

**November
2023**

Executive Summary

**M/s.Naraj Blue Metals Pvt Ltd
Rough stone & Gravel Quarry- 4.32.10 Ha**

For

PUBLIC HEARING

At

**S.F Nos : 264/2(P), 264/3A(P), 267/1B, 267/2(P) & 267/3
Akkinampattu Village, Cheyyur Taluk,Chengalpattu
District, Tamil nadu State.**

PROJECT PROPONENT

**M/s.Naraj Blue Metals Private Limited,
Thiru.P.Naresh (Director),
Plot No-109 &110,
Kamatchi Amman Nagar East,
Mangadu, Chennai,
TamilNadu.
Pin Code:600122.**

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

**Prepared By:
Ecotech Labs Pvt. Ltd.**



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

EXECUTIVE SUMMARY

1. Project Background:

The Proposed project total extent area is 4.32.10 Ha, It is a Patta land in 264/2(P), 264/3A(P), 267/1B, 267/2(P) & 267/3 Akkinampattu Village, Cheyyur Taluk, Chengalpattu District. The category of project is B1, It is a Rough stone and Gravel quarry in Akkinampattu village. The area is situated on plain topography covered by Gravel formation which does not sustain any type of vegetation.

The quarry operation is proposed to carry out with open cast mechanized mining with 5.0 meter bench for Top soil & Gravel followed by 5.0 meter vertical bench with a bench width not less than the bench height. The quarry operation involves shallow jack hammer drilling, slurry blasting, Loading and transportation of Rough stone and Gravel to the needy nearby crusher units / road formation works.

The quarry operation is proposed up to depth of 49 from the below ground level. Geological Resources is estimated at 2424780 Cum of Rough stone and 80826 Cum of Gravel. Mineable Reserves is estimated as 866500 Cum of Rough stone and after leaving necessary safety distance from the lease boundary as indicated in the precise area letter and relevant mining laws in force. Production Schedule is production of 866500 Cum of Rough Stone for the period of Ten years. Mining Plan was approved by The Assistant Director, Geology & Mining, Chengalpattu vide letter Roc.No.101/Mines/2022 dated 31.03.2023. Precise area communication letter received from Assistant Director, Department of Geology and Mining; Chengalpattu letter Na.Ka.No.101/Kaniman/2022, dated 10.01.2023.

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 15Km.

2. Nature & Size of the Project

The Rough Stone Quarry over an extent of 4.32.10 Hectares land is located at Akkinampattu Village, Cheyyur Taluk, Chengalpattu District.

Mineral intends to quarry	: Rough stone and Gravel Quarry
District	: Chengalpattu
Taluk	: Cheyyur
Village	: Akkinampattu
S. F. Nos.	: 264/2(P), 264/3A(P), 267/1B, 267/2(P) & 267/3
Extent	: 4.32.10 Hectares

Table 1: Brief Description of the Project

S. No	Particulars	Details
1	Latitude	Latitude : 12° 25' 46.02" N to 12° 25' 57.66" N
2	Longitude	Longitude : 80° 02' 57.81" E to 80° 03' 04.76" E
3	Site Elevation above MSL	100 m MSL
4	Topography	Plain Terrain
5	Land use of the site	Patta Land
6	Extent of lease area	4.32.10 Ha
7	Nearest highway	NH332 A , ECR Road, 5.75 km, E
8	Nearest railway station	Madurantakam Railway Station – 18.76 km, WNW
9	Nearest airport	Chennai International Airport – 62.18 km, N Puducherry Airport-58.35 Km, SSW
10	Nearest town / city	<ul style="list-style-type: none"> • Town - Cheyyur - 10.65 Km, SSW • City - Chengalpattu – 28.16 Km, NNW • District - Chengalpattu – 28.16 Km, NNW
11	Rivers / Canal	❖ Kiliyar river-12.82 km, NNW
12	Lake	<ul style="list-style-type: none"> ❖ Pakkur Lake- 5.33 km, S ❖ Odiyur Lake-7.88 km, S ❖ Irumbedu Lake-12.23 km, SW ❖ Murukkambakkam Lake-10.01 km, NW ❖ Veeranankkunnam Lake-11.24 km, NW ❖ Keezhpattu lake-10.46 km, NW

		❖ Thachoor lake-11.13km, NW Pallavankulam lake-7.05 km, N
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	Nil
17	Seismicity	Proposed Lease area come under Seismic zone-III
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 and Gravel extracted will be transported to be Stone crusher of district Chengalpattu.
- ❖ 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.

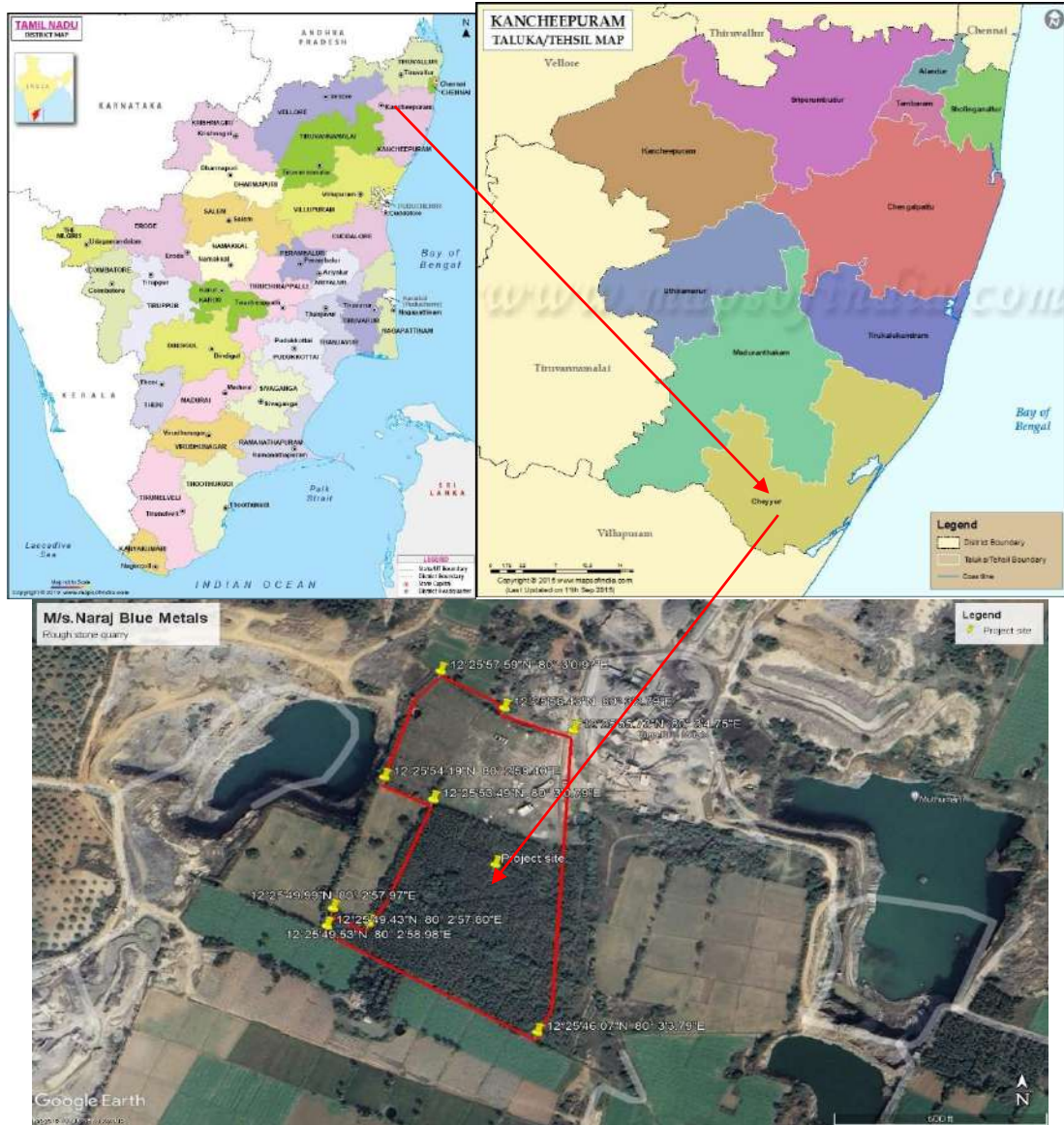


Figure 1: Location Map of the Project Site



Figure 2: Google Image of the Project Site

4. Charnockite

Charnockite is applied to any orthopyroxene-bearing quartz-feldspar rock, composed mainly of quartz, perthite or antiperthite and orthopyroxene (usually hypersthene) formed at high temperature and pressure, commonly found in granulite facies metamorphic regions, as an end-member of the charnockite series. Charnockite is extensively quarried for rough stone which is used as blue metals for construction of building, laying roads and for preparation of hollow bricks. In some places, charnockite is used as grinder stone. Charnockite is exposed as discontinuous body in ENEWSW direction from Karanampettai in the west to Unjappalayam in the east and from Pallapalayam in the north to Kodanipalayam-Sukkampalayam in the south. More than 50 quarries are located in Kodangipalayam and Itchipatti areas. An isolated charnockite body is exposed for a length of 4kw with 1to 1.5 km wide from Sedarpalayam-

Morattupalayam in the north to Velliyampalayam-Sarkar Periyapalayam in the south. Active quarries are located in Timmanayakkanpalayam, Govindampalayam and A.Periyapalayam. Charnockite is very well exposed in NW Madathukulam area of Udumalai taluk. Eastwest trending rock is available for more than 5 km length with 2 km width. Active quarries are located in this area for rough stone i.e. for construction material.

5. Geological Resources

The Geological reserves have been calculated based on the cross section method. The available geological reserve is estimated as 2424780 m³ of Rough Stone and 80826 m³ of Gravel respectively. Availability of Resources is given below. The quarrying is restricted up to a depth of 49m below ground level only. Availability of Resources is given below.

Table 2. Geological resources

GEOLOGICAL RESOURCES							
Section	Length in (m)	Width in (m)	Depth in (m)	Volume m³	Geological Resources of wheathered in m³	Geological Resources of Gravel in m³	Geological Resources of Roughstone in m³
XY-AB	181	145	2	52490		52490	
	181	145	2	52490	52490		
	181	145	60	1574700			1574700
TOTAL					52490	52490	1574700
XY-CD	92	154	2	28336		28336	
	92	154	2	28336	28336		
	92	154	60	850080			850080
TOTAL					28336	28336	850080
GRAND TOTAL					80826	80826	2424780

Table 3. Mineable Resources

MINEABLE RESERVES								
Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m³	Gravel Formation in m³	wheathered Formation in m³	Mineable Reserves of Rough stone in m³
XY-AB	98-100	174	130	2	45240	45240	-	-
	96-98	174	130	2	45240	-	45240	-
	91-96	170	122	5	103700	-	-	103700
	86-91	165	112	5	92400	-	-	92400
	81-86	160	102	5	81600	-	-	81600
	76-81	155	92	5	71300	-	-	71300
	71-76	150	82	5	61500	-	-	61500
	66-71	145	72	5	52200	-	-	52200
	61-66	140	62	5	43400	-	-	43400
	56-61	135	52	5	35100	-	-	35100
	51-56	130	42	5	27300	-	-	27300
	46-51	120	32	5	19200	-	-	19200
	41-46	110	22	5	12100	-	-	12100
	36-41	100	12	5	6000	-	-	6000
TOTAL						45240	45240	605800
XY-CD	98-100	84	139	2	23352	23352	-	-
	96-98	84	139	2	23352	-	23352	-
	91-96	80	131	5	52400	-	-	52400
	86-91	75	121	5	45375	-	-	45375
	81-86	70	111	5	38850	-	-	38850
	76-81	65	101	5	32825	-	-	32825
	71-76	60	91	5	27300	-	-	27300
	66-71	55	81	5	22275	-	-	22275
	61-66	50	71	5	17750	-	-	17750
	56-60	45	61	5	13725	-	-	13725
	51-56	40	51	5	10200	-	-	10200
TOTAL						23352	23352	260700
GRAND TOTAL						68592	68592	866500

The Available mineable reserve is computed as 866500m³ of Rough stone upto a depth of 49m below ground level only.

Table 4. Year wise Production Plan

The applicant has proposed to carry out 866500 m³ of Rough stone at the rate of 100% recovery upto a depth of 49 m below ground level for the period of Ten years only.

YEARWISE DEVELOPMENT & PRODUCTION RESERVES								
Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m³	Gravel Formation in m³	Recoverable Reserves of Rough stone in m³
I	XY-AB	96-100	135	130	4	70200	70200	-
		91-96	130	122	5	79300	-	79300
TOTAL							70200	79300
II	XY-AB	96-100	39	130	4	20280	20280	
	XY-CD	96-100	84	139	4	46704	46704	
	XY-AB	91-96	40	122	5	24400	-	24400
	XY-CD	91-96	80	131	5	52400	-	52400
		86-91	10	121	5	6050		6050
TOTAL							66984	82850
III	XY-CD	86-91	65	121	5	39325		39325
	XY-AB	86-92	80	112	5	44800		44800
TOTAL								84125
IV	XY-AB	86-91	85	112	5	47600		47600
		81-86	73	102	5	37230		37230
TOTAL								84830
V	XY-AB	81-86	87	102	5	44370		44370
	AB-CD	81-86	70	111	5	38850		38850
TOTAL								83220
GRAND TOTAL							137184	414325

YEARWISE DEVELOPMENT & PRODUCTION RESERVES								
Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m³	Gravel Formation in m³	Recoverable Reserves of Rough stone in m³
VI	XY-CD	76-81	65	101	5	32825		32825
	XY-AB	76-81	115	92	5	52900		52900
TOTAL								85725
VII	XY-AB	76-81	40	92	5	18400		18400
	XY-CD	71-76	60	91	5	27300		27300
	XY-AB	71-76	106	82	5	43460		43460
TOTAL								89160
VIII	XY-AB	71-76	44	82	5	18040		18040
		66-71	145	72	5	52200		52200
	XY-CD	66-71	45	81	5	18225		18225
TOTAL								88465
IX	XY-CD	66-71	10	81	5	4050		4050
		61-66	50	71	5	17750		17750
		56-61	45	61	5	13725		13725
	XY-AB	61-66	140	62	5	43400		43400
		56-61	30	52	5	7800		7800
TOTAL								86725
X	XY-AB	56-61	105	52	5	27300		27300
		51-56	130	42	5	27300		27300
	XY-CD	51-56	40	51	5	10200		10200
TOTAL								64800
GRAND TOTAL							0	414875

6. Mining

Opencast mining

Open cast Semi-Mechanized Mining with one 5.0 meter bench for Top soil & Gravel followed by 5.0 meter vertical bench with a bench width not less than the bench height.

The Quarry operation involves shallow jack hammer drilling, blasting, loading and transportation.

Process Description

- The reserves and resource are arrived based upon the Geological investigation
- Removal of Gravel by Excavators and directly Loaded into Tippers.
- Removal of Rough Stone by Excavators by Drilling and Blasting.
- Shallow Drilling With Jackhammer of 30-32 mm 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 2.5 KLD. Domestic water will be sourced from nearby Vettakarakuppam Village and other water will be source from nearby road tankers supply.

Table 5. Water Balance

Purpose	Quantity	Source
Drinking Water	1.5KLD	Packaged Drinking water vendors available in Vettakarakuppam village which is about 1.14 Km ESE of the area
Green belt	0.5KLD	Other domestic activities through road tankers supply
Dust suppression	0.5KLD	From road tankers supply
Total	2.5 KLD	

8. Manpower

Total manpower required for the project is approximately 34 persons. Workers will be from nearby villages.

Table 6. Man Power

1	Skilled	Operators	6
2	Semi skilled	Driver	14
3	Unskilled	Musdoor/Labours	10
4	Mines Manager		1
5	Mines Foreman		1
6	Mines mate		1
7	Blaster		1
Total			34 Nos

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

9. Solid Waste Management

Table 7 Solid Waste Management

S. No	Type	Quantity	Disposal Method
1	Organic	6.12 kg/day	Municipal bin including food waste
2	Inorganic	9.18 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 Owner	Village & Taluk	S.F.Nos.	Extent in Hect.	Lease Period
1	Tvl.Uma Blue Metals, Vettaikarakuppam, Kodur Post, Cheyyur taluk, Kancheepuram 603305	Cheyyur, Akkinampaattu	270/1, 270/2, 272/4, 272/5A	3.20.00	08.11.2018 to 07.11.2023 (5 years)
2	S.Balaji, S/o.K.Sundaramoorthy, Manamai Village and Post, Kalpakkam, Thirukazhukundram Taluk, Chengalpattu District 603102	Cheyyur, Akkinampaattu	264/1A(P)	1.62.00	30.09.2020 to 29.09.2025 (5 years)

2) Details of abandoned /Old Quarries

S. No.	Name of the Owner	Village & Taluk	S.F.Nos.	Extent in Hect.	Lease Period
1.	R.Ranganathan M/s.Uma Blue Metals, Vettaikarakuppam, Kodur Post, Cheyyur Taluk.	Cheyyur, Akkinampaattu	268/1B1B	1.24.50	06.02.2014 to 05.02.2019 Lease expired

3) Details of Proposed quarries

S. No.	Name of the Owner	Village & Taluk	S.F.Nos.	Extent in Hect.	Lease Period
1.	M/s.Naraj Blue Metals Pvt Ltd, Thiru.P.Naresh (Director), Plot No.109&110, Kamatchi Amman Nagar East, Mangadu, Chennai- 600122	Cheyyur, Akkinampaattu	264/2(P), 264/3A(P), 267/1B, 267/2(P), 267/3	4.32.10	Under processing (Present Application)

10. Land Requirement

The total extent area of the project is 4.32.10 Ha, Patta Land in Akkinampaattu Village of Cheyyur Taluk, Chengalpattu 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	Nil	3.53.85
2.	Infrastructure	Nil	0.01.00
3.	Roads	Nil	0.02.00
4.	Green Belt	Nil	0.75.25

5.	Unutilized	4.32.10	0.00.00
	Total	4.32.10 Ha	4.32.10 Ha

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

S.No	Name of the Village	Approximate distance & Direction from lease applied area	Approximate population
1.	Nelvaipalayam	1.2 Km-N	454
2.	Vettakkarakuppam	1.3 Km-E	19233
3.	Akkinampattu	1.2 Km-SW	2553
4.	Kadugupattu	2.5 Km-W	1765

12. Power Requirement

The proposed Rough stone quarrying does not require any power supply for the quarrying operation.

16 Litre diesel per hour for excavator for mining and loading for Rough stone needed and **10 Litre** diesel per hour for excavator for mining and loading for Top soil.

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 : 31° C
- ii) Average Maximum Temperature. : 34°C
- iii) Average Annual Rainfall of the area : 792 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 (39-67 µg/m³), PM_{2.5} (15- 33µg/m³), SO₂ (5- 22µg/m³), NO₂(10-40 µg/m³), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from March 2023 to May 2023.

13.3 Noise Environment

The maximum Day noise and Night noise were found to be 60 dB(A) and 52 dB(A) respectively in Panchayat Union Middle School and Sri Shirdi Sai Temple. The minimum Day Noise and Night noise were 40 dB(A) and 32 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 – 7.83.
- TDS value varied from 220 mg/l to 679 mg/l
- Hardness varied from 166 to 386 mg/l
- Chloride varied from 24.2 to 200 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 6.49 to 8.87 with organic matter 0.18 to 3.7 %. 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 a 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, Vilvam, Panai, etc will be planted along the lease boundary and avenues as well as over Non-active dumps at a rate of 440 trees per annum with interval 5m.
4. The rate of survival expected to be 70% 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,	70%	2200

Thandri, Sengondrai, Poovarasu, Thethankottai Maram, Pungam		
Total		2200

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 1,18,81,500/-** 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	Cost (Rs.)
1	Fixed Asset Cost	78,81,500/-
2	Operational Cost	40,00,000 /-
	Total	1,18,81,500/-

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)
1.	Panchayat Union Middle School, Akkinampattu Provision of <ul style="list-style-type: none">➤ Smart Board➤ All in one Printer➤ Bench and desks➤ Microphone set➤ Planting trees in and around the periphery of the school campus➤ Environmental Science books in Tamil Language for Library➤ Smart Classroom facility➤ Hygienic Toilet Facility	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.