

DRAFT EXECUTIVE SUMMARY FOR PROPOSED ROUGH STONE QUARRY CATEGORY – B1 (CLUSTER)

(Public Hearing Upgraded after Terms of Reference (ToR) as per the provisions of
EIA Notification 2006 & amendments thereof)

ToR Lr.No.SEIAA-TN/F.No.8879/SEAC/ToR-1150/2021, DATED: 23.05.2022

PROPOSED QUARRY LEASE DETAILS	
SURVEY NO	135 (Part-6)
VILLAGE	IYUNKUNAM
TALUK	KILPENNATHUR
DISTRICT	THIRUVANNAMALAI
EXTENT	2.50.0 Ha
CLUSTER EXTENT	9.50.0 Ha
PROPOSED PRODUCTION QUANTITY FOR FIVE YEARS	ROUGH STONE : 1,85,825 m ³
LAND	GOVERNMENT PORAMBOKE LAND

(Sector No. 1(a) Sector No.1 as per NABET)

Category of the Project: B1 Cluster Mining, Total Cluster Area – 9.50.0 Ha

Baseline Monitoring Period – March 2024 to May 2024

APPLICANT

THIRU.A.KRISHNAMOORTHY,
S/O.ARUMUGAM, RESIDING AT NO.116/1,
MANIKKARATHERU, THANDRAMPATTU TALUK,
TIRUVANNAMALAI DISTRICT

ORGANIZATION

M/s. GLOBAL MINING SOLUTIONS
(NABET ACCREDITED & ISO 9001 CERTIFIED CONSULTANT)
PLOT NO.6, SF NO. 13/2, A2, VS CITY, RC CHETTYPATTY,
KOTTAMETTUPATTY, OMALUR, SALEM, TAMIL NADU – 636 455
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February- 2024



EXECUTIVE SUMMARY

OVER ALL JUSTIFICATION FOR IMPLEMENTATION OF THE PROJECT

INTRODUCTION

Thiru.A.Krishnamoorthy has obtained Precise Area communication letter from the assistant Director, Geology and Mining, Tiruvannamalai letter vide Rc.No./Kanimam/2020 dated 10.06.2021 to quarry out 1,85,825 m³ of Rough Stone over an extent of 2.50.0 ha., S.F. No. 135 (Part-6) of Iyunkunam Village, Kilpennathur Taluk, Tiruvannamalai District, Tamil Nadu State.

As per EIA notification, 2006 and its subsequent amendments the proposed "Rough Stone Quarry of Thiru.A.Krishnamoorthy mines cluster falls under Schedule 1(a) of EIA Notification and its subsequent amendments the project comes under Category B1. The ToR for preparation of EIA/EMP report of the project was approved vide ToR Lr.No.SEIAA-TN/F.No.8879/SEAC/ToR-1150/2021, DATED: 23.05.2022. This report has been prepared in line with the approved TOR for production of maximum excavation of 1,85,825 m³ of Rough Stone

Sl. No.	Description	Status/Remarks
1.	Sector	Non-coal mining
2.	Category of the project	B1
3.	Proposed mineral	Rough Stone
4.	Type of Lease	New quarry
5.	Extent of the lease	2.50.0 Ha
6.	Proposed depth of mining	30m above ground level
7.	Method of mining	Opencast method of mechanized.
8.	Proposed lease period	5 Years
9.	Proposed Environmental Clearance	5 Years
10.	Proposed production quantity for five years	Rough Stone: 1,85,825 m ³

The proposed lessee Thiru.A.Krishnamoorthy is an individual with sound experience in the identification of quarry, operation and marketing in the field of Rough Stone quarry. The proposed land is Government poramboke land.

LOCATION

Iyunkunam Village, Kilpennathur Taluk, Tiruvannamalai District, Tamil Nadu State and its Latitude: 12°15'42.59"N to 12°15'49.82"N and Longitude: 79°09'51.24"E to 79°09'59.11"E with Survey of India Topo Sheet No. 57- P/03. To conduct the study, the proposed mine lease area (core zone) and an impact zone of 10 km radius (called buffer zone) around the proposed mine site were considered. The EIA report is based on three months baseline data (i.e. March 2024 to May 2024)

GEOLOGY

The rock type noticed in the area for lease is Charnockite which contains mostly Quartz and Feldspar with some ferromagnesian minerals. The Charnockite is part of peninsular Gneisses, a high-grade metamorphic rock. The strike of the Charnockite formation is N45°E – S45°W with vertical dipping.

PROJECT DESCRIPTION

This is a proposed Rough Stone quarry by opencast Mechanized mining method. The quarrying is restricted up to a depth 30m above ground level for the period of first five year. The geological reserves are estimated to be 12,33,020 m³ of Rough Stone. The mineable reserve calculated by deducting 10m safety distance and bench loss. The mineable reserves are 3,71,340 m³ of Rough Stone and the proposed production for the first five is 1,85,825m³ of rough stone, which will be recovered at the rate of 100% recovery upto a depth of 30m above ground level for the period of five years.

- It is proposed to quarry out rough stone with 5m bench height, 5m width with 60° slope using conventional Open cast Mechanized method. The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of Rough Stone.
- There is no overburden anticipated during entire rough stone quarrying operation.

DRAFT EXECUTIVE SUMMARY FOR THE PROPOSED ROUGH STONE QUARRY OF THIRU.A.KRISHNAMOORTHY OVER AN EXTENT OF 2.50.0 HA LOCATED AT S.F.NOs. S.F.NO.135 (PART-6) OF IYUNKUNAM VILLAGE, KILPENNATHUR TALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE.

S.No.	Type of Detail	Description
1	Sector	1(a) Non coal mining
2	Fresh/Existing project	New quarry
3	Category	B1
4	Nature of mineral	Minor mineral
5	Life of the mine	10 years
6	Production Quantity for five years	Rough Stone: 1,85,825 m3
7	Waste generation and management	Nil
8	Bench height and width	Proposed bench height & width is 5.0m respectively and number of proposed benches is 6 Nos.
9	Ultimate pit depth	30m above ground level
10	End use	The excavated Rough Stone is used for construction industries for Government & Public sector projects besides catering domestic housing and infrastructure projects in and around the district.

11.1.4 PROJECT REQUIREMENTS

The requirements of the project is given below.7

S.No.	Nature of requirement	Description
1	Water requirement	Total water requirement of 2.5 KLD which will be procured from the outside agencies. Out of 1.0 KLD drinking water requirement, Green belt development 0.5 KLD and dust suppression is 1.0 KLD.
2	Power requirement	No electricity is needed for mining operations, for office demands, it will be met from the state grid. Total Fuel requirement is 59456 litres for entire life of the project.
3	Manpower requirement	Permanent employees - 10, temporary employees - 11.

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4	Financial requirement	The total project cost as per PFR will be INR 374.04 Lakhs including Operational cost, Fixed Asset cost and EMP cost
5	Funds for Socio economic development	INR 5,00,000 is allocated. In addition, any demand raised by people during public hearing will also be met.

DESCRIPTION OF LEASE AREA

The features in the study area is given below.

Description of the lease area				
S.No.	Areas	Distance from project site		
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil within 15km radius		
2	Areas which are important or sensitive for ecological reasons			
A	Wetlands, water courses or other water bodies,			
		Water bodies	Distance	Direction
		Kamalaputhur Lake	12 km	N
		Avalurpet Lake	10.4 km	NE
		Karungalikuppam Lake	5.7 km	NW
		Idapalayam Lake	11.8 km	SW
		Kolakudi Lake	14.8 km	SW
		Usambadi Lake	12 km	SE
		Kariyandal Lake	14.7km	NE
		Thurunjal River	7.6km	SW
B	Coastal zone, biospheres,	Nil within 10km radius		
C	Mountains, forests	Tippakodu R.F. – 8.5 km, SW		
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging,	Nil within 15km radius		

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	resting, overwintering, migration	
4	Inland, coastal, marine or underground waters	Nil within 15km radius
5	State, National boundaries	Nil within 15km radius
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	Nil within 15km radius
7	Defense installations	Nil within 15km radius
8	Densely populated or built-up area	Tiruvannamalai – 9.86 Km - W
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Tiruvannamalai – 9.86 Km - W
10	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Nil
11	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (earth quakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions) similar effects	No. The area is not prone to earthquakes, floods, etc.

The baseline data collection for meteorology, air, water, noise and soil environments have been carried out during March to May 2024.

Air, water, noise and soil samples are collected and analyzed through NABL accredited lab.

EXPLANATION OF HOW ADVERSE EFFECTS HAVE BEEN MITIGATED

AIR ENVIRONMENT

The air monitoring have been carried out in 6 locations and the results are given below.

S. No.	Station Code	Locations	Distance & Direction	Coordinates
1	AAQ 1	Near by the Proposed Mine Site	Core Zone	12°15'42.59"N 79°09'51.24"E
2	AAQ 2	Somaspadi	1.16 km, S	12°15'11.61"N 79°9'53.23"E
3	AAQ 3	Karampoondi	1.5 km, E	12°15'47.45"N 79°10'54.6"E
4	AAQ 4	Iyangunnam	1.36 km, NW	12°16'18.3"N 79°9'30.16"E
5	AAQ 5	Kazhikulam	1.96 Km, S	12°16'34.66"N 79°10'46.61"E
6	AAQ6	Namiyandal So	2.83 Km, W	12°15'11.74"N 79°8'36.69"E

All the values of pollutant concentrations were found to be within the NAAQs Standards.

Station ID	Min	Max	Avg.
Particulate matter PM₁₀ (µg/m³)			
AAQ-1	56.9	76.2	66.55
AAQ-2	51.3	66.4	58.85
AAQ-3	48.3	58.7	53.5
AAQ-4	46.0	55.2	50.6
AAQ-5	40.9	54.7	47.8
AAQ-6	42.9	52.1	47.5
CPCB NAAQS 2009 for PM₁₀ - 100 µg/m³			
Particulate matter PM_{2.5} (µg/m³)			
AAQ-1	26.8	35.8	31.3
AAQ-2	23.6	30.6	27.1
AAQ-3	22.74	27.3	25.02
AAQ-4	20.7	24.8	22.75
AAQ-5	18.5	24.9	21.7
AAQ-6	20.5	25.0	22.75
CPCB NAAQS 2009 for PM_{2.5} - 60 µg/m³			
Sulphur Di-oxide as SO₂ (µg/m³)			
AAQ-1	5.1	6.8	5.95
AAQ-2	5	6.1	5.55
AAQ-3	4.2	6.1	5.15
AAQ-4	4	5	4.5
AAQ-5	2.9	4.3	3.6
AAQ-6	2.9	5.2	4.05
CPCB NAAQS 2009 for SO₂ - 80 µg/m³			
Oxide of Nitrogen as NO₂ (µg/m³)			
AAQ-1	7.4	13.8	10.6
AAQ-2	6.6	11.6	9.1
AAQ-3	5.8	11.0	8.4
AAQ-4	5.7	11	8.35
AAQ-5	6.4	8.5	7.45
AAQ-6	6.5	8.8	7.65
CPCB NAAQS 2009 for NO₂ - 80 µg/m³			

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WATER ENVIRONMENT

Results of Ground Water sampling Analysis in 6 locations							Specification/ Limit As per IS:10500: 2012	
	W1	W2	W3	W4	W5	W6	Desir able	Permi ssible
Odour	Agreeabl e	Agreeabl e	Agreeabl e	Agreeabl e	Agreeabl e	Agreeabl e	Agree able	Agree able
Turbidity	<1	<1	<1	<1	<1	<1	Agree able	Agree able
pH at 25 °C	7.59	7.62	7.05	6.60	7.06	6.98	6.5 - 8.5	No Relaxa tion
Electrical Conductivity	753.9	1352	1579	2255	1627	2268	1	5
Total Dissolved Solids	450	810	950	1350	974	1362	500	2000
Total hardness as CaCO ₃	293	309	519	582	586	576	1	15
Calcium as Ca	79.2	66.5	124	130	165	141	200	600
Magnesium as Mg	22.8	34.2	50.4	61.8	41.8	53.8	200	600
Calcium as CaCO ₃	198	166	309	325	412	352	75	200
Magnesium as CaCO ₃	95.0	143	210	257	174	224		
Total alkalinity as CaCO ₃	283	424	384	436	291	420		
Chloride as Cl-	90.5	195	264	394	277	456	250	1000
Free Residual chlorine as Cl-	BDL (D.L - 0.2)	BDL (D.L - 0.2)	BDL (D.L - 0.2)	BDL (D.L - 0.2)	BDL (D.L - 0.2)	BDL (D.L - 0.2)	30	100
Sulphates as SO ₄ ²⁻	45.6	210	229	365	247	354	45	No Relaxa tion
Iron as Fe	0.05	0.11	0.06	0.04	0.08	0.05	200	400
Nitrate as NO ₃	2.34	4.35	1.98	6.89	5.64	4.62	1	No Relaxa tion
Fluoride as F	0.42	0.47	0.44	0.52	0.54	0.59	0.1	0.3
Manganese as Mn	BDL (D.L - 0.05)	BDL (D.L - 0.05)	BDL (D.L - 0.05)	BDL (D.L - 0.05)	BDL (D.L - 0.05)	BDL (D.L - 0.05)	Not Speci fied	Not Specifi ed

All the values were found to be within permissible limits

NOISE ENVIRONMENT

Noise levels were measured in 6 locations and the results are given below.

S. No	Location	Day equivalent	Night equivalent	Day equivalent limits by CPCB	Night equivalent limits by CPCB
1	Near by the Proposed Mine Site	43.8	38.6	75	70
2	Somaspadi	48.1	37.7		
3	Karampoondi	46.1	37.7		
4	Iyangunnam	47.3	38.3		
5	Kazhikulam	49.1	39.8		
6	Namiyandal So	45.4	38.8		

SOIL ENVIRONMENT

Soil samples are collected from 6 locations and the results are given below.

Results of Soil Sample Analysis								
S. No	Parameter	Unit	S1	S2	S3	S4	S5	S6
1	pH at 25 °C	-	6.78	6.66	7.26	7.05	7.56	6.96
2	Electrical Conductivity	µmhos/cm	70.24	158.80	104.30	110.60	174.10	95.64
3	Dry matter content	%	95.68	94.67	96.14	97.84	90.70	97.78
4	Water Content	%	4.32	5.33	3.86	2.16	9.30	2.22
5	Organic Matter	%	1.25	1.95	2.09	1.68	2.09	1.65
6	Soil texture	-	sandy clay	clay	silt loam	loam	SILTY CLAY	SILTY CLAY
7	Grain Size Distribution	%	61.00	37.76	17.89	36.47	5.86	6.48
	i. Sand							
8	ii. Silt	%	36.95	21.04	65.70	43.60	39.55	46.68
9	iii. Clay	%	53.74	41.20	16.41	19.93	54.59	46.84
10	Phosphorous as P	mg/kg	0.69	0.78	1.32	0.96	1.75	1.11
11	Sodium as Na	mg/kg	745	998	1020	812	656	1042
12	Potassium as K	mg/kg	366	1056	976	765	794	896
13	Nitrogen and Nitrogenous Compounds	mg/kg	232	364	297	255	366	455
14	Total Soluble Sulphate	%	BDL(D.L. 0.02)	BDL(D.L. 0.02)	BDL(D.L. 0.02)	BDL(D.L. 0.02)	BDL(D.L. 0.02)	BDL(D.L. 0.02)
15	Porosity	%	20.7	24.4	23.1	21.6	20.5	22.3
16	Water Holding Capacity	Inches/foot	38	36	40	42	40	36

BIOLOGICAL ENVIRONMENT

FLORA

For measuring the extent of flora present in the study area, the area is divided in to 4 quadrants. The flora population in each quadrant is summed up for the total population in the study area. Field survey is done. Erukku, Aavarai and Nayuruvi are found in lease area. In the buffer zone, common trees like Neem, papaya, mango, teak, etc and shrubs like Avarai, Aloe vera, etc, climbers like Kovai,jasmine etc are found.

FAUNA

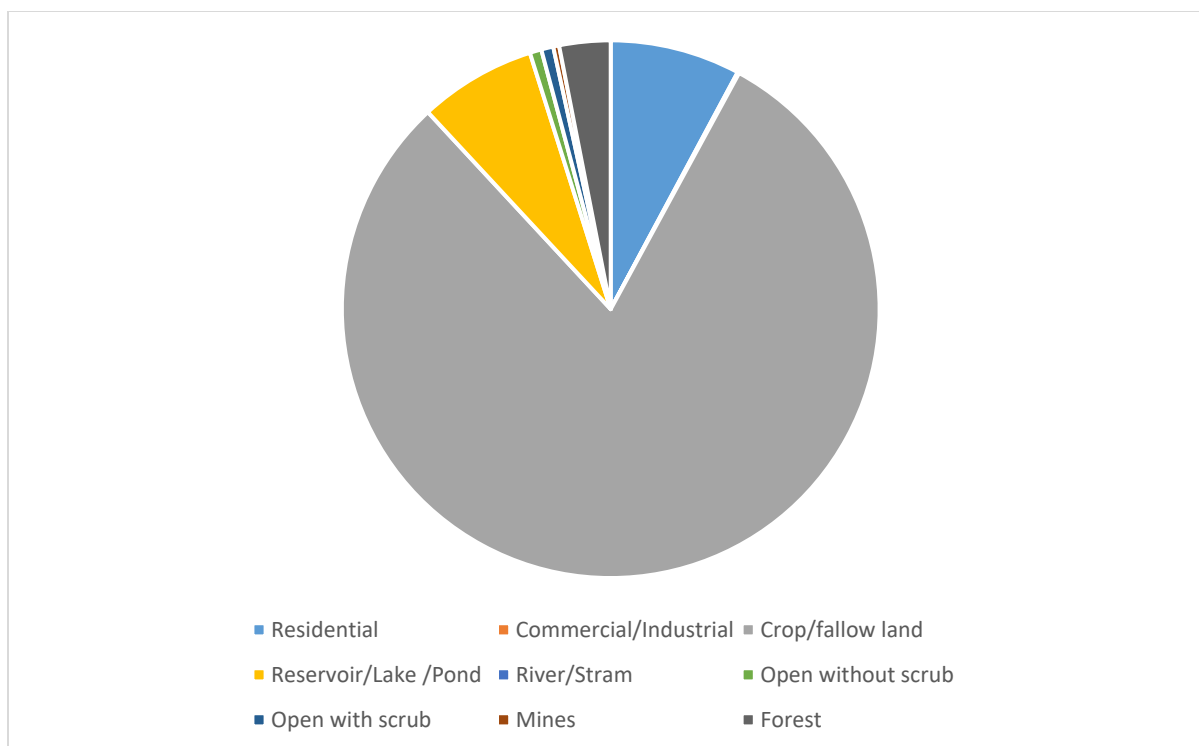
In the study area, commonly found animals like dogs, cats, bush rat, cows, birds like crow, Myna, Sparrow, etc were found.

LAND USE

The land use land cover data is found using the LANDSAT – 9 satellite imagery. The number of bands used are 11. The land use pattern is given below:

Major Land Use Units of the Study Area in Percentage

S. No	1st Level Classification	Area in (sq.km)	Percentage (%)	2nd Level Classification	Area in (sq.km)	Percentage (%)
1	Built-up or habitation	25.21	7.93	Residential	24.90	7.83
				Commercial/Industrial	0.31	0.10
2	Agriculture	254.93	80.17	Crop/fallow land	254.93	80.17
3	Water bodies	22.40	7.04	Reservoir/Lake /Pond	22.40	7.04
				River/Stram		
4	Waste Land	4.54	1.43	Open without scrub	2.23	0.70
				Open with scrub	2.31	0.73
5	Mines	1.12	0.35	Mines	1.12	0.35
6	Forest	9.80	3.08	Forest	9.80	3.08
Total		318	100	Total	318	100



SOCIO ECONOMIC ENVIRONMENT

The socio economic environment of the study area is studied by conducting primary sites through site visits and conducting sample surveys. The secondary data obtained from Census 2011 is also used.

The following data area collected from secondary data.

- Demographic pattern.
- Health pattern
- Occupational structure.
- Amenities available.

The expert visited 5 villages in the study area namely Somaspadi, Karampoondi, Iyangunnam, Kazhikulam and Namiyandal so villages. Discussions were held with the people from nearby locality to study the social and economic conditions prevailing in the area. The expert also visited nearby hospitals, primary health centers and Tiruvannamalai. The following observations were made.

Primary schools are available in many villages. For hospital facilities, people in the locality have to go to hospital in Tiruvannamalai which is about 10.0 km from the lease area. Major schools with higher secondary and senior secondary schools are located in Tiruvannamalai. The major Iyunkunam Union located in the area is Tiruvannamalai. Facilities like petrol pump stations, ATM facility are available in Tiruvannamalai.

HYDROGEOLOGY OF THE LEASE AREA

There is Thurunjal River is located at a distance of 7.6 km (SW) direction of lease area. The hydrological and hydrogeological pattern of the study area is studied in detail using satellite imagery.

There are many tanks located in the study area, which are mostly dry throughout the year. These tanks get water only during monsoons. The factors may be monsoon failure, insufficient rainfall, poor rain water management and water consuming patterns.

GROUND WATER STUDY

For Ground water study, satellite imagery is used. Water levels from monitoring levels are collected through imaging. The pre-monsoon and post-monsoon data are collected and the results are analyzed.

During field visit, it is observed that water is available in wells only after monsoon. The yield is obtained at deep levels only.

As far as the mining lease area is considered, the area is rocky and no major seepage is envisaged. The production quantity is very less and the depth proposed is 30m above ground level. Hence, there will not be any major impact due to mining on water levels or ground water levels in the area.

ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Environmental impacts on the following environments are identified.

- Land environment
- Water environment
- Vegetation
- Fauna
- Air environment
- Noise environment
- Socio-economic impacts

LAND ENVIRONMENT: IMPACT AND MITIGATION MEASURES

The major impact due to this project on land environment is the change in land use. Since this quarry is a small one and the production is less, mining activity will be carried out upto 30m above ground level. Other than quarrying of minerals, no other change will be done since there is no dumping. To prevent soil erosion during monsoon season, garland drain will be constructed with silt traps. At the mine closure stage 1.82.0 Ha of lease area will be left as rain water harvesting pond. 0.20.0 Ha will be developed with green belt. For this, plants like Neem/Pungan are selected. A total of 1250 trees are planned to be planted. Spacing will be 3m x 3m.

WATER ENVIRONMENT: IMPACT AND MITIGATION MEASURES

There is no water body present inside the lease area. The entire water requirement for the project is 2.5 KLD which will be sourced from outside agencies. Negligible sewage will be generated, for which a septic tank with soak pit will be set up.

During monsoon season, the excess rain water, if any, will be led through garland drain of 0.6m width and 0.3 m depth to the collection pond with silt traps.

Since the mining operation will be limited upto depth of 30m above ground level there will not be any seepage. However, the rain water percolation and collection of water from seepage shall be less than 300lpm and it shall be pumped out periodically by a stand by diesel powered Centrifugal pump motivated with 7.5 HP Motor. The quality

of water is expected to be potable. Hence, water stored in the quarry pit will be pumped into the adjacent agricultural fields. Further the water can also be used for plantation purposes

The major water bodies found in the buffer zone are.

Water bodies	Distance	Direction
Kamalaputhur Lake	12 km	N
Avalurpet Lake	10.4 km	NE
Karungalikuppam Lake	5.7 km	NW
Idapalayam Lake	11.8 km	SW
Kolakudi Lake	14.8 km	SW
Usambadi Lake	12 km	SE
Kariyandal Lake	14.7km	NE
Thurunjal River	7.6km	SW

Since these water bodies are located outside the lease area and there is no discharge of effluent or any untreated water from the mines will be made in to these water bodies, there is no major impact. For the canal, adequate safety distance is left. The proponent will restrict the mining operation only within the lease and no other work will be carried out near the canal or any area outside the lease.

It is planned to carryout appropriate rainwater harvesting schemes and artificial recharge schemes in the area.

- Rain water falling in the quarry will be collected efficiently through garland drains.
- Water thus collected will be passed through collection tank with silt traps. This water can be used by the proponent for water sprinkling and for green belt purposes.
- Excess water after desiltation will be provided to downstream users, if any

BIOLOGICAL ENVIRONMENT: IMPACT AND MITIGATION MEASURES

Impacts

- Fauna is affected due to noise and vibration.
- Dust generation due to mining activities
- Change in land use of the lease area
- Accidental falling of animals

Mitigation measures

- Sirens will be blown before blasting in the mines. To reduce noise levels, plantation will be done. Blasting will be carried out only in the allotted time.
- To reduce dust generation, mist sprayers will be used. During transportation, the material will be covered with tarpaulin. Water sprinkling will be done to reduce generation of pollutants
- After the mine closure stage, the mine pit will be left as rain water collecting tank, which can attract bird population in the nearby areas.
- To prevent entry of animals, the mining area will be properly fenced.

AIR ENVIRONMENT: IMPACT AND MITIGATION MEASURES

The major air pollutants due to mining operations are fugitive emissions like PM₁₀, PM_{2.5}. Other than these pollutants, gaseous emissions of sulfur dioxide (SO₂) and oxides of nitrogen (NO_x) due to excavation/loading equipment and vehicles plying on haul roads are the cause of air pollution in the project area.

The major impacts are Dust emission due to drilling, blasting and transportation. The major mitigation measures include Using Wet drilling methods, Allowing drilling only with PPE, Carrying out blasting only during specified times, Avoiding blasting during unfavourable weather conditions, Using explosives of good quality, Using mist sprayers Regular wetting of transport, Covering the materials carried in tippers with tarpaulin, Proper maintenance of vehicles used for transportation, Conducting regular emission tests for vehicles used for transport Development of greenbelt is proposed in the safety zone of 10m and 7.5m barriers in the lease area.

The anticipated data is calculated using AERMOD software and the projected values are found to be within limits.

NOISE ENVIRONMENT: IMPACT AND MITIGATION MEASURES

Impacts

- ✚ Noise generation in mining is due to operation like drilling, blasting and transportation of minerals within and outside the lease area.
- ✚ As per DGMS (Directorate General of Mines Safety) and OSHA (Occupational Safety and Health Administration) limits, the acceptable noise level is 90 dB(A) for an exposure period of 8 hours.
- ✚ Exposure to loud noise can also cause high blood pressure, heart disease, sleep disturbances, and stress. Noise pollution also impacts the health and well-being of wildlife.
- ✚ Noise exceeding prescribed limits may cause impairment like abnormal loudness perception, tinnitus, which causes a persistent high-pitched ringing in the ears, paracusis or distorted hearing

Mitigation measures

- ✚ As the distance between the source and receptor increases, the noise level also decreases. Hence, there will be a natural attenuation
- ✚ The proposed has planned to develop green belt in the periphery of the lease area, which diminishes sound volume by dampening them.
- ✚ All the equipment/machinery/trucks involved will be properly maintained to control noise generation
- ✚ Conducting regular health checkups for employees involved
- ✚ Employees will be made to work on shifts to reduce their exposure time
- ✚ Providing earplugs to all employees

By adopting these measures, the noise levels will be maintained well within MoEF & CC limits since the baseline value is low.

VIBRATION: IMPACT AND MITIGATION MEASURES

Impacts

- ✚ Though vibration will be only felt by the people working inside the lease area, it is usually undesired.
- ✚ Vibration may also cause flyrocks
- ✚ It may frighten the birds and small insects in the lease area. However, it will be felt only for a short period

Mitigation measures

- ✚ Carrying out blasting on limited scale, only from 12:00 PM to 2:00 PM
- ✚ Control of fly rock and vibration by maintaining peak particle velocity with in standard as prescribed by the DGMS and MOEF & CC.
- ✚ Shallow depths jackhammer drilling and blasting is proposed to be carried out with minimum use of explosive
- ✚ Supervising blasting by competent and statutory foreman/ mines manager

SOCIO ECONOMIC ENVIRONMENT

Impact and Mitigation measures

No land is acquired from anyone. No rehabilitation is needed. Hence, there is no negative impact. The proponent has planned to spend INR 5,00,000 for CER activities. This amount will be subjected to change after public hearing.

OCCUPATIONAL HEALTH

Impacts

Dust generation due to drilling and blasting, Noise generation due to drilling and blasting, unexpected accidents. Continuous exposure to dust causes Pneumonia, Tuberculosis, Rhematic arthritis and Segmental Vibration, Short term impact will be lack of sleep, high blood pressure and heart ailments. Long term exposure may lead to partial or permanent deafness, Risks include fly rocks, cracks or fissures due to improper mining methods

Mitigation measures

- Using dust suppression measures like water spraying on roads to reduce rise of air pollutants
- Providing green belt for air pollutant and noise attenuation
- Ensuring slope stability
- Employing only trained professionals for blasting
- Conducting Pre-Medical Examination for employees before inducting
- Conducting periodical Medical Examination once in 6 months.
- Making all first aid kits available in mines office
- Keeping fire extinguisher in place
- Educating the employees about how to handle unexpected happenings
- Posting information containing emergency contact numbers in mines office
- By adopting all these measures, the safety of the employees working in the quarry will be ensured.

ENVIRONMENTAL MONITORING PROGRAMME

Monitoring is done to measure the efficiency of control measures implemented. Regular monitoring of various environmental parameters like air, water, noise and soil environments is needed to assess the status of environment during the project operation. A schedule is framed with timeline to monitor various parameters during the operation of the project. To evaluate the effectiveness of environmental management programme, regular monitoring of the important environmental parameters will be taken up. Air monitoring will be carried out once in 3 months, water sample will be collected once in a season, noise will be monitored once in 3 months, soil samples will be analyzed once per season. For EMP, a budget of INR 187.33 Lakhs is allocated.

PROJECT BENEFITS

Financial benefits

- This project will contribute financially through payment of taxes like royalty, GST, etc.,
- The project will also contribute via CSR.
- The demands of people during public hearing will also be considered by the project proponent

Social benefits

- This project provides employment to 21 people directly. Local people will be hired for unskilled labour.
- Through CSR, nearby schools, hospitals will be benefitted.
- For CSR, INR 5,00,000 is allocated.
- Based on the demand of the people during public hearing, further funds will be allocated, if necessary.

Various aspects of mining activities were considered and related impacts were evaluated. Considering all the possible ways to mitigate the environmental concerns Environmental Management Plan was prepared and 187.33 lakhs for the five years has been allocated as EMP cost. The EMP is dynamic, flexible and subjected to periodic review. For project where the major environmental impacts are associated, EMP will be under regular review. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP and the project will bring the positive impact in the study area.



ANNEXURE-1

புவியியல் மற்றும் சுரங்கத்துறை

ANNEXURE

5

நக.எண்:186/கனிமம்/2020

உதவி இயக்குநர் அலுவலகம்,
மாவட்ட ஆட்சியர் அலுவலக மாவட்டம்,
திருவண்ணாமலை மாவட்டம்
திருவண்ணாமலை-4

நாள்: 31.12.2020.

அறிவிக்கை

மொகுள்: கனிமங்களும் குவாரிகளும் - கல்துவாரிகள் - டெண்டர் / மொது
ஏலம் - திருவண்ணாமலை மாவட்டம் - கீழ்வெண்ணாத்தூர்
மாவட்டம் - ஐங்குணம் கிராமம் - அரசு புறம்போக்கு - புல
எண் 135 (பகுதி-6) பரப்பு 250.0 ஹெக்டேர் - 10 ஆண்டுகளுக்கு
கல்துவாரி செய்ய குத்தகை உரிமம் வழங்கும் மொகுள்
மாவட்ட அரசிதழில் சிறப்பு வெளியீடு செய்யப்பட்டது
திரு.A.கிருஷ்ணமூர்த்தி த/பெ. ஆறுமுகம் என்பவருக்கு - ஏலம்
உறுதி செய்யப்பட்டது எலத்தொகை முழுவதும் வசூலிக்கப்பட்டு
அரசு கணக்கில் செலுத்தப்பட்டது - ஒப்புதல் பெறப்பட்ட சுரங்க
திட்ட அறிக்கை மற்றும் சுற்றுச்சூழல் தாக்க மதிப்பீடு ஆணைய
தலையின்மேல் சான்று பெற்று சமர்ப்பிக்க அறிவுறுத்துதல்
தொடர்பாக.

1. திருவண்ணாமலை மாவட்ட அரசிதழ் சிறப்பு வெளியீடு
எண் 38, நாள் 17.10.2020
2. திரு.A.கிருஷ்ணமூர்த்தி த/பெ.ஆறுமுகம், தண்டாரம்பட்டு
என்பவரின் டெண்டர் விண்ணப்பம், நாள் 28.10.2020
3. இவ்வலுவலக குறிப்பாணை நக.எண் 03/கனிமம்
/ 2020, நாள் 29.10.2020
4. திரு.A.கிருஷ்ணமூர்த்தி த/பெ.ஆறுமுகம் என்பவரின் கடிதம்
நாள் 12.11.2020
5. அரசாணை (MS) எண் 169 தொழில் (எம்.எம்.சி) துறை நாள்
04.08.2020
6. தொடர்புடைய ஆவணங்கள்

திருவண்ணாமலை மாவட்ட அரசிதழ் சிறப்பு வெளியீடு எண் 38,
நாள் 17.10.2020 மூலம் திருவண்ணாமலை மாவட்டத்திற்குட்பட்ட அரசு
புறம்போக்கு நிலங்களில் உள்ள 15 கல்துவாரிகளுக்கு மொது ஏலமுறையில்
குத்தகை உரிமம் வழங்க ஏல / டெண்டர் விண்ணப்பங்கள்
வாங்கெடுக்கப்பட்டது அதன்படி வரிசை எண் 5-ல் கண்ட திருவண்ணாமலை
மாவட்டம், கீழ்வெண்ணாத்தூர் மாவட்டம், ஐங்குணம் கிராமம், அரசு
புறம்போக்கு, புல எண் 135 (பகுதி-6) 350.0 ஹெக்டேர் பரப்பிலுள்ள புதிய
கல்துவாரிக்கு 28.10.2020 மாலை 5 மணி வரை 2 டெண்டர்
விண்ணப்பங்கள் வரபெற்றது. அதனை தொடர்ந்து 29.10.2020 அன்று
நடைபெற்ற பொது ஏலத்தில் டெண்டர் விண்ணப்பதாரர்கள் உட்பட 6
நபர்கள் கலந்து கொண்டனர்.



2. பொது ஏலத்தில் திரு. A. திருமூர்த்தி என்பவரால் அதிகாரம்மாட மேற்படி குவாரிக்கு ரூ.69,00,000/- (ரூபாய் அறுபத்து ஒன்பது லட்சம் மட்டும்) ஏலம் கோரப்பட்டது அதனைத் தொடர்ந்து பெண்டர் விற்பனைப்பாளிகள் திறக்கப்பட்டு பரிசீலிக்கப்பட்டதில் மேற்படி குவாரிக்கு திரு. A. கிருஷ்ணமூர்த்தி என்பவரால் அதிக பட்ச பெண்டர் தொகையாக ரூ.127,51,000/- (ரூபாய் ஒரு கோடியே இருபத்து ஏழு லட்சத்து ஐம்பத்து ஒரு ஆயிரம் மட்டும்) குறிப்பிட்டிருந்தது. பெண்டரில் திரு. A. கிருஷ்ணமூர்த்தி என்பவரால் குறிப்பிடப்பட்டிருந்த தொகையானது பொது ஏலத்தில் திரு. A. திருமூர்த்தி என்பவரால் கோரப்பட்ட தொகையை காட்டிலும் அதிகம் சமரக இருந்ததாலும் மேற்படி குவாரிக்கு அரசால் நிர்ணயம் செய்யப்பட்ட குறுமத்தொகையைக் காட்டிலும் கூடுதலாக இருந்ததினாலும் திரு. A. கிருஷ்ணமூர்த்தி என்பவரை உயர்ந்தபட்ச ஏலதாரராக அறிவிப்பது செய்யப்பட்டு ஏலம் உறுதி செய்யப்பட்டது.

3. அதனைத் தொடர்ந்து ஏலம் நடந்த அன்று செலுத்தப்பட்ட 10% தொகை மற்றும் EMD ரூ.25,000/-ஐ நீக்கி மீதமுள்ள தொகை ரூ.1,14,49,500/-ஐ ஏலதாரர் பார்வை (4) -ல் காணும் கடிதம் மூலம் வங்கி வரைகோலைகளாக சமர்ப்பித்ததையடுத்து மேற்படி வரைகோலைகள் கணக்கில் செலுது உரிய அரசு கணக்கில் வரவு வைக்கப்பட்டுள்ளது.

4. மேலும், ஏலதாரர் மேற்கண்ட ஏலத்தொகைக்கு 15% வருமானவரி (TCS) கணக்கிட்டு ரூ.1,91,265/-ஐ திருவண்ணாமலை -பொரத ஸ்டேட் வங்கி கிளை மூலம் 31.12.2020 தேதியன்று செலுத்தி அசல் ஆவணங்களை இவ்வலுவலகத்தில் சமர்ப்பித்துள்ளார்.

5. எனவே, ஏலதாரர் திரு. A. கிருஷ்ணமூர்த்தி த/பெ.ஆறுமுகம், என்பவருக்கு, கீழ்பென்னத்தூர் வட்டம், ஐங்குணம் கிராமம், அரசு புறம்போக்கு, புல எண். 135 (பகுதி-6) 250.0 ஹெக்டேர் பரப்பினை 10 ஆண்டுகளுக்கு கற்குவாரி செய்ய உகந்த புலம் (Precise Area) என தீர்மானித்து கீழ்கண்ட நிபந்தனைகளுக்கு உட்பட்டு அறிவிப்பு செய்யப்படுகிறது.

நிபந்தனைகள்

1. குத்தகை உரிமம் வழங்க ஏதுவாக தமிழ்நாடு சிறுகணிம சலுகை விதிகள் 1959 விதிகள் 41 மற்றும் 42-ன்படி ஒப்புதல் பெறப்பட்ட சுரங்கத்திட்ட அறிக்கை மற்றும் சுற்றுத்தூழல் தாக்க மதிப்பீட்டு ஆணைய தடையின்மை சான்று பெற்று சமர்ப்பிக்க வேண்டும்.



2. அருகில் உள்ள பட்டா மற்றும் புறம்போக்கு நிலங்களுக்கு முறையே 7.5மீ மற்றும் 10மீ பாதுகாப்பு இடைவெளி விடவேண்டும்.
3. நிலையான அமைப்புகளுக்கு (நீர் நிலைகள், நெடுஞ்சாலைகள், மின் சாதனங்கள், இரயில் பாதைகள்) 50மீ பாதுகாப்பு இடைவெளி விட வேண்டும்.
4. அருகில் உள்ள நிலங்களுக்கும் மற்றும் பொதுமக்களுக்கும் எவ்வித பாதிப்பமின்றி குவாரிப்பணி மேற்கொள்ள வேண்டும்.
5. குவாரிப்பணி ஆரம்பிப்பதற்கு முன்பாக குத்தகை உரிமம் வழங்கப்பட்ட புலத்தினைச் சுற்றி முன்கம்பி வேலி அமைத்து குத்தகை காலம் முழுவதும் பராமரித்து வரவேண்டும்.
6. பாறைகளைத் தகர்க்க கைத்துளைப்பான்களை கொண்டு பாறைகளை துளையிட்டு குறைவான வெடிபொருட்கள் பயன்படுத்த வேண்டும்.
7. குவாரிப்பணியினை விஞ்ஞானப்பூர்வமாகவும், முறையாகவும் மேற்கொள்ள வேண்டும்.
6. எனவே, ஏலதாரர் இவ்வறிவிப்பு கிடைக்கபெற்ற 90 நாட்களுக்குள் மேற்சொன்ன நிபந்தனைகளை குறிக்கும் வகையில் வரைவு சுரங்கத்திட்ட அறிக்கை தயார் செய்து உதவி இயக்குநர், (கனிமம்), திருவண்ணாமலை அவர்களிடம் ஒப்புதல் பெற சமர்ப்பிக்குமாறு அறிவுறுத்தப்படுகிறார்.
7. மேலும், ஒப்புதல் பெறப்பட்ட சுரங்கத்திட்ட அறிக்கை மற்றும் சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணைய தடையின்மைச் சான்றினை பெற்று சமர்ப்பிக்கும் பட்சத்தில் கீழ்பென்னாத்தூர் வட்டம், ஐங்குணம் கிராமம், அரசு புறம்போக்கு, புல எண் 135 (பகுதி-6) 250.0 ஹெக்டேர் பரப்பில் கற்குவாரி செய்ய 1959-ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகளின், விதி 8(6)(b)-ன்படி 10 ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்க உரிய நடவடிக்கை மேற்கொள்ளப்படும் என்ற விவரம் தெரிவிக்கப்படுகிறது.

பெறுநர்:

திரு A.கிருஷ்ணமூர்த்தி,
த/பெ. ஆறுமுகம்,
நெ 116/1, மணிக்காரத்தெரு,
தண்டராம்பட்டு வட்டம்.

[Signature]
உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
திருவண்ணாமலை.

[Signature]
21/12/20

நகல்:-

வட்டாட்சியர் -
கீழ்பென்னாத்தூர்.

ஏலதாரர் சுரங்கத்திட்ட அறிக்கை தயார் செய்ய ஏதுவாகவும் குத்தகை ஒப்பந்தம் நிறைவேற்றவும் குத்தகை உரிமம் வழங்க பரிந்துரை செய்யப்பட்ட பகுதியினை புல வரைப்படத்தில் குறியிட்டு ஒப்பம் செய்து முப்பிரதிகளில் அனுப்பி வைக்க வேண்டி.



ANNEXURE-2

From

Dr.G.Panneer Selvam,
M.Sc., M.Phil., Ph.D.,
Assistant Director,
Geology and Mining,
Tiruvannamalai - 4.

To

Thiru.A.Krishnamoorthi,
S/o.Arumugam,
No.116/1, Manikkara street,
Thandaramapattu Taluk
Tiruvannamalai District.

Rc.No. 186/Kanimam/2020, dated:10.06.2021

Sir,

Sub: Quarries and Minerals - Minor Mineral - Rough stone -
Tiruvannamalai District - Kilpenathur Taluk - Iyangunam
Village - Govt. Poramboke Land in SF.No.135 (Part-6) over
an extent of 2.50.0 Hectare - preferred by
Thiru.A.Krishnamoorthi - Highest Bidder - Precise area
communicated - Submission of Mining Plan for approval -
Approved- Regarding.

Ref: 1. Application from Thiru.A.Krishnamoorthi S/o.
Arumugam, Tiruvannamalai dated.28.10.2020.
2. Precise Area Communication Notice
Rc.No.186/Kanimam/2020, dated.31.12.2020.
3. Mining Plan submitted by Thiru.A.Krishnamoorthi S/o.
Arumugam, Tiruvannamalai dated.30.03.2021.

In the reference (2)nd cited, it has been communicated the SF.No.135 (Part-6), over an extent of 2.50.0 hect., of Iyangunam Village, Kilpenathur Taluk, Tiruvannamalai District as precise area for grant of quarry lease for quarrying Rough Stone for a period of 10 years to Thiru.A.Krishnamoorthi with a direction to produce an approved mining plan and Environment Clearances in respect of the precise area as per Rule 41 and 42 of Tamil Nadu Minor Mineral Concession Rules, 1959.

2. As of the applicant has prepared the draft Mining Plan through the Recognized Qualified Person and submitted for approval vide reference 3rd cited.
3. The draft mining plan submitted in respect of the precise area has been examined with reference to the provisions of Rule 41 of Tamil Nadu Minor Mineral Concession Rules, 1959 and the followings are observed.
 - i) The boundary Co-ordinates (GPS readings) for the entire boundary pillars (4 nos) of the area have been incorporated and shown in the mining plan.
 - ii) All the conditions stipulated in the Assistant Director, Geology and Mining Letter Rc.No.186/Kanimam/2020 dated:31.12.2020 have been incorporated in the mining plan.
 - iii) The Geological and minable reserves estimated for the precise area for quarrying Rough Stone to a depth of 65m (40m above Ground level and 25m below ground level) as follows.

Geological Reserves:

Depth in mts	Geological Reserves in Cu.m
65m (40m above Ground level and 25m below ground level)	Rough Stone : 12,33,020

Mineable Reserves:

Depth in mts	Mineable Reserves in Cu.m
65m (40m above Ground level and 25m below ground level)	Rough Stone : 3,71,340

- iv) Though The mineable reserve in the precise area computed as 3,71,340m³ of Rough stone but the applicant has proposed to carry out 1,85,825m³ of Rough Stone at the rate of 100% recovery up to a depth of 30m above ground level for the period of first five years.

Depth in Mts.	Mineable Reserves in Cu.m
30m (above ground level)	Rough Stone : 1,85,825

4. In the light of the above, in exercise of the powers conferred under Rule 41 (7) of Tamil Nadu Minor Mineral Concession Rules, 1959 the mining plan in respect of Rough Stone quarry of Thiru.A.Krishnamoorthi, is approved subject to the following conditions.

i) The mining plan is approved without prejudice to any other Law applicable to the quarry lease from time to time whether such Laws are made by the Central Government, State Government or any other authority.

ii) The approval of the mining plan does not in any way imply the approval of the Government it terms of any other provisions of the Mines and Minerals (Development and Regulation) Act 1957, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules 1981, Environment Protection Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Indian Explosives Act, 1884 (Central Act IV of 1884) and the rules made there under and the Tamil Nadu Minor Mineral Concession Rule s, 1959.

iii) The mining Plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.

iv) Quarrying operations and production shall be carried out as per the approved Mining Plan and the applicant shall be liable to pay the cost of mineral if there is any deviation in the quantum indicated in the approved year wise quantum of production and any such cases as on date are to be dealt with as per Court direction.

Encl: 2 Copies of Approved Mining Plan.

[Signature]
Assistant Director,
Geology and Mining,
Tiruvannamalai.

Copy submitted to:

1. The Chairman, SEIAA,
Tamil Nadu, 3rd Floor, Panagal Maaligai,
No.1, Jeenis Road, Saidapet, Chennai-15.
2. The Commissioner of Geology and Mining, Chennai-32.
3. The District Collector, Tiruvannamalai.



ANNEXURE-3

From

To

Dr.G.Panneer Selvam
M.Sc., M.Phil., Ph.D.,
Assistant Director,
Geology and Mining,
Tiruvannamalai - 4.

Thiru.A.Krishnamoorthi,
S/o.Arumugam,
No.116/1, Manikkara street,
Thandaramapattu Taluk
Tiruvannamalai District.

Rc.No.186/Kanimam/2020, dated:10.06.2021

Sir,

Sub: Mines and Minerals - Tiruvannamalai District -
Thiru.A.Krishnamoorthi - Bidder of Proposal Stone
quarry in an extent of 2.50.0 Hectare at Govt.
Poramboke SF.No.135(Part-6) in Iyangunam Village,
Kilpennathur Taluk - Particulars called for - furnished
- regarding.

Ref: 1. Tender/Auction application preferred by
Thiru.A.Krishnamoorthi S/o. Arumugam,
Tiruvannamalai dated.28.10.2020
2. Thiru.A.Krishnamoorthi S/o. Arumugam,
Tiruvannamalai Letter, dated:10.06.2021.

In the reference cited, the bidder of proposed stone quarry in
SF.No.135(Part-6) over an extent 2.50.0 hectare of Iyangunam Village,
Kilpennathur Taluk, Thiru.A.Krishnamoorthi, has requested to furnish the
details of Proposed / Existing / lease expired quarries located within 500 mts
radius from his proposed quarry, so as to submit the same to the Environment
Impact Assessment Authority for obtaining Environment Clearance.

As requested, the following details are furnished.

i). Existing quarries

Sl. No.	Name of the Owner (Tvl.)	Village & S.F. Nos.	Extent in Hect.	Lease Period	Remarks
--Nil--					

ii). Abandoned quarries

Sl. No	Name of the Owner (Tvl)	Village & S.F. Nos.	Extent in Hect.	Lease Period	Remarks
1	R.Karthikeyan 23/29, Lakshmipuram, Gandhi Nagar, Tiruvannamalai-2.	Iynkunam 135 (part 3)	1.00.0 Hect.	20.04.2011 to 19.04.2021	Existing Quarry

iii). Present Proposed quarries

Sl. No	Name of the Owner (Tvl)	Village & S.F. Nos.	Extent in Hect.	Lease Period	Remarks
1.	Thiru.A.Krishnamoorthi, S/o.Arumuga, No.116/1, Manikkara street, Thandaramapattu Taluk Tiruvannamalai.	Iyangunam 135 (Part-6)	2.50.0	--	Proposed quarry

iv). Future Proposed quarries

Sl. No	Name of the Owner (Tvl)	Village & S.F. Nos.	Extent in Hect.
1	Tmt.A.Kalpana, W/o.Adhimoolam, No.4, Gandhi nagar, 6 th street, Tiruvannamalai.	Iyangunam 135(Part4)	1.00.0
2	P.Adimoolam, 57A, Tamizhnagar, Tiruavannamalai	Iyangunam 135(Part5)	1.00.0
3	Thiru.Alavudeen Bhasa, Director of City Blue metals, Iyangunam village, Tiruvannamalai.	Iyangunam 135(Part2)	1.00.0
4	P.Adimoolam, 57A, Tamizhnagar, Tiruavannamalai	Iyangunam 135(Part7)	4.00.0

[Signature]
Assistant Director,
Geology and Mining,
Tiruvannamalai.

[Signature]
10/6/21