Executive Summary

Tvl. Sri Vinayaka Enterprises Rough Stone Quarry - 2.85.0 Ha

For

PUBLIC HEARING

At

S.F Nos: 136 (Part 8) of Venkateshapuram Village, Shoolagiri Taluk, Krishnagiri District, Tamil Nadu

PROJECT PROPONENT

Tvl.Sri Vinayaka Enterprises,
Beggili Village
Venkateshapuram
Schoolagiri Taluk,
Krishnagiri District – 635 117

EIA Notification 2006 Schedule 1(a) Category B1 (Cluster)

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EXECUTIVE SUMMARY

1. Project Background:

The existing Rough Stone Quarry is over an extent of 2.85.0 Ha. It is a Government Poramboke land in S.F.No. 136 (Part 8) of Venkateshapuram Village, Shoolagiri Taluk, and Krishnagiri District. The category of project is B1, It is a Rough stone quarry in Venkateshapuram village. The area is situated on hilly terrain area sloping towards eastern side covered with Rough Stone which does not sustain any type of vegetation.

The quarry operation is proposed to carry out with conventional open cast semi mechanized mining with 5.0 meter vertical bench and 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 of 56 m (24 m above ground level (AGL) and 32 m below ground level (BGL) including the existing depth of 14.36 m). The total Geological Resources is about 11,43,748 m³ of Rough stone. The Mineable Reserves is estimated at 4,35,474 m³ of Rough Stone to be mined for (Sixty months) Five years only. The Precise Area Communication Letter received from District Collector Office, Department of Geology and Mining, Krishnagiri District vide letter Rc.No.1263/2018/Mines, dated 13.11.2018. The Mining Plan was approved by The Deputy Director, Geology & Mining, Krishnagiri vide letter Rc.No.1263/2018/Mines, dated 06.02.2019.

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

2. NATURE & SIZE OF THE PROJECT

The existing Rough Stone Quarry over an extent of 2.85.0 Hectares land is located at Venkateshapuram Village, Shoolagiri Taluk, Krishnagiri District.

Mineral intends to quarry : Rough stone Quarry

District : Krishnagiri Taluk : Shoolagiri

Village : Venkateshapuram

S. F. Nos. : 136 (Part 8) Extent : 2.85.0 Hectares

Table 1: Brief Description of the Project

| S. No | Particulars | Details | | | | | |
|-------|--|--|--|--|--|--|--|
| 1 | Latitude | Latitude : 120 44' 44.08" N to 120 44' 37.76" N | | | | | |
| 2 | Longitude | Longitude : 770 56' 31.57" E to 770 56' 28.62" E | | | | | |
| 3 | Site Elevation above MSL | 840 m from MSL | | | | | |
| 4 | Topography | Hilly terrain topography | | | | | |
| 5 | Land use of the site | Government Poramboke Land | | | | | |
| 6 | Extent of lease area | 2.85.0 На | | | | | |
| 7 | NT . 1 · 1 | NH 44 – Bengaluru – Chennai- 6.68 km, S | | | | | |
| 7 | Nearest highway | SH 17C – Bagalur – Berikai Road – 6.92 km, N | | | | | |
| 8 | Nearest railway station | Hosur Railway Station – 13.17 km, WSW | | | | | |
| 9 | Nearest airport | Kempegowda International Airport – 56.26 km, NW | | | | | |
| | | Town – Shoolagiri - 11.57 km, SE | | | | | |
| 10 | Nearest town / city | City – Hosur - 13.44 km, WSW | | | | | |
| | | District - Krishnagiri - 38.56 km, SE | | | | | |
| 11 | Rivers / Canal | Ponnaiyar River, 4.43km, W | | | | | |
| 12 | Lake | Bukkasagaram Lake, 2.43km, S Muthali Lake, 4.42km, NW Peddakullu Lake, 4.77km, WNW Kamandoddi New Lake, 5.95km, SSW Kamandoddi Lake- 6.69 km SE Kamandoddi Old Lake, 6.85km, SSW Kumudapalli Lake, 7.49km, WSW Konerapalli Lake, 7.60km, SSE Ieyland Lake, 7.71km, WSW Kelavarapelli Reservoir, 7.78km, NW Chappadi Lake, 8.48km, SSE Tippalam Lake, 8.70km, WSW Alasantham Lake - 10.05 km SW Basthi Lake- 10.93 km W Vasanth Nagar Lake - 11.18 km SW Chinnar Reservior - 13.02 km SE Shanthapuram Lake - 13.14 km NW Chandramkudi Eri- 13.34 km W Bedarapalli Lake- 14.49 km NW | | | | | |
| 13 | Hills / valleys | ❖ Brahmma Hills – 11.80 km SW | | | | | |
| 14 | Archaeologically places | ❖ Shoolagiri Fort – 12.09 km SE | | | | | |
| 15 | National parks / Wildli Sanctuaries | | | | | | |

| 116 | Reserved / Protected Forests | Athimugam RF – 0.18 km SE Ramasandiram RF – 2.56 km SW Miditepalli RF – 2.96 km N Sanamavu R.F. – 3.42 km SW Berikai Extension R.F 4.07 km NE Settipalli R.F 5.70 km SE |
|-----|---------------------------------|--|
| 17 | Seismicity | Mine Lease area comes under Seismic zone-III |

2. NEED FOR THE PROJECT

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

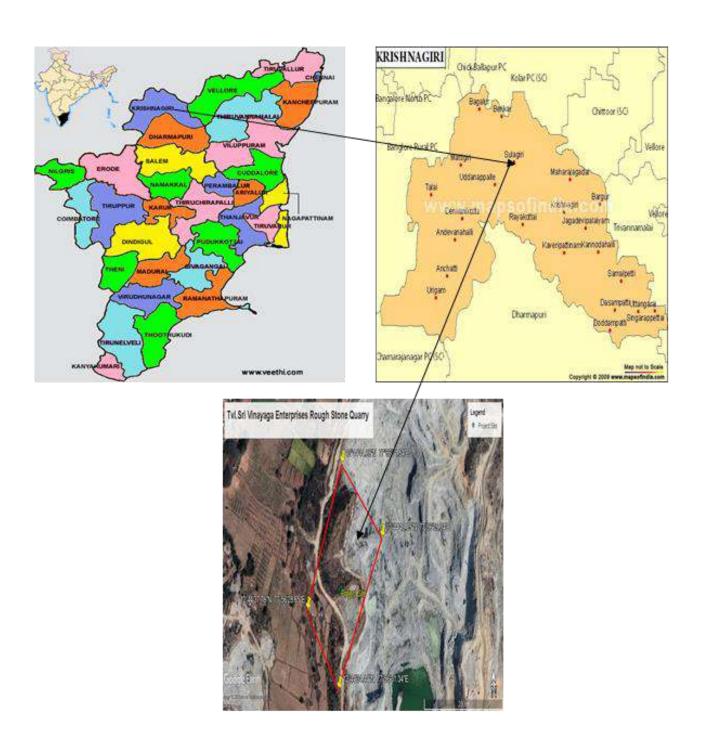


Figure 1: Location Map of the Project Site

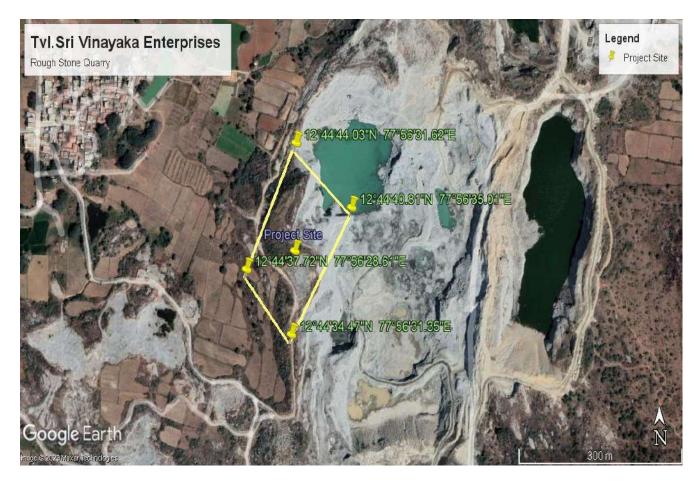


Figure 2: Google Image of the Project Site

4. CHARNOCKITE

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

5. GEOLOGICAL RESOURCES

Table 2. Geological resources

| Section | Benc h | Lengt h in (m) | Widt h in (m) | Dept h in (m) | Volume In M ³ | Geologica l Reserves in m³ @ 95% | Mine waste in m ³ @ 5% | Top Soil in m ³ |
|---------|-----------|----------------------|---------------------|---------------------|-----------------------------|---|--|-------------------------------|
| | I | 1 | 38 | 1 | | | | 38 |
| | III | 1 | 39 | 3 | 117 | 111 | 6 | |
| | IV | 1 | 41 | 5 | 205 | 195 | 10 | |
| | V | 1 | 45 | 5 | 225 | 214 | 11 | |
| | VI | 86 | 135 | 5 | 58050 | 55148 | 2902 | |
| XY-AB | VII | 86 | 135 | 5 | 58050 | 55148 | 2902 | |
| | VIII | 86 | 135 | 5 | 58050 | 55148 | 2902 | |
| | IX | 86 | 135 | 5 | 58050 | 55148 | 2902 | |
| | X | 86 | 135 | 5 | 58050 | 55148 | 2902 | |
| | XI | 86 | 135 | 5 | 58050 | 55148 | 2902 | |
| | XII | 86 | 135 | 5 | 58050 | 55148 | 2902 | |
| | • | TOTAL | | | 406897 | 386556 | 20341 | 38 |
| | I | 25 | 99 | 1 | | | | 2475 |
| | II | 35 | 18 | 2 | 1260 | 1197 | 63 | |
| | III | 35 | 85 | 5 | 14875 | 14131 | 744 | |
| | IV | 49 | 100 | 5 | 24500 | 23275 | 1225 | |
| | V | 53 | 130 | 5 | 34450 | 32728 | 1722 | |
| XY-CD | VI | 53 | 130 | 5 | 34450 | 32728 | 1722 | |
| MI-CD | VII | 53 | 130 | 5 | 34450 | 32728 | 1722 | |
| | VIII | 53 | 130 | 5 | 34450 | 32728 | 1722 | |
| | IX | 53 | 130 | 5 | 34450 | 32728 | 1722 | |
| | X | 53 | 130 | 5 | 34450 | 32728 | 1722 | |
| | XI | 53 | 130 | 5 | 34450 | 32728 | 1722 | |
| | XII | 53 | 130 | 5 | 34450 | 32728 | 1722 | |
| | , | TOTAL | | | 316235 | 300427 | 15808 | 2475 |
| | I | 47 | 70 | 1 | | | | 3290 |
| | II | 57 | 73 | 5 | 20805 | 19765 | 1040 | |
| | III | 68 | 76 | 5 | 25840 | 24548 | 1292 | |
| | IV | 81 | 80 | 5 | 32400 | 30780 | 1620 | |
| | V | 81 | 124 | 5 | 50220 | 47709 | 2511 | |
| XY-EF | VI | 81 | 124 | 5 | 50220 | 47709 | 2511 | |
| VI-FL | VII | 81 | 124 | 5 | 50220 | 47709 | 2511 | |
| | VIII | 81 | 124 | 5 | 50220 | 47709 | 2511 | |
| | IX | 81 | 124 | 5 | 50220 | 47709 | 2511 | |
| | X | 81 | 124 | 5 | 50220 | 47709 | 2511 | |
| | XI | 81 | 124 | 5 | 50220 | 47709 | 2511 | |
| | XII | 81 | 124 | 5 | 50220 | 47709 | 2511 | |

| TOTAL | 480805 | 456765 | 24040 | 3290 |
|-------------|-------------|---------|-------|------|
| GRAND TOTAL | 120393 7 | 1143748 | 60189 | 5803 |

Table 3. Mineable Resources

| Section | Bench | Length in (m) | Width in (m) | Depth in (m) | Volume In M3 | Mineable Reserves in m3 @ 95% | Mine waste in m3 @ 5% | Top Soil in m3 |
|---------|-------|---------------|--------------|--------------------|-----------------|--|--------------------------------|-------------------|
| | I | 1 | 28 | 1 | | | | 28 |
| | III | 1 | 28 | 3 | 84 | 80 | 4 | |
| | IV | 1 | 25 | 5 | 125 | 119 | 6 | |
| | V | 1 | 24 | 5 | 120 | 114 | 6 | |
| | VI | 76 | 99 | 5 | 37620 | 35739 | 1881 | |
| XY-AB | VII | 71 | 89 | 5 | 31595 | 30015 | 1580 | |
| | VIII | 66 | 79 | 5 | 26070 | 24767 | 1303 | |
| | IX | 61 | 69 | 5 | 21045 | 19993 | 1052 | |
| | X | 56 | 59 | 5 | 16520 | 15694 | 826 | |
| | XI | 51 | 49 | 5 | 12495 | 11870 | 625 | |
| | XII | 46 | 39 | 5 | 8970 | 8522 | 448 | |
| | , | TOTAL | | | 154644 | 146913 | 7731 | 28 |
| | I | 1 | 89 | 1 | | | | 89 |
| | III | 35 | 74 | 5 | 12950 | 12303 | 647 | |
| | IV | 49 | 84 | 5 | 20580 | 19551 | 1029 | |
| | V | 53 | 99 | 5 | 26235 | 24923 | 1312 | |
| | VI | 53 | 89 | 5 | 23585 | 22406 | 1179 | |
| XY-CD | VII | 53 | 79 | 5 | 20935 | 19888 | 1047 | |
| | VIII | 53 | 69 | 5 | 18285 | 17371 | 914 | |
| | IX | 53 | 59 | 5 | 15635 | 14853 | 782 | |
| | X | 53 | 49 | 5 | 12985 | 12336 | 649 | |
| | XI | 53 | 39 | 5 | 10335 | 9818 | 517 | |
| | XII | 53 | 29 | 5 | 7685 | 7301 | 384 | |
| | | TOTAL | | T | 169210 | 160750 | 8460 | 89 |
| | I | 36 | 60 | 1 | | | | 2160 |
| | II | 45 | 62 | 5 | 13950 | 13253 | 697 | |
| | III | 51 | 60 | 5 | 15300 | 14535 | 765 | |
| | IV | 59 | 59 | 5 | 17405 | 16535 | 870 | |
| XY-EF | V | 54 | 88 | 5 | 23760 | 22572 | 1188 | |
| | VI | 49 | 78 | 5 | 19110 | 18155 | 955 | |
| | VII | 44 | 68 | 5 | 14960 | 14212 | 748 | |
| | VIII | 39 | 58 | 5 | 11310 | 10745 | 565 | |
| | IX | 34 | 48 | 5 | 8160 | 7752 | 408 | |

| GRAND TOTAL | | | | | 458389 | 435474 | 22915 | 2277 |
|-------------|-----|-------|----|--------|--------|--------|-------|------|
| | • | TOTAL | | 134535 | 127811 | 6724 | 2160 | |
| | XII | 19 | 18 | 5 | 1710 | 1625 | 85 | |
| | XI | 24 | 28 | 5 | 3360 | 3192 | 168 | |
| | X | 29 | 38 | 5 | 5510 | 5235 | 275 | |

Table 4. Year wise Production Plan

| YEAR | Section | Bench | Length in (m) | Width in (m) | Depth in (m) | Volume In M3 | Reserves in m3 @ 95% | Mine waste in m3 @ 5% | Top Soil in m3 |
|--------|---------|-------|---------------|--------------|--------------------|-----------------|----------------------------|--------------------------------|----------------------|
| | | I | 1 | 28 | 1 | | | | 28 |
| | | III | 1 | 28 | 3 | 84 | 80 | 4 | |
| | XY-AB | IV | 1 | 25 | 5 | 125 | 119 | 6 | |
| | | V | 1 | 24 | 5 | 120 | 114 | 6 | |
| | | VI | 76 | 99 | 5 | 37620 | 35739 | 1881 | |
| | | I | 1 | 89 | 1 | | | | 89 |
| | | III | 35 | 74 | 5 | 12950 | 12303 | 647 | |
| IVEAD | XY-CD | IV | 49 | 84 | 5 | 20580 | 19551 | 1029 | |
| I YEAR | | V | 53 | 99 | 5 | 26235 | 24923 | 1312 | |
| | | VI | 53 | 89 | 5 | 23585 | 22406 | 1179 | |
| | XY-EF | I | 36 | 60 | 1 | | | | 2160 |
| | | II | 45 | 62 | 5 | 13950 | 13253 | 697 | |
| | | III | 51 | 60 | 5 | 15300 | 14535 | 765 | |
| | | IV | 59 | 59 | 5 | 17405 | 16535 | 870 | |
| | | V | 54 | 88 | 5 | 23760 | 22572 | 1188 | |
| | | VI | 49 | 78 | 5 | 19110 | 18155 | 955 | |
| | | | TOTAL | | | 210824 | 200285 | 10539 | 2277 |
| ** | XY-AB | VII | 71 | 89 | 5 | 31595 | 30015 | 1580 | |
| II | XY-CD | VII | 53 | 79 | 5 | 20935 | 19888 | 1047 | |
| YEAR | XY-EF | VII | 44 | 68 | 5 | 14960 | 14212 | 748 | |
| | | | TOTAL | | | 67490 | 64115 | 3375 | |
| *** | XY-AB | VIII | 66 | 79 | 5 | 26070 | 24767 | 1303 | |
| III | XY-CD | VIII | 53 | 69 | 5 | 18285 | 17371 | 914 | |
| YEAR | XY-EF | VIII | 39 | 58 | 5 | 11310 | 10745 | 565 | |
| | | | TOTAL | | | 55665 | 52883 | 2782 | |
| | WW AD | IX | 61 | 69 | 5 | 21045 | 19993 | 1052 | |
| | XY-AB | X | 56 | 59 | 5 | 16520 | 15694 | 826 | |
| IV | WW CD | IX | 53 | 59 | 5 | 15635 | 14853 | 782 | |
| YEAR | XY-CD | X | 53 | 49 | 5 | 12985 | 12336 | 649 | |
| | W PP | IX | 34 | 48 | 5 | 8160 | 7752 | 408 | |
| | XY-EF | X | 29 | 38 | 5 | 5510 | 5235 | 275 | |

| | | | TOTAL | | 79855 | 75863 | 3992 | | |
|------|-------|-----|----------|----|-------|--------|--------|-------|------|
| | XY-AB | XI | 51 | 49 | 5 | 12495 | 11870 | 625 | |
| | AI-AD | XII | 46 | 39 | 5 | 8970 | 8522 | 448 | |
| V | XY-CD | XI | 53 | 39 | 5 | 10335 | 9818 | 517 | |
| YEAR | | XII | 53 | 29 | 5 | 7685 | 7301 | 384 | |
| | XY-EF | XI | 24 | 28 | 5 | 3360 | 3192 | 168 | |
| | ΛΙ-ΕΓ | XII | 19 | 18 | 5 | 1710 | 1625 | 85 | |
| | | | TOTAL | | 44555 | 42328 | 2227 | | |
| | | GR/ | AND TOTA | AL | | 458389 | 435474 | 22915 | 2277 |

The proposed rate of production of Rough stone is estimated as 435474 m³ for next five (I-V) years.

6. MINING

Opencast mining

The quarry operation is proposed to carry out with conventional open cast semi 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.

Process Description

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

7. Water Requirement

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

Table 5. Water Balance

| Purpose | Quantity | Sources |
|------------------|----------|--|
| Drinking Water | H () KLD | Packaged Drinking water vendors available in Venkateshapuram Village which is about $\simeq 1.50~{\rm km}$ on NW side of the area. |
| Green belt | 0.5KLD | Other domestic activities through road tankers supply |
| Dust suppression | 1.0 KLD | From road tankers supply |
| Total | 2.5 KLD | |

8. Manpower

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

Table 6. Man Power

| 1. | Skilled | Operator | 2 No. |
|----|---------------------|------------------|--------|
| | | Mechanic | 1 No. |
| | | Blaster/Mat | 1 No. |
| 2. | Semi – skilled | Driver | 2 Nos. |
| 3. | Unskilled | Musdoor / Labors | 5 Nos. |
| | | Cleaners | 3 Nos. |
| | | Office Boy | 1 No. |
| 4. | Management & Superv | isory Staff | 3 No. |
| | • | 18 Nos | |

9. Solid Waste Management

Table 7 Solid Waste Management

| S. No | Туре | Quantity | Disposal Method |
|-------|-----------|------------|------------------------------|
| 1 | Organic | 3.2 kg/day | Municipal bin including food |
| | | | waste |
| 2 | Inorganic | 4.9 kg/day | TNPCB authorized recyclers |

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

Table 8. 500m Radius Cluster Mine

1) Existing other quarries:

| S. No. | Name of the Owner | Village & Taluk | S.F.Nos. | Extent in Hect. | Lease Period |
|-----------|----------------------|------------------|----------------|--------------------|---------------|
| 1. | 1. Thiru Y. Jagadesh | Venkatesapuram | 136 (Part -7) | 3.50.0 | 13.07.2018 to |
| | , 0 | Shoolagiri Taluk | | | 12.07.2023 |
| 2 | 2. Thiru. Manjunaika | Venkatesapuram | 136 (Part -3) | 4.10.0 | 08.03.2019 to |
| ۷. | | Shoolagiri Taluk | 150 (1 a11 -5) | 4.10.0 | 07.03.2024 |

2) Details of abandoned /Old Quarries

| S. No. | Name of the Owner | Village & Taluk | S.F.Nos. | Extent in Hect. | Lease Period |
|-----------|-------------------|-----------------|----------|-----------------|--------------|
| 110. | | | | Heet. | |

| 1. | Thiru. A.D. Mohan | Venkatesapuram | 136 (Part -2) | 4.00.0 | RC No, 78/12 Mines dated |
|-----------------|-----------------------|------------------|----------------|--------|-----------------------------|
| | | | | | 21.05.2012 |
| 2 | Thirty V Javannalroch | Venkatesapuram | 126 (Dant 1) | 2.00.0 | Roc. |
| 2. Thiru. V. Ja | Thiru. V. Jayaprakash | Shoolagiri Taluk | 136 (Part -4) | 2.00.0 | 73/2016/Mines |
| 3. | Thiru T. Muniraj | Venkatesapuram | 136 (Part -5) | 1.30.0 | Roc. |
| 3. | rniru 1. Muniraj | Shoolagiri Taluk | 130 (Fait-3) | 1.50.0 | 74/2016/Mines |
| 4. | Thiru N. Haries | Venkatesapuram | 136 (Part -6) | 3.00.0 | Roc. |
| 4. | Tilli u N. Haries | Shoolagiri Taluk | 130 (Fait -0) | 3.00.0 | 75/2016/Mines |
| 5. | Thiru V. Madesh | Venkatesapuram | 136 (Part -9) | 3.00.0 | Roc. |
| 5. | i iii u v. Mauesii | Shoolagiri Taluk | 130 (1 alt -9) | 3.00.0 | 77/2016/Mines |

3) Details of Present Proposed quarries

| S. No. | Name of the Owner | Village & Taluk | S.F.Nos. | Extent in Hect. | Lease Period | |
|-----------|---|------------------------------------|---------------|-----------------|---|--|
| 1 | Tvl. Sri Vinayaka Enterprises | Venkatesapuram Shoolagiri Taluk | 136 (Part -8) | 2.85.0 | Precise area given Instant Proposal | |
| 2 | Thiru S. Chinnanna | Venkatesapuram Shoolagiri Taluk | 136 (Part -1) | 2.80.0 | Precise area given | |
| 3 | Tvl. S V Blue Metals | Venkatesapuram Shoolagiri Taluk | 136 P—12) | 2.70.0 | Precise area given | |
| Deta | Details of other proposed /applied quarries | | | | | |
| | Nil | Nil | Nil | Nil | Nil | |

10. Land Requirement

The total extent area of the project is 2.85.0 Ha, Government Poramboke Land in Village of Venkateshapuram, Shoolagiri Taluk, and Krishnagiri District.

Table 9 Land Use Breakup

| SL. NO. | LAND USE | PRESENT AREA (Ha) | AREA IN USE DURING THE QUARRYING PERIOD (Ha) |
|---------|----------------------|----------------------|--|
| 1. | Area under Quarrying | 1.43.0 | 2.52.0 |
| 2. | Infrastructure | Nil | 0.01.0 |

| 3. | Roads | 0.01.0 | 0.01.0 |
|----|-------------------|--------|--------|
| 4. | Green Belt & Dump | Nil | 0.31.0 |
| 5. | Unutilized Area | 1.41.0 | Nil |
| | Total | 2.85.0 | 2.85.0 |

11. Human Settlement

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

Table 10 Habitation

| SL. NO | DIRECTION | VILLAGE | POPULATION | DISTANCE |
|--------|-----------|-----------------|------------|----------|
| 1 | North | Venkateshapuram | 550 | 1.6 Km |
| 2 | East | Doripalli | 120 | 3.0 Km |
| 3 | South | Bukkasagaram | 600 | 2.3 km |
| 4 | West | Dasapalle | 350 | 3.8 km |

12. Power Requirement

The Electricity for Mines office and Lights only at nights (working is restricted on day time only between 9 Am to 5 Pm). Diesel (HSD) will be used for quarrying machineries around **675308 litres of HSD** will be used for the entire project life. Diesel will be brought from nearby diesel pumps. No power is required for the project. Lightings on the Night time the power will be taken from nearby electric poles after obtaining permission from concerned authorities.

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 : 18º C

ii) Average Maximum Temperature. : 38°Celsius

iii) Average Annual Rainfall of the area: 800 mm-900 mm

13.2 Air Environment

Ambient air monitoring was carried out on monthly basis in the surrounding areas of the Mine Lease area to assess the ambient air quality at the source. To know the ambient air quality at a larger distance i.e. in the study area of 5 km. radius, air quality survey has been conducted at 5 locations. Major air pollutants like Particulate Matter (PM10), Sulphur Dioxide (SO₂), and Nitrogen Dioxide (NO₂) were monitored and the results are summarized below.

The baseline levels of PM_{10} (44- 64 $\mu g/m^3$), $PM_{2.5}$ (15- 31 $\mu g/m^3$), SO_2 (6-20 $\mu g/m^3$), NO_2 (14-37 $\mu g/m^3$), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from April to June 2023.

13.3 Noise Environment

The maximum Day noise and Night noise were found to be 65 dB(A) and 55 dB(A) respectively in Government higher secondary school, Bukkasagaram. The minimum Day Noise and Night noise were 47 dB (A) and 35 dB(A) respectively which was observed in Sri kalabhairaveshwara Temple, Perumalapalli. The observed values are all well within the Standards prescribed by CPCB.

13.4 Water Environment

- The average pH ranges from 7.34 to 8.1
- TDS value varied from 505 mg/l to 1015 mg/l
- Hardness varied from 252 to 717 mg/l
- Chloride varied from 71.3 to 223 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 6.21 to 8.14 with organic matter 0.12 to 0.68 %. The

concentration of Nitrogen, Phosphorus & Potassium has been found to be in good amount in the soil samples.

13.6 Biological Environment

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

14. Rehabilitation/Resettlement

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

15. Greenbelt Development

- 1. The development of greenbelt in the peripheral buffer zone of the mine area.
- 2. Green belt has been recommended as one of the major component of Environmental Management Plan, which will improve ecology, environment and quality of the surrounding area.
- 3. Local trees like Neem, Vilvam, Panai, etc will be planted along the lease boundary and avenues as well as over Non-active dumps at a rate of 1500 trees with interval 5m.
- 4. The rate of survival expected to be 80% in this area

Table.11. Plantation/ Afforestation Program

| Name of species proposed | Survival | No of species |
|--|----------|---------------|
| Neem, Vilvam, Vaagai, Eachai, Naval, Mantharai, Magizha Maram, Vila Maram, Poo Marudhu, Panai, Marudha maram, | 80% | 1500 |
| Thandri, Sengondrai, Poovarasu, Thethankottai Maram, Pungam | | |
| Total | | 1500 |

16. Anticipated Environmental Impacts

16.1 Air Environment and Mitigation Measures

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

16.2 Noise Environment and Mitigation Measures

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

17. Responsibilities for Environmental Management Cell (EMC)

The responsibilities of the EMC include the following:

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

18. Environmental Monitoring Program

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

19. Project Cost

The total project cost is **Rs 1,45,02,000** /- for deployment of machinery and creation of infrastructural facilities like approach road, mine office / Workers Shed, First Aid Room etc., including electrifications and water supply

Table .12 Project Cost details

| S. No. | Description | Cost (Rs.) |
|--------|------------------|-------------|
| 1 | Fixed cost | 1,15,02,000 |
| 2 | Operational cost | 30,00,000 |
| | Total Cost | 1,45,02,000 |

Table .13 EMP Cost

| S.No. | Categories | Capital cost | Recurring cost |
|-------|--|---------------|----------------|
| 1 | Air Environment | 296000 | 183000 |
| 2 | Noise Environment | 40000 | 2199370 |
| 3 | 3 Water Environment | | 5000 |
| 4 | Waste Management | 15000 | 7000 |
| 5 | Implementation of EC, Mining plan & DGMS Condition | 831500 | 109700 |
| 6 | Green belt development | 390000 | 45000 |
| | | 1601000 | 2549070 |
| | Total | Rs. 41,50,070 | |

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|-----------|-----------|-----------|-----------|-----------|
| 41,50,070 | 26,76,524 | 28,10,350 | 29,50,867 | 30,98,411 |

Total EMP Cost for 5 Years - Rs. 1,56,86,221/-

20. Corporate Environmental Responsibility

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

Table 14 CER Cost

| S.No. | CER Activity | Cost (Rs) |
|-------|--|------------|
| 1. | Provision of Desks, Benches, Mic Set, Environmental awareness | |
| | books in Library for Students, Green belt development, and Toilet | |
| | rooms in PUP School, Beggili | 5,00,000/- |
| | Provision of Xerox machine, Mic Set, Environmental awareness books | |
| | in Library for Students, Green belt development, and Toilet rooms in | |
| | PUP School, Menasanadodddi | |
| | 5,00,000 | |

21. Benefits of the Project

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