

**April**

**2024**

**Executive Summary for Conducting Public Hearing**

**FOR**

**“Thiru. M.Nallaiyah Rough Stone and Gravel Quarry  
over a total extent of 1.53.5 Ha”**

**At**

**S.F.No. 210/7C1 & 210/8A1B of Melur Village, Kulathur  
Taluk, Pudukkottai District, Tamil Nadu State**

**Project Proponent:**

**Thiru.M.Nallaiyah,  
S/o. Marikonar,  
No.8668/4, Chola Real Estate,  
Thiruvappur, Pudukkottai Taluk,  
Pudukkottai District – 622 002**

**Project termed under schedule 1(a) Category B<sub>1</sub>**

**Prepared By:**

**Ecotech Labs Pvt. Ltd.**



**NABET Accredited EIA Consultant**

**48, 2<sup>nd</sup> Main Road, Ram Nagar South Extension,  
Pallikaranai, Chennai -600100**

# EXECUTIVE SUMMARY

## 1. Project Background:

The New Rough Stone Quarry over an extent of 1.53.5 Ha, Own Patta land S.F. No: 210/7C1 & 210/8A1B of Melur Village, Kulathur Taluk, Pudukkottai District. The category of the project is B1 (cluster), the lease area exhibits plain terrain covered by massive charnockite rough stone formation.

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

The quarry operation is proposed up to depth for 33.0m (Gravel 2m + 1m Weathered Rock & 30m Rough stone). The Total Geological reserve is about 26,592m<sup>3</sup> of Gravel and 13,296m<sup>3</sup> of Weathered Rock and 4,97,220m<sup>3</sup> of Rough Stone. The Mineable Reserves are 17,278m<sup>3</sup> of Gravel and 7,705m<sup>3</sup> of Weathered Rock and 1,25,720m<sup>3</sup> of Rough stone. Production schedule is proposed an average production of 17,728m<sup>3</sup> of Gravel and 7,705m<sup>3</sup> Weathered Rock and 1,25,720m<sup>3</sup> of Rough stone for (Sixty months) Five years only.

The mining plan was approved by Geology and Mining department of Pudukkottai district letter vide no. Rc.No.368/2022 (G&M) dated 24.11.2022 from the date of execution lease dead. The project area does not fall in Hill Area Conservation Authority region. There is no interstate boundaries, 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 New Rough Stone and Gravel Quarry over an extent of 1.53.5 Hectares land is located Melur Village of Kulathur Taluk, Pudukkottai District.

Mineral intends to quarry	: Rough stone and Gravel.
District	: Pudukkottai
Taluk	: Kulathur
Village	: Melur

S. F. Nos. : 210/7C1 and 210/8A1B

Extent : 1.53.5 Hectares

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

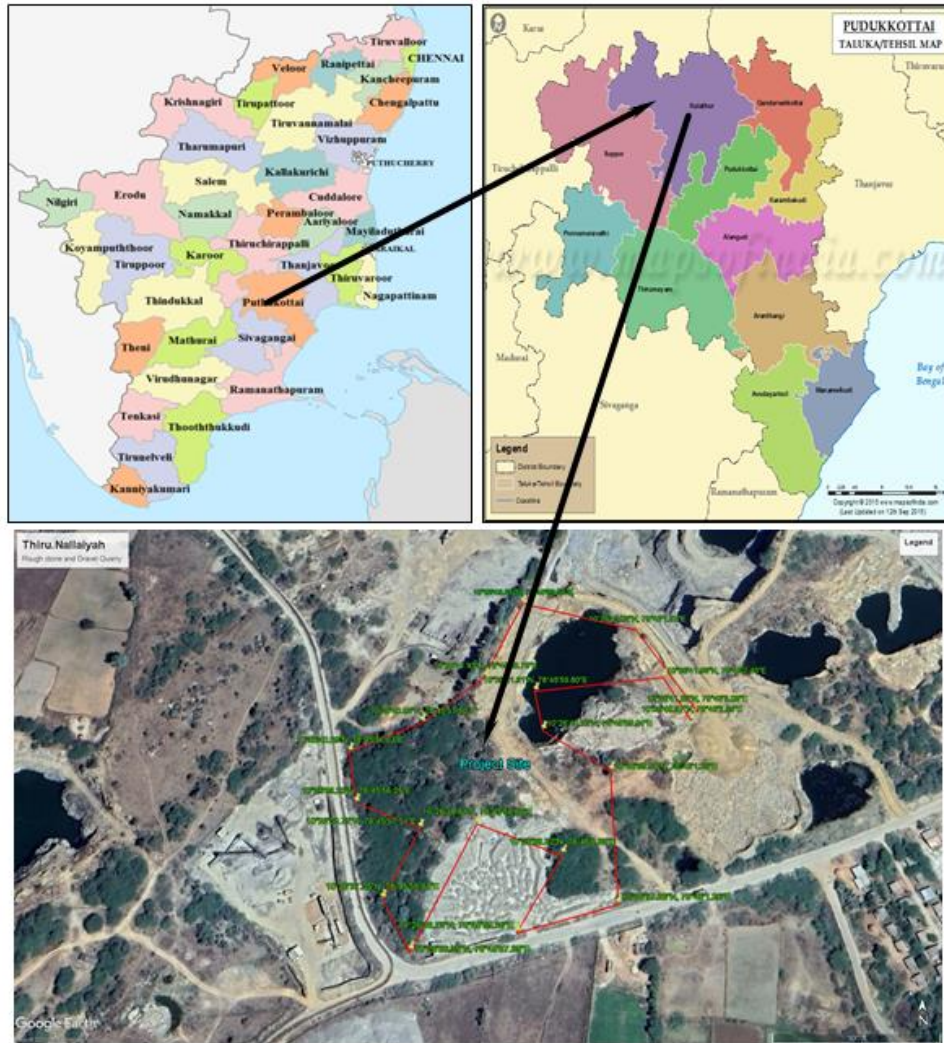
<b>S. No</b>	<b>Particulars</b>	<b>Details</b>
1	Latitude	10°26'41.1998" N to 10°26'36.3638" N
2	Longitude	78°46'03.0733" E to 78°45'57.3908" E
3	Site Elevation above MSL	110.0m above MSL.
4	Topography	Plain terrain
5	Land use of the site	Patta land
6	Extent of lease area	1.53.5 Ha
7	Nearest highway	NH 336 – Trichy to Pudukkottai Road – 1.91 Km - E SH 71 – Pudukkottai to Alangudi Road – 2.88 Km - SW
8	Nearest railway station	Vellanur Railway Station – 4.20 km - NE
9	Nearest airport	Tiruchirapalli International Airport – 35.83 km - N
10	Nearest town / city	Town - Pudukkottai – 5.68 km - SE City - Pudukkottai – 5.68 km - SE District - Pudukkottai – 5.68 km - SE
11	Rivers / Canal	Nil within 15km radius
12	Lake/Pond	❖ Keel Kulam - 1.24 Km - NE ❖ Vellanur local Pond – 2.65 Km - E ❖ Thiruvengainathar Lake – 2.99 Km – S ❖ Kili Kulam – 3.26 Km – NE ❖ Temple Pond – 1.34 Km – NW ❖ Perunjunai Lake – 2.31 Km – SW ❖ Melakulam – 3.01 Km – SW ❖ Kavinadu Kanmai – 7.03 Km – S ❖ Annavasal Periyakulam Lake–7.56 Km - W
13	Hills / valleys	Nil in 15 km radius
14	Archaeologically places	❖ Sundaresvara temple with sub-shrine, Thirukkattalai – 12.41Km – SE

		<ul style="list-style-type: none"> <li>❖ Jain image and the inscription to the south of it on the summit of the sadayapparai, Nathampannai – 4.73km – SSE</li> <li>❖ Cave &amp; Jain image, Ammachathiram – 8.97km – N</li> <li>❖ Jain image, Annavasal – 4.70 km – W</li> <li>❖ Siva temple. Ariyur – 4.47 km – SW</li> <li>❖ Siva and Pillayar temple, Mangudi – 7.70 km – SE</li> <li>❖ Jain Tirthankara idol and relics of old Jain Temple – 1.77km – N</li> <li>❖ Amman koil, Rock-cut Siva temple, Vijayalaya Cholisvaram and the group of subshrines around it, Rock-cut Vishnu shrine – Narthamalai – 6.73 km – N</li> <li>❖ Rock-cut Jain temple, Natural Cavern with stone beds – Eladipattam – Sittannavasal – 4.61 km – W</li> <li>❖ Siva Temple, Thodaiyur – 7.64 km – NE</li> <li>❖ Kailasanatha temple, Agastisvara temple – Vellanur – 3.29 km – E</li> </ul>
15	National parks / Wildlife Sanctuaries	Nil in 15 km radius
16	Reserved / Protected Forests	<ul style="list-style-type: none"> <li>❖ Narthamalai RF – 5.49 Km – N</li> <li>❖ Aladukkadu RF – 9.39 Km – NNE</li> <li>❖ Perungudipatti RF – 9.45 Km – NNW</li> <li>❖ Pudukkottai RF – 5.32 Km - SE</li> </ul>
17	Seismicity	Proposed Lease area come under Seismic zone-II (Moderate 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 Pudukkottai.
- ❖ 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. 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 the areas of Kunnandavarkoil, Thirumayam, Kulathur, 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**

##### **Gravel:**

The Thickness of Gravel in this area is 2.0m and the total volume of Gravel will be 26592m<sup>3</sup>.

##### **Rough Stone:**

The Available Geological Reserve is estimated as 4,97,220m<sup>3</sup> respectively at the rate of 100% recovery upto the permissible depth. Gravel is calculated up to a depth of 2m, weathered rock is calculated upto a depth of 1m & Rough stone at a depth of 30m. Total Depth – 33.0m

***Table 2. Geological resources***

GEOLOGICAL RESERVES								
Section	Bench	L (m)	W (m)	D (m)	Volume In M <sup>3</sup>	Geological Reserves in m <sup>3</sup> @ 100%	Weathered Rock in m <sup>3</sup>	Gravel in m <sup>3</sup>
XY-AB	I	2	14	2				56
	II	2	14	1			28	
	III	2	45	5	450	450		
	IV	2	45	5	450	450		
	V	54	91	5	24570	24570		
	VI	54	91	5	24570	24570		
	VII	54	91	5	24570	24570		
	VIII	54	91	5	24570	24570		
	<b>TOTAL</b>					<b>99180</b>	<b>99180</b>	<b>28</b>
X1Y1-CD	I	77	85	2				13090
	II	77	85	1			6545	
	III	77	85	5	32725	32725		
	IV	77	85	5	32725	32725		
	V	77	85	5	32725	32725		
	VI	77	85	5	32725	32725		
	VII	77	85	5	32725	32725		
	VIII	77	85	5	32725	32725		
	<b>TOTAL</b>					<b>196350</b>	<b>196350</b>	<b>6545</b>
X1Y1-EF	I	67	29	2				3886
	II	67	29	1			1943	
	III	67	29	5	9715	9715		
	IV	67	29	5	9715	9715		
	V	67	29	5	9715	9715		
	VI	67	29	5	9715	9715		
	VII	67	29	5	9715	9715		
	VIII	67	29	5	9715	9715		
	<b>TOTAL</b>					<b>58290</b>	<b>58290</b>	<b>1943</b>
X2Y2-CD	I	49	58	2				5684
	II	49	58	1			2842	

	III	49	58	5	14210	14210		
	IV	49	58	5	14210	14210		
	V	49	58	5	14210	14210		
	VI	49	58	5	14210	14210		
	VII	49	58	5	14210	14210		
	VIII	49	58	5	14210	14210		
	<b>TOTAL</b>				<b>85260</b>	<b>85260</b>	<b>2842</b>	<b>5684</b>
X2Y2- GH	I	38	51	2				3876
	II	38	51	1			1938	
	III	38	51	5	9690	9690		
	IV	38	51	5	9690	9690		
	V	38	51	5	9690	9690		
	VI	38	51	5	9690	9690		
	VII	38	51	5	9690	9690		
	VIII	38	51	5	9690	9690		
<b>TOTAL</b>				<b>58140</b>	<b>58140</b>	<b>1938</b>	<b>3876</b>	
<b>GRAND TOTAL</b>				<b>497220</b>	<b>497220</b>	<b>13296</b>	<b>26592</b>	

**Table 2.1 Mineable Resources**

<b>MINEABLE RESERVES</b>								
<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>Mineable Reserves in m<sup>3</sup> @ 100%</b>	<b>Weathered Rock in m<sup>3</sup></b>	<b>Gravel in m<sup>3</sup></b>
XY-AB	I	39	4	2				312
	II	39	2	1			78	
	III	39	26	5	5070	5070		
	IV	39	16	5	3120	3120		
	V	39	52	5	10140	10140		
	VI	29	42	5	6090	6090		
	VII	19	32	5	3040	3040		
<b>TOTAL</b>				<b>27460</b>	<b>27460</b>	<b>78</b>	<b>312</b>	
X1Y1- CD	I	67	71	2				9514
	II	65	69	1			4485	



	III	64	68	5	21760	21760		
	IV	54	63	5	17010	17010		
	V	44	58	5	12760	12760		
	VI	34	53	5	9010	9010		
	VII	24	48	5	5760	5760		
	VIII	14	38	5	2660	2660		
	<b>TOTAL</b>				<b>68960</b>	<b>68960</b>	<b>4485</b>	<b>9514</b>
X1Y1- EF	I	54	14	2				1512
	II	52	10	1			520	
	<b>TOTAL</b>						<b>520</b>	<b>1512</b>
X2Y2- CD	I	42	50	2				4200
	II	40	48	1			1920	
	III	39	47	5	9165	9165		
	IV	34	42	5	7140	7140		
	V	29	37	5	5365	5365		
	VI	19	32	5	3040	3040		
	<b>TOTAL</b>				<b>24710</b>	<b>24710</b>	<b>1920</b>	<b>4200</b>
X2Y2- GH	I	29	30	2				1740
	II	27	26	1			702	
	III	26	24	5	3120	3120		
	IV	21	14	5	1470	1470		
	<b>TOTAL</b>				<b>4590</b>	<b>4590</b>	<b>702</b>	<b>1740</b>
<b>GRAND TOTAL</b>					<b>125720</b>	<b>125720</b>	<b>7705</b>	<b>17278</b>

**Table 3. Year wise Production Plan**

<b>YEARWISE DEVELOPMENT AND PRODUCTION</b>									
<b>YEAR</b>	<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 Reserves in m<sup>3</sup> @ 100%</b>	<b>Weathere d Rock in m<sup>3</sup></b>	<b>Gravel in m<sup>3</sup></b>
I- YEAR	XY-AB	I	39	4	2				312
		II	39	2	1			78	

		III	39	26	5	5070	5070		
	X1Y1-CD	I	67	71	2				9514
		II	65	69	1			4485	
		III	64	68	5	21760	21760		
	X1Y1-EF	I	54	14	2				1512
		II	52	10	1			520	
	X2Y2-CD	I	42	50	2				4200
		II	40	48	1			1920	
		III	39	47	5	9165	9165		
	X2Y2-GH	I	29	30	2				1740
		II	27	26	1			702	
		III	26	24	5	3120	3120		
		<b>TOTAL</b>				<b>39115</b>	<b>39115</b>	<b>7705</b>	<b>17278</b>
II- YEAR	XY-AB	IV	39	16	5	3120	3120		
	X1Y1-CD	IV	54	63	5	17010	17010		
	X2Y2-CD	IV	34	42	5	7140	7140		
	X2Y2-GH	IV	21	14	5	1470	1470		
		<b>TOTAL</b>				<b>28740</b>	<b>28740</b>		
III- YEAR	XY-AB	V	39	52	5	10140	10140		
	X1Y1-CD	V	44	58	5	12760	12760		
	X2Y2-CD	V	29	37	5	5365	5365		
		<b>TOTAL</b>				<b>28265</b>	<b>28265</b>		
IV- YEAR	XY-AB	VI	29	42	5	6090	6090		
	X1Y1-CD	VI	34	53	5	9010	9010		
	X2Y2-CD	VI	19	32	5	3040	3040		
		<b>TOTAL</b>				<b>18140</b>	<b>18140</b>		
V- YEAR	XY-AB	VII	19	32	5	3040	3040		
	X1Y1-CD	VII	24	48	5	5760	5760		
		VIII	14	38	5	2660	2660		
		<b>TOTAL</b>				<b>11460</b>	<b>11460</b>		
<b>GRAND TOTAL</b>						<b>125720</b>	<b>125720</b>	<b>7705</b>	<b>17278</b>

## 6. Mining

### *Opencast mining*

The quarry operation is proposed to be carried out with conventional open cast mechanized mining with 5.0meter 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 resources 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 25.5mm Dia.
- Minimum Blasting With Class 3 Explosives.
- Loading of Rough Stone By Excavators Into Tippers.

#### **7. Water Requirement**

Total water requirement for the mining project is 2.0 KLD. Domestic water will be sourced from nearby Melur Village and other water will be sourced from nearby road tankers supply.

**Table 4. Water Balance**

<b>Purpose</b>	<b>Quantity</b>	<b>Source</b>
Drinking Water	1.0 KLD	Packaged Drinking water vendors available in Melur village which is about 2.02 km NE from the project site.
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>2.0 KLD</b>	

#### **8. Manpower**

Total manpower required for the project is approximately 27 persons. Workers will be from nearby villages.

**Table 5. Man Power**

1.	Skilled	Operators	2 Nos
		Mechanic	1 No
		Blaster/Mat	1 No
2.	Semi – skilled	Drivers	2 Nos

3.	Unskilled	Musdoor/Labours	7 Nos
		Cleaners	2 Nos
		Office Boy	1 No
4.	Management & Supervisory staff		2 Nos
<b>Total</b>			<b>18 Nos</b>

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

## 9. Solid Waste Management

**Table 6 Solid Waste Management**

S. No	Type	Quantity	Disposal Method
1	Organic	4.86 kg/day	Municipal bin including food waste
2	Inorganic	3.24 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:					
S. No.	Name of the lessee / Permit Holder	Village & Taluk	S. F. No.	Extent	Lease Period
1.	Thiru.M.Rajamohemed, S/o.Mohamed Ibrahim, No.9884, Kalif Nagar, 4 <sup>th</sup> Street, Pudukottai	Melur & Kulathur	210/21	0.91.0	21.01.2019 to 20.01.2024

2.	Thiru.Ramesh Babu, S/o. Jayaraman, T.S.No.7166/2 of Maharajapuram, Thirukokarnam, Pudukottai District.	Melur & Kulathur	210/19 & 210/9B1B	1.50.5	06.11.2019 to 05.11.2024
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**2) Proposed Area:**

S. No.	Name of the applicant	Village & Taluk	S. F. No.	Extent
1.	Thiru.M.Nallaiyah, S/o.Marikonar, No.8668/4, Chola Real Estate, Thiruvappur, Pudukottai Taluk, Pudukottai District.	Melur & Kulathur	210/7C1 & 210/8A1B	1.53.5
2.	Thiru.P.Arumugam, S/o.Palanivel, No.3/625, Melamuthudaiyanpatti, Vellanur, Kulathur Taluk, Pudukottai District.	Melur & Kulathur	210/12C1A etc.,	2.13.0
3	Thiru.Arockiya Raj, S/o.Rethinam pillai, No.297/7, Sathiyamoorthi Nagra, Pudukottai.	Melur & Kulathur	210/7A	1.68.0

**3) Lease Expired**

S. No.	Name of the lessee / Permit Holder	Village & Taluk	S. F. No.	Extent	Lease Period
1.	Thiru.A.Palanivel, S/o.Arumugam, 3/625, Melamuthudaiyanpatti, Vellanur Post, Pudukottai District	Melur & Kulathur	210/12B etc.,	1.73.0	29.05.2015 to 29.05.2020



2.	Thiru.R.Jaffer Ali, S/o. Raja Mohamed, T.S.No.9884, Kalif Nagar 4 <sup>th</sup> street, Pudukottai	Melur & Kulathur	211 (Q.No.1)	0.60.0	20.01.2017 to 19.01.2022
3.	Bagavathi Amman Magalir Ponvizha Grama Suya Velai Thitta Sangam, Melur, Kulathur Taluk, Pudukkottai District.	Melur & Kulathur	211 (Part)	1.00.0	15.11.2017 to 14.11.2022
4.	M.Nallaiah, S/o.Marikonar, Vettanviduthi, Alangudi Taluk.	Melur & Kulathur	210/7C1 & 210/8a1B		05.02.2007 to 04.02.2012
<b>Total</b>				<b>4.86.5</b>	

The Total extent of the Existing / Lease expired / Proposed quarries is 7.76.0 Ha.

## 10. Land Requirement

The total extent area of the project is 1.53.5 Ha, Own Patta land in Melur Village of Kulathur Taluk, Pudukkottai District.

**Table 8 Land Use Breakup**

S. No.	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)
1.	Area under quarrying	0.54.0	1.10.0
2.	Infrastructure	Nil	0.01.0
3.	Roads	0.01.0	0.01.0
4.	Green Belt & Dump	Nil	0.41.5
5.	Unutilized Area	0.98.5	Nil
	<b>Total</b>	<b>1.53.5 Ha</b>	<b>1.53.5 Ha</b>

## 11. Human Settlement

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

**Table 9 Habitation**

<b>SL. NO.</b>	<b>DIRECTIO N</b>	<b>VILLAGE</b>	<b>DISTANCE</b>	<b>POPULATION</b>
1	E	Muthudaiyanpatti	1.83 Km	260
2	SE	Vagaipatti	0.80 Km	150
3	W	Maruthanthalai	1.21 Km	280
4	NNE	Melur	2.02 Km	350

## **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**

This chapter contains information on existing environmental scenarios 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 : 33.7 °C
- ii) Average Maximum Temperature. : 24 °C
- iii) Average Annual Rainfall of the area : 922.8 mm

### **13.2 Air Environment**

Ambient air monitoring was carried out on a 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, an air quality survey has been conducted at 7 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 PM<sub>10</sub> (61 – 35 µg/m<sup>3</sup>), PM<sub>2.5</sub> (34 - 13 µg/m<sup>3</sup>), SO<sub>2</sub> (25 – 4 µg/m<sup>3</sup>), NO<sub>2</sub> (45 - 8 µg/m<sup>3</sup>), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from January to March 2024.

### **13.3 Noise Environment**

Ambient noise levels were measured at 7 locations around the proposed project site. The maximum Day noise and Night noise were found to be 64 dB(A) and 50 dB(A) respectively in Rakkachi Amman Kovil, Pudukottai. The minimum Day Noise and Night noise were 41 dB(A) and 36 dB(A) respectively which was observed in Project Site.

### **13.4 Water Environment**

- The average pH ranges from 7.21 – 8.21.
- TDS value varied from 195 mg/l to 2095 mg/l
- Hardness varied from 95 to 555 mg/l
- Chloride varied from 36 to 699 mg/l

### **13.5 Land Environment**

The analysis results show that the majority of soil in the project and surrounding area is slightly alkaline in nature and pH value ranges from 6.87 to 8.69 with organic matter 0.09 % to 1.18 %. 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.

#### 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, Naval etc will be planted along the 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
2024	Neem, Pungam, Poovarasu	North	150	5m	80%
2025	Naval, Mantharai, Arasa Maram	South	150	5m	80%
2026	Magizham, Vilvam, Vaagai, Marudha maram	East	150	5m	80%
2027	Usil, Aaththi, Panai	South	150	5m	80%
2028	Illuppai, Eachai, Vanni maram	West	150	5m	80%
<b>Total</b>			<b>750</b>		

#### 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. 46,70,000/-** 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	16,70,000
2	Expenditure Cost	30,00,000
	<b>Total</b>	<b>46,70,000</b>

Environmental Management Plan Cost – 61,17,799/- (Sixty one lakh seventeen thousand seven hundred and ninety nine rupees only)

## **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 Cost (Rs.)</b>
1.	Government High School, Melur - Provision of ➤ To provide necessary equipment to the school & Computer, ➤ Environmental books for library (in Tamil language), ➤ Greenbelt facilities and ➤ Basic amenities such as safe drinking water, furniture.	<b>5,00,000/-</b>
	<b>Total</b>	<b>5,00,000/-</b>

## **21. Benefits of the Project**

- There is a 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 the 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 nearby vicinity.

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