  
PARTNER

Witness

1.  S. SELVAKUMAR, 267/2, Sindhan nagar, Ardamkavil East
2.  S/o. M.P. Arthanasi. 151/ Palani puram. Bhanuani P  
Erode - Dt. Pin- 638301

## अनुज्ञापित प्ररूप एल. ई.-3 | LICENCE FORM LE-3

(विस्फोटक नियम, 2008 की अनुसूची 4 के भाग 1 के अनुच्छेद 3(क) से (घ) देखिए।  
(See article 3(a) to (d) of Part I of Schedule IV of Explosives Rules, 2008)(ग) उपयोग के लिए एक समय पर वर्ग 1,2,3,4,5 या वर्ग 7 के विस्फोटक या किसी मैगजीन में वर्ग 6 के विस्फोटक रख  
Licence to possess : (c) for use,explosives of class 1, 2,3,4,5,6 or 7 in a magazineअनुज्ञापित सं. (Licence No.) : E/SC/TN/22/652(E83007)  
वार्षिक फीस रुपए (Annual Fee Rs): 6200/-

1. Licence is hereby granted to

Sri Veerakumar Explosives (आधिभागी / Occupier : S.Balasubramani), 1/99 Union Office Road, K.Paramathy,  
Town/Village - K.Paramathy, District-KARUR, State-Tamil Nadu, Pincode - 639111

को अनुज्ञापित अनुदत्त की जाती है।

2. अनुज्ञापितधारी की प्रास्थिति | Status of licensee : Partnership Firm

3. अनुज्ञापित निम्नलिखित प्रयोजनों के लिए विधिमान्य है।

Licence is valid only for the following purpose.

possess for use of Slurry Explosives, Electric and/or Ordinary  
Detonators, Detonating Fuse, Safety Fuse, - के उपयोग के लिए

4. अनुज्ञापित विस्फोटकों के निम्नलिखित किस्मों, प्रकार और मात्रा के लिए विधिमान्य है।

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

| क्र<br>Sr. No. | नाम और विवरण<br>Name and Description | वर्ग और प्रभाग<br>Class & Division | उप-प्रभाग<br>Sub-division | मात्रा किसी एक समय में<br>Quantity at any one time |
|----------------|--------------------------------------|------------------------------------|---------------------------|--|
| 1.             | Slurry Explosives                    | 2-0                                | 0                         | 1600 Kg.   |
| 2.             | Electric and/or Ordinary Detonators  | 6-3                                | 0                         | 44000 Nos.   |
| 3.             | Detonating Fuse                      | 6-2                                | 0                         | 20000 Mtrs   |
| 4.             | Safety Fuse                          | 6-1                                | 0                         | 10000 Mtrs   |

(ख) किसी एक कलेंडर मास में खरीदे जाने वाले विस्फोटक की मात्रा (अनुच्छेद 3(ख) और (ग) के अधीन अनुज्ञापित के लिए)  
(b) Quantity of explosives to be purchased in a calendar month [applicable for licence under article 3(b) and (g)]:10 times  
as above.

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

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

रेखाचित्र क्र. (Drawing No.) E/SC/TN/22/652(E83007)  
दिनांक (Dated) 29/03/2016

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

Survey No. Survey No: 266, ग्राम (Town/Village) : Karunchellipalayam, Thottampatti, Monjanur village, तालुका थाना (Police Station) : Thennilai  
जिला (District) KARUR राज्य (State) Tamil Nadu पिनकोड (Pincode) 639111  
दूरभाष (Phone) ई. मेल (E-Mail) फेक्स (Fax)

7. अनुज्ञापित परिसर में निम्नलिखित सुविधाएं अंतर्विष्ट हैं।

The licensed premises consist of following facilities.

One Detonator room, one Lobby and a main room

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

The licence is granted subject to the provision of Explosives Act 1884 as amended from time to time and the Explosives Rules, 2004 framed there under and the conditions, additional conditions and the following Annexures.

- उपर्युक्त क्रम सं. 5 में यथा कथित रेखाचित्र (स्थान, सन्निर्माण संबंधी और अन्य विवरण दर्शाते हुए)।  
Drawings (showing site, constructional and other details) as stated in serial No. 5 above.
- अनुज्ञापित प्राधिकारी द्वारा हस्ताक्षरित इस अनुज्ञापित की शर्तों और अतिरिक्त शर्तों।  
Conditions and Additional Conditions of this licence signed by the licensing authority.
- दूरी प्ररूप DE-2 | Distance Form DE-2.

9. यह अनुज्ञापित तारीख 31 मार्च 2020 तक विधिमान्य रहेगी। This licence shall remain valid till 31st day of March 2020.

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

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

तारीख | The Date - 29/03/2016

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

## Amendments :

- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 29/04/2016

नवीनीकरण के पृष्ठांकन के लिए स्थान  
Space for Endorsement of Renewal

| नवीकरण की तारीख<br>Date of Renewal | समाप्ति की तारीख<br>Date of Expiry | अनुज्ञापन प्राधिकारी के हस्ताक्षर और स्टाम्प<br>Signature of licensing authority and stamp |
|------------------------------------|------------------------------------|--|
| 29/09/2020                         | 31/03/2025                         | Jt. Chief Controller of Explosives, South Circle, Chennai                                  |

कानूनी चेतावनी : विस्फोटकों को गलत ढंग से चलाने या उनका दुरुपयोग विधि के अधीन गंभीर दंडित अपराध होगा।  
Statutory Warning : Mishandling and misuse of explosives shall constitute serious criminal offence under the law.

अनुज्ञा प्रमाण पत्र. - 10 | Form LE-10

शॉट फायर कर्ता प्रमाण-पत्र | Shot Firer's Certificate

(अनुसूची IV के भाग 1 का अनुच्छेद 10 देखें | See article 10 of Part 1 of Schedule IV)

[विस्फोटक विधम, 2008 का नियम 107(5) देखें | see rule 107(5) of Explosives Rules, 2008]

(खान अधिनियम, 1952 के अधीन न आने वाले क्षेत्र में विस्फोट करने के लिए सक्षमता प्रमाणपत्र)

(Certificate of competency to carry out blasting of explosives in area not coming under)

संख्या | No.: E/SC/TN/30/1213(E71449)

प्रमाणित किया जाता है कि श्री K SUDHAKARAN,

जिनका जन्म 08/03/1955 को हुआ था, को S/o.Kittusamy.1/99.Union office Road,K.Paramathy,Aravakurichy taluk, KARUR, Tamil Nadu - के निवासी होने के अलावा, वे, येनै व्यापक तारीख को आवेदित शॉट फायर की परीक्षा तारीख को उत्तीर्ण कर ली है और वह विस्फोटक अधिनियम, 1884 और उसके अधीन विहित नियमों के उपबंधों के अधीन रहते हुए खान अधिनियम, 1952 की प्राप्ति के अधीन आनेवाले खानों से अन्यथा क्षेत्र में नीचे यथा उल्लिखित विस्फोटकों का उपयोग करते हुए विस्फोट प्रचालन करने के लिए प्राधिकृत है।

This is to certify that Shri K SUDHAKARAN,

born on 08/03/1955, resident of S/o.Kittusamy.1/99.Union office Road,K.Paramathy,Aravakurichy taluk, KARUR, Tamil Nadu - passed the shotfirer's examination held on conducted by Chennai and is authorised to conduct blasting operations as mentioned below using explosives in areas other than mines coming under the purview of the Mines Act 1952, subject to the provisions of the Explosives Act, 1884 and the rules framed thereunder.

विस्फोट करने के प्राधिकृत वर्ग, प्रवर्ग और प्रकार :

वर्ग: (ख), श्रेणी: सामान्य जमीन के ऊपर, जमीन के ऊपर ब्लास्टिंग आपरेसन

Authorised class, category and type of blasting :

Class : (B), Category : General aboveground, All phases of aboveground blasting operation

[ नियम 107 का उप-नियम (S) का स्पष्टीकरण देखें | See explanation of sub-rule (S) of rule 107 ]

यह प्रमाणपत्र 15/01/2018 (जारी करने की तारीख से पांच वर्ष) तक विधिमानी होगा |

This certificate shall remain valid till 15/01/2018 (five years from the date of issue)

यह प्रमाण-पत्र, अधिनियम या उसके अधीन विहित नियमों अथवा इस प्रमाण-पत्र की शर्तों का कोई अधिग्रहण करने पर या यदि आवेदन करते आवेदन प्रारूप में दी गई सूचना में कोई फर्क या विचलन होता है तो निलम्बित या अभिसंश्रित कर दिया जाएगा।

This certificate is liable to be suspended or revoked for any violation of the Act or rules framed thereunder or the conditions of this certificate or if there is any discrepancy or deviation in the information or suppression of facts furnished by the applicant in his application form.

Sd/-

स्थान | Place : चेन्नै | Chennai

दिनांक | Date: 15/01/2013

संयुक्त मुख्य विस्फोटक निबंधक | Joint Chief Controller of Explosives

दक्षिणांचल, चेन्नै | South Circle, Chennai

Amendments :

- Change in Postal Address/Purpose/Attached to Magazine dated : 30/03/2016

पुनर्विधिमानीकरण के लिए पृष्ठांकन  
Endorsement for revalidation

| पुनर्विधिमानीकरण की तारीख<br>Date of Revalidation | समाप्ति की तिथि<br>Date of Expiry | अनुज्ञा प्राधिकारी के हस्ताक्षर<br>Signature of licensing authority |
|---|-----------------------------------|---|
| 14/03/2018  | 15/01/2023                        | Jt. Chief Controller of Explosives, South Circle,<br>Chennai        |

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

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

**ANNEXURE-IX AFFIDAVIT AND CER  
DETAILS**



भारतीय गैर न्यायिक

बीस रुपये

रु.20



Rs.20

TWENTY  
RUPEES

INDIA NON JUDICIAL

தமிழ்நாடு தமில்நாடு TAMIL NADU (Ru.20) - 15.7.2021. 93AB 631680

ANNAI BLUE METAL  
KALIPALAYAM.

K. SIVASAMY,  
S.V. 19-A, PNS ST.,  
L.No: 1/97, KRR,  
KARUR.

**AFFIDAVIT TO SEIAA, TAMIL NADU**

We, M/s. Annai Blue Metals, office at S.F.No.451, Kaalipalayam, Kuppam Village, Pugalur Taluk, Karur District – 639 111 do hereby solemnly declare and sincerely affirm that, we had applied for getting environment clearance to SEIAA, Tamil Nadu for quarry lease for Rough stone and Gravel quarry over an extent of 1.92.0Ha. of Patta land in S.F.No. 682(Part) of Kuppam Village, Pugalur Taluk, Karur District, Tamil Nadu State,

1. We swear to state and confirm that within 10km area of the quarry site, we have applied for environmental clearance, none of the following is situated
  - a. Protected areas notified under the wild life (Protection) Act, 1972 (NBWL).
  - b. Wild Life Sanctuary: Nil within 10km Radius
  - c. Critically polluted areas as notified by the central pollution control board constituted under water (Prevention and control of Pollution) Act 1974.
  - d. Interstate boundaries and international boundaries within 10km radius from the boundary of the proposed site.



*R. Manivel*  
22.07.2021  
R. MANIVEL, B.A., B.L.,  
ADVOCATE / NOTARY PUBLIC  
Reg. No: G.O.(Ms).No: 272/2018 (TN),  
No: 84, Rani Mangammal Street  
KARUR - 639 001.(TN), Cell: 98652 71544.

For ANNAI BLUE METAL,  
*S. Iyer*  
PARTNER.

2. We will complete the following Corporate Environment Responsibility (CER) activities before commencement of the quarrying activities.

| CER Activity   | Project cost (Rs) | CER cost 2.0% of Project cost (Rs) |
|--|-------------------|------------------------------------|
| Carrying out various developmental works in the nearby region based on the need of the locals. | Rs. 52,00,000/-   | Rs. 1,04,000/-                     |
| Total cost Allocation  | Rs. 52,00,000/-   | Rs. 1,04,000/-                     |

3. Details of quarry within 500m radius from the applied area:

(i) Details of Existing quarries:

| Sl. No. | Name of the lessee  | S.F. No.                       | Extent in Ha.                            | Lease period                   | Remarks |
|---------|---|--------------------------------|--|--------------------------------|---------|
| 1       | Thiru.S.K. Krishnamurthy, 1/22, kavadikaranur, Thangayur village, Edapati Taluk, Karur District.        | 679, 680/1 (Part)              | 1.09.5<br><u>0.86.0</u><br><b>1.95.5</b> | 04.7.2018<br>To<br>03.7.2023   | -       |
| 2       | Tmt. S. Tamilselvi w/o. Sapapathi Ganesa Nagar 1 <sup>st</sup> Street Enam Karur Karur Taluk & District | 706 part                       | 3.36.0                                   | 18.08.2017<br>To<br>17.08.2022 | -       |
| 3       | Thiru. T.Manoharan, S/o. Moorthi, Salipalayam, Kuppam Post, Aravakurich Taluk, Karur District.          | 665/1<br>665/2<br><b>Total</b> | 1.39.5<br><u>1.26.5</u><br><b>2.66.0</b> | 21.2.2018<br>to<br>20.2.2023   | -       |

(ii) Details of abandoned / Old quarries:

| Sl. No. | Name of the lessee   | S.F. No. | Extent in Ha. | Lease period                | Remarks |
|---------|--|----------|---------------|-----------------------------|---------|
| 1       | S. Tamilselvi, W/o. S. Sapapathi, 16B, Ganesa Nagar, K.V.B Nagar, Karur. | 702      | 3.35.5        | 09.09.2010 to<br>08.09.2015 | -       |



For ANNAI BLUE METAL,  
S. K. S. PARTNER.  
22.07.2024,  
R. MANIVEL, B.A., B.L.,  
ADVOCATE / NOTARY PUBLIC  
Reg. No: G.O.(Ms).No: 272/2018 (TN),  
No: 84, Rani Mangammal Street  
KARUR - 639 001.(TN), Cell: 98652 71544.

(iii) Details of Proposed Area:

| Sl. No. | Name of the lessee   | S.F. No.      | Extent in Ha. | Lease period | Remarks |
|---------|--|---------------|---------------|--------------|---------|
| 1       | M/s. Annai Blue Metals,<br>S.F.No.451,<br>Kaalipalayam, Kuppam<br>Village, Pugalur Taluk,<br>Karur District. | 682<br>(Part) | 1.92.0        | 5 Years      | -       |

4. There will not be hindrance or disturbance to the people living no enrooted/ nearby our quarry site while transporting the mineral and due to quarrying activities.
5. There is no approved habitation within 300m radius from the periphery of our quarry.
6. We swear that afforestation will be carried out during the course of quarrying operation and maintained.
7. The required insurance will be taken in the name of the laborers working in our 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 and Gravel.
9. We will not engage any child labor in our quarry site and we aware that engaging child labor is punishable under the law.
10. All types of safety / protective equipment will be provided to all the laborers working in our quarry.
11. No permanent structures, temple etc., are located within 500m radius from the periphery of our quarry.

We ensure to do the social and Environment commitment as mentioned in the Mining plan to the best of our knowledge.

For M/s. Annai Blue Metals

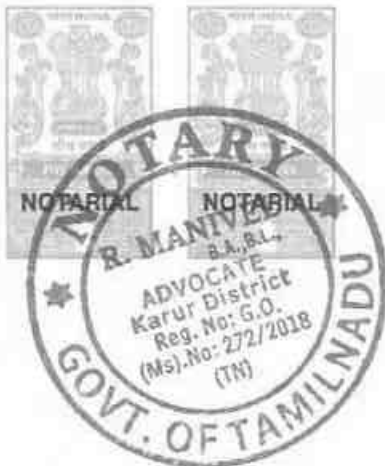
*S. Ketan*

(Deponent)

Solemnly affirm and Signed  
before me at Karur on 22.07.2021.

*[Signature]*  
22.07.2021

*[Signature]*  
22.07.2021



R. MANIVEL, B.A., B.L.,  
ADVOCATE / NOTARY PUBLIC  
Reg. No: G.O.(Ms).No: 272/2018 (TN),  
No: 84, Rani Mangammal Street  
KARUR - 639 001.(TN), Cell: 98652 71544.





# **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.



**ANNEXURE XI**  
**EXISTING PIT LETTER**



From  
Dr.P.Jayapal M.Sc., Ph.D.,  
Deputy Director,  
Geology and Mining,  
Karur.

To  
M/s.Annai Blue Metals,  
S.F.No.451, Kaalipalayam,  
Kuppam Village,  
Pugalur Taluk,  
Karur District - 639 111.

R.C. No.134/Mines/2020, Dated: .03.2021

Sir,

Sub: Mines and Minerals – Minor Mineral – Karur District – Pugalur Taluk – Kuppam Village- S.F.No. 682(Part)- Over an Extent 1.92.0 hectares of patta land Quarry lease application – Minor Mineral - Rough stone and Gravel – preferred by M/s.Annai blue Metals – Mining Plan approved - Details of existing pits in lease applied field requested -furnished – Regarding.

- Ref: 1. Quarry lease application for Rough stone and Gravel preferred by M/s.Annai blue Metals, S.F.No.451, Kaalipalayam, Kuppam Village, Pugalur Taluk, Karur District, dated: 10.12.2020
2. Pricise Area Communication Notice R.c.No. 134/Mines/2020, Dated: 12.10.2020
- 3 Mining Plan submitted by M/s.Annai blue Metals, Letter dated:08.01.2021.
4. The Deputy Director, Geology and Mining, Karur Mining Plan approved letter No.134/Mine/2020, dated: 17.02.2021
5. M/s.Annai blue Metals, S.F.No.451, Kaalipalayam, Kuppam Village, Pugalur Taluk, Karur District, letter dated. 17.02.2020

-----

In the reference 5<sup>th</sup> cited above, the applicant M/s.Annai blue Metals has requested to furnish certain particulars regarding the precise area granted to applicant in the S.F.No. 682(Part)- Over an Extent 1.92.0 hectares in Kuppam Village, Pugalur Taluk, Karur District. In this regard the following details are furnished.

The area applied for lease in which precise area communicated was previously held under quarry lease for a period of 5 years from 12.07.2002 to





11.07.2007 and 03.02.2010 to 02.02.2015. The old pit is found in the area applied for lease in the following dimensions.

| Pit - Details | Length(m) | Width(m) | Depth(m) |
|---------------|-----------|----------|----------|
| Pit           | 97        | 50       | 15       |

From the records, it is ascertained that previously quarry leases for Rough Stone were granted two time in the name of Thiru.R.Ponnusamy and Tvl.Annai Blue Metals for a period of five years each as detailed below.

1. District Collector's Proceedings Rc.No.D.125/2001, dated. Dt:12.09.2001 in S.F. Nos. 682(Part) for a period of 5 years from 12.07.2002 to 11.07.2007.
2. District Collector's Proceedings Rc.No.B.349/Mines/2009, dated. Dt:30.12.2009 in S.F. Nos.682(Part) for a period of 5 years from 03.02.2010 to 02.02.2015.

  
Deputy Director,  
Geology and Mining,  
Karur

  
12/03/2024

**ANNEXURE XII**  
**VAO, THASILDAR, RDO CERTIFICATES**



வருவாய் மற்றும் பேரிடர் மேலாண்மைத்துறை

அனுப்புநர்

திருமதி.வ.சந்தியா, பி.எஸ்.சி., பி.எட்.,  
வருவாய் கோட்டாட்சியர்,  
கரூர்.

பெறுநர்

மாவட்ட ஆட்சித் தலைவர்,  
கரூர்.

ந.க.அ/995/2020, நாள்:11.07.2020.

அய்யா,

பொருள்: கனிமம் மற்றும் சுரங்கம் - சிறு கனிமங்கள் - கரூர் மாவட்டம் -  
புகளூர் வட்டம் - குப்பம் கிராமம் - புல எண்கள். 682 (பகுதி)  
ஹெக்டேர் 1.92.0 ஏர்ஸ் பரப்பில் சாதாரண கற்கள் / கிராவல்  
வெட்டியெடுக்க தி/ள்.அன்னை புளு மெட்டல்ஸ் என்ற  
நிறுவனத்தினர் குவாரி குத்தகை உரிமம் வழங்க கோரியது -  
அறிக்கை அனுப்புதல் - தொடர்பாக.

- பார்வை: 1. வருவாய் கோட்டாட்சியர் அவர்களின் ந.க.அ/995/2020  
நாள் :13.03.2020  
2. இவ்வலுவலக கடிதம் ந.க.ஆ/995/2020 நாள் :06.05.2020.  
3. புகளூர் வட்டாட்சியர் ந.க.எண்.ஆ/339/2020  
நாள் 08.07.2020

\*\*\*\*\*

கரூர் மாவட்டம், புகளூர் வட்டம், குப்பம் கிராமம், புல எண்கள். 682 (பகுதி)  
ஹெக்டேர் 1.92.0 ஏர்ஸ் நிலத்தில் சாதாரண கற்கள் / கிராவல் வெட்டியெடுக்க குத்தகை  
உரிமம் கோரி தி/ள். அன்னை புளு மெட்டல்ஸ் என்ற நிறுவனத்தினர் மனு அளித்துள்ளதை  
தொடர்ந்து பார்வை-1ல் காணும் மாவட்ட ஆட்சித் தலைவர் அவர்களின் கடிதத்தில்  
புலத்தணிக்கை மற்றும் விசாரணை மேற்கொண்டு அறிக்கை அனுப்பக்  
தெரிவிக்கப்பட்டுள்ளது. பார்வை-2ல் காணும் இவ்வலுவலக கடிதத்தின் வாயிலாக புகளூர்  
வட்டாட்சியரிடம் அறிக்கை கோரப்பட்டதில் பார்வை-3ல் கண்டுள்ளவாறு புகளூர்  
வட்டாட்சியரிடமிருந்து குத்தகை உரிமம் வழங்க பரிந்துரை செய்து அறிக்கை  
வரப்பெற்றுள்ளது. மேற்படி அறிக்கையின் அடிப்படையில் புலத்தினை தலதணிக்கை செய்து  
எனதறிக்கையினை பின்வருமாறு சமர்ப்பித்துக் கொள்கிறேன்.

கரூர் மாவட்டம், புகளூர் வட்டம், குப்பம் கிராமம், புல எண்கள். 682 ஹெக்டேர் 6.21.0  
ஏர்ஸ் நிலத்தில் ஹெக்டேர் 1.92.0 ஏர்ஸ் (பகுதி) நிலத்தில் தி/ள்.அன்னை புளு மெட்டல்ஸ்  
நிறுவனத்தின் நிர்வாக பங்குதாரர்களான கார்த்திகா க/பெ.செல்வக்குமார்-(1), சிவக்குமார்  
த/பெ.செல்வக்குமார்-(2) ஆகிய பெயர்களில் பட்டா எண் 3707-ன்படி கூட்டாக  
தாக்கலாகியுள்ளது.

மேற்படி புல எண். 682-ன் நான்கெல்லை விவரம் (ஹெக்டேர் 1.92.0 ஏர்ஸ் (பகுதி))

|         |   |   |
|---------|---|---|
| வடக்கு  | : | புல எண்.680/1 கிருஷ்ணமூர்த்தி நிலம்<br>புல எண்.680/2 திருமூர்த்தி நிலம் |
| தெற்கு  | : | புல எண்.682-ல் பகுதி அன்னை புளூ மெட்டல்ஸ் நிலம்                         |
| கிழக்கு | : | புல எண்.682-ல் பகுதி அன்னை புளூ மெட்டல்ஸ் நிலம்                         |
| மேற்கு  | : | புல எண்.681 நடைபாதை   |

மேற்படி, குவாரி குத்தகை உரிமம் கோரும் இடங்களில் எல்லைகள் வரையறுக்கப்பட்டு எல்லை கற்கள் நடப்பட்டுள்ளது. இப்புலத்தில் அரிய வகை மரங்களோ, வரலாற்று சின்னங்களோ மற்றும் வழிபாட்டுத் தலங்களோ ஏதுமில்லை. இந்நிலம் நில உச்சவரம்பு சட்டத்தின் கீழோ மற்றும் நில சீர்திருத்த சட்டத்திற்கு கட்டுப்பட்ட நிலமாகவோ இல்லை. இப்புலத்தின் ஊடே உயர்/தாழ் மின் அழுத்த கம்பி ஏதும் செல்லவில்லை. மயானம், கல்விக்கூடம் போன்றவைகள் ஏதும் அருகில் இல்லை. இப்புலத்தின் எல்லையில் இருந்து 300 மீட்டர் தொலைவிற்குள் அங்கரிக்கப்பட்ட வீட்டுமனைகளோ அல்லது ஊர் நத்தமோ ஏதுமில்லை.

மேற்படி குப்பம் கிராமம், புல எண். 682 (பகுதி) ஹெக்டேர் 1.92.0 ஏர்ஸ் நிலத்தில் தி/ள். அன்னை புளூ மெட்டல்ஸ் என்ற நிறுவனத்தினர் சாதாரண கற்கள் மற்றும் கிராவல் வெட்டி எடுக்க 5 வருடங்களுக்கு குவாரி குத்தகை உரிமம் வழங்க கோரியது தொடர்பாக மேற்படி கிராமத்தில் (அ1) விளம்பர அறிவிப்பு பிரசுரித்தம் செய்யப்பட்டதில் எந்தவித ஆட்சேபணையும் வரப்பெறவில்லை. எனவே மேற்படி குப்பம் கிராமம், புல எண். 682 (பகுதி) ஹெக்டேர் 1.92.0 ஏர்ஸ் நிலத்தில் தி/ள். அன்னை புளூ மெட்டல்ஸ் என்பவருக்கு 5 வருடங்களுக்கு சாதாரண கற்கள் மற்றும் கிராவல் வெட்டி எடுக்க குத்தகை உரிமம் வழங்கலாம் என புகளூர் வட்டாட்சியர் பரிந்துரை செய்து அறிக்கை சமர்ப்பித்துள்ளார்.

எனவே, வட்டாட்சியின் அறிக்கை மற்றும் கிராம கணக்குகள், ஆவணங்கள் ஆகியவற்றின் அடிப்படையில் களூர் மாவட்டம், புகளூர் வட்டம், குப்பம் கிராமம், புல எண். 682 (பகுதி) ஹெக்டேர் 1.92.0 ஏர்ஸ் நிலத்தில் தி/ள். அன்னை புளூ மெட்டல்ஸ் என்பவருக்கு சாதாரண கற்கள் மற்றும் கிராவல் வெட்டி எடுக்க 5 வருடங்களுக்கு குத்தகை உரிமம் வழங்கலாம் என்பதைப் பணிவுடன் தெரிவித்துக்கொள்கிறேன். மேலும் புலத்தணிக்கை குறிப்பு, புகளூர் வட்டாட்சியர் அறிக்கை, விசாரணை ஆவணங்கள் மற்றும் கிராம கணக்கு நகல்கள் ஆகியவற்றினை இத்துடன் இணைத்து அனுப்பியுள்ளேன் என்பதையும் பணிவுடன் தெரிவித்துக்கொள்கிறேன்.

இணைப்பு - மேற்கண்டவாறு.

வருவாய் கோட்டாட்சியர்,  
களூர்.

11/11/2020

**கரூர் வருவாய் கோட்டாட்சியரின் புலத்தணிக்கை குறிப்பு**

|                           |   |
|---------------------------|---|
| கிராமம் : குப்பம் கிராமம் | புல எண். 682<br>மொத்த விஸ்தீர்ணம் ஹெக்டேர் 6.210<br>ஏர்ஸ் பரப்பில் ஹெக்டேர் 1.92.0 ஏர்ஸ்) |
| நாள்: 09.07.2020          | வகைபாடு : ரயத்து புன்செய்   |

கரூர் மாவட்டம், புகளூர் வட்டம், குப்பம் கிராமம் புல எண்.682-ல் மொத்த விஸ்தீர்ணம் ஹெக்டேர் 6.210 ஏர்ஸ் பரப்பில் ஹெக்டேர் 1.92.0 ஏர்ஸ் (பகுதி) நிலத்தில் தி/ள். அன்னை புளூ மெட்டல்ஸ் நிறுவனத்தினர் சாதாரண கற்கள் மற்றும் கிராவல் வெட்டியெடுக்க 5 வருடங்களுக்கு குத்தகை உரிமம் கோரியது தொடர்பாக, இன்று 09.07.2020 புலத்தணிக்கை மேற்கொள்ளப்பட்டது. மேற்படி புலத்தணிக்கையின்போது புகளூர் வட்டாட்சியர், க.பரமத்தி குறுவட்ட ஆய்வாளர், க.பரமத்தி குறுவட்ட நில அளவா, குப்பம் கிராம நிர்வாக அலுவலர், குப்பம் கிராம உதவியாளர் உடனிருந்தனர்.

கரூர் மாவட்டம், புகளூர் வட்டம், குப்பம் கிராமம், புல எண்கள். 682-ல் மொத்த விஸ்தீர்ணம் ஹெக்டேர் 6.210 ஏர்ஸ் நிலமானது தி/ள். அன்னை புளூ மெட்டல்ஸ் நிறுவனத்தின் நிர்வாக பங்குதாரர்களான கார்த்திகா க/பெ.செல்வக்குமார்-(1), சிவக்குமார் த/பெ.செல்வக்குமார்-(2) ஆகிய பெயர்களில் பட்டா எண்.3707-ன்படி கூட்டாக தாக்கலாகியுள்ளது. மேற்படி நிலமானது ரயத்து புன்செய் வகைபாடு நிலமாகும்.

புல எண். 682-ல் குவாரி உரிமம் கோரும் பகுதியின் நான்கெல்லை விவரம்  
(ஹெக்டேர் 1.92.0 ஏர்ஸ் )

|           |   |
|-----------|---|
| வடக்கு :  | புல எண்.680/1 கிருஷ்ணமூர்த்தி நிலம்<br>புல எண்.680/2 திருமூர்த்தி நிலம் |
| தெற்கு :  | புல எண்.682-ல் பகுதி அன்னை புளூ மெட்டல்ஸ் நிலம்                         |
| கிழக்கு : | புல எண்.682-ல் பகுதி அன்னை புளூ மெட்டல்ஸ் நிலம்                         |
| மேற்கு :  | புல எண்.681 நடைபாதை   |

குவாரி குத்தகை உரிமம் வழங்க கோரிய பிரஸ்தாப புல எண்களை தலப்பார்வை செய்ததில் எல்லைகள் வரையறுக்கப்பட்டு எல்லை கற்கள் நடப்பட்டுள்ளது. இப்புலத்தில் அரிய வகை மரங்களோ, வரலாற்று சின்னங்களோ மற்றும் வழிபாட்டுத் தலங்களோ ஏதுமில்லை. இந்நிலம் நில உச்சவரம்பு சட்டத்தின் கீழோ மற்றும் நில சீர்திருத்த சட்டத்திற்கு கட்டுப்பட்ட நிலமாகவோ இல்லை. இப்புலத்தின் ஊடே உயர்/தாழ் மின் அழுத்த கம்பிகள் ஏதும் செல்லவில்லை. மயானம், கல்விக்கூடம் போன்ற ஏதும் அருகில் இல்லை. இப்புலத்தின் எல்லையில் இருந்து 300மீட்டர் தொலைவிற்குள் அங்கரிக்கப்பட்ட வீட்டுமனைகளோ அல்லது ஊர் நத்தமோ ஏதுமில்லை.

எனவே, கரூர் மாவட்டம், புகளூர் வட்டம், குப்பம் கிராமம், புல எண்கள். 682 (பகுதி)  
ஹெக்டேர் 1.92.0 ஏர்ஸ் நிலத்தில் தி/ள். அன்னை புளூ மெட்டல்ஸ் நிறுவனத்திற்கு சாதாரண  
கற்கள் மற்றும் கிராவல் வெட்டி எடுக்க 5 வருடங்களுக்கு குத்தகை உரிமம் வழங்கலாம்.

வருவாய் கோட்டாட்சியர்,  
கரூர்.

**வருவாய் மற்றும் பேரிடர் மேலாண்மைத்துறை**

அனுப்புநர்

திரு.தி.சிவக்குமார்,எம்.எஸ்.சி.,எம்.பி.எட்.,  
வருவாய் வட்டாட்சியர்,  
புகளூர்.

பெறுநர்

வருவாய் கோட்டாட்சியர்,  
கரூர்.

**ந.க.ஆ/339/2020, நாள்: 08.07.2020.**

அம்மையர்,

**பொருள்:** கனிமம் மற்றும் கரங்கம் - சிறு கனிமங்கள் - கரூர் மாவட்டம் - புகளூர் வட்டம் - குப்பம் கிராமம் - புல எண்கள். 682 (பகுதி) ஹெக்டேர் 1.92.0 ஏர்ஸ் பரப்பில் சாதாரண கற்கள் / கிராவல் வெட்டியெடுக்க குத்தகை உரிமம் கோரி தி/ள் அன்னை புளூ மெட்டல்ஸ் என்ற நிறுவனத்தினருக்கு குத்தகை உரிமம் வழங்க கோரியது -அறிக்கை அனுப்புதல் - தொடர்பாக.

- பார்வை:**
1. கரூர் வருவாய் கோட்டாட்சியர் அவர்களின் ந.க.அ/995/2020 நாள் :13.03.2020.
  2. இவ்வலுவலக கடிதம் ந.க.ஆ/339/2020 நாள் :06.05.2020.
  3. க.பரமத்தி குறுவட்ட வருவாய் ஆய்வாளரின் அறிக்கை அதிமு/41/2020, நாள் :07.07.2020

\*\*\*\*\*

கரூர் மாவட்டம், புகளூர் வட்டம், குப்பம் கிராமம், புல எண்கள். 682 (பகுதி) ஹெக்டேர் 1.92.0 ஏர்ஸ் நிலத்தில் சாதாரண கற்கள் / கிராவல் வெட்டியெடுக்க குத்தகை உரிமம் கோரி தி/ள். அன்னை புளூ மெட்டல்ஸ் என்ற நிறுவனத்தினர் அளித்திட்ட மனுவின் மீது பார்வை(1) ல் காணும் குறிப்பாணையில் கோரியுள்ளவாறு புலத்தணிக்கை மற்றும் விசாரணை மேற்கொண்டு எனதறிக்கையினை கீழ்க்கண்டவாறு சமர்ப்பிக்கின்றேன்

கரூர் மாவட்டம், புகளூர் வட்டம், குப்பம் கிராமம், புல எண்கள். 682 ஹெக்டேர் 6.21.0 ஏர்ஸ் நிலம் தி/ள். அன்னை புளூ மெட்டல்ஸ் நிறுவனத்தின் நிர்வாக பங்குதாரர்கள் கார்த்திகா க/பெ.செல்வக்குமார்-(1), சிவக்குமார் த/பெ.செல்வக்குமார் -(2) ஆகிய பெயர்களில் பட்டா எண். 3707-ன்படி கூட்டாக தாக்கலாகியுள்ளது. மேலும் மேற்படி தி/ள் அன்னை புளூ மெட்டல்ஸ் நிறுவனத்தினர் குப்பம் கிராம புல எண்.682-ல் மொத்த விஸ்தீர்ணம் ஹெக்டேர் 6.21.0 ஏர்ஸ் பரப்பில் ஹெக்டேர் 1.92.0 ஏர்ஸ் (பகுதி) பரப்பில் அரசு அனுமதி பெற்று 5 ஆண்டுகளுக்கு சாதாரண கற்கள் வெட்டியெடுக்க குத்தகை உரிமம் கோரியுள்ளனர்.

புல எண். 682-ல் குவாரி உரிமம் கோரும் பகுதி ஹெக்டேர் 1.92.0 ஏர்ஸ் நிலத்திற்கு நான்கெல்லை விவரம் கீழ்க்கண்டுள்ளவாறு உள்ளது.

|         |   |   |
|---------|---|---|
| வடக்கு  | : | புல எண்.680/1 கிருஷ்ணமூர்த்தி நிலம்<br>புல எண்.680/2 திருமூர்த்தி நிலம் |
| தெற்கு  | : | புல எண்.682-ல் பகுதி அன்னை புளூ மெட்டல்ஸ் நிலம்                         |
| கிழக்கு | : | புல எண்.682-ல் பகுதி அன்னை புளூ மெட்டல்ஸ் நிலம்                         |
| மேற்கு  | : | புல எண்.681 நடைபாதை   |



குவாரி குத்தகை உரிமம் வழங்குவது தொடர்பாக பிரஸ்தாப புல எண்களை தலப்பார்வை செய்ததில் குவாரி குத்தகை உரிமம் கோரும் இடங்களில் எல்லைகள் வரையறுக்கப்பட்டு எல்லை கற்கள் நடப்பட்டுள்ளது. இப்புலத்தில் அரிய வகை மரங்களோ, வரலாற்று சின்னங்களோ மற்றும் வழிபாட்டுத் தலங்களோ ஏதுமில்லை. இந்நிலம் நில உச்சவரம்பு சட்டத்தின் கீழோ மற்றும் நில சீர்திருத்த சட்டத்திற்கு கட்டுப்பட்ட நிலமோ இல்லை. இப்புலத்தின் ஊடே உயர்/தாழ் மின் அழுத்த கம்பி ஏதும் செல்லவில்லை. மயானம், கல்விக்கூடம் போன்ற ஏதும் அருகில் இல்லை. இப்புலத்தின் எல்லையில் இருந்து 300மீட்டர் தொலைவிற்குள் அங்கரிக்கப்பட்ட வீட்டுமனைகளோ அல்லது ஊர் நத்தமோ ஏதுமில்லை.

மேற்படி குப்பம் கிராமம், புல எண். 682 (பகுதி) ஹெக்டேர் 1.92.0 ஏர்ஸ் நிலத்தில் தி/ள். அன்னை புளூ மெட்டல்ஸ் என்ற நிறுவனத்தினர் 5 வருடங்களுக்கு சாதாரண கற்கள் மற்றும் கிராவல் வெட்டி எடுக்க குவாரி குத்தகை உரிமம் வழங்குவது தொடர்பாக மேற்படி கிராமத்தில் (அ1) விளம்பர அறிவிப்பு பிரசுரித்தம் செய்யப்பட்டதில் எந்தவித ஆட்சேபணையும் வரப்பெறவில்லை. எனவே மேற்படி குப்பம் கிராமம், புல எண். 682 (பகுதி) ஹெக்டேர் 1.92.0 ஏர்ஸ் நிலத்தில் தி/ள். அன்னை புளூ மெட்டல்ஸ் என்பவருக்கு 5 வருடங்களுக்கு சாதாரண கற்கள் மற்றும் கிராவல் வெட்டி எடுக்க குத்தகை உரிமம் வழங்கலாம் என பார்வை 3 ல் காணும் அறிக்கையில் க.பரமத்தி குறுவட்ட வருவாய் ஆய்வாளர் பரிந்துரை செய்துள்ளார். மேலும் தி/ள். அன்னை புளூ மெட்டல்ஸ் என்ற நிறுவனத்தினர் குவாரி குத்தகை உரிமம் பெறுவதற்கு உரிமக்கட்டணமாக ரூ.1500/- அரக கணக்கில் செலுத்தி அசல் சலான் இணைத்துள்ளார்.

எனவே, கரூர் மாவட்டம், புகளூர் வட்டம், குப்பம் கிராமம், புல எண்கள். 682 (பகுதி) ஹெக்டேர் 1.92.0 ஏர்ஸ் நிலத்தில் தி/ள். அன்னை புளூ மெட்டல்ஸ் என்பவருக்கு 5 வருடங்களுக்கு சாதாரண கற்கள் மற்றும் கிராவல் வெட்டி எடுக்க குத்தகை உரிமம் வழங்கலாம் என்பதைப் பணிவுடன் தெரிவித்துக்கொள்கிறேன். இத்துடன் விசாரணை ஆவணங்கள் மற்றும் கிராம கணக்கு நகல்களை இணைத்துள்ளேன் என்பதையும் பணிவுடன் தெரிவித்துக்கொள்கிறேன்.

இணைப்பு - மேற்கண்டவாறு.

22/08/20  
வட்டாட்சியர்,  
புகளூர். (1/2)

8  
08/07/20

நகல்: மாவட்ட ஆட்சித்தலைவர், கரூர் அவர்களுக்கு தகவலுக்காக பணிந்து சமர்ப்பிக்கப்படுகிறது.

**புலத்தணிக்கை குறிப்பு**

கரூர் மாவட்டம், புகளூர் வட்டம், சூப்பம் கிராம புல எண்கள். 682 (பகுதி) ஹெக்டேர் 1.92.0 ஏர்ஸ், நிலத்தில் தி/ள். அன்னை புளூ மெட்டல்ஸ் நிறுவனத்தினர் 5 வருடங்களுக்கு சாதாரண கற்கள் மற்றும் கிராவல் வெட்டியெடுக்க குத்தகை உரிமம் கோரியது தொடர்பாக, இன்று 08.07.2020 க.பரமத்தி குறுவட்ட ஆய்வாளர், க.பரமத்தி குறுவட்ட நில அளவர், சூப்பம் கிராம நிர்வாக அலுவலர், சூப்பம் கிராம உதவியாளர் ஆகியோருடன் புல தணிக்கை செய்யப்பட்டது.

கரூர் மாவட்டம், புகளூர் வட்டம், சூப்பம் கிராமம், புல எண்கள். 682 ஹெக்டேர் 6.21.0 ஏர்ஸ் நிலம் தி/ள். அன்னை புளூ மெட்டல்ஸ் நிறுவனத்தின் நிர்வாக பங்குதாரர்கள் கார்த்திகா க/பெ.செல்வக்குமார்-(1), சிவக்குமார் த/பெ.செல்வக்குமார் -(2) ஆகிய பெயர்களில் பட்டா எண்.3707-ன்படி கூட்டாக தாக்கலாகியுள்ளது. மேலும் மேற்படி தி/ள் அன்னை புளூ மெட்டல்ஸ் நிறுவனத்தினர் சூப்பம் கிராம புல எண்.682-ல் மொத்த விஸ்தீர்ணம் ஹெக்டேர் 6.21.0 ஏர்ஸ் பரப்பில் ஹெக்டேர் 1.92.0 ஏர்ஸ் (பகுதி) பரப்பில் அரசு அனுமதி பெற்று 5 ஆண்டுகளுக்கு சாதாரண கற்கள் வெட்டியெடுக்க குத்தகை உரிமம் கோரியுள்ளனர்.

குத்தகை உரிமம் கோரும் புல எண்.682-க்கு நான்கெல்லை விவரம் பின்வருமாறு.

|         |   |   |
|---------|---|---|
| வடக்கு  | : | புல எண்.680/1 கிருஷ்ணமூர்த்தி நிலம்<br>புல எண்.680/2 திருமூர்த்தி நிலம்<br>புல எண்.677 நடைபாதை      |
| தெற்கு  | : | புல எண்.683 ச.யசோதா (வ) நிலம்   |
| கிழக்கு | : | புல எண்.675/1 சின்னச்சாமி நிலம்<br>புல எண்.675/2 சின்னச்சாமி நிலம்<br>புல எண்.674/1 பெரியசாமி நிலம் |
| மேற்கு  | : | புல எண்.681 நடைபாதை<br>புல எண்.684 நடைபாதை  |

புல எண். 682-ல் குவாரி உரிமம் கோரும் பகுதி ஹெக்டேர் 1.92.0 ஏர்ஸ் நிலத்திற்கு நான்கெல்லை விவரம் கீழ்க்கண்டுள்ளவாறு உள்ளது.

|         |   |   |
|---------|---|---|
| வடக்கு  | : | புல எண்.680/1 கிருஷ்ணமூர்த்தி நிலம்<br>புல எண்.680/2 திருமூர்த்தி நிலம் |
| தெற்கு  | : | புல எண்.682-ல் பகுதி அன்னை புளூ மெட்டல்ஸ் நிலம்                         |
| கிழக்கு | : | புல எண்.682-ல் பகுதி அன்னை புளூ மெட்டல்ஸ் நிலம்                         |
| மேற்கு  | : | புல எண்.681 நடைபாதை   |

குவாரி குத்தகை உரிமம் வழங்குவது தொடர்பாக பிரஸ்தாப புல எண்களை தலப்பார்வை செய்ததில் குவாரி குத்தகை உரிமம் கோரும் இடங்களில் எல்லைகள் வரையறுக்கப்பட்டு எல்லை கற்கள் நடப்பட்டுள்ளது. இப்புலத்தில் அரிய வகை மரங்களோ, வரலாற்று சின்னங்களோ மற்றும் வழிபாட்டுத் தலங்களோ ஏதுமில்லை. இந்நிலம் நில உச்சவரம்பு சட்டத்தின் கீழோ மற்றும் நில சீர்திருத்த சட்டத்திற்கு கட்டுப்பட்ட நிலமோ இல்லை. இப்புலத்தின் ஊடே உயர்/தாழ் மின் அழுத்த கம்பி ஏதும் செல்லவில்லை. மயானம், கல்விக்கூடம் போன்ற ஏதும் அருகில் இல்லை. இப்புலத்தின் எல்லையில் இருந்து 300மீட்டர் தொலைவிற்குள் அங்கரிக்கப்பட்ட வீட்டுமனைகளோ அல்லது ஊர் நத்தமோ ஏதுமில்லை.

எனவே, கருநர் மாவட்டம், புகளூர் வட்டம், குப்பம் கிராமம், புல எண்கள். 682 (பகுதி) ஹெக்டேர் 1.92.0 ஏர்ஸ் நிலத்தில் தி/ள். அன்னை புளூ மெட்டல்ஸ் என்பவருக்கு 5 வருடங்களுக்கு சாதாரண கற்கள் மற்றும் கிராவல் வெட்டி எடுக்க குத்தகை உரிமம் வழங்க பரிந்துரை செய்யலாம் என்பதை பணிவுடன் தெரிவித்துக் கொள்கிறேன்.

  
வ. அ. சிவார்,  
புகளூர்.

அதிமு / 41 / 2020 நாள் 07.07.2020

**புகளூர் வட்டாட்சியர் அவர்களுக்கு பணிநிதனுப்பப்படுகிறது**

களூர் மாவட்டம், புகளூர் வட்டம், குப்பம் கிராமம், காளிபாளையம் என்ற முகவரியில் இயங்கி வரும் தி/ள். அன்னை புளூ மெட்டல்ஸ் நிறுவனத்தினர், புகளூர் வட்டம், பவித்திரம் கிராமம் புல எண் 682-ல் பகுதி ஹெக்டேர் 1.92.0 ஏர்ஸ் பரப்பில் சாதாரண கற்கள் / கிராவல் வெட்டியெடுக்க குத்தகை உரிமம் கோரி களூர் மாவட்ட ஆட்சித்தலைவர் அவர்களிடம் அளித்த மனு தொடர்பாக, தல விசாரணை மேற்கொண்டு எனதறிக்கையினைக் கீழ்க்கண்டவாறு சமர்ப்பிக்கின்றேன்.

களூர் மாவட்டம், புகளூர் வட்டம், குப்பம் கிராமம் புல எண் 682-ல் ஹெக்டேர் 6.21.0 ஏர்ஸ் நிலம் அன்னை புளூ மெட்டல்ஸ் நிறுவனத்தின் நிர்வாக பங்குதாரர்கள் கார்த்திகா, க/பெ.செல்வக்குமார் - (1), சிவக்குமார், த/பெ.செல்வக்குமார் - (2) ஆகிய பெயர்களில் பட்டா எண் 3707-ன்படி கிராம கணக்குகளில் உள்ளது. மேற்படி தி/ள். அன்னை புளூ மெட்டல்ஸ் நிறுவனத்தினர் குப்பம் கிராம புல எண் 682-ல் மொத்த விஸ்தீரணம் ஹெக்டேர் 6.21.0 ஏர்ஸ் பரப்பில் ஹெக்டேர் 1.92.0 ஏர்ஸ் (பகுதி) பரப்பில் அரசு அனுமதி பெற்று 5 ஆண்டுகளுக்கு சாதாரண கற்கள் வெட்டியெடுக்க குத்தகை உரிமம் கோரி மனு செய்துள்ளனர் என்பது விசாரணையில் தெரிய வருகிறது.

**குத்தகை உரிமம் கோரும் புல எண் 682-க்கு நான்கெல்லை விவரம்.**


|         |   |   |
|---------|---|---|
| வடக்கு  | : | புல எண் 680/1 கிருஷ்ணமூர்த்தி நிலம் ✓<br>புல எண் 680/2 திருமூர்த்தி நிலம் ✓<br>புல எண் 677 நடைபாதை      |
| தெற்கு  | : | புல எண் 683 ச.யசோதா (வ) நிலம் ✓   |
| கிழக்கு | : | புல எண் 675/1 சின்னச்சாமி நிலம் ✓<br>புல எண் 675/2 சின்னச்சாமி நிலம் ✓<br>புல எண் 674/1 பெரியசாமி நிலம் |
| மேற்கு  | : | புல எண் 681 நடைபாதை ✓<br>புல எண் 684 நடைபாதை ✓  |

**புல எண் 682-ல் குவாரி உரிமம் கோரும் பகுதி ஹெக்டேர் 1.92.0 ஏர்ஸ் நிலத்திற்கு நான்கெல்லை விவரம்.**

|         |   |   |
|---------|---|---|
| வடக்கு  | : | புல எண் 680/1 கிருஷ்ணமூர்த்தி நிலம் ✓<br>புல எண் 680/2 திருமூர்த்தி நிலம் ✓ |
| தெற்கு  | : | புல எண் 682-ல் பகுதி அன்னை புளூ மெட்டல்ஸ் நிலம் ✓                           |
| கிழக்கு | : | புல எண் 682-ல் பகுதி அன்னை புளூ மெட்டல்ஸ் நிலம் ✓                           |
| மேற்கு  | : | புல எண் 681 நடைபாதை ✓   |

மேற்படி குவாரி குத்தகை உரிமம் கோரும் புல எண் எல்லைகள் வரையறுக்கப்பட்டு, எல்லைக்கற்கள் நடப்பட்டுள்ளன. குத்தகை உரிமம் தொடர்பாக பொதுமக்களிடம் ஆட்சேபணை விளம்பரம் அ1 நோட்டீஸ் பிரசுரம் செய்யப்பட்டதில் நாளது தேதிவரை எவ்வித ஆட்சேபணையும் பொதுமக்களிடமிருந்து வரப்பெறவில்லை. மேற்படி குத்தகை உரிமம் கோரும் புலங்களில் இருந்து 300 மீட்டர் சுற்றளவில் ஊர் நத்தம், அங்கீகரிக்கப்பட்ட குடியிருப்புகள், ஆதி திராவிடர் மற்றும் பிற்படுத்தப்பட்ட நலத்துறையினரால் கையகப்படுத்தப்பட்ட அரசு நிலங்கள் ஏதுமில்லை. குத்தகை உரிமம் கோரும் புலங்களினூடே உயர் மின்னழுத்த கம்பிகள் ஏதும் செல்லவில்லை. மேற்படி குத்தகை உரிமம் கோரும் புலத்திற்கு 50 மீட்டர் சுற்றளவில் புராதனச் சின்னங்கள், கோவில்கள், மசூதிகள், சர்ச்சுகள் போன்ற வழிபாட்டுத் தலங்கள், நீர்நிலைகள் மற்றும் தேசிய மற்றும் மாநில நெடுஞ்சாலைகள் ஏதும் இல்லை.

மேற்படி தி/ள். அன்னை புளூ மெட்டல்ஸ் நிறுவனத்தினர், குவாரி குத்தகை உரிமம் பெறுவதற்கு உரிமக்கட்டணமாக ரூ.1,500/- அரசு கணக்கில் செலுத்தி அசல் சலான் இணைத்துள்ளனர். மேலும், குப்பம் கிராம பொதுமக்கள் மற்றும் குத்தகை உரிமம் கோரும் புல எண்ணைச் சுற்றியுள்ளவர்களிடம் விசாரணை செய்தவகையில் ஆட்சேபணை ஏதும் இல்லை என்பது தெரிய வருகிறது. எனவே, புகளூர் வட்டம், குப்பம் கிராமம் புல எண் 682-ல் மொத்த விஸ்தீரணம் ஹெக்டேர் 6.210 ஏர்ஸ் மொத்த பரப்பில் ஹெக்டேர் 1.92.0 ஏர்ஸ் (பகுதி) பரப்பில் சாதாரண கற்கள் / கிராவல் வெட்டியெடுக்க மேற்படி குப்பம் கிராமத்தில் இயங்கி வரும் தி/ள். அன்னை புளூ மெட்டல்ஸ் நிறுவனத்தினருக்கு குத்தகை உரிமம் வழங்கலாம் என்பதையும், இது தொடர்பாக, குப்பம் கிராம நிர்வாக அலுவலரின் வாக்குமூலம், நிறுவனத்தின் பங்குதாரர் செல்வக்குமார் மனைவி கார்த்திகா என்பவரது வாக்குமூலம், பொதுமக்கள் வாக்குமூலம், அடங்கல், சிட்டா, “அ” பதிவேடு நகல், புலப்பட நகல், கூட்டுவரைபட நகல் ஆகியவற்றை இத்துடன் இணைத்துள்ளேன் என்பதையும் பணிவுடன் தெரிவித்துக் கொள்கிறேன்.

  
**ச. பரமத்தி ரா வட்டம்,**  
**புகளூர் வட்டம்.**





வருவாய் மற்றும் பேரிடர் மேலாண்மைத் துறை

ந.க.எண். ஆ/339/2020

வட்டாட்சியர் அலுவலகம்,  
புகளூர்.  
நாள்: .05.2020

எ1 விளம்பர அறிவிப்பு

கரூர் மாவட்டம், புகளூர் வட்டம், குப்பம் கிராம மக்களுக்கு இந்த அறிவிப்பு மூலம் தெரிவிப்பது யாதெனில், குப்பம் கிராம புல எண். 682 (பகுதி) ஹெக்டேர் 1.92.0 ஏர்ஸ், பரப்பில் சாதாரண கற்கள்/கிராவல் வெட்டியெடுக்க குவாரி குத்தகை உரிமம் கோரி தி/ள்.அன்னை புளு மெட்டல்ஸ் என்ற நிறுவனத்தினர் கரூர் மாவட்ட ஆட்சியர் அவர்களிடம் விண்ணப்பித்துள்ளனர். மேற்படி குப்பம் கிராம புல எண். 682 (பகுதி) ஹெக்டேர் 1.92.0 ஏர்ஸ், பரப்பில் சாதாரண கற்கள்/கிராவல் வெட்டியெடுக்க கிராம பொதுமக்களுக்கு ஆட்சேபணைகள் ஏதுமிருப்பின் அத்தகைய ஆட்சேபணையை எழுத்து மூலமாகவோ, நேரிலோ அல்லது தபால் மூலமாகவோ இந்த அறிவிக்கை பிரசித்தம் செய்யப்பட்ட 7 நாட்களுக்குள் அடியிற்கையொப்பமிட்டவருக்குத் தெரிவித்துக் கொள்ள வேண்டியது. குறிப்பிட்ட காலத்திற்குள் எவ்வித ஆட்சேபணையும் வரப்பெறவில்லையென்றால், ஆட்சேபணைகள் ஏதுமில்லை எனக் கருதி மேல் நடவடிக்கை எடுக்கப்படும் என அறிவிக்கப்படுகிறது.

வட்டாட்சியர்,  
புகளூர்.

6.5.2020

கிராம நிர்வாக அலுவலர், குப்பம் கிராமம் மேற்கண்ட விளம்பரத்தை நன்கு விளம்பரம் செய்து அதற்கான அத்தாட்சியை சமர்ப்பிக்க அறிவுறுத்தப்படுகிறார்.

குப்பம் கிராமக் குடிகளாகிய நாங்கள் இந்த விளம்பர அறிவிக்கையை தண்டோரா மூலம் பிரசித்தம் செய்ததைத் தெரிந்து கொண்டோம்.

கிராமக் குடிகள் கையொப்பம் :-

1. T. S. S. S. S.

2. P. Valeri Sany.

3. பெரிய சாமி

4. P. S. S.

5. S. Jan.



6. சி. சி. சி.

7 V. சி. சி. சி.

8 சி. சி. சி.

9 P. சி. சி. சி.

10 சி. சி. சி.

11 சி. சி. சி.

12 R. சி. சி.

13 சி. சி. சி.

14 சி. சி. சி.

15 R. சி. சி. சி.

ப. சி. :

கிராம சமர்வகீதம்படுகிறகு :

மேற்கண்ட கல்வியை கண்டறிய சீரம் மறுகீதம்

கல்வியை கிராமம் கல்வியை. கிராம சீரம் வரை  
கல்வியை கிராமம் கல்வியை கிராமம் கல்வியை  
கல்வியை கிராமம் கல்வியை கிராமம் கல்வியை

சி. சி. சி.  
கிராம நிர்வாக அலுவலர்  
18, குப்பம் கிராமம்  
புகளூர் வட்டம்  
கருர் மாவட்டம்

**ANNEXURE XIII**  
**FOREST CERTIFICATE**



பொருள் : கனிமம் - கல்குவாரி - கரூர் மாவட்டம், புகளூர் வட்டம், குப்பம் கிராமத்தில் உள்ள கல்குவாரிக்கும் காப்புக்காடு பகுதிக்கும் இடைப்பட்ட தூர விபரங்களை தெரிவித்தல் - தொடர்பாக.

பார்வை : 1. அன்னை புளூ மெட்டல்ஸ், கரூர் கடித எண்.இல்லை நாள்.04.08.2022

2. வனச்சரக அலுவலர், கரூர் வனச்சரகம் கடித எண்.126/2022 நாள்.08.08.2022

\*\*\*\*\*

பார்வை 1-ல் காணும் கடிதத்தில் கரூர் மாவட்டம், புகளூர் வட்டம், குப்பம் கிராமத்தில் புல எண்.682-ல் 1.92.0 ஏக்கடேர் பரப்பளவில் அன்னை புளூமெட்டல்ஸ் என்ற நிறுவனத்தின் கல்குவாரியை அமைக்க மாநில சுற்றுச்சூழல் ஆணையத்திற்கு விண்ணப்பித்துள்ளதால், மேற்படி கல்குவாரியின் புலத்திலிருந்து 25 கி.மீ சுற்றளவுக்குள் உள்ள காப்புக்காடுகளின் விபரங்களை தெரிவிக்குமாறும் கோரப்பட்டது.

அதன்படி மேற்படி இடமானது கரூர் வனச்சரக அலுவலரால் களத்தணிக்கை செய்யப்பட்டு பார்வை 2-ல் கண்டவாறு சமர்ப்பித்த அறிக்கையின் படி கரூர் மாவட்டம், புகளூர் வட்டம், குப்பம் கிராமத்தில் புல எண்.682-ல் 1.92.0 ஏக்கடேர் பரப்பளவில் அன்னை புளூமெட்டல்ஸ் என்ற நிறுவனத்தின் மூலம் அமைக்கப்படவுள்ள கல்குவாரியிலிருந்து 8.20 கிலோமீட்டர் தூரத்தில் தாதம்பாளையம் காப்புக்காடு அமைந்துள்ளது. மேலும் கல்குவாரியின் புலத்திலிருந்து 25 கி.மீ சுற்றளவுக்குள் பாதுகாக்கப்பட்ட வனப்பகுதி, புலிகள் காப்பகம் மற்றும் சரணாலயங்கள் ஏதுமில்லை என தெரிவிக்கப்படுகிறது.

ஓம்/- வி.ஏ.சரவணன்,  
மாவட்ட வன அலுவலர்,  
கரூர் வனக்கோட்டம்,  
கரூர்.

பெறுநர்

திருமதி.எஸ்.கார்த்திகா,  
அன்னை புளூமெட்டல்ஸ்,  
புல எண்.682, காளிபாளையம்,  
குப்பம் கிராமம்,  
புகளூர் வட்டம்,  
கரூர் மாவட்டம்.

// உ.ந.உ.ப //

கண்காணிப்பாளர்.  
10.8.22



**ANNEXURE XIV**  
**LAB REPORTS**





# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
 Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
 Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
 Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/A/001/080322

Report Date: 02.06.2022

Page 1 of 1

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry  
 Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu

Sample Name : Air Quality Sample Description : Ambient air  
 Sample Drawn By : Eco Tech Labs P.Ltd Sample Duration : 24Hrs

Sampling Procedure : ETL/QAD/SOP/09 Sampling date : 08-03-2022 TO 31-03-2022  
 Sample Location : Project Site

| Test Method        | SO <sub>2</sub> µg/m <sup>3</sup> | NO <sub>2</sub> µg/m <sup>3</sup>  | PM 10 µg/m <sup>3</sup>           | PM 2.5 µg/m <sup>3</sup> |
|--------------------|-----------------------------------|------------------------------------|-----------------------------------|--------------------------|
| Date of Monitoring | IS: 5182 (P- 2)<br>2001(RA:2012)  | IS: 5182 (P- 6)<br>:2006(RA :2012) | IS: 5182 (P-23)<br>:2006(RA:2012) | ETL/CHL/SOP/001          |
| 08.03.2022         | 15                                | 22                                 | 57                                | 25                       |
| 10.03.2022         | 13                                | 20                                 | 53                                | 24                       |
| 15.03.2022         | 12                                | 23                                 | 55                                | 21                       |
| 17.03.2022         | 15                                | 21                                 | 56                                | 24                       |
| 22.03.2022         | 13                                | 23                                 | 53                                | 22                       |
| 24.03.2022         | 14                                | 25                                 | 55                                | 23                       |
| 29.03.2022         | 12                                | 21                                 | 52                                | 21                       |
| 31.03.2022         | 16                                | 19                                 | 56                                | 24                       |
| CPCB Standard      | 100                               | 60                                 | 80                                | 80                       |

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

\*\*\*End of Report\*\*\*



Authorised Signatory - Chemical

*S. Kokila*  
 S. Kokila  
 Lab Manager





# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/A/002/080322

Report Date: 02.06.2022

Page 1 of 1

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry  
Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu  
Sample Name : Air Quality Sample Description : Ambient air  
Sample Drawn By : Eco Tech Labs P.Ltd Sample Duration : 24Hrs  
Sampling Procedure : ETL/QAD/SOP/09 Sampling date : 08-03-2022 TO 31-03-2022  
Sample Location :2.Sri annamaliyur maligai ,munnur

| Test Method        | SO <sub>2</sub> µg/m <sup>3</sup> | NO <sub>2</sub> µg/m <sup>3</sup>  | PM 10 µg/m <sup>3</sup>           | PM 2.5 µg/m <sup>3</sup> |
|--------------------|-----------------------------------|------------------------------------|-----------------------------------|--------------------------|
| Date of Monitoring | IS: 5182 (P- 2)<br>2001(RA:2012)  | IS: 5182 (P- 6)<br>:2006(RA :2012) | IS: 5182 (P-23)<br>:2006(RA:2012) | ETL/CHL/SOP/001          |
| 08.03.2022         | 12                                | 17                                 | 49                                | 21                       |
| 10.03.2022         | 6                                 | 12                                 | 47                                | 18                       |
| 15.03.2022         | 8                                 | 14                                 | 44                                | 15                       |
| 17.03.2022         | 12                                | 19                                 | 47                                | 19                       |
| 22.03.2022         | 10                                | 16                                 | 49                                | 20                       |
| 24.03.2022         | 7                                 | 14                                 | 46                                | 15                       |
| 29.03.2022         | 9                                 | 16                                 | 48                                | 17                       |
| 31.03.2022         | 13                                | 20                                 | 50                                | 24                       |
| CPCB Standard      | 100                               | 60                                 | 80                                | 80                       |

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

\*\*\*End of Report\*\*\*



Authorised Signatory - Chemical

S. Kokila  
Lab Manager



# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
 Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
 Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
 Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/A/003/080322

Report Date: 02.06.2022

Page 1 of 1

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry  
 Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu  
 Sample Name : Air Quality Sample Description : Ambient air  
 Sample Drawn By : Eco Tech Labs P.Ltd Sample Duration : 24Hrs  
 Sampling Procedure : ETL/QAD/SOP/09 Sampling date : 08-03-2022 TO 31-03-2022  
 Sample Location : 3.Sri krishna mahal ,punnam

| Test Method        | SO <sub>2</sub> µg/m <sup>3</sup> | NO <sub>2</sub> µg/m <sup>3</sup>  | PM 10 µg/m <sup>3</sup>           | PM 2.5 µg/m <sup>3</sup> |
|--------------------|-----------------------------------|------------------------------------|-----------------------------------|--------------------------|
| Date of Monitoring | IS: 5182 (P- 2)<br>2001(RA:2012)  | IS: 5182 (P- 6)<br>:2006(RA :2012) | IS: 5182 (P-23)<br>:2006(RA:2012) | ETL/CHL/SOP/001          |
| 08.03.2022         | 11                                | 17                                 | 48                                | 21                       |
| 10.03.2022         | 8                                 | 13                                 | 45                                | 15                       |
| 15.03.2022         | 7                                 | 14                                 | 44                                | 13                       |
| 17.03.2022         | 10                                | 13                                 | 47                                | 17                       |
| 22.03.2022         | 9                                 | 15                                 | 49                                | 19                       |
| 24.03.2022         | 7                                 | 17                                 | 46                                | 16                       |
| 29.03.2022         | 6                                 | 15                                 | 44                                | 14                       |
| 31.03.2022         | 10                                | 18                                 | 49                                | 19                       |
| CPCB Standard      | 100                               | 60                                 | 80                                | 80                       |

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

\*\*\*End of Report\*\*\*



Authorised Signatory - Chemical

*S. Kokila*

S. Kokila  
Lab Manager



# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/A/004/080322

Report Date: 02.06.2022

Page 1 of 1

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry  
Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu

Sample Name : Air Quality Sample Description : Ambient air  
Sample Drawn By : Eco Tech Labs P.Ltd Sample Duration : 24Hrs  
Sampling Procedure : ETL/QAD/SOP/09 Sampling date : 08-03-2022 TO 31-03-2022  
Sample Location : 4.Government primary school

| Test Method        | SO <sub>2</sub> µg/m <sup>3</sup> | NO <sub>2</sub> µg/m <sup>3</sup>  | PM 10 µg/m <sup>3</sup>           | PM 2.5 µg/m <sup>3</sup> |
|--------------------|-----------------------------------|------------------------------------|-----------------------------------|--------------------------|
| Date of Monitoring | IS: 5182 (P- 2)<br>2001(RA:2012)  | IS: 5182 (P- 6)<br>:2006(RA :2012) | IS: 5182 (P-23)<br>:2006(RA:2012) | ETL/CHL/SOP/001          |
| 08.03.2022         | 9                                 | 16                                 | 44                                | 19                       |
| 10.03.2022         | 6                                 | 13                                 | 41                                | 16                       |
| 15.03.2022         | 7                                 | 15                                 | 43                                | 17                       |
| 17.03.2022         | 10                                | 19                                 | 45                                | 21                       |
| 22.03.2022         | 7                                 | 14                                 | 43                                | 18                       |
| 24.03.2022         | 12                                | 20                                 | 48                                | 22                       |
| 29.03.2022         | 9                                 | 14                                 | 43                                | 17                       |
| 31.03.2022         | 6                                 | 13                                 | 42                                | 14                       |
| CPCB Standard      | 100                               | 60                                 | 80                                | 80                       |

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

\*\*\*End of Report\*\*\*



Authorised Signatory - Chemical

S. Kokila  
Lab Manager



# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/A/005/080322

Report Date: 02.06.2022

Page 1 of 1

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry  
Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu

Sample Name : Air Quality Sample Description : Ambient air  
Sample Drawn By : Eco Tech Labs P.Ltd Sample Duration : 24Hrs  
Sampling Procedure : ETL/QAD/SOP/09 Sampling date : 08-03-2022 TO 31-03-2022  
Sample Location : 5.Vettamanagalam east

| Test Method        | SO <sub>2</sub> µg/m <sup>3</sup> | NO <sub>2</sub> µg/m <sup>3</sup>  | PM 10 µg/m <sup>3</sup>           | PM 2.5 µg/m <sup>3</sup> |
|--------------------|-----------------------------------|------------------------------------|-----------------------------------|--------------------------|
| Date of Monitoring | IS: 5182 (P- 2)<br>2001(RA:2012)  | IS: 5182 (P- 6)<br>:2006(RA :2012) | IS: 5182 (P-23)<br>:2006(RA:2012) | ETL/CHL/SOP/001          |
| 08.03.2022         | 10                                | 17                                 | 49                                | 22                       |
| 10.03.2022         | 7                                 | 12                                 | 45                                | 19                       |
| 15.03.2022         | 9                                 | 15                                 | 48                                | 21                       |
| 17.03.2022         | 6                                 | 13                                 | 46                                | 17                       |
| 22.03.2022         | 7                                 | 12                                 | 44                                | 14                       |
| 24.03.2022         | 12                                | 16                                 | 47                                | 19                       |
| 29.03.2022         | 8                                 | 17                                 | 45                                | 19                       |
| 31.03.2022         | 10                                | 20                                 | 50                                | 22                       |
| CPCB Standard      | 100                               | 60                                 | 80                                | 80                       |

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

\*\*\*End of Report\*\*\*



Authorised Signatory - Chemical

S. Kokila  
Lab Manager



# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/A/006/050422

Report Date: 02.06.2022

Page 1 of 1

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry  
Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu  
Sample Name : Air Quality Sample Description : Ambient air  
Sample Drawn By : Eco Tech Labs P.Ltd Sample Duration : 24Hrs  
Sampling Procedure : ETL/QAD/SOP/09 Sampling date : 05-04-2022 TO 28-04-2022  
Sample Location : Project Site

| Test Method        | SO <sub>2</sub> µg/m <sup>3</sup> | NO <sub>2</sub> µg/m <sup>3</sup>  | PM 10 µg/m <sup>3</sup>           | PM 2.5 µg/m <sup>3</sup> |
|--------------------|-----------------------------------|------------------------------------|-----------------------------------|--------------------------|
| Date of Monitoring | IS: 5182 (P- 2)<br>2001(RA:2012)  | IS: 5182 (P- 6)<br>:2006(RA :2012) | IS: 5182 (P-23)<br>:2006(RA:2012) | ETL/CHL/SOP/001          |
| 05.04.2022         | 17                                | 24                                 | 62                                | 27                       |
| 07.04.2022         | 15                                | 22                                 | 60                                | 25                       |
| 12.04.2022         | 13                                | 20                                 | 59                                | 23                       |
| 14.04.2022         | 11                                | 18                                 | 57                                | 21                       |
| 19.04.2022         | 16                                | 24                                 | 59                                | 24                       |
| 21.04.2022         | 20                                | 26                                 | 62                                | 26                       |
| 26.04.2022         | 18                                | 22                                 | 60                                | 24                       |
| 28.04.2022         | 17                                | 20                                 | 57                                | 22                       |
| CPCB Standard      | 100                               | 60                                 | 80                                | 80                       |

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

\*\*\*End of Report\*\*\*



Authorised Signatory - Chemical

S. Kokila  
Lab Manager



# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
 Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
 Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
 Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/A/007/050422

Report Date: 02.06.2022

Page 1 of 1

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry  
 Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu  
 Sample Name : Air Quality Sample Description : Ambient air  
 Sample Drawn By : Eco Tech Labs P.Ltd Sample Duration : 24Hrs  
 Sampling Procedure : ETL/QAD/SOP/09 Sampling date : 05-04-2022 TO 28-04-2022  
 Sample Location : 2.Sri annamaliyur maligai ,munnur

| Test Method        | SO <sub>2</sub> µg/m <sup>3</sup> | NO <sub>2</sub> µg/m <sup>3</sup>  | PM 10 µg/m <sup>3</sup>           | PM 2.5 µg/m <sup>3</sup> |
|--------------------|-----------------------------------|------------------------------------|-----------------------------------|--------------------------|
| Date of Monitoring | IS: 5182 (P- 2)<br>2001(RA:2012)  | IS: 5182 (P- 6)<br>:2006(RA :2012) | IS: 5182 (P-23)<br>:2006(RA:2012) | ETL/CHL/SOP/001          |
| 05.04.2022         | 13                                | 21                                 | 52                                | 24                       |
| 07.04.2022         | 7                                 | 14                                 | 48                                | 20                       |
| 12.04.2022         | 9                                 | 11                                 | 47                                | 17                       |
| 14.04.2022         | 13                                | 20                                 | 49                                | 23                       |
| 19.04.2022         | 9                                 | 18                                 | 50                                | 21                       |
| 21.04.2022         | 8                                 | 15                                 | 48                                | 18                       |
| 26.04.2022         | 12                                | 17                                 | 51                                | 20                       |
| 28.04.2022         | 11                                | 16                                 | 50                                | 19                       |
| CPCB Standard      | 100                               | 60                                 | 80                                | 80                       |

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

\*\*\*End of Report\*\*\*



Authorised Signatory - Chemical

*S. Kokila*

S. Kokila  
Lab Manager



# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

|                                |                         |             |
|--------------------------------|-------------------------|-------------|
| Report No : ETL/S/A/008/050422 | Report Date: 02.06.2022 | Page 1 of 1 |
|--------------------------------|-------------------------|-------------|

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry  
Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu  
Sample Name : Air Quality Sample Description : Ambient air  
Sample Drawn By : Eco Tech Labs P.Ltd Sample Duration : 24Hrs  
Sampling Procedure : ETL/QAD/SOP/09 Sampling date : 05-04-2022 TO 28-04-2022  
Sample Location : 3.Sri krishna mahal ,punnam

| Test Method        | SO <sub>2</sub> µg/m <sup>3</sup> | NO <sub>2</sub> µg/m <sup>3</sup> | PM 10 µg/m <sup>3</sup>           | PM 2.5 µg/m <sup>3</sup> |
|--------------------|-----------------------------------|-----------------------------------|-----------------------------------|--------------------------|
| Date of Monitoring | IS: 5182 (P-2)<br>2001(RA:2012)   | IS: 5182 (P-6)<br>:2006(RA :2012) | IS: 5182 (P-23)<br>:2006(RA:2012) | ETL/CHL/SOP/001          |
| 05.04.2022         | 12                                | 21                                | 51                                | 22                       |
| 07.04.2022         | 10                                | 16                                | 49                                | 18                       |
| 12.04.2022         | 7                                 | 13                                | 46                                | 15                       |
| 14.04.2022         | 8                                 | 15                                | 48                                | 17                       |
| 19.04.2022         | 11                                | 20                                | 50                                | 21                       |
| 21.04.2022         | 9                                 | 17                                | 49                                | 18                       |
| 26.04.2022         | 6                                 | 12                                | 47                                | 15                       |
| 28.04.2022         | 10                                | 19                                | 49                                | 20                       |
| 05.04.2022         | 12                                | 21                                | 51                                | 22                       |
| CPCB Standard      | 100                               | 60                                | 80                                | 80                       |

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

\*\*\*End of Report\*\*\*



Authorised Signatory - Chemical

S. Kokila  
Lab Manager



# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/A/009/050422

Report Date: 02.06.2022

Page 1 of 1

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry  
Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu  
Sample Name : Air Quality Sample Description : Ambient air  
Sample Drawn By : Eco Tech Labs P.Ltd Sample Duration : 24Hrs  
Sampling Procedure : ETL/QAD/SOP/09 Sampling date : 05-04-2022 TO 28-04-2022  
Sample Location : 4.Government primary school

| Test Method        | SO <sub>2</sub> µg/m <sup>3</sup> | NO <sub>2</sub> µg/m <sup>3</sup>  | PM 10 µg/m <sup>3</sup>           | PM 2.5 µg/m <sup>3</sup> |
|--------------------|-----------------------------------|------------------------------------|-----------------------------------|--------------------------|
| Date of Monitoring | IS: 5182 (P- 2)<br>2001(RA:2012)  | IS: 5182 (P- 6)<br>:2006(RA :2012) | IS: 5182 (P-23)<br>:2006(RA:2012) | ETL/CHL/SOP/001          |
| 05.04.2022         | 10                                | 16                                 | 45                                | 22                       |
| 07.04.2022         | 7                                 | 14                                 | 43                                | 19                       |
| 12.04.2022         | 6                                 | 13                                 | 44                                | 21                       |
| 14.04.2022         | 9                                 | 14                                 | 47                                | 23                       |
| 19.04.2022         | 8                                 | 13                                 | 45                                | 20                       |
| 21.04.2022         | 11                                | 16                                 | 48                                | 22                       |
| 26.04.2022         | 6                                 | 14                                 | 43                                | 18                       |
| 28.04.2022         | 8                                 | 12                                 | 44                                | 17                       |
| CPCB Standard      | 100                               | 60                                 | 80                                | 80                       |

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

\*\*\*End of Report\*\*\*



Authorised Signatory - Chemical

S. Kokila  
Lab Manager





# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
 Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
 Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
 Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/A/010/050422

Report Date: 02.06.2022

Page 1 of 1

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry  
 Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu  
 Sample Name : Air Quality Sample Description : Ambient air  
 Sample Drawn By : Eco Tech Labs P.Ltd Sample Duration : 24Hrs  
 Sampling Procedure : ETL/QAD/SOP/09 Sampling date : 05-04-2022 TO 28-04-2022  
 Sample Location : 5.Vettamanagalam east

| Test Method        | SO <sub>2</sub> µg/m <sup>3</sup> | NO <sub>2</sub> µg/m <sup>3</sup>  | PM 10 µg/m <sup>3</sup>           | PM 2.5 µg/m <sup>3</sup> |
|--------------------|-----------------------------------|------------------------------------|-----------------------------------|--------------------------|
| Date of Monitoring | IS: 5182 (P- 2)<br>2001(RA:2012)  | IS: 5182 (P- 6)<br>:2006(RA :2012) | IS: 5182 (P-23)<br>:2006(RA:2012) | ETL/CHL/SOP/001          |
| 05.04.2022         | 11                                | 20                                 | 50                                | 23                       |
| 07.04.2022         | 8                                 | 15                                 | 48                                | 21                       |
| 12.04.2022         | 10                                | 17                                 | 49                                | 22                       |
| 14.04.2022         | 7                                 | 14                                 | 47                                | 17                       |
| 19.04.2022         | 8                                 | 16                                 | 48                                | 15                       |
| 21.04.2022         | 10                                | 19                                 | 50                                | 20                       |
| 26.04.2022         | 9                                 | 18                                 | 48                                | 18                       |
| 28.04.2022         | 14                                | 22                                 | 51                                | 23                       |
| CPCB Standard      | 100                               | 60                                 | 80                                | 80                       |

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

\*\*\*End of Report\*\*\*



Authorised Signatory - Chemical

*S. Kokila*  
 S. Kokila  
 Lab Manager



# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/A/011/050422

Report Date: 02.06.2022

Page 1 of 1

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry  
Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu  
Sample Name : Air Quality Sample Description : Ambient air  
Sample Drawn By : Eco Tech Labs P.Ltd Sample Duration : 24Hrs  
Sampling Procedure : ETL/QAD/SOP/09 Sampling date : 05-04-2022 TO 28-04-2022  
Sample Location : Project Site

| Test Method        | SO <sub>2</sub> µg/m <sup>3</sup> | NO <sub>2</sub> µg/m <sup>3</sup>  | PM 10 µg/m <sup>3</sup>           | PM 2.5 µg/m <sup>3</sup> |
|--------------------|-----------------------------------|------------------------------------|-----------------------------------|--------------------------|
| Date of Monitoring | IS: 5182 (P- 2)<br>2001(RA:2012)  | IS: 5182 (P- 6)<br>:2006(RA :2012) | IS: 5182 (P-23)<br>:2006(RA:2012) | ETL/CHL/SOP/001          |
| 05.04.2022         | 19                                | 28                                 | 66                                | 30                       |
| 07.04.2022         | 16                                | 25                                 | 63                                | 27                       |
| 12.04.2022         | 14                                | 22                                 | 60                                | 24                       |
| 14.04.2022         | 17                                | 24                                 | 64                                | 29                       |
| 19.04.2022         | 13                                | 25                                 | 61                                | 25                       |
| 21.04.2022         | 18                                | 30                                 | 67                                | 28                       |
| 26.04.2022         | 17                                | 26                                 | 63                                | 26                       |
| 28.04.2022         | 15                                | 24                                 | 59                                | 25                       |
| CPCB Standard      | 100                               | 60                                 | 80                                | 80                       |

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

\*\*\*End of Report\*\*\*



Authorised Signatory - Chemical

S. Kokila  
Lab Manager



# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
 Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
 Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
 Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/A/012/030522

Report Date: 02.06.2022

Page 1 of 1

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry  
 Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu  
 Sample Name : Air Quality Sample Description : Ambient air  
 Sample Drawn By : Eco Tech Labs P.Ltd Sample Duration : 24Hrs  
 Sampling Procedure : ETL/QAD/SOP/09 Sampling date : 03-05-2022 TO 26-05-2022  
 Sample Location : :2.Sri annamaliyur maligai ,munnur

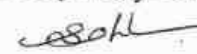
| Test Method        | SO <sub>2</sub> µg/m <sup>3</sup> | NO <sub>2</sub> µg/m <sup>3</sup>  | PM 10 µg/m <sup>3</sup>           | PM 2.5 µg/m <sup>3</sup> |
|--------------------|-----------------------------------|------------------------------------|-----------------------------------|--------------------------|
| Date of Monitoring | IS: 5182 (P- 2)<br>2001(RA:2012)  | IS: 5182 (P- 6)<br>:2006(RA :2012) | IS: 5182 (P-23)<br>:2006(RA:2012) | ETL/CHL/SOP/001          |
| 03.05.2022         | 11                                | 18                                 | 54                                | 24                       |
| 05.05.2022         | 8                                 | 16                                 | 50                                | 21                       |
| 10.05.2022         | 9                                 | 17                                 | 54                                | 23                       |
| 12.05.2022         | 12                                | 15                                 | 51                                | 20                       |
| 17.05.2022         | 8                                 | 17                                 | 49                                | 19                       |
| 19.05.2022         | 11                                | 18                                 | 50                                | 21                       |
| 24.05.2022         | 10                                | 15                                 | 48                                | 18                       |
| 26.05.2022         | 13                                | 21                                 | 51                                | 20                       |
| CPCB Standard      | 100                               | 60                                 | 80                                | 80                       |

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

\*\*\*End of Report\*\*\*



Authorised Signatory - Chemical

  
 S. Kokila  
 Lab Manager



# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
 Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
 Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
 Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/A/013/030522 Report Date: 02.06.2022 Page 1 of 1

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry  
 Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu  
 Sample Name : Air Quality Sample Description : Ambient air  
 Sample Drawn By : Eco Tech Labs P.Ltd Sample Duration : 24Hrs  
 Sampling Procedure : ETL/QAD/SOP/09 Sampling date : 03-05-2022 TO 26-05-2022  
 Sample Location : 3.Sri krishna mahal ,punnam

| Test Method        | SO <sub>2</sub> µg/m <sup>3</sup> | NO <sub>2</sub> µg/m <sup>3</sup>  | PM 10 µg/m <sup>3</sup>           | PM 2.5 µg/m <sup>3</sup> |
|--------------------|-----------------------------------|------------------------------------|-----------------------------------|--------------------------|
| Date of Monitoring | IS: 5182 (P- 2)<br>2001(RA:2012)  | IS: 5182 (P- 6)<br>:2006(RA :2012) | IS: 5182 (P-23)<br>:2006(RA:2012) | ETL/CHL/SOP/001          |
| 03.05.2022         | 12                                | 23                                 | 52                                | 24                       |
| 05.05.2022         | 10                                | 20                                 | 49                                | 20                       |
| 10.05.2022         | 6                                 | 15                                 | 47                                | 18                       |
| 12.05.2022         | 8                                 | 16                                 | 48                                | 17                       |
| 17.05.2022         | 9                                 | 18                                 | 49                                | 19                       |
| 19.05.2022         | 11                                | 17                                 | 50                                | 20                       |
| 24.05.2022         | 8                                 | 16                                 | 48                                | 17                       |
| 26.05.2022         | 11                                | 20                                 | 51                                | 21                       |
| CPCB Standard      | 100                               | 60                                 | 80                                | 80                       |

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

\*\*\*End of Report\*\*\*



Authorised Signatory - Chemical

*S. Kokila*

S. Kokila  
Lab Manager



# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
 Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
 Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
 Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/A/014/030522

Report Date: 02.06.2022

Page 1 of 1

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry  
 Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu  
 Sample Name : Air Quality Sample Description : Ambient air  
 Sample Drawn By : Eco Tech Labs P.Ltd Sample Duration : 24Hrs  
 Sampling Procedure : ETL/QAD/SOP/09 Sampling date : 03-05-2022 TO 26-05-2022  
 Sample Location : 4.Government primary school

| Test Method        | SO <sub>2</sub> µg/m <sup>3</sup> | NO <sub>2</sub> µg/m <sup>3</sup>  | PM 10 µg/m <sup>3</sup>           | PM 2.5 µg/m <sup>3</sup> |
|--------------------|-----------------------------------|------------------------------------|-----------------------------------|--------------------------|
| Date of Monitoring | IS: 5182 (P- 2)<br>2001(RA:2012)  | IS: 5182 (P- 6)<br>:2006(RA :2012) | IS: 5182 (P-23)<br>:2006(RA:2012) | ETL/CHL/SOP/001          |
| 03.05.2022         | 10                                | 20                                 | 47                                | 23                       |
| 05.05.2022         | 8                                 | 15                                 | 46                                | 22                       |
| 10.05.2022         | 7                                 | 13                                 | 43                                | 20                       |
| 12.05.2022         | 11                                | 21                                 | 46                                | 18                       |
| 17.05.2022         | 9                                 | 18                                 | 46                                | 20                       |
| 19.05.2022         | 8                                 | 16                                 | 48                                | 23                       |
| 24.05.2022         | 7                                 | 14                                 | 45                                | 20                       |
| 26.05.2022         | 9                                 | 18                                 | 48                                | 24                       |
| CPCB Standard      | 100                               | 60                                 | 80                                | 80                       |

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

\*\*\*End of Report\*\*\*



Authorised Signatory - Chemical

*S. Kokila*  
 S. Kokila  
 Lab Manager



# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
 Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
 Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
 Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/A/015/030522

Report Date: 02.06.2022

Page 1 of 1

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry  
 Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu  
 Sample Name : Air Quality Sample Description : Ambient air  
 Sample Drawn By : Eco Tech Labs P.Ltd Sample Duration : 24Hrs  
 Sampling Procedure : ETL/QAD/SOP/09 Sampling date : 03-05-2022 TO 26-05-2022  
 Sample Location : 5.Vettamanagalam east

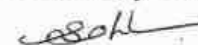
| Test Method        | SO <sub>2</sub> µg/m <sup>3</sup> | NO <sub>2</sub> µg/m <sup>3</sup> | PM 10 µg/m <sup>3</sup>           | PM 2.5 µg/m <sup>3</sup> |
|--------------------|-----------------------------------|-----------------------------------|-----------------------------------|--------------------------|
| Date of Monitoring | IS: 5182 (P-2)<br>2001(RA:2012)   | IS: 5182 (P-6)<br>:2006(RA :2012) | IS: 5182 (P-23)<br>:2006(RA:2012) | ETL/CHL/SOP/001          |
| 03.05.2022         | 13                                | 22                                | 52                                | 25                       |
| 05.05.2022         | 9                                 | 16                                | 50                                | 21                       |
| 10.05.2022         | 14                                | 24                                | 53                                | 26                       |
| 12.05.2022         | 11                                | 20                                | 49                                | 19                       |
| 17.05.2022         | 8                                 | 17                                | 48                                | 17                       |
| 19.05.2022         | 12                                | 21                                | 51                                | 22                       |
| 24.05.2022         | 10                                | 20                                | 49                                | 19                       |
| 26.05.2022         | 15                                | 25                                | 52                                | 25                       |
| CPCB Standard      | 100                               | 60                                | 80                                | 80                       |

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

\*\*\*End of Report\*\*\*



Authorised Signatory - Chemical

  
 S. Kokila  
 Lab Manager



# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/N/025/250522

Report Date : 02.06.2022

Page 1 of 2

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry

Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu

Sample Name : Noise Monitoring-1

Sample Description : Ambient Noise

Sample Code :-

Sample Location : Project Site

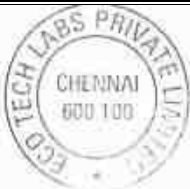
Sample Drawn By : Eco Tech Labs P. Ltd

Sampling date : 25.05.2022

Sampling Procedure : ETL/CHL/IOP/035

Received date : 25.05.2022

| S. No | DAY NOISE (hrs) |          | Noise level in dB (A) |
|-------|-----------------|----------|-----------------------|
|       | TIME ON         | TIME OFF |                       |
| 1     | 06.00           | 07.00    | 55                    |
| 2     | 07.00           | 08.00    | 53                    |
| 3     | 08.00           | 09.00    | 52                    |
| 4     | 09.00           | 10.00    | 54                    |
| 5     | 10.00           | 11.00    | 56                    |
| 6     | 11.00           | 12.00    | 52                    |
| 7     | 12.00           | 13.00    | 54                    |
| 8     | 13.00           | 14.00    | 53                    |
| 9     | 14.00           | 15.00    | 51                    |
| 10    | 15.00           | 16.00    | 50                    |
| 11    | 16.00           | 17.00    | 52                    |
| 12    | 17.00           | 18.00    | 53                    |
| 13    | 18.00           | 19.00    | 51                    |
| 14    | 19.00           | 20.00    | 54                    |
| 15    | 20.00           | 21.00    | 52                    |
| 16    | 21.00           | 22.00    | 51                    |





# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act. 1986  
Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/N/025/250522

Report Date : 02.06.2022

Page 2 of 2

| S.No | NIGHT NOISE (hrs) |          | Noise level in dB (A) |
|------|-------------------|----------|-----------------------|
|      | TIME ON           | TIME OFF |                       |
| 1    | 22.00             | 23.00    | 49                    |
| 2    | 23.00             | 24.00    | 50                    |
| 3    | 24.00             | 01.00    | 48                    |
| 4    | 01.00             | 02.00    | 50                    |
| 5    | 02.00             | 03.00    | 53                    |
| 6    | 03.00             | 04.00    | 51                    |
| 7    | 04.00             | 05.00    | 49                    |
| 8    | 05.00             | 06.00    | 48                    |


### CPCB Limits:

- i) Industrial Area : Day Time - 75 dB (A); Night Time - 70 dB(A)
- ii) Commercial Area : Day Time - 65 dB (A); Night Time - 55 dB(A)
- iii) Residential Area : Day Time - 55 dB (A); Night Time - 45 dB(A)
- iv) Silence Zone : Day Time - 50 dB (A); Night Time - 40 dB(A)
- v) Working Zone : Day Time - 90 dB (A)

\*\*\*End Report\*\*\*



Authorised Signatory - Chemical

  
S. Kokila  
Lab Manager





# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/N/028/250522

Report Date : 02.06.2022

Page 1 of 2

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry

Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu

Sample Name : Noise Monitoring-2

Sample Description : Ambient Noise

Sample Code : -

Sample Location : 2.Sri annamaliyur maligai ,munnur

Sample Drawn By : Eco Tech Labs P. Ltd

Sampling date : 25.05.2022

Sampling Procedure : ETL/CHL/IOP/035

Received date : 25.05.2022

| S. No | DAY NOISE (hrs) |          | Noise level in dB (A) |
|-------|-----------------|----------|-----------------------|
|       | TIME ON         | TIME OFF |                       |
| 1     | 06.00           | 07.00    | 48                    |
| 2     | 07.00           | 08.00    | 46                    |
| 3     | 08.00           | 09.00    | 45                    |
| 4     | 09.00           | 10.00    | 44                    |
| 5     | 10.00           | 11.00    | 43                    |
| 6     | 11.00           | 12.00    | 50                    |
| 7     | 12.00           | 13.00    | 49                    |
| 8     | 13.00           | 14.00    | 45                    |
| 9     | 14.00           | 15.00    | 44                    |
| 10    | 15.00           | 16.00    | 42                    |
| 11    | 16.00           | 17.00    | 45                    |
| 12    | 17.00           | 18.00    | 43                    |
| 13    | 18.00           | 19.00    | 42                    |
| 14    | 19.00           | 20.00    | 44                    |
| 15    | 20.00           | 21.00    | 46                    |
| 16    | 21.00           | 22.00    | 48                    |





# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act. 1986  
Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/N/028/250522

Report Date : 02.06.2022

Page 2 of 2

| S.No | NIGHT NOISE (hrs) |          | Noise level in dB (A) |
|------|-------------------|----------|-----------------------|
|      | TIME ON           | TIME OFF |                       |
| 1    | 22.00             | 23.00    | 44                    |
| 2    | 23.00             | 24.00    | 43                    |
| 3    | 24.00             | 01.00    | 46                    |
| 4    | 01.00             | 02.00    | 43                    |
| 5    | 02.00             | 03.00    | 42                    |
| 6    | 03.00             | 04.00    | 44                    |
| 7    | 04.00             | 05.00    | 41                    |
| 8    | 05.00             | 06.00    | 43                    |


### CPCB Limits:

- i) Industrial Area : Day Time - 75 dB (A); Night Time - 70 dB(A)
- ii) Commercial Area : Day Time - 65 dB (A); Night Time - 55 dB(A)
- iii) Residential Area : Day Time - 55 dB (A); Night Time - 45 dB(A)
- iv) Silence Zone : Day Time - 50 dB (A); Night Time - 40 dB(A)
- v) Working Zone : Day Time - 90 dB (A)

\*\*\*End Report\*\*\*



Authorised Signatory - Chemical

  
S. Kokila  
Lab Manager



# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act. 1986  
Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/N/026/250522

Report Date : 02.06.2022

Page 1 of 2

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry

Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu

Sample Name : Noise Monitoring-3

Sample Description : Ambient Noise

Sample Code : -

Sample Location : 3.Sri krishna mahal ,punnam

Sample Drawn By : Eco Tech Labs P. Ltd

Sampling date : 25.05.2022

Sampling Procedure : ETL/CHL/IOP/035

Received date : 25.05.2022

| S. No | DAY NOISE (hrs) |          | Noise level in dB (A) |
|-------|-----------------|----------|-----------------------|
|       | TIME ON         | TIME OFF |                       |
| 1     | 06.00           | 07.00    | 44                    |
| 2     | 07.00           | 08.00    | 46                    |
| 3     | 08.00           | 09.00    | 49                    |
| 4     | 09.00           | 10.00    | 50                    |
| 5     | 10.00           | 11.00    | 52                    |
| 6     | 11.00           | 12.00    | 46                    |
| 7     | 12.00           | 13.00    | 44                    |
| 8     | 13.00           | 14.00    | 43                    |
| 9     | 14.00           | 15.00    | 45                    |
| 10    | 15.00           | 16.00    | 46                    |
| 11    | 16.00           | 17.00    | 48                    |
| 12    | 17.00           | 18.00    | 50                    |
| 13    | 18.00           | 19.00    | 52                    |
| 14    | 19.00           | 20.00    | 47                    |
| 15    | 20.00           | 21.00    | 45                    |
| 16    | 21.00           | 22.00    | 41                    |





# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act. 1986  
Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/N/026/250522

Report Date : 02.06.2022

Page 2 of 2

| S.No | NIGHT NOISE (hrs) |          | Noise level in dB (A) |
|------|-------------------|----------|-----------------------|
|      | TIME ON           | TIME OFF |                       |
| 1    | 22.00             | 23.00    | 42                    |
| 2    | 23.00             | 24.00    | 40                    |
| 3    | 24.00             | 01.00    | 43                    |
| 4    | 01.00             | 02.00    | 41                    |
| 5    | 02.00             | 03.00    | 42                    |
| 6    | 03.00             | 04.00    | 45                    |
| 7    | 04.00             | 05.00    | 43                    |
| 8    | 05.00             | 06.00    | 46                    |

### CPCB Limits:

- i) Industrial Area : Day Time - 75 dB (A); Night Time - 70 dB(A)
- ii) Commercial Area : Day Time - 65 dB (A); Night Time - 55 dB(A)
- iii) Residential Area : Day Time - 55 dB (A); Night Time - 45 dB(A)
- iv) Silence Zone : Day Time - 50 dB (A); Night Time - 40 dB(A)
- v) Working Zone : Day Time - 90 dB (A)

\*\*\*End Report\*\*\*



Authorised Signatory - Chemical

S. Kokila  
Lab Manager



# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/N/028/250522

Report Date : 02.06.2022

Page 1 of 2

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry

Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu

Sample Name : Noise Monitoring-4

Sample Description : Ambient Noise

Sample Code :-

Sample Location : 4.Government primary school

Sample Drawn By : Eco Tech Labs P. Ltd

Sampling date : 25.05.2022

Sampling Procedure : ETL/CHL/IOP/035

Received date : 25.05.2022

| S. No | DAY NOISE (hrs) |          | Noise level in dB (A) |
|-------|-----------------|----------|-----------------------|
|       | TIME ON         | TIME OFF |                       |
| 1     | 06.00           | 07.00    | 45                    |
| 2     | 07.00           | 08.00    | 47                    |
| 3     | 08.00           | 09.00    | 44                    |
| 4     | 09.00           | 10.00    | 41                    |
| 5     | 10.00           | 11.00    | 40                    |
| 6     | 11.00           | 12.00    | 42                    |
| 7     | 12.00           | 13.00    | 46                    |
| 8     | 13.00           | 14.00    | 43                    |
| 9     | 14.00           | 15.00    | 47                    |
| 10    | 15.00           | 16.00    | 44                    |
| 11    | 16.00           | 17.00    | 42                    |
| 12    | 17.00           | 18.00    | 49                    |
| 13    | 18.00           | 19.00    | 45                    |
| 14    | 19.00           | 20.00    | 48                    |
| 15    | 20.00           | 21.00    | 44                    |
| 16    | 21.00           | 22.00    | 46                    |





# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act. 1986  
Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/N/028/250522

Report Date : 02.06.2022

Page 2 of 2

| S.No | NIGHT NOISE (hrs) |          | Noise level in dB (A) |
|------|-------------------|----------|-----------------------|
|      | TIME ON           | TIME OFF |                       |
| 1    | 22.00             | 23.00    | 44                    |
| 2    | 23.00             | 24.00    | 42                    |
| 3    | 24.00             | 01.00    | 44                    |
| 4    | 01.00             | 02.00    | 46                    |
| 5    | 02.00             | 03.00    | 43                    |
| 6    | 03.00             | 04.00    | 45                    |
| 7    | 04.00             | 05.00    | 42                    |
| 8    | 05.00             | 06.00    | 43                    |


### CPCB Limits:

- i) Industrial Area : Day Time - 75 dB (A); Night Time - 70 dB(A)
- ii) Commercial Area : Day Time - 65 dB (A); Night Time - 55 dB(A)
- iii) Residential Area : Day Time - 55 dB (A); Night Time - 45 dB(A)
- iv) Silence Zone : Day Time - 50 dB (A); Night Time - 40 dB(A)
- v) Working Zone : Day Time - 90 dB (A)

\*\*\*End Report\*\*\*



Authorised Signatory - Chemical

  
S. Kokila  
Lab Manager



# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
 Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act. 1986  
 Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
 Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/N/027/250522

Report Date : 02.06.2022

Page 1 of 2

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry

Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu

Sample Name : Noise Monitoring-5

Sample Description

: Ambient Noise

Sample Code : -

Sample Location

: 5.Vettamanagalam east

Sample Drawn By : Eco Tech Labs P. Ltd

Sampling date

: 25.05.2022

Sampling Procedure : ETL/CHL/IOP/035

Received date

: 25.05.2022

| S. No | DAY NOISE (hrs) |          | Noise level in dB (A) |
|-------|-----------------|----------|-----------------------|
|       | TIME ON         | TIME OFF |                       |
| 1     | 06.00           | 07.00    | 42                    |
| 2     | 07.00           | 08.00    | 54                    |
| 3     | 08.00           | 09.00    | 51                    |
| 4     | 09.00           | 10.00    | 52                    |
| 5     | 10.00           | 11.00    | 55                    |
| 6     | 11.00           | 12.00    | 51                    |
| 7     | 12.00           | 13.00    | 53                    |
| 8     | 13.00           | 14.00    | 50                    |
| 9     | 14.00           | 15.00    | 51                    |
| 10    | 15.00           | 16.00    | 53                    |
| 11    | 16.00           | 17.00    | 51                    |
| 12    | 17.00           | 18.00    | 52                    |
| 13    | 18.00           | 19.00    | 50                    |
| 14    | 19.00           | 20.00    | 49                    |
| 15    | 20.00           | 21.00    | 47                    |
| 16    | 21.00           | 22.00    | 48                    |





# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act. 1986  
Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/N/027/250522

Report Date : 02.06.2022

Page 2 of 2

| S.No | NIGHT NOISE (hrs) |          | Noise level in dB (A) |
|------|-------------------|----------|-----------------------|
|      | TIME ON           | TIME OFF |                       |
| 1    | 22.00             | 23.00    | 45                    |
| 2    | 23.00             | 24.00    | 44                    |
| 3    | 24.00             | 01.00    | 48                    |
| 4    | 01.00             | 02.00    | 47                    |
| 5    | 02.00             | 03.00    | 44                    |
| 6    | 03.00             | 04.00    | 48                    |
| 7    | 04.00             | 05.00    | 46                    |
| 8    | 05.00             | 06.00    | 45                    |


### CPCB Limits:

- i) Industrial Area : Day Time - 75 dB (A); Night Time - 70 dB(A)
- ii) Commercial Area : Day Time - 65 dB (A); Night Time - 55 dB(A)
- iii) Residential Area : Day Time - 55 dB (A); Night Time - 45 dB(A)
- iv) Silence Zone : Day Time - 50 dB (A); Night Time - 40 dB(A)
- v) Working Zone : Day Time - 90 dB (A)

\*\*\*End Report\*\*\*



Authorised Signatory - Chemical

  
S. Kokila  
Lab Manager





# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
 Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
 Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
 Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/S/018/250522

Report Date : 02.06.2022

Page 1 of 2

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry

Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu

|                    |  |                  |              |
|--------------------|--|------------------|--------------|
| Sample Name        | : Soil   | Sample Condition | : Good       |
| Sample Code        | : -  | Sampling date    | : 25.05.2022 |
| Sample Drawn By    | : Eco Tech Labs P.Ltd  | Received date    | : 25.05.2022 |
| Sampling Procedure | : ETL/QAD/SOP/08   | Commenced on     | : 25.05.2022 |
| Customer Reference | : -  | Completed on     | : 31.05.2022 |
| Sample Location    | : 1. Project Site, 2.Sri annamaliyur maligai ,munnur 3.Sri krishna mahal ,punnam |                  |              |

### I.CHEMICAL TESTING

#### 1.Atmospheric Pollution

| S. No | Parameters              | Test Method                  | Result |        |        | Units             |
|-------|-------------------------|------------------------------|--------|--------|--------|-------------------|
|       |                         |                              | SQ1    | SQ2    | SQ3    |                   |
| 1     | pH (at 25°C)            | IS:2720(P -26)1987           | 7.3    | 6.62   | 8.37   | -                 |
| 2     | Electrical Conductivity | IS:14767: 2016               | 0.27   | 0.07   | 0.24   | mS/cm             |
| 3     | Water Holding Capacity  | ICARDA Page No:28            | 3.8    | 4.2    | 3.2    | ml/l              |
| 4     | Chloride                | FAO 2007 Page No:48          | 42     | 25.1   | 38.5   | mg/kg             |
| 5     | Bulk Density            | FAO 2007 Page No:35          | 1.156  | 1.1412 | 1.1586 | g/cm <sup>3</sup> |
| 6     | Calcium as Ca           | FAO 2007 Page No:44          | 12.2   | 8.2    | 8.4    | mg/kg             |
| 7     | Sodium as Na            | FAO 2007 Page No:44          | 118    | 96     | 121    | mg/kg             |
| 8     | Potassium as K          | FAO 2007 Page No:44          | 10.6   | 16.8   | 14.2   | mg/kg             |
| 9     | Organic matter          | IS:2720 (P-22) 1972, RA:2010 | 0.26   | 0.3    | 0.42   | mg/kg             |
| 10    | Magnesium as Mg         | FAO 2007 - 44                | 8.6    | 5      | 5.1    | mg/kg             |





# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act. 1986  
Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/S/018/250522

Report Date : 02.06.2022

Page 2 of 2

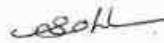
| S. No | Parameters               | Test Method                  | Result |       |       | Units    |
|-------|--------------------------|------------------------------|--------|-------|-------|----------|
|       |                          |                              | SQ1    | SQ2   | SQ3   |          |
| 11    | Total Nitrogen           | IS 14864-1999;RA:2008        | 0.031  | 0.028 | 0.021 | %        |
| 12    | Total soluble sulphate   | IS:2720(P -27):1977 RA: 2010 | 116    | 68    | 186   | mg/kg    |
| 13    | Available Phosphorous    | FAO 2007 Page No:73          | 218    | 182   | 190   | mg/kg    |
| 14    | Sand                     | FAO 2007 Page No:25          | 57     | 65    | 52    | %        |
| 15    | Clay                     | FAO 2007 Page No:25          | 18     | 18.4  | 16    | %        |
| 16    | Silt                     | FAO 2007 Page No:25          | 25     | 16.6  | 32    | %        |
| 17    | Cation Exchange Capacity | IS:2720(P -24):1976 RA: 2010 | 36     | 24.2  | 21.6  | meq/100g |
| 18    | SAR                      | ETL/CHL/SOP/004              | 7.6    | 8.8   | 7.92  | meq/kg   |
| 19    | Silicon                  | ICARDA Page No:160           | 0.9    | 0.96  | 0.82  | mg/kg    |

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

\*\*\*End of Report\*\*\*



Authorised Signatory - Chemical

  
S. Kokila  
Lab Manager



# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
 Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
 Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
 Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/S/019/250522

Report Date : 02.06.2022

Page 1 of 2

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry

Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu

|                    |   |                  |              |
|--------------------|---|------------------|--------------|
| Sample Name        | : Soil  | Sample Condition | : Good       |
| Sample Code        | : -   | Sampling date    | : 25.05.2022 |
| Sample Drawn By    | : Eco Tech Labs P.Ltd                               | Received date    | : 25.05.2022 |
| Sampling Procedure | : ETL/QAD/SOP/08                                    | Commenced on     | : 25.05.2022 |
| Customer Reference | : -   | Completed on     | : 31.05.2022 |
| Sample Location    | : 4.Government primary school 5.Vettamanagalam east |                  |              |

### I.CHEMICAL TESTING

#### 1.Atmospheric Pollution

| S. No | Parameters              | Test Method                  | Result |        | Units             |
|-------|-------------------------|------------------------------|--------|--------|-------------------|
|       |                         |                              | SQ4    | SQ5    |                   |
| 1     | pH (at 25°C)            | IS:2720(P -26)1987           | 6.45   | 7.15   | -                 |
| 2     | Electrical Conductivity | IS:14767: 2016               | 0.09   | 0.24   | mS/cm             |
| 3     | Water Holding Capacity  | ICARDA Page No:28            | 2.8    | 4.8    | ml/l              |
| 4     | Chloride                | FAO 2007 Page No:48          | 31.2   | 37.9   | mg/kg             |
| 5     | Bulk Density            | FAO 2007 Page No:35          | 1.1316 | 1.1413 | g/cm <sup>3</sup> |
| 6     | Calcium as Ca           | FAO 2007 Page No:44          | 7.2    | 10.3   | mg/kg             |
| 7     | Sodium as Na            | FAO 2007 Page No:44          | 95.8   | 182    | mg/kg             |
| 8     | Potassium as K          | FAO 2007 Page No:44          | 16     | 32     | mg/kg             |
| 9     | Organic matter          | IS:2720 (P-22) 1972, RA:2010 | 0.3    | 0.28   | mg/kg             |
| 10    | Magnesium as Mg         | FAO 2007 - 44                | 4.2    | 6.3    | mg/kg             |





# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/S/019/260820

Report Date : 03.09.2020

Page 2 of 2

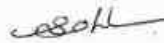
| S. No | Parameters               | Test Method                  | Result |       | Units    |
|-------|--------------------------|------------------------------|--------|-------|----------|
|       |                          |                              | SQ4    | SQ5   |          |
| 11    | Total Nitrogen           | IS 14864-1999;RA:2008        | 0.026  | 0.038 | %        |
| 12    | Total soluble sulphate   | IS:2720(P -27):1977 RA: 2010 | 126    | 190   | mg/kg    |
| 13    | Available Phosphorous    | FAO 2007 Page No:73          | 180    | 216   | mg/kg    |
| 14    | Sand                     | FAO 2007 Page No:25          | 54     | 64    | %        |
| 15    | Clay                     | FAO 2007 Page No:25          | 16     | 18.2  | %        |
| 16    | Silt                     | FAO 2007 Page No:25          | 30     | 17.8  | %        |
| 17    | Cation Exchange Capacity | IS:2720(P -24):1976 RA: 2010 | 11.8   | 51.6  | meq/100g |
| 18    | SAR                      | ETL/CHL/SOP/004              | 6.5    | 7.88  | meq/kg   |
| 19    | Silicon                  | ICARDA Page No:160           | 0.86   | 0.72  | mg/kg    |

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

\*\*\*End of Report\*\*\*



Authorised Signatory - Chemical

  
S. Kokila  
Lab Manager



# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
 Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
 Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
 Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/W/016/250522

Report Date : 02.06.2022

Page 1 of 2

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry  
 Address of the Project Site : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil Nadu

Sample Name : Water Sample Description : Bore Well  
 Sample Code : - Sample Condition : Good  
 Sample Drawn by : Eco Tech Labs P.Ltd Sampling date : 25.05.2022  
 Sampling Procedure : ETL/QAD/SOP/07 Received date : 25.05.2022  
 Customer Reference : - Commenced on : 25.05.2022  
 Sample Location : 1. Project Site, 2.Sri annamaliyur maligai ,munnur 3.Sri krishna mahal ,punnam Completed on : 31.05.2022

### I.CHEMICAL TESTING

#### 1. Water

| S. No | Parameters                          | Test Method                  | Results   |           |           | Units      | Acceptable Limits for Drinking Water as per IS: 10500:2012 |
|-------|-------------------------------------|------------------------------|-----------|-----------|-----------|------------|--|
|       |                                     |                              | WQ1       | WQ2       | WQ3       |            |  |
| 1     | pH (at 25°C)                        | IS:3025(P -11)1983 RA: 2012  | 7.38      | 7.58      | 7.8       | -          | 6.5 - 8.5  |
| 2     | Electrical Conductivity             | IS:3025(P -14) 2013          | 2990      | 2750      | 2550      | µS/cm      | -  |
| 3     | Colour                              | IS:3025 (P -4)1983 RA: 2012  | 1         | 1         | 2         | Hazen Unit | 5  |
| 4     | Turbidity                           | IS:3025(P -10)1984 RA: 2012  | BQL(LOQ1] | BQL(LOQ1] | BQL(LOQ1] | NTU        | 1  |
| 5     | Total Dissolved Solids              | APHA 22nd Edn.2012-2540-C    | 1645      | 1545      | 1495      | mg/L       | 500  |
| 6     | Total Suspended Solids              | IS:3025(P-17)-1984 RA:2012   | BQL(LOQ2] | BQL(LOQ2] | BQL(LOQ2] | mg/L       | -  |
| 7     | Total Hardness as CaCO <sub>3</sub> | APHA 22nd Edn.2012-2340-C    | 1357      | 935       | 460       | mg/L       | 200  |
| 8     | Calcium as Ca                       | APHA 22nd Edn2012.3500 Ca-B  | 347       | 187       | 114       | mg/L       | 75   |
| 9     | Magnesium as Mg                     | APHA 22nd Edn.2012-3500 Mg-B | 119       | 113       | 42.5      | mg/L       | 30   |
| 10    | Chloride as Cl                      | IS:3025(P -32)-1988 RA: 2014 | 338       | 416       | 484       | mg/L       | 250  |





# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
 Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
 Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
 Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/W/016/260820 Report Date : 03.09.2020 Page 2 of 2

| S. No | Parameters                            | Test Method                                | Results     |             |             | Units         | Acceptable Limits for Drinking Water as per IS: 10500:2012 |
|-------|---------------------------------------|--|-------------|-------------|-------------|---------------|--|
|       |                                       |  | WQ1         | WQ2         | WQ3         |               |  |
| 11    | Sulphate as SO <sub>4</sub>           | APHA 22nd Edn.2012-4500 SO <sub>4</sub> -E | 245         | 188         | 192         | mg/L          | 200  |
| 12    | Total Alkalinity as CaCO <sub>3</sub> | APHA 22nd Edn.2012-2320-B                  | 315         | 255         | 234         | mg/L          | 200  |
| 13    | Iron as Fe                            | IS:3025(P -53):2003 RA: 2014               | BQL(LOQ0.1] | BQL(LOQ0.1] | BQL(LOQ0.1] | mg/L          | 1.0  |
| 14    | Silica as SiO <sub>2</sub>            | IS:3025(P -35)1988 RA: 2014                | 88.5        | 75.2        | 84.3        | mg/L          | -  |
| 15    | Fluoride as F                         | APHA 22nd Edn.2012-4500-F-D                | 0.91        | 0.77        | 0.63        | mg/L          | -  |
| 16    | Nitrate as NO <sub>3</sub>            | IS:3025(P -34):1988 RA: 2014               | 5.3         | 4.6         | 3.7         | mg/L          | 45   |
| 17    | Sodium as Na                          | IS:3025(P -45):1993 RA: 2014               | 245         | 318         | 326         | mg/L          | -  |
| 18    | Potassium as K                        | IS:3025(P -45):1993 RA: 2014               | 75          | 85.5        | 102         | mg/L          | -  |
| 19    | E.coli                                | IS:1622:1981:RA:2014                       | <2          | <2          | <2          | mpn/<br>100ml | -  |
| 20    | Coliform                              | IS:1622:1981:RA:2014                       | 11          | 17          | 22          | mpn/<br>100ml | -  |

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification; MPN-Most Probable Number,

\*\*\*End of Report\*\*\*

Authorised Signatory - Microbiology

M. Arumugam Prasietha  
Technical Manager



Authorised Signatory - Chemical

S. Kokila  
Lab Manager



# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
 Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
 Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
 Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

|                                |                          |             |
|--------------------------------|--------------------------|-------------|
| Report No : ETL/S/W/017/250522 | Report Date : 02.06.2022 | Page 1 of 2 |
|--------------------------------|--------------------------|-------------|

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry  
 Address of the Project : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil  
 Site : Nadu

|                    |  |                    |              |
|--------------------|--|--------------------|--------------|
| Sample Name        | : Water  | Sample Description | : Bore Well  |
| Sample Code        | : -  | Sample Condition   | : Good       |
| Sample Drawn by    | : Eco Tech Labs P.Ltd  | Sampling date      | : 25.05.2022 |
| Sampling Procedure | : ETL/QAD/SOP/07   | Received date      | : 25.05.2022 |
| Customer Reference | : -  | Commenced on       | : 25.05.2022 |
| Sample Location    | : 4. Kattandi kuppam 5.Sathyamoorthy store<br>Melampattu village | Completed on       | : 31.05.2022 |

### I.CHEMICAL TESTING

#### 1. Water

| S. No | Parameters              | Test Method                  | Results   |         | Units      | Acceptable Limits for Drinking |
|-------|-------------------------|------------------------------|-----------|---------|------------|--------------------------------|
|       |                         |                              | WQ4       | WQ5     |            |                                |
| 1     | pH (at 25°C)            | IS:3025(P -11)1983 RA: 2012  | 7.46      | 7.75    | -          | 6.5 - 8.5                      |
| 2     | Electrical Conductivity | IS:3025(P -14) 2013          | 2170      | 2680    | µS/cm      | -                              |
| 3     | Colour                  | IS:3025 (P -4)1983 RA: 2012  | 2         | 2       | Hazen Unit | 5                              |
| 4     | Turbidity               | IS:3025(P -10)1984 RA: 2012  | BQL(LOQ1] | BQL(LOQ | NTU        | 1                              |
| 5     | Total Dissolved Solids  | APHA 22nd Edn.2012-2540-C    | 1295      | 1770    | mg/L       | 500                            |
| 6     | Total Suspended Solids  | IS:3025(P-17)-1984 RA:2012   | BQL(LOQ2] | BQL(LOQ | mg/L       | -                              |
| 7     | Total Hardness as CaCO3 | APHA 22nd Edn.2012-2340-C    | 828       | 513     | mg/L       | 200                            |
| 8     | Calcium as Ca           | APHA 22nd Edn2012.3500 Ca-B  | 204       | 85.3    | mg/L       | 75                             |
| 9     | Magnesium as Mg         | APHA 22nd Edn.2012-3500 Mg-B | 77.6      | 73      | mg/L       | 30                             |
| 10    | Chloride as Cl          | IS:3025(P -32)-1988 RA: 2014 | 298       | 470     | mg/L       | 250                            |





# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
 Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act.1986  
 Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
 Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/W/017/250522      Report Date : 02.06.2022      Page 2 of 2

| S. No | Parameters                            | Test Method                                | Results     |             | Units     | Acceptable Limits for Drinking Water as per |
|-------|---------------------------------------|--|-------------|-------------|-----------|---|
|       |                                       |  | WQ4         | WQ5         |           |   |
| 11    | Sulphate as SO <sub>4</sub>           | APHA 22nd Edn.2012-4500 SO <sub>4</sub> -E | 179         | 317         | mg/L      | 200   |
| 12    | Total Alkalinity as CaCO <sub>3</sub> | APHA 22nd Edn.2012-2320-B                  | 275         | 485         | mg/L      | 200   |
| 13    | Iron as Fe                            | IS:3025(P -53):2003 RA: 2014               | BQL(LOQ0.1] | BQL(LOQ0.1] | mg/L      | 1.0   |
| 14    | Silica as SiO <sub>2</sub>            | IS:3025(P -35)1988 RA: 2014                | 79.5        | 65.3        | mg/L      | -   |
| 15    | Fluoride as F                         | APHA 22nd Edn.2012-4500-F-D                | 0.55        | 0.69        | mg/L      | -   |
| 16    | Nitrate as NO <sub>3</sub>            | IS:3025(P -34):1988 RA: 2014               | 2.9         | 3.9         | mg/L      | 45  |
| 17    | Sodium as Na                          | IS:3025(P -45):1993 RA: 2014               | 202         | 380         | mg/L      | -   |
| 18    | Potassium as K                        | IS:3025(P -45):1993 RA: 2014               | 85.2        | 88.5        | mg/L      | -   |
| 19    | E.coli                                | IS:1622:1981:RA:2014                       | 8           | 4           | mpn/100ml | -   |
| 20    | Coliform                              | IS:1622:1981:RA:2014                       | 22          | 13          | mpn/100ml | -   |

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification; MPN-Most Probable Number,

\*\*\*End of Report\*\*\*

Authorised Signatory - Microbiology

M. Arumugam Prasietha  
 Technical Manager



Authorised Signatory - Chemical

S. Kokila  
 Lab Manager





# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
 Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act. 1986  
 Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
 Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/W/018/250522

Report Date : 02.06.2022

Page 1 of 2

Name of the Client : M/s. Annai Blue metals Rough Stone and Gravel Quarry  
 Address of the Project : S.F.No. 682 (Part) of Kuppam Village of Pugalur Taluk, Karur District and Tamil  
 Site : Nadu

Sample Name : Water Sample Description : Surface Water  
 Sample Code : - Sample Condition : Good  
 Sample Drawn by : Eco Tech Labs P.Ltd Sampling date : 25.05.2022  
 Sampling Procedure : ETL/QAD/SOP/07 Received date : 25.05.2022  
 Customer Reference : - Commenced on : 25.05.2022  
 Sample Location : Noyyal River Kaveri River Completed on : 31.05.2022

### I.CHEMICAL TESTING

#### 1. Water

| S. No | Parameters              | Test Method                  | Results |      | Units      | Acceptable Limits for Drinking |
|-------|-------------------------|------------------------------|---------|------|------------|--------------------------------|
|       |                         |                              | WQ4     | WQ5  |            |                                |
| 1     | pH (at 25°C)            | IS:3025(P -11)1983 RA: 2012  | 8.49    | 8.45 | -          | 6.5 - 8.5                      |
| 2     | Electrical Conductivity | IS:3025(P -14) 2013          | 2510    | 2410 | µS/cm      | -                              |
| 3     | Colour                  | IS:3025 (P -4)1983 RA: 2012  | 45      | 50   | Hazen Unit | 5                              |
| 4     | Turbidity               | IS:3025(P -10)1984 RA: 2012  | 18      | 21   | NTU        | 1                              |
| 5     | Total Dissolved Solids  | APHA 22nd Edn.2012-2540-C    | 1660    | 1605 | mg/L       | 500                            |
| 6     | Total Suspended Solids  | IS:3025(P-17)-1984 RA:2012   | 27.2    | 31.5 | mg/L       | -                              |
| 7     | Total Hardness as CaCO3 | APHA 22nd Edn.2012-2340-C    | 422     | 407  | mg/L       | 200                            |
| 8     | Calcium as Ca           | APHA 22nd Edn2012.3500 Ca-B  | 57.9    | 59.4 | mg/L       | 75                             |
| 9     | Magnesium as Mg         | APHA 22nd Edn.2012-3500 Mg-B | 67.5    | 62.8 | mg/L       | 30                             |
| 10    | Chloride as Cl          | IS:3025(P -32)-1988 RA: 2014 | 504     | 450  | mg/L       | 250                            |





# ECO TECH LABS PVT LTD

ISO 9001: 2015 and OHSAS-ISO 45001:2018 Certified Company  
 Recognized by MoEF & CC as Environmental Laboratory under the Environment (Production) Act. 1986  
 Plot No. 48A, 2nd Main Road, Ram Nagar South Extension,  
 Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

## Test Report

Report No : ETL/S/W/018/250522      Report Date : 02.06.2022      Page 2 of 2

| S. No | Parameters                            | Test Method                                 | Results     |             | Units     | Acceptable Limits for Drinking Water as per IS: 10500:2012 |
|-------|---------------------------------------|---|-------------|-------------|-----------|--|
|       |                                       |   | WQ4         | WQ5         |           |  |
| 11    | Sulphate as SO <sub>4</sub>           | APHA 22nd Edn.2012-4500 SO <sub>4</sub> --E | 289         | 305         | mg/L      | 200  |
| 12    | Total Alkalinity as CaCO <sub>3</sub> | APHA 22nd Edn.2012-2320-B                   | 311         | 343         | mg/L      | 200  |
| 13    | Iron as Fe                            | IS:3025(P -53):2003 RA: 2014                | BQL(LOQ0.1] | BQL(LOQ0.1] | mg/L      | 1.0  |
| 14    | Silica as SiO <sub>2</sub>            | IS:3025(P -35)1988 RA: 2014                 | 60.5        | 85.3        | mg/L      | -  |
| 15    | Fluoride as F                         | APHA 22nd Edn.2012-4500-F-D                 | 1.31        | 1.21        | mg/L      | -  |
| 16    | Nitrate as NO <sub>3</sub>            | IS:3025(P -34):1988 RA: 2014                | 13.1        | 12.5        | mg/L      | 45   |
| 17    | Sodium as Na                          | IS:3025(P -45):1993 RA: 2014                | 396         | 325         | mg/L      | -  |
| 18    | Potassium as K                        | IS:3025(P -45):1993 RA: 2014                | 99.5        | 110         | mg/L      | -  |
| 19    | E.coli                                | IS:1622:1981:RA:2014                        | 70          | 110         | mpn/100ml | -  |
| 20    | Coliform                              | IS:1622:1981:RA:2014                        | 220         | 280         | mpn/100ml | -  |

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification; MPN-Most Probable Number,  
 \*\*\*End of Report\*\*\*

Authorised Signatory - Microbiology  
  
 M. Arumugam Prasietha  
 Technical Manager



Authorised Signatory - Chemical  
  
 S. Kokila  
 Lab Manager



**ANNEXURE XV**  
**SITE PHOTOS**



# AAQ PHOTOS



# WATER SAMPLING PHOTOS



# NOISE PHOTOS

