

October

2023

Executive Summary for Conducting Public Hearing

FOR

“Rough Stone Quarry over a total extent of 3.00.0 Ha

At

**Rough Stone Quarry over a total extent of 3.00.0 Ha at
S.F.Nos.314/Part - I of Thuppuganapalli Village,
Shoolagiri Taluk, Krishnagiri District**

Project Proponent:

Thiru G.Perumal

Owner

S/o. Gopal,

A-14, Thally Hudco,

Thally Road,

Hosur Taluk,

Krishnagiri District.

Project termed under schedule 1(a) Category B₁

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EXECUTIVE SUMMARY

1. Project Background:

The Proposed project total extent area is 3.00.0 Ha, Government land in Thuppuganapalli Village of Shoolagiri Taluk, Krishnagiri District. The category of project is B1, It is a Rough stone quarry in Thuppuganapalli village. The area is situated on plain terrain sloping towards south Eastern 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 7.0 meter vertical bench with a bench width of 5.0 meter. The thickness of topsoil in this area is 1.0 m. The Quarry operation involves shallow jack hammer drilling, slurry blasting, loading and transportation.

The quarry operation is proposed up to depth for 64 m – topsoil 1.0 m + Rough stone 63 m (Surface ground level above height is 40 m and surface ground level below depth is 24 m). The Total Geological resource is about 803639 m³ of Rough stone. The Mineable Reserves of Rough stone is 516612 m³. The year wise production/recoverable resources of Rough stone for 5 years is 516612 m³.

The fresh Mining Plan was approved by Deputy Director, Geology and Mining, Krishnagiri vide letter Roc No.496/2021/Mines dated: 01.07.2021.

Accordingly, the Lessee had obtained Environmental Clearance from SEIAA-TN vide Lr. No. SEIAA- TN/F.No.5265/1(a)/EC.No:3279/2016 dated 11.07.2016.

The Mining Lease was granted in Rc.No.97/2016/Mines-1 dated:06.04.2016 for the period of Ten years. The lease deed was executed on 10.08.2016. The lease will expire on 09.08.2026.

This Scheme of Mining plan for the period 2021-2022 to 2025-2026 was approved by The Assistant Director, Dept. of Geology & Mining, Collectorate, Krishnagiri vide R.c.No.496/2021/Mines dated 01.07.2021. The project area does not fall in Hill Area Conservation Authority region. There is no interstate boundary, CRZ zone, Western Ghats as per Wild life protection Act 1972, within the radius of 15 Km.

2. Nature & Size of the Project

The Rough stone Quarry over an extent of 3.00.0 Hectares land is located Thuppuganapalli Village of Shoolagiri Taluk, Krishnagiri District.

Mineral intends to quarry	: Rough stone
District	: Krishnagiri
Taluk	: Shoolagiri
Village	: Thuppuganapalli
S. F. Nos.	: S.F. Nos. 314 (Part-1)
Extent	: 3.00.0 Hectares

Table 1: Brief Description of the Project

S. No	Particulars	Details
1	Latitude	N 12 ° 36' 45.6221" to N 12 ° 36' 49.2184"
2	Longitude	E 77° 55' 21.8437" to E 77° 55' 31.8815"
3	Site Elevation above MSL	777 m above Mean Sea Level
4	Topography	Hilly terrain
5	Land use of the site	Government land
6	Extent of lease area	3.00.0 Ha
7	Nearest highway	SH 17A – Shoolagiri – Denkanikottai – 0.50 km, NE
8	Nearest railway station	Shoolagiri Railway Station – 15.96 km, SW
9	Nearest airport	Shoolagiri Airport – 18 km, NW
10	Nearest town / city	Town - Shoolagiri (12 km, NE) City – Shoolagiri (12 km, NE) District – Krishnagiri (32 km, SE)

11	Rivers / Canal	Ponnaiyar River, 5 km, E
12	Lake	<ul style="list-style-type: none"> ➤ Nagamangalam Lake, 5.85 km, SE ➤ Old Lake, 7.67 km, N ➤ Konerapalli Lake, 8.65 km, NE ➤ Chappadi Lake, 8.74 km, NE ➤ Chinnar river – 8.86 km, SW ➤ Lake – 9.65 km, NE ➤ Thorapalli Lake - 9.8 km, SE ➤ Jona Banda Lake – 11 km, SE ➤ Chennathur lake – 12.63 km, SE ➤ Bathlapalli lake – 14 km, SE
13	Hills / valleys	Nil in 15 km radius
14	Archaeologically places	Nil in 15 km radius
15	National parks / Wildlife Sanctuaries	Cauvery North Wildlife Sanctuary – 8.2 km, S
16	Reserved / Protected Forests	<ul style="list-style-type: none"> ➤ Sanamavu Forest – 2.9 km, NW ➤ Perandapalli R.F. – 5.23 km, N ➤ Udedurgam R.F. – 8.2 km, S ➤ Denkanikottai R.F. – 11.5 km, SW ➤ Sengodachinhahalli R.F. – 14 km, SE
17	Seismicity	Proposed Lease area come under Seismic zone-II(low risk area)

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 Krishnagiri.
- ❖ 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, 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.

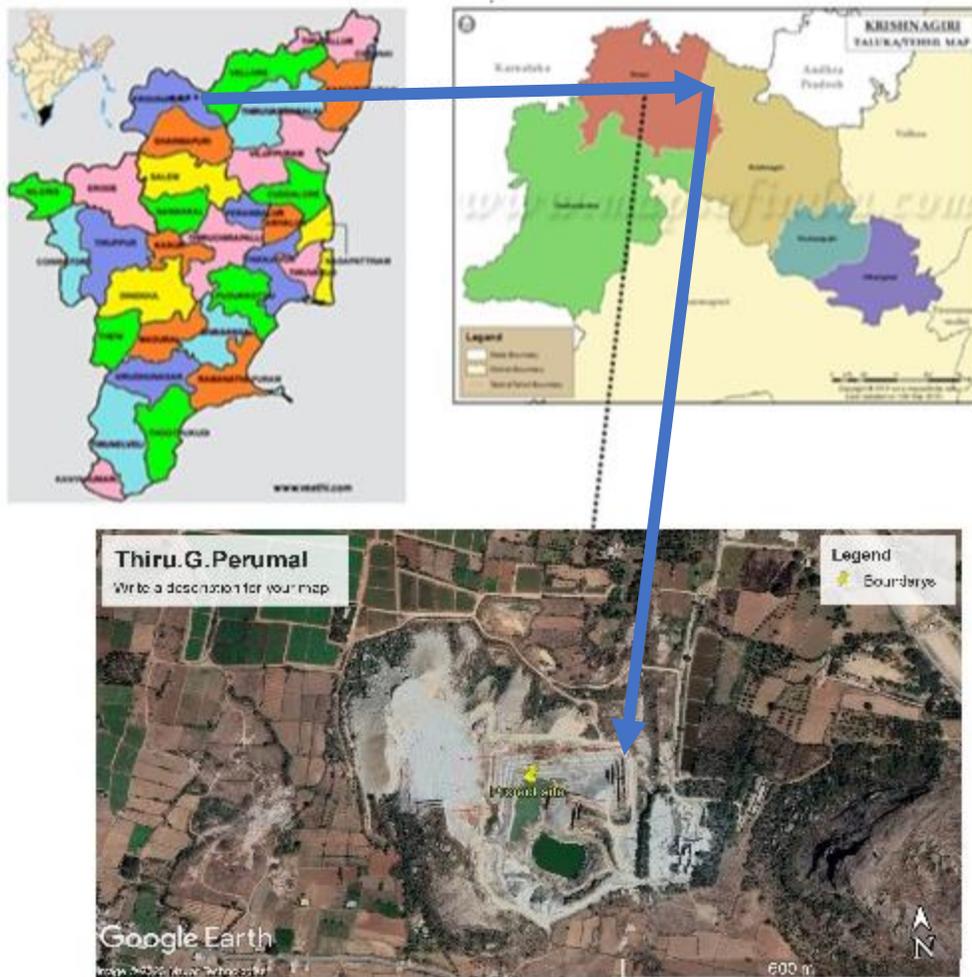


Figure 1: Location Map of the Project Site



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 resource of Rough Stone and Topsoil is calculated upto a depth of 64.0m (1.0m Topsoil + 63.0m Rough Stone). Surface Ground Level Above-40m and Surface Ground Level Below-24m. Total Geological resource is estimated as 845936 m³ by area cross sectional method.

Table 2. Geological resources

Geological Reserves

Section	Bench	L (m)	W (m)	D (m)	Volume In M3	Geological Reserves in m3 @ 95%	Mine waste in m3 @ 5%	Top Soil in m3
XY-AB	I	60	102	1				6120
	II	26	18	7	3276	3112	164	
	III	65	53	7	24115	22909	1206	
	IV	69	88	7	42504	40379	2125	
	V	73	100	7	51100	48545	2555	
	VI	73	100	7	51100	48545	2555	
	VII	122	100	7	85400	81130	4270	
	VIII	120	100	7	84000	79800	4200	
	IX	120	100	7	84000	79800	4200	
	X	120	100	7	84000	79800	4200	
TOTAL					509495	484020	25475	6120
XY-CD	II	180	17	7	21420	20349	1071	
	III	180	26	7	32760	31122	1638	
	IV	131	33	7	30261	28748	1513	
	V	180	100	7	126000	119700	6300	
	VI	180	100	7	126000	119700	6300	
TOTAL					336441	319619	16822	
GRAND TOTAL					845936	803639	42297	6120

Table 3. Year wise Production Plan

Yearwise Development and Production Reserves									
YEAR	Section	Bench	L (m)	W (m)	D (m)	Volume m ³	Recoverable Reserve in m ³ @ 95%	Mine waste in m ³ @ 5%	Top Soil in m ³
10.08.2021 TO 09.08.2022	XY-AB								
		I	49	82	1				4018

		II	16	8	7	896	851	45	
		III	55	43	7	16555	15727	828	
		IV	59	80	7	33040	31388	1652	
		V	63	80	7	35280	33516	1764	
		VI	63	80	7	35280	33516	1764	
		VII	112	80	7	62720	59584	3136	
		TOTAL				183771	174582	9189	4018
10.08.2022 TO 09.08.2023	XY-AB								
		VIII	105	75	7	55125	52369	2756	
		IX	100	70	7	49000	46550	2450	
		TOTAL				104125	98919	5206	
10.08.2023 TO 09.08.2024	XY- CD								
		II	180	16	7	20160	19152	1008	
		III	180	23	7	28980	27531	1449	
		IV	116	18	7	14616	13885	731	
		TOTAL				63756	60568	3188	
10.08.2024 TO 09.08.2025	XY - CD								
		V	160	70	7	78400	74480	3920	
		TOTAL				78400	74480	3920	
10.08.2025 TO 09.08.2026	XY - AB	X	95	65	7	43225	41064	2161	
	XY - CD	VI	155	65	7	70525	66999	3526	
		TOTAL				113750	108063	5687	
GRAND TOTAL						543802	516612	27190	4018

6. Mining

Opencast mining

The quarry operation is proposed to carry out with conventional open cast semi mechanized mining with 7.0 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 Topsoil by Excavators and directly Loaded Into Tippers.
- Removal of Rough stone & Gravel by Excavators by Drilling and Blasting.
- Shallow Drilling With Jackhammer of 32mm Dia.
- Minimum Blasting With Class 2 Explosives.
- Loading of Rough stone & Gravel By Excavators Into Tippers.

7. Water Requirement

Total water requirement for the mining project is 2.2 KLD. Domestic water will be sourced from nearby Thuppuganapalli Village and other water will be source from nearby road tankers supply.

Table 4. Water Balance

Purnose	Quantitv	Sources
Drinking Water	0.7 KLD	Packaged Drinking water is available from the nearby Uddanapalli Villages which is 0.66 km North from the project site.
Green belt	0.5 KLD	Other domestic activities through road tankers supply
Dust suppression	1.0 KLD	From road tankers supply
Total	2.2 KLD	

8. Man Power

Total manpower required for the project is approximately 14 Nos. Workers will be from nearby villages.

Table 5 Man Power

1.	Skilled	Foreman/Part time Mining Engineer	1 No.
		Excavator Operator	1 No.
		Co-operator	1 No's.
		Jack Hammer Operator	6 No's.
		Blaster/Mate	1 No.
2.	Semi – skilled		2 No.
		Watchman	1 No
3.	Unskilled helper		1 No
		Total	14 Nos

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

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

9. Solid Waste Management

The entire quarried rough stone of irrespective of size will be consumed in the needy crusher as even the dust is sold nowadays as M sand. Hence there is no waste in the quarrying operation. Mining waste will be used for basement purpose for construction of building, nearby end users.

Table 7 500m Radius Cluster Mine

1) Existing Quarries:

S. No.	Name of the Owner	Village & S.F.Nos.	Extent in Hect.	G.O. No & Date	Lease Period
1.	G. Perumal, S/o Gopal A-14, Thally Hudco, Tally road, Shoolagiri - 635109	Shoolagiri taluk Thuppuganapalli village	314 Part-1 3.00.0	Roc.97/2016/Mines dated: 04.08.2016	10.08.2016 to 09.08.2026
2.	G. Perumal, S/o Gopal A-14, Thally Hudco, Tally road, Shoolagiri - 635109	Shoolagiri taluk Thuppuganapalli village	314 Part-3 4.94.32	Roc.214/2018/Mines dated: 06.12.2019	06.12.2019 to 05.12.2029

2) Expired/Old quarries:

S. No.	Name of the Owner	Village & Taluk	Extent in Hect.	G.O No & Date	Lease Period
1.	G. Perumal, S/o Gopal A-14, Thally Hudco, Tally road, Shoolagiri - 635109	Shoolagiri taluk Thuppuganapalli Village	214 part-2	Roc No.703/2005/Mines dated: 23.07.2005	12.09.2005 to 11.09.2015

3) Applied / Proposed Quarries

S.No.	Name of the Owner	Village & Taluk	S.F.No & Extent in Ha	G.O.No & Date	Lease period
Nil					

The Total extent of the Existing / Lease expired / proposed quarries are 7.94.32 Ha

10. Land Requirement

The total extent area of the project is 3.00.0 Ha, Government land in Thuppuganapalli Village of Shoolagiri Taluk, Krishnagiri District.

Table 8 Land Use Breakup

Sl.No.	Description	Present Area (Ha.)	Area in use during the quarrying period (Ha.)
01.	Area under Quarrying	2.06.0	2.50.0
02.	Infrastructure	Nil	0.01.0
03.	Roads	0.01.0	0.01.0
04.	Green Belt & Dump	Nil	0.48.0
05.	Unutilized Area	0.93.0	Nil
Total		3.00.0	3.00.0

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

Sl. No.	Direction	Village	Population	Distance
1	North	Thuppuganapalli	250	1.0 kms.
2	South	Thyaranadurgam	400	1.0 kms.
3	West	Hanumanthapuram	300	2.9 kms.
4	East	T.Kurubarapalli	600	1.4 kms.

12. Power Requirement

The Rough stone Quarry project does not require huge water and electricity for the project. **16 Liter** diesel per hour for excavator for mining and loading for Rough stone needed.

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 : 28 °C
- ii) Average Maximum Temperature. : 36 °C

iii) Average Annual Rainfall of the area: 274.7 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), Nitrogen Dioxide (NO₂) were monitored and the results are summarized below.

The baseline levels of PM10 (61-37 µg/m³), PM2.5 (29-16 µg/m³), SO₂ (13-5 µg/m³), NO₂ (30-10 µg/m³), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from January 2023 – March 2023 .

13.3 Noise Environment

Ambient noise levels were measured at 5 locations around the proposed project site. The maximum Day noise and Night noise were found to be 60 dB (A) and 44 dB (A) respectively in Project site. The minimum Day Noise and Night noise were 38 dB (A) and 35 dB (A) respectively which was observed in Project Site.

13.4 Water Environment

- The average pH ranges from 7.84 – 7.99.
- TDS value varied from 306 mg/l to 1116 mg/l
- Hardness varied from 206 to 669 mg/l
- Chloride varied from 25.4 to 254 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 6.8 to 8.51 with organic matter 0.26 to 0.32 %. 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 Government 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.
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, Pungam, and Naval etc., will be planted along the lease boundary and avenues as well as over Non-active dumps at a rate of 300 trees per annum with interval 5m.
4. The rate of survival expected to be 80% in this area

Table.10 Plantation/ Afforestation Program

Year	Name of species	Place of planted	No of species	Spacing	Survival
2023	Neem/Pungam	North	300	5m	80%
2024	Naval	South	300	5m	80%
2025	Poovarasu/Pungam	East	300	5m	80%
2026	Naval/Pungam	South	300	5m	80%
2027	Neem	West	300	5m	80%
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. 3,93,00,000** 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

S. No.	Description	Cost
1	Fixed Asset Cost	3,53,00,000
2	Operational Cost	40,00,000
	Total	3,93,00,000

20. Corporate Environmental Responsibility

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

Table 12 CER Cost

S.No.	CER Activity	CER (Rs.)
1.	Provision of basic amenities such as safe drinking water, Hygienic toilet facilities, furniture's, Greenbelt development and Environmental awareness books in library, Solar lights to Govt Urdu Middle School, Ollapalli.	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.