Executive Summary

Thiru. G. Perumal Rough Stone Quarry - 4.94.32 Ha

For

PUBLIC HEARING

At S.F.No. 314 (Part III) of Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District, Tamil Nadu

PROJECT PROPONENT

Thiru. G. Perumal S/o. Gopal, A-14, Thally Hudco, Thally Road Hosur Taluk, Krishnagiri District – 635 109

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

Prepared By: Ecotech Labs Pvt. Ltd.



NABET Accreditated EIA Consultant No.48, 2nd Main Road, Ram Nagar South Extension, Pallikaranai, Chennai-600100

Project	Rough Stone Quarry- 4.94.32 Ha	
Project Proponent	Thiru. G. Perumal	Executive Summary
Project Location	Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District	

EXECUTIVE SUMMARY

1. Project Background:

The existing Rough Stone Quarry is over an extent of 4.94.32 Ha. It is a Government land in S.F.No. 314 (Part III) of Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District. The project comes under Category B1. The area is situated on hilly terrain sloping towards North Eastern side.

The quarry operation is proposed to carry out with conventional open cast semimechanized 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 49 m (1 m topsoil and 48 m rough stone) (including the existing depth) for a period of 5 years. The total Geological Resources is about 8,74,879 m³ of Rough stone and 9,371 m³ of Topsoil. The Mineable Reserves is estimated at 7,37,960 m³ of Rough Stone and 6,831 m³ of Topsoil to be mined for (Sixty months) Five years only. The Precise Area Communication Letter received from The District Collector, Department of Geology and Mining, Krishnagiri District vide Rc. No.214/2018/Mines dated 09.03.2018. The Scheme of Mining Plan was approved by The Deputy Director, Department of Geology & Mining, Krishnagiri vide Roc. No. 214/2018/Mines dated 20.10.2023.

The project area does not fall in Hill Area Conservation Authority region. There is no interstate boundary, CRZ zone, Western Ghats, notified Bird sanctuaries, within the radius of 15 km.

2. NATURE & SIZE OF THE PROJECT

The existing Rough Stone Quarry over an extent of 4.94.32 Hectares land is located at Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District.

Mineral intends to quarry: Rough stone QuarryDistrict: KrishnagiriTaluk: Shoolagiri

1

Project Present Thim C Present	
Project Proponent Initu. G. Perumai Executive S	'ummary
Project Location Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District	

Village	: Thuppuganapalli
S. F. Nos.	: 314 (Part III)
Extent	: 4.94.32 Hectares

Table 1: Brief Description of the Project

S. No	Particulars	Details
1.	Latitude	12° 36' 53.0353"N to 12° 36' 45.6499"N
2.	Longitude	77° 55' 25.4549"E to 77° 55' 18.3602"E
3.	Site Elevation above MSL	822 m from MSL
4.	Topography	Hilly terrain topography
5.	Land use of the site	Government Land
6.	Extent of lease area	4.94.32 Ha
7.	Nearest highway	NH 844 (Papparapatti - Somanahalli Road)- 0.66 km, NE SH 85 (Attibele- Rayakottai Road)- 6.49 km SW
8.	Nearest railway station	Periya Nagathunai Railway Station - 5.98 km SW
9.	Nearest airport	Kempegowda International Airport – 67.68 km NW
10.	Nearest town / city	Town – Shoolagiri - 10.94 km NE City – Shoolagiri - 10.94 km NE District - Krishnagiri – 33.10 km SE
11.	Rivers / Canal	 Ponnaiyar River – 4.39 km N Chinnar River – 8.39 km SW
12.	Lake	 Govidhan Lake – 5.42 km NW Nanjappan Kodigai Lake – 6.86 km SW Kamandoddi Old Lake – 7.13 km NE Kamandoddi Lake-7.76 km NE Kamandoddi New Lake – 8.18 km NE Konerapalli Lake – 8.37 km NE Chappadi Lake – 8.42 km N Chikke Goundan Lake – 9.80 km SE Bharadhangi Lake – 10.17 km SE Tippalam Lake – 11.33 km NW Kumudapalli Lake – 11.63 km NW Bukkasagaram Lake – 11.96 km NE Pachapalli Reservoir – 12.43 km S Shoolagiri/Chinnar Reservoir – 13.51 km NE
13.	Dam	 Shoolagiri/Chinnar Dam – 14.24 km NE Panchapalli Dam – 14.80 km S
14.	Hills / valleys	 Brahmma Hills – 14.24 km NW
15.	Archaeologically places	 Shoolagiri Fort – 11.88 km NW

Project	Rough Stone Quarry- 4.94.32 Ha	
Project Proponent	Thiru. G. Perumal	Executive Summary
Project Location	Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District	

16.	National parks / Wildlife Sanctuaries	 Cauvery North Wildlife Sanctuary – 8.40 km 				
		*	Sanamavu RF – 3.12 km NW			
		*	Udedurgam RF – 8.15 km SW			
	Decorrigid / Protocted	*	Perandapalli RF – 9.32 km NW			
17.	Foresta	*	Denkanikotta RF – 10.93 km SW			
	FOIESUS	*	Ramasandiram RF – 12.78 km N			
		*	Athimugam RF – 13.49 km NE			
		*	Sengodachinnahalli RF – 14.18 km SE			
18.	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.

Project	Rough Stone Quarry- 4.94.32 Ha	
Project Proponent	Thiru. G. Perumal	Executive Summary
Project Location	Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District	



Figure 1: Location Map of the Project Site



Figure 2: Google Image of the Project Site

Project	Rough Stone Quarry- 4.94.32 Ha	
Project Proponent	Thiru. G. Perumal	Executive Summary
Project Location	Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District	

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

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in (Cu.m.)	Recoverable Reserve in Cu.m (100%)	Topsoil in Cu.m.
	Ι	120	77	1			9240
	II	34	35	5	5950	5950	
	III	60	45	5	13500	13500	
	IV	69	50	5	17250	17250	
	V	76	55	5	20900	20900	
XY-AB	VI	83	59	5	24485	24485	
	VII	239	101	5	120695	120695	
	VIII	273	105	5	143325	143325	
	IX	277	110	5	152350	152350	
	Х	277	114	5	157890	157890	
	XI	277	114	3	94734	94734	
		Total			751079	751079	9240
	Ι	1	131	1			131
	II	81	17	5	6885	6885	
	III	93	35	5	16275	16275	
X1Y1-AB	IV	104	52	5	27040	27040	
	V	116	70	5	40600	40600	
	VI	125	88	3	33000	33000	
		Total			123800	123800	131
	Grand Total				874879	874879	9371

Table 2. Geological resources

Project	Rough Stone Quarry- 4.94.32 Ha	
Project Proponent	Thiru. G. Perumal	Executive Summary
Project Location	Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District	

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in (Cu.m.)	Recoverable Reserve in Cu.m (100%)	Topsoil in Cu.m.
	Ι	100	67	1			6700
	II	34	35	5	5950	5950	
	III	60	45	5	13500	13500	
	IV	69	50	5	17250	17250	
	V	76	55	5	20900	20900	
XY-AB	VI	83	59	5	24485	24485	
	VII	239	101	5	120695	120695	
	VIII	250	103	5	128750	128750	
	IX	240	98	5	117600	117600	
	Х	230	93	5	106950	106950	
	XI	230	88	3	58080	58080	
		Total			614160	751079	6700
	Ι	1	131	1			131
	II	81	17	5	6885	6885	
V1V1 AD	III	93	35	5	16275	16275	
ATTI-AD	IV	104	52	5	27040	27040	
	V	116	70	5	40600	40600	
	VI	125	88	3	33000	33000	
		Total			123800	123800	131
	Gr	and Total			737960	737960	6831

Table 3. Mineable Resources

Table 4. Year wise Production Plan

Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in (Cu.m.)	Recoverable Reserve in Cu.m (100%)	Topsoil in Cu.m.
06.12.2024 - 05.12.2025	XY-AB	Ι	100	67	1			6700
		II	34	35	5	5950	5950	
		III	60	45	5	13500	13500	
		IV	69	50	5	17250	17250	
		V	76	55	5	20900	20900	
		VI	83	59	5	24485	24485	
		Total	82085	82085	6700			

Project	Rough Stone Quarry- 4.94.32 Ha	
Project Proponent	Thiru. G. Perumal	Executive Summary
Project Location	Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District	

06.12.2025	XY-AB	VII	239	101	5	120695	120695	
-	V1V1_AR	Ι	1	131	1			131
05.12.2026	ATTI-AD	II	81	14	5	6885	6885	
		Total				127580	127580	131
06.12.2026	XY-AB	VIII	250	103	5	128750	128750	
- 15.12.2027	X1Y1-AB	III	93	35	5	16275	16275	
		Total				145025	145025	
06.12.2027	XY-AB	IX	240	98	5	117600	117600	
- 05.12.2028	X1Y1-AB	IV	104	52	5	27040	27040	
		Total				144640	144640	
06 12 2020	VV AR	Х	230	93	5	106950	106950	
00.12.2028	AT-AD	XI	220	88	3	58080	58080	
- 05 12 2029	¥1V1_AR	V	116	70	5	40600	40600	
05.12.2027	ATTI-AD	VI	125	88	3	33000	33000	
		Total				238630	238630	
Grand Total					737960	737960	6831	

The proposed rate of production of Rough stone is estimated as 7,37,960 m³ for five 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.

Project	Rough Stone Quarry- 4.94.32 Ha	
Project Proponent	Thiru. G. Perumal	Executive Summary
Project Location	Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District	

Table 5. Water Balance

Purpose	Quantity	Sources	
Domestic & Flushing	1.0 KLD	Water will be supplied through tankers from Thiyaranadurgam Village (0.51 km SW of the project site).	
Green belt	0.5KLD	Water tanker supply	
Dust suppression	0.5 KLD	Water tanker supply	
Total	2.0 KLD		

8. Manpower

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

Table 6. Man Power

		Foreman/Part time Mining Engineer	1 No.
		HEMM Operator	2 No.s
1.	Skilled	Excavator Operator	2 No.s
-		Co-Operator	2 No.s
		Jack Hammer Operator	6 No.s
		Blaster/Mate	1 No.
2.	Semi – skilled		3 No.s
		Watchman	1 No.s
3.	Unskilled	Musdoor / Labours	4 No.s
	Total		22 No.s

9. Solid Waste Management

Table 7 Solid Waste Management

S. No	Туре	Quantity	Disposal Method
1	Organic	4.0 kg/day	Municipal bin including food waste
2	Inorganic	6.0 kg/day	TNPCB authorized recyclers

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

Project	Rough Stone Quarry- 4.94.32 Ha	
Project Proponent	Thiru. G. Perumal	Executive Summary
Project Location	Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District	

Table 8. 500m Radius Cluster Mine

1) Details of Existing Quarries:

S.	Name of the	ROC. No. dated	Village & Taluk	S.F.Nos.	Extent	Lease
No.	Lessee				in Hect.	Period
1.	Thiru. G.	Rc. No.	Thuppuganapalli	314	4.94.32	06.12.2019
	Perumal	214/2018/Mines	Village	(Part -3)		То
		dated 06.12.2018	Shoolagiri Taluk			05.12.2029
2.	Thiru. G.	Rc. No.	Thuppuganapalli	314	3.00.0	10.08.2016
	Perumal	97/2016/Mines	Village	(Part -1)		to
		dated 04.08.2016	Shoolagiri Taluk			09.08.2026

2) Details of Abandoned /Old Quarries

S.	Name of the	ROC. No. dated	Village & Taluk	S.F.Nos.	Extent	Lease
No.	Lessee				in Hect.	Period
1.	Thiru. G.	Rc. No.	Thuppuganapalli	314	5.00.0	12.09.2005
	Perumal	703/2005/Mines-	Village	(Part -2)		to
		2 dated	Shoolagiri Taluk			11.09.2015
		12.08.2015				

3) Details of Other Proposed /Applied Quarries

1 1	noti noi uuteu	village & Taluk	5.F.NOS.	Extent	Lease
No. Lessee				in Hect.	Period
1.		Nil			

10. Land Requirement

The total extent area of the project is 4.94.32 Ha, Government Land in Thuppuganapalli Village, Shoolagiri Taluk, and Krishnagiri District.

Project	Rough Stone Quarry- 4.94.32 Ha	
Project Proponent	Thiru. G. Perumal	Executive Summary
Project Location	Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District	

Table 9 Land Use Breakup

Sl. No.	Land Use	Present Area (Hect)	Area in use during the Quarrying Period (Hect)
1.	Area under quarrying	2.22.62	4.15.38
2.	Infrastructure	Nil	0.01.00
3.	Roads	0.01.00	0.01.00
4.	Green Belt & dump	Nil	0.76.94
5.	Unutilized area	2.70.70	Nil
	Total	4.94.32	4.94.32

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

Direction	Village	Distance In Kms	Population
North	Kummepalli	2.4 Kms	270
East	T. Kurubarapalli	3.0 Kms	250
South	Armadpuram	2.5 kms	230
West	Irudhalam	3.0 Kms	200

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 **5,91,507 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

Project	Rough Stone Quarry- 4.94.32 Ha	
Project Proponent	Thiru. G. Perumal	Executive Summary
Project Location	Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District	

- 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 7 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} (39- 69 µg/m³), $PM_{2.5}$ (15- 34 µg/m³), SO_2 (6-23 µg/m³), NO_2 (12-42 µg/m³), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from November 2023 to January 2024.

13.3 Noise Environment

The maximum Day noise and Night noise were found to be 59 dB(A) and 49 dB(A) in Government Polytechnic College, Kelamangalam and Sri Nagamuneswara Temple, Onnagurukki respectively. The minimum Day Noise and Night noise were 36 dB (A) and 30 dB(A) respectively which was observed in Project Site. The observed values are all well within the Standards prescribed by CPCB.

13.4 Water Environment

- The average pH ranges from 7.38 and 7.93
- TDS value varied from 392 mg/l to 975 mg/l
- Hardness varied from 238 to 529 mg/l

Project	Rough Stone Quarry- 4.94.32 Ha	
Project Proponent	Thiru. G. Perumal	Executive Summary
Project Location	Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District	

• Chloride varied from 50.1 to 208 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 7.14 to 8.42 with organic matter 7.14 to 8.42%. 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 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.

 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, Vilvam, Panai, etc will be planted along the lease boundary and avenues as well as over Non-active dumps at a rate of 2500 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,	0.00/	2500
Thandri, Sengondrai, Poovarasu, Thethankottai Maram,	80%	2500
Pungam		
Total		2500

Project	Rough Stone Quarry- 4.94.32 Ha	
Project Proponent	Thiru. G. Perumal	Executive Summary
Project Location	Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District	

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 5,97,40,000/-** 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.

Project	Rough Stone Quarry- 4.94.32 Ha	
Project Proponent	Thiru. G. Perumal	Executive Summary
Project Location	Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District	

Table .12 Project Cost details

S. No.	Description	Cost (Rs.)
1	Fixed cost	4,67,40,000
2	Operational cost	1,30,00,000
	Total Cost	5,97,40,000

Table .13 EMP Cost

S.No.	Categories	Capital cost (Rs.)	Recurring cost (Rs.)
1	Air Environment	3,09,432	2,05,796
2	Noise Environment	25,000	37,01,800
3	Water Environment	49,432	5000
4	Waste Management	10,000	4000
5	Implementation of EC, Mining plan & DGMS Condition	13,65,800	1,21,886
6	Green belt development	6,50,000	75,000
		24,09,664	41,13,482
	Total	65,	23,146

Year 1	Year 2	Year 3	Year 4	Year 5
65,23,146	43,19,157	45,35,114	47,61,870	49,99,964

Total EMP Cost for 5 Years - Rs. 2,51,39,251/-

20. Corporate Environmental Responsibility

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

S.No.	CER Activity	Cost (Rs)
1.	Wildlife Protection Activities- Fund to the DFO, Krishnagiri for	5,00,000/-
	Cauvery North Wildlife Sanctuary	
	Total	5,00,000

Table 14 CER Cost

Project	Rough Stone Quarry- 4.94.32 Ha	
Project Proponent	Thiru. G. Perumal	Executive Summary
Project Location	Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District	

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.