

EXECUTIVE SUMMARY

1. Project Background:

The Existing Rough stone quarry over an extent of 2.13.0 Ha, Patta land in Padalur (E) Village, Alathur Taluk, Perambalur District. The category of project is B1 (cluster), The lease area exhibits plain terrain topography with very gentle elevation of 1 or 2m above the ground level and sloping towards southeast and covered with Rough stone.

The quarry operation is proposed to carry out with conventional open cast mechanized mining with 6.0 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 30m below ground level. The Total Geological reserve is about 5,41,640 m³ of Rough stone. The Mineable Reserves is and Proposed Yearwise production is carried out 1,49,773 m³ of Rough stone of reserves to be mined for (Sixty months) Five years only.

Mining plan was approved, Roc.No.66/G&M/2018 dated 08.03.2019 by Deputy a Director, Geology and Mining Perambalur from the date of execution of lease dead. 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 2.13.0 Hectares land is located Padalur (East) Village of Alathur Taluk, Perambalur District.

Mineral intends to quarry	: Rough stone
District	:Perambalur
Taluk	: Alathur
Village	: Padalur East village
S. F. Nos.	: 4/3A,4/4B,7/4A & 7/4B
Extent	: 2.13.0 hectares

Table 1: Brief Description of the Project

S. No	Particulars	Details
1	Latitude	11°6'51.10" N to 11°6'58.93" N
2	Longitude	78°50'17.38" E to 78°50'21.64" E
3	Site Elevation above MSL	130 m from MSL
4	Topography	Plain terrain
5	Land use of the site	Own Patta land
6	Extent of lease area	2.13.0 Ha
7	Nearest highway	(NH 45)- Srinagar to Kanyakumari – 0.59 km towards West side
8	Nearest railway station	Kallakam Railway Station - 20.45 Km - SE
9	Nearest airport	Thiruchirapalli Air Port - 51.40 Km-SW
10	Nearest town / city	Town - Padalur -2.28 Km -SE City - Padalur -2.28 Km -SE District - Perambalur – 13.65 Km -N
11	Rivers / Canal	Nanthai River -4.37 Km-SE
12	Lake	Nakkambadi Lake – 6.38Km-SE Chettikulam Lake -5.95Km-NW Thurai Mangalam Lake-13.02Km-NE
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	Kalarampatti R.F- 11.96 Km-NW Nekkaselam R.F- 14.53 Km-NW Trichy Zoological Park- 8.61Km-SW Elephant Camp- 7.5 Km-SW
17	Seismicity	Proposed Lease area come under Seismic zone-II (low risk area)
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 Perambalur
- ❖ 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.

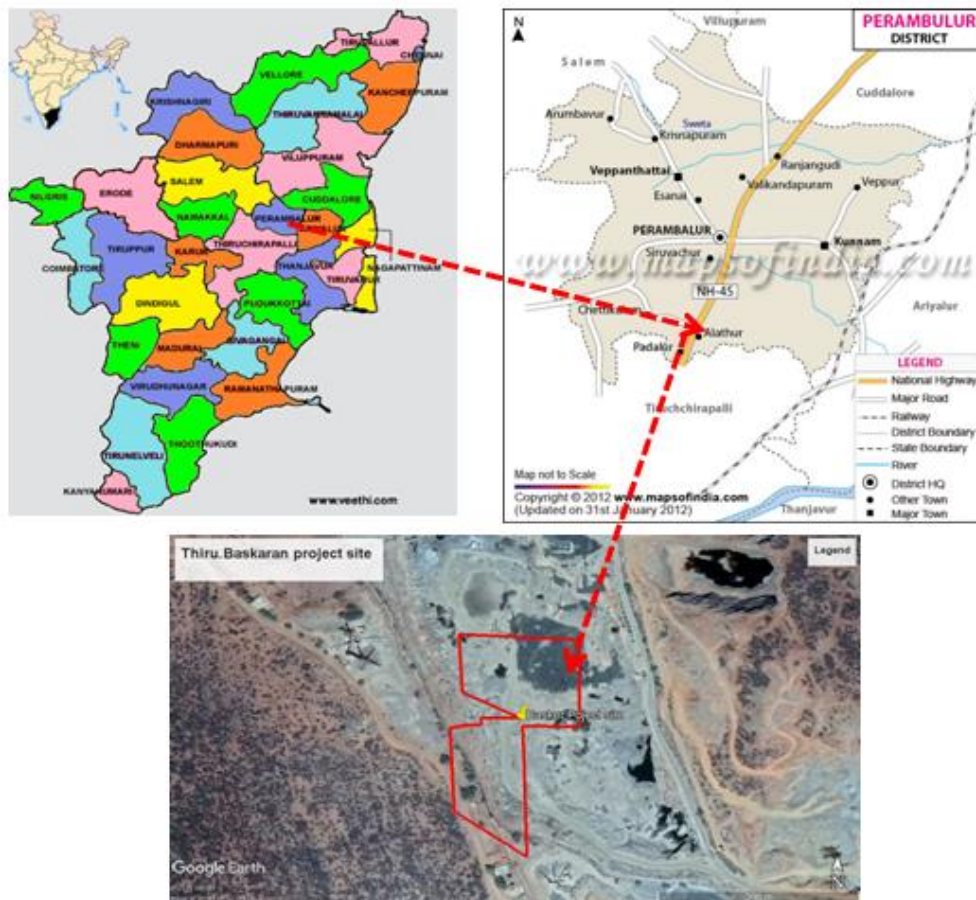


Figure 1: Location Map of the Project Site



Figure 2: Google Image of the Project Site

4. Charnokite

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 Esanai, Vengalam, Kalpadi, Nattarmangalam, Naranamangalam, Padalur, 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

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

Table 2. Geological resources

Section	Bench	Length	Width	Height	Volume (m ³)	Mineable Reserves 95% (m ³)	Mine Waste 5% (m ³)	Top soil
XY-AB	IV	69	87	5	30015	28514	1501	
	V	69	87	5	30015	28514	1501	
	VI	69	87	5	30015	28514	1501	-
	VII	69	87	5	30015	28514	1501	-

	VIII	69	87	5	30015	28514	1501	-
XY-CD	IV	59	104	5	30680	29146	1534	-
	V	59	104	5	30680	29146	1534	-
	VI	59	104	5	30680	29146	1534	-
	VII	59	104	5	30680	29146	1534	-
	VIII	59	104	5	30680	29146	1534	-
XIY1- EF	I	2	11	2				44
	II	2	11	5	110	105	5	-
	III	2	31	5	310	295	15	-
	IV	75	142	5	53250	50588	2662	-
	V	75	142	5	53250	50588	2662	-
	VI	75	142	5	53250	50588	2662	-
	VII	75	142	5	53250	50588	2662	-
	VIII	75	142	5	53250	50588	2662	-
Total Geological Reserves					570145	541640	28505	-

Table 3. Yearwise Production Plan

Section	Bench	Length	Width	Height	Volume (m ³)	Mineable Reserves 95% (m ³)	Mine Waste 5% (m ³)
I-YEAR	IV	59	72	5	21240	20178	1062
	IV	54	89	5	23140	21983	1157
	III	1	20	5	100	95	5
	IV	18	119	5	10710	10175	535
II-YEAR	V	54	62	5	16740	15903	837
	V	47	79	5	18565	17637	928
	V	8	109	5	4360	4142	218
III-YEAR	VI	49	52	5	12740	12103	637
	VI	42	69	5	14490	13766	724
	VI	1	99	5	495	470	25

IV-YEAR	VII	44	42	5	9240	8778	462
	VII	37	59	5	100915	10369	546
	VII	1	89	5	445	423	22
V-YEAR	VIII	39	32	5	6240	5928	312
	VIII	32	49	5	7840	7448	392
	VIII	1	79	5	395	375	20
	Total Geological Reserves				157655	149773	7882

6. Mining

Opencast mining

The quarry operation is proposed to carry out with conventional open cast mechanized mining with 6.0 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 by Excavators by Drilling and Blasting.
- Shallow Drilling With Jackhammer of 32-36mm 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 2.0 kLD. The 90% water will be required for the suspension of dust and green belt development domestic water will be sourced from nearby Padalur (E) Village and other water will be source from nearby road tankers supply

Table 4. Water Balance

Purpose	Quantity	Source
Drinking Water	1.0 KLD	Packaged Drinking water vendors available in Padalur(E) village which is about 2.28 km on SE side of the area.
Green belt	0.5 KLD	Other domestic activities through road

		tankers supply.
Dust suppression	0.5 KLD	From road tankers supply.
Total	2.0 KLD	

8. Man Power

Total manpower required for the project is approximately 20 persons. Workers will be from nearby villages.

Table 5.Man Power

S. No.	Name of the Employment	No. of Employee
I.	Skilled Labors	
1.	Permit Manager	3
2.	Mines Manager/Mate	2
II.	Semi Skilled Labors	
	Driller	2
III.	Unskilled - Helpers	
	Labors	13
Total		20

No child less than 21 years will be entertained during quarrying operations.

9. Solid Waste Management

Table .6 Solid Waste Management

S.No	Type	Quantity	Disposal Method
1	Organic	4.0 kg/day	Municipal bin including food waste
2	Inorganic	3.0 kg/day	TNPCB authorized recyclers

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

Table.7 500m Radius Cluster Mine

S. No.	Quarry detail	Taluk & Village	S.F No	Extent (Ha)
I. Existing Quarry				
1	Panneerselvam	Alathur and Padalur East	10/1, Block No.22	1.00.0

2	M.Baskaran	Alathur and Padalur East	4/1 (P) 4/2 (P) & 7/3 (P)	2.00.0
3	B.Karpagam	Alathur and Padalur East	3/5 (P), 3/6 (p)	1.45.0
4	Natarajan	Alathur & Irur	713/5,6,7,8 & 9	1.34.0
II. Abandoned Quarry				
5	B.Ravichandran	Alathur and Padalur East	10/1 Block 21	1.00.0
6	M.Ravi	Alathur and Padalur East	10/1 Block 20	1.00.0
7	K.Mathiyalagan	Alathur and Padalur East	10/1 Block 18	1.00.0
8	R.Sureshbau	Alathur and Padalur East	10/1 Block 22	1.00.0
9	R.Ravichandran	Alathur and Padalur East	10/1 Block 19	1.00.0
III. Proposed Quarry				
10	Thiru.M.Baskaran	Alathur and Padalur East	4/3A, 4/4B, 7/4A,7/4B	2.13.0
Total				12.92

10. Land Requirement

The total extent area of the Existing project is 2.13.0 Ha, Own patta land in Padalur east Village of Alathur Taluk, Perambalur District.

Table .8 Land Use Breakup

S.No	Land Use	Lease Area (Ha)
1	Quarry Pit	2.03.0
2	Infrastructure	0.01.0
3	Roads	0.01.0
4	Green Belt	0.08.0
5	Un utilized area	Nil
	Total	2.13.0

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

S.No	direction	village	Distance	Population
1	North	Perumapalayam	1.0 km	100
2	South	Karai	4.4 km	200
3	East	Thiruvilakurchy	1.3 km	600
4	West	Koothanur	4.2 km	800

12. Power Requirement

The 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.

13.Scope of the Baseline Study

The 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 : 32 °C
- ii) Average Maximum Temperature. : 36 °C
- iv) Average Annual Rainfall of the area : 1123.3 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 over a period of Pre Monsoon Season. 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 (59-36 µg/m³), PM2.5 (26-12 µg/m³), SO₂ (16-7µg/m³), NO₂ (28-11 µg/m³), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from January to March 2021.

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 54 dB(A) and 49 dB(A) respectively in AG Church Padalur village. The minimum Day Noise and Night noise were 50 dB(A) and 42dB(A) respectively which was observed in AG Church Padalur village.

13.4 Water Environment

- The average pH ranges from 7.49-7.75.
- TDS value varied from 457 mg/l to 1968 mg/l
- Hardness varied from 167 to 926 mg/l
- Chloride varied from 45 to 636 mg/l

13.5 Land Environment

The analysis results show that soil is neutral in nature as pH value ranges from 7.01 to 7.78 with organic matter 0.09 % to 0.33 %. 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 private 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.

5. 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, Naval etc will be planted along the south side lease boundary and avenues as well as over Non-active dumps at a rate of 150 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
2021	Neem/Pungam	North	150	5m	80%
2022	Naval	South	150	5m	80%
2023	Poovarasu/Pungam	East	150	5m	80%
2024	Naval/Pungam	South	150	5m	80%
2025	Neem	West	150	5m	80%
Total			750		

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.

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. **47,00,000** 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	Project Cost	23,50,000
2	Expenditure Cost	20,00,000
3	EMP Cost	3,50,000
	Total	47,00,000

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 cost (Rs)
1.	Developing Sports facilitates and Providing Toilet, Water Filter facilities to Government Schools in Padalur east Villages	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.