

August 2024

**Executive Summary for Conducting Public Hearing
FOR**

**“Thiru. K. Sakthivel Multi Colour Granite
Quarry over a total extent of 2.51.5 Ha”**

At

**S.F.No. 351 of Nallur Village, Kulithalai Taluk,
Karur District, Tamilnadu State**

Project Proponent:

**K. Sakthivel,
S/o. Karupanna,
Ponnampatti, Perunthalur Village,
Kulithalai Taluk,
Karur District – 639 104**

Project termed under schedule 1(a) Category B₁

Prepared By:

Ecotech Labs Pvt. Ltd.



NABET Accredited EIA Consultant

**48, 2nd Main Road, Ram Nagar South Extension,
Pallikaranai, Chennai -600100**

EXECUTIVE SUMMARY

1. Project Background:

Proposed proposal pertains to Multi Colour Granite mining project by open cast semi mechanized method on allotted mine lease area at Nallur Village, Kulithalai taluk of Karur District, Tamil Nadu. It is a Undulated terrain.

Proposed quarry was existing quarry and lease was granted in favour of K. Sakthivel, the Lessee had obtained lease for quarrying granite vide Government Order.(3D) No. 12, Industries (MMB.2) Department dated 11.08.2017 for a period of twenty years and the lease deed was executed on 05.09.2017 and the lease will expire on 04.09.2037.

The Proposed Multi Colour Granite Quarry over an extent of 2.51.5 Ha at S.F.No. 351 of Nallur Village, Kulithalai taluk, Karur District, Tamilnadu. Based on the 500m radius letter obtained from Deputy Director, Dept. of Geology and Mining, Karur vide letter no Rc.No.67/Mines/2022 dated 27.07.2023 proposal coming under Cluster of mine exceedingly more than 5 Ha and the total cluster area is 8.29.0 Ha. We have submitted our fresh application for ToR to SEIAA vide Proposal No: SIA/TN/MIN/451778/2023 on 09.11.2023.

The category of the project is B1(cluster), the lease area exhibits Plain terrain and sloping towards south-west side covered with Multi Colour Granite. The quarry operation is proposed to be carried out with conventional open cast semi mechanized mining with 5.0-meter vertical bench with a bench width of 5.0 meter. In addition to the above the Quarry operation involves Diamond wire saw cutting, loading and transportation.

The quarry operation is proposed up to depth for 23 m (2.0 m Top Soil + 1.0 m Weathered granite + 20 m Multi colour Granite) below ground level. The total Geological Reserves is 4,67,326 m³ and Mineable Reserves is 2,33,664 m³. The Geological reserve in ROM is about 4,67,326 m³ and reserve at 50% reserves is about 2,33,662 m³. The Mineable Reserves in ROM is about 2,35,138 m³ and reserve at 50% reserves is about 1,17,570 m³ and Proposed Yearwise production is carried out as 26,142 m³ at 50% reserves to be mined for (Sixty months) Five years only.

The 1st Scheme of Mining Plan was approved by Commissioner, Commissionerate of Geology and Mining, Guindy, Chennai - 32 vide letter Rc. No. 4088/MM2/2022, Dated: 21.01.2023. The lessee has obtained Environmental clearance from DEIAA-DIA/TN/MIN/5852/2017-KRR Ec.No.17/2017/Mines, Dated: 02.08.2017.

The 1st scheme of mining plan for the period from 2022 - 2023 to 2026 - 2027 is now being prepared and submitted under rule 18(2) of GCDR 1999 for approval on 21.01.2023.

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

2. Nature & Size of the Project

The proposed Multi Colour Granite Quarry over an extent of 2.51.5 Hectares land is located at Nallur Village of Kulithalai taluk, Karur District.

Mineral intends to quarry : Multi Colour Granite
 District : Kulithalai
 Taluk : Karur
 Village : Nallur
 S. F. Nos. : 351
 Extent : 2.51.5 Hectares

Table 1: Brief Description of the Project

S. No.	Particulars	Details
1	Latitude	10° 47' 40.9465" N to 10° 47' 35.0079" N
2	Longitude	78° 27' 6.0451" E to 78° 27' 0.2310" E
3	Site Elevation above MSL	124 m from MSL
4	Topography	Undulated Topography
5	Land use of the site	Patta land

6	Extent of lease area	2.51.5 Ha
7	Nearest highway/Road	NH 83 - Chennai Theni Road – 13.21 kms, SE SH 71 - Kulithalai-Manapparai Road 6.08 kms, W
8	Nearest railway station	Pettaivayatalai Railway Station – 12.41 kms, NEN Tiruchirapalli Junction – 25.54 kms, E
9	Nearest airport	Thiruchirappalli International Airport – 28.18 kms, E
10	Nearest town / city	Town : Thiruchirappalli – 22.17 kms, E City : Thiruchirappalli – 22.17 kms, E District : Karur – 44.23 kms, NW
11	Rivers / Canal	Kaveri River – 13.30 km, N
12	Lake	<ul style="list-style-type: none"> ➤ Ganeshapuram Pond – 9.36 km, N ➤ Periya Kulam – 7.17 km, SE ➤ Vayalur Kulam – 13.74 km, NW ➤ Mayanoor Barrriage Right Canal – 6.0 km, NW ➤ Inamkulathoor Lake – 13.49 km, SE ➤ Gudalur Lake – 3.45 km, SW ➤ Kaghagoor Eri – 8.19 km, SW
13	Hills / valleys	➤ Ayyamalai Hill – 11.52 km, NW
14	Archaeologically places	Nil in 15 km radius
15	National parks / Wildlife Sanctuaries	Nil in 15 km radius
16	Reserved / Protected Forests	<ul style="list-style-type: none"> ➤ Veeramalai R.F – 11.43 km, SW ➤ Kulithalai R.F – 13.59 km, N ➤ Karuppathur R.F – 15.45 km, NW
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 demand for granite increased due to rapid industrialization and growth in infrastructure. So the number of granite producing quarries is increasing in India. Granite is the chief material for the export industries like monuments, flooring slabs, Kitchen articles, sculptures & export. Based on the demand of Granite, the lessee intends to produce the required quantity of Multi Colour Granite for domestic market.

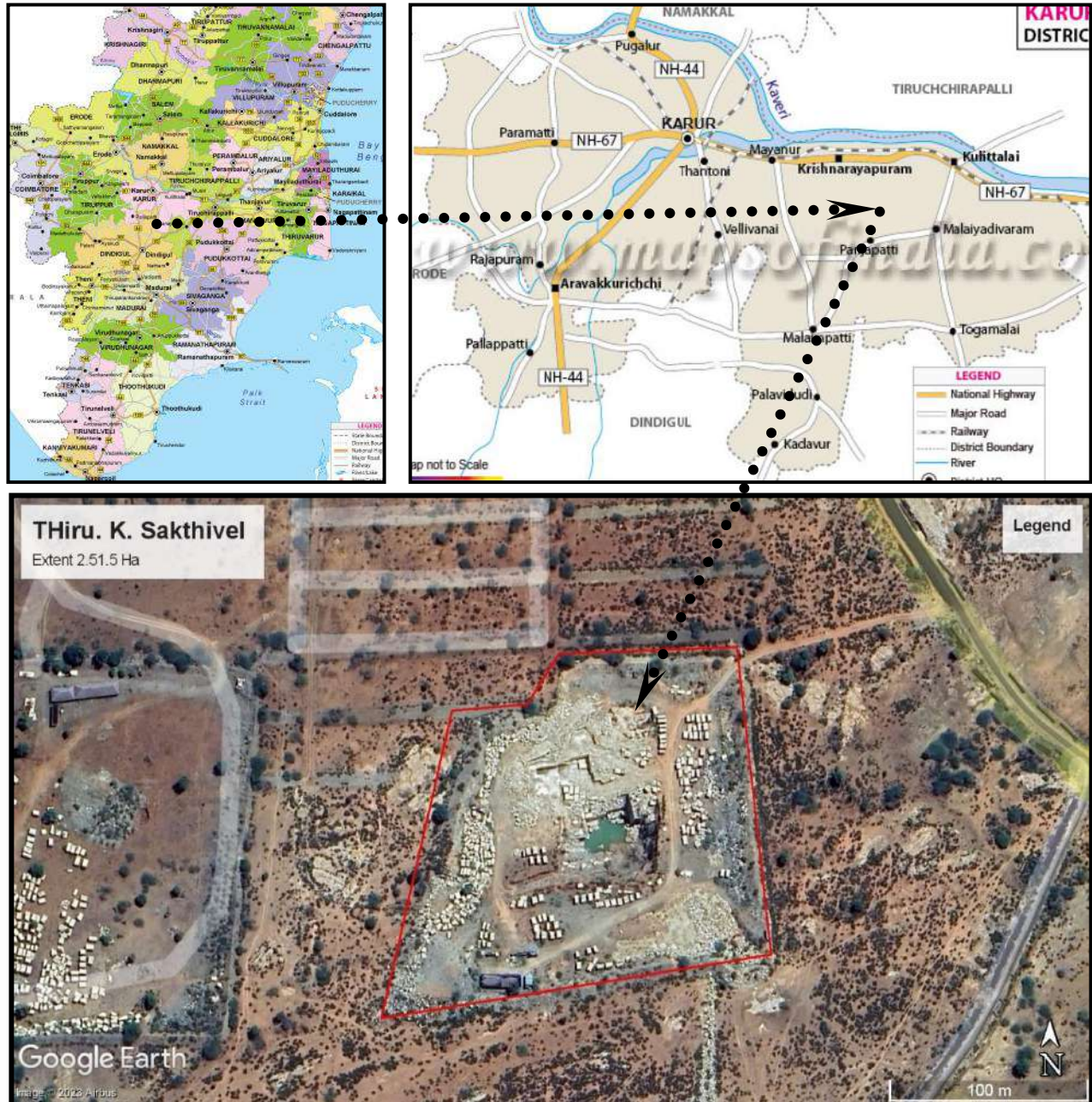


Figure 1: Location Map of the Project Site



Figure 2: Google Image of the Project Site

4. Multi Colour Granite

The Multi Colour Granite and granite gneiss is mainly composed of medium to fine grained with feldspar and quartz are main constituents, garnet and other mafic minerals are secondary minerals. It has commercially called as 'Paradiso' which is widely used for Slabs, Tiles and Monuments after cutting and polishing.

5. Geological Resources

The Geological reserve is estimated as **467326 m³** upto a depth of 22.0m (2.0 m Top Soil + 1.0 m Weathered Granite + 19.0 m Multi Colour Granite), by area cross sectional method.

<i>Project Name</i>	<i>Thiru. K. Sakhivel Multicolour Granite Quarry – 2.51.5 Ha</i>	<i>Final EIA Report</i>
<i>Project Proponent</i>	<i>Thiru. K. Sakhivel</i>	
<i>Project Location</i>	<i>Nallur Village, Kulithalai taluk, Karur District.</i>	

Table 2. Geological resources

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Total Reserve in m ³	Colour Granite Recoverable Reserve @ 50%	Granite Waste @ 50%	Weathered Granite	Topsoil
XY-AB	I	31	111	2						6882
	II	63	151	1					9513	
	III	63	151	5	47565	47565	23783	23782		
	IV	63	151	5	47565	47565	23783	23782		
	V	76	151	5	57380	57380	28690	28690		
	VI	76	151	5	57380	57380	28690	28690		
	TOTAL					209890	209890	104946	104944	9513
XY-CD	I	51	121	2						12342
	II	51	123	1					6273	
	III	51	149	4	30396	30396	15198	15198		
	IV	88	172	5	75680	75680	37840	37840		
	V	88	172	5	75680	75680	37840	37840		
	VI	88	172	5	75680	75680	37840	37840		
	TOTAL					257436	257436	128718	128718	6273
GRAND TOTAL					467326	467326	233664	233662	15786	19224

Table 3. Mineable Resources

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Total Reserve in m ³	Colour Granite Recoverable Reserve @ 50%	Granite Waste @ 50%	Weathered Granite	Topsoil
XY-AB	I	22	89	2						3916
	II	49	122	1					5978	
	III	48	120	5	28800	28800	14400	14400		
	IV	43	110	5	23650	23650	11825	11825		
	V	51	100	5	25500	25500	12750	12750		
	VI	46	90	5	20700	20700	10350	10350		

<i>Project Name</i>	<i>Thiru. K. Sakthivel Multicolour Granite Quarry – 2.51.5 Ha</i>	<i>Final EIA Report</i>
<i>Project Proponent</i>	<i>Thiru. K. Sakthivel</i>	
<i>Project Location</i>	<i>Nallur Village, Kulithalai taluk, Karur District.</i>	

	TOTAL				98650	98650	49325	49325	5978	3916
XY-CD	I	42	102	2						8568
	II	38	95	1					3610	
	III	37	121	4	17908	17908	8954	8954		
	IV	69	133	5	45885	45885	22943	22942		
	V	64	123	5	39360	39360	19680	19680		
	VI	59	113	5	33335	33335	16668	16667		
	TOTAL				136488	136488	68245	68243	3610	8568
GRAND TOTAL					235138	235138	117570	117568	9588	12484

Table 4. Year wise Production Plan

Year	Section	Bench	Length in (m)	Width in (m)	Depth in(m)	Volume in m³	Total Reserve in m³	Colour Granite Recoverable Reserve @ 50%	Granite Waste @ 50%	Weathered Granite	Topsoil
Year I	XY-AB	I	42	69	2						5796
		II	38	63	1					2394	
		III	37	83	4	12284	12284	6142	6142		
		TOTAL				12284	12284	6142	6142	2394	5796
Year II	XY-AB	IV	80	25	5	10000	10000	5000	5000		
		TOTAL				10000	10000	5000	5000		
Year III	XY-AB	IV	80	25	5	10000	10000	5000	5000		
		TOTAL				10000	10000	5000	5000		
Year IV	XY-AB	IV	80	25	5	10000	10000	5000	5000		
		TOTAL				10000	10000	5000	5000		
Year V	XY-AB	IV	80	25	5	10000	10000	5000	5000		
		TOTAL				10000	10000	5000	5000		
		GRAND TOTAL						52284	52284	26142	26142

6. Mining

Opencast mining

The quarry operation is proposed to be carried 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 Diamond wire saw cutting, loading and transportation.

Process Description

The proposed mining is planned to be carried out by open cast-semi mechanized method of mining, in this proposed mining area by using compressor operated jack hammer drills, excavators and dumpers etc.

Hydraulic excavators will be used to remove the over burden, Shifting of Blocks and waste removal etc. Compressor operated jack hammers will be used to drill the holes as preparatory work before cutting the Block by using Wire saw.

The diamond wire saw has many advantages to its credit such as

1. Reduced Consumption of Explosives.
2. Reduced noise level
3. Reduced Loss of material
4. Simple to use and saves squaring operation.

7. Water Requirement

Total water requirement for the mining project is 2.25 KLD. Domestic water will be sourced from nearby Sanga Goundampatti Village and other water will be source from nearby road tankers supply.

Table 5. Water Balance

Purpose	Quantity	Source
Domestic & Flushing	1.25 KLD	Drinking water will be brought from the approved water vendors in the nearby villages.
Green belt	0.50 KLD	Other domestic activities through road tankers supply
Dust suppression	0.50 KLD	From road tankers supply
Total	2.25 KLD	

8. Man Power and Organization Chart

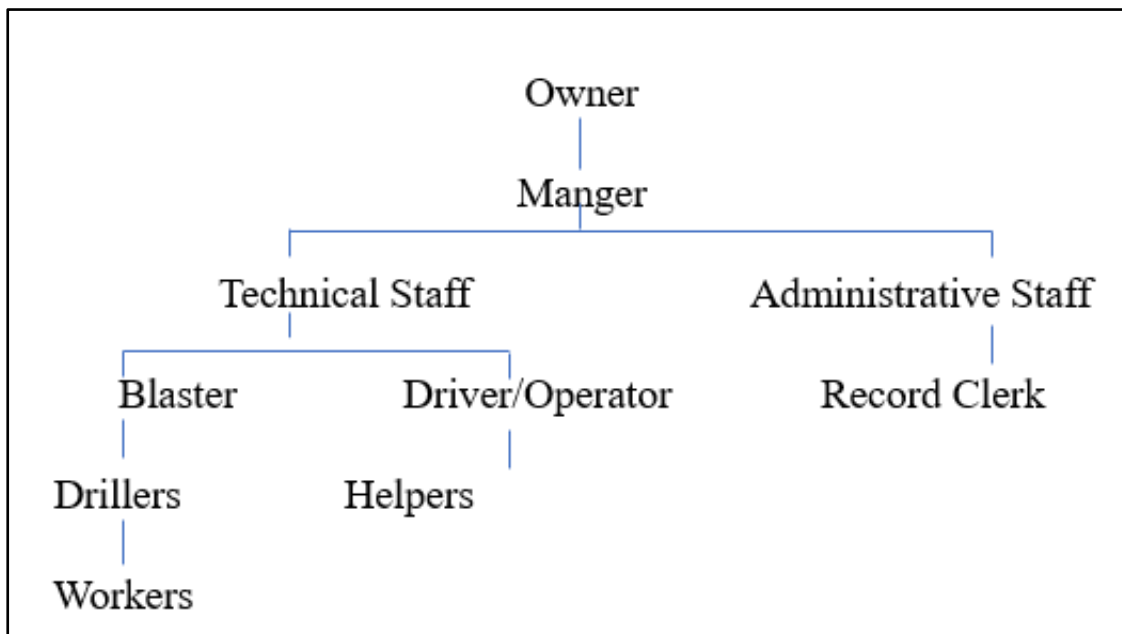
Total manpower required for the project is approximately 24 persons. Workers will be from nearby villages.

Table 6. Man Power

1.		Manager	1 No
2.		Record Clerk	1 No
3.	High-Skilled	Supervisor Cum Blaster	1 No
4.	Skilled	Compressor / Wagon Drill Operator	1 No
		Drillers/ Workers	5 Nos
		Excavator/ Rock Breaker Operators	3 Nos
		Vehicle Drivers	2 Nos
5.	Semi- Skilled	Watchmen	1 No
6.	Unskilled	Dresser/ Cutter	9 Nos
Total			24 Nos.

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

ORGANISATION CHART



9. Solid Waste Management

Table 7. Solid Waste Management

S. No	Type	Quantity	Disposal Method
1	Organic	6.48 kg/day	Municipal bin including food waste
2	Inorganic	4.32 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 quarries:

S. No.	Name of the applicant	Village & Taluk	S. F. No.	Extent	Lease Period
1	Thiru. K. Sakthivel, S/o Karuppannan, Ponnampatti, Perunthalur Village, Kulithalai Taluk, Karur District.	Nallur Village, Kulithalai Taluk	351	2.51.5	Sep 2017 - 2027
2	M/s Apple Granites S. f. No. 299/1,2 Kallai Village, Kulithalai Taluk, Karur District.	Kallai Village, Kulithalai Taluk	299/1 (P), 299/2A (P), 299/2B (P), 301/1 (P), 302/2 (P), 302/3 (P)	2.97.0	Feb 2018 - 2028
3	M/s. V. B. S Exports No. 38, Srinivasa Nagar, 1 st Street, Thiran Nagar, Madurai District.	Kallai Village, Kulithalai Taluk	349/Part, 303/2A(P), 302/1 (P)	2.80.5	Feb 2018 - 2028

2) Abandoned/Old quarries:

S. No.	Name of the applicant	Village & Taluk	S. F. No.	Extent	Lease Period
----- Nil-----					

3) Details of Proposed/Applied quarries:

S. No.	Name of the lessee / Permit Holder	Village & Taluk	S. F. No.	Extent	Lease Period
----- Nil-----					

The Total extent of the Existing / Lease expired / Proposed quarries are 8.29.0 Ha

10. Land Requirement

The total extent area of the project is 2.51.5 Ha, of Patta land in Nallur Village of Kulithalai taluk, Karur District.

Table 9. Land Use Breakup

Description	Present Area (Ha.)	Area to be required at the present scheme period (Ha)	End of life of Quarrying Period (Ha.)
Area under Quarry	0.22.0	0.89.0	2.00.0
Dumps	0.45.0	0.47.0	Backfilling
Stockyard	Nil	Nil	Nil
Infrastructure	0.01.0	0.01.0	0.02.0
Roads	0.03.0	0.01.0	0.04.0
Green Belt	Nil	0.18.0	0.45.5
Unutilized Area	1.80.5	0.95.5	Nil
Grand Total	2.51.5	2.51.5	2.51.5

11. Human Settlement

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

Table 10. Habitation

Direction	Village	Population	Distance in Kms
North	Nallur	600	3.0 km
West	Gudalur	500	5.0 km
East	Kallai	800	3.0 km
South	Puthur	500	4.0 km

12. Power Requirement

The proposed multi colour granite quarrying does not required any power supply for the quarrying operation.16 Litres diesel per hour required for excavator whenever 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 : 26.3 °C
- ii) Average Maximum Temperature. : 40.0 °C
- iii) Average Annual Rainfall of the area : 806 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 10 km. radius, air quality survey has been conducted at 7 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 (65-45(µg/m³)), PM 2.5(35-17 (µg/m³)), SO_x (20-5 (µg/m³), NO_x (9-32 (µg/m³), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from April to June, 2022

13.3 Noise Environment

Ambient noise levels were measured at 7 locations around the proposed project site. The noise level during day varies from 41-64 dB(A) and during night varies between 33-56 dB(A).

13.4 Water Environment

- The average pH ranges from 7.21-8.44

- TDS value varied from 692 mg/l to 1605 mg/l
- Hardness varied from 376 to 959 mg/l
- Chloride varied from 99.3 to 502 mg/l

13.5 Land Environment

The analysis results show that the majority of soil in the project and surrounding area is slightly base in nature and pH value ranges from 6.95 to 8.54 with organic matter 0.47 % to 1.90 %. 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 will be planted along the lease boundary and avenues as well as over non-active dumps at a rate of 252 trees per annum with interval 5m.
4. The rate of survival expected to be 80% in this area

Table 11 Plantation/ Afforestation Program

Sl.No	Name of the species		Survival rate expected in %	No. of trees expected to be grown
	Scientific Name	Common Name		

1	<i>Azadirachta indica</i>	Neem	80 %	450
2	<i>Pongamia pinnata</i>	Pungam	80 %	300
3	<i>Pterocarpus marsupium</i>	Vengai	80 %	150
4	<i>Cassia fistula</i>	Sarakondrai	80 %	190
5	<i>Aegle marmelos</i>	Vilvam	80 %	50
6	<i>Lagerstroemia speciosa</i>	Poo Marudhu	80 %	50
7	<i>Mimusops elengi</i>	Magizha maram	80 %	70
Total				1260

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

- Periodical monitoring of ambient noise will be done as per CPCB guidelines.
- No other equipment except the transportation vehicles and excavator for loading will be allowed.
- 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.2,04,20,000/-** 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 of cost	Cost of lakhs
A	Fixed Asset cost:	
1	Land cost	Rs. 30,00,000/-
2	Labour Shed	Rs.1,50,000/-
3	Sanitary Facility	Rs. 70,000/-
4	Fencing Cost	Rs. 1,00,000/-
	Total Fixed Asset cost	Rs. 33,20,000/-
B	Operational cost:	
1	Excavator	Rs. 55,00,000/-
2	Tipper 2 Nos	Rs. 20,00,000/-
3	Wire Saw	Rs. 8,00,000/-
4	Compressor with loose tools	Rs. 10,00,000/-
	Machinery Cost	Rs. 93,00,000/-
C	EMP Cost:	
1	Year 1	Rs. 2641013
2	Year 2	Rs. 1197605
3	Year 3	Rs. 1257027
4	Year 4	Rs. 1319420
5	Year 5	Rs. 1384933
	EMP Cost	Rs. 78,00,000
	Total Project cost	Rs. 2,04,20,000/-

20. Corporate Environmental Responsibility

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

Table 13 CER Cost

S.No.	CER Activity	CER value (Rs)
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1.	<p>P.U.P School, Nallur Village, Kulithalai Taluk, Karur District.</p> <p>Following details are provided to the school.</p> <ul style="list-style-type: none"> ➤ Vegetable Garden. ➤ Electric Motor. ➤ Repair works on Roof of the School. ➤ Hygienic Toilet facilities through lease period. ➤ Greenbelt Development inside and around the campus – 50 No's. ➤ Environmental, Social Awareness and General Knowledge Books in Tamil Language. 	5,00,000/-
Total		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.