

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

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

TOR IDENTIFICATION NO. TO25B0108TN5277761N, DATED: 26/04/2025

PROPOSED QUARRY LEASE DETAILS	
SURVEY NOS	16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10 AND 19/11
VILLAGE	MELAKALANGAL
TALUK	V.K.PUDHUR
DISTRICT	TENKASI
EXTENT	4.41.0 Ha
PROPOSED PRODUCTION QUANTITY FOR FIVE YEARS	ROUGH STONE : 9,01,561m ³ GRAVEL : 53,474m ³ PEAK PRODUCTION : 1,82,780m ³
LAND	PATTA LAND

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

Category of the Project: B1 Cluster Mining, Total Cluster Area – 8.67.5 Ha

Baseline Monitoring Period – December 2024 to February 2025

APPLICANT

Thiru. S. Subramanian
S/o. Thiru. Shanmugavel
No. 196/4, North Street,
Chokkampatti Village,
Kadayanallur Taluk, Tenkasi District

ENVIRONMENTAL CONSULTANT	LABORATORY
M/s. GLOBAL MINING SOLUTIONS <i>(NABET Accredited & ISO 9001 Certified Consultant)</i> Plot No. 6, S.F.No. 13/2, A2, VS City, RC Chettypatty, Kottamettupatty, Omalur, Salem, Tamil Nadu – 636 455. NABET Accreditation No: NABET/EIA/23-26/SA 0241 Valid up to: 04.01.2026 Contact: 97502 23535 & 94446 54520 Email: infoglobalmining@gmail.com, globalminingsolutionssalem@gmail.com	M/s. SHRIENT ANALYTICAL & RESEARCH LABS PRIVATE LIMITED <i>(NABL Accredited Testing Laboratory)</i> Valid up to: 29.09.2025 #416/15, Dhargas Road, Perungalathur, West Tambaram, Chennai, Tamil Nadu, India.

EXECUTIVE SUMMARY

1.1 INTRODUCTION

Thiru. S. Subramanian has obtained Precise Area Communication Letter from Assistant Director, Department of Geology and Mining, Tenkasi, vide Rc.No.M1/177/2024, dated 18.12.2024, to quarry out 9,01,561m³ of Rough Stone and 53,474m³ of Gravel from an extent of 4.41.0 Ha located in S. F. Nos. 16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, and 19/11.

As per EIA notification, 2006 and its subsequent amendments the proposed "Rough Stone and Gravel Quarry of Thiru S. Subramanian" 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 Identification No. TO25B0108TN5277761N. This report has been prepared in line with the approved TOR for production of maximum excavation of 9,01,561m³ of Rough Stone and 53,474m³ of gravel.

S. No.	Description	Status/Remarks
1.	Sector	Non-coal mining
2.	Category of the project	B1 (Cluster)
3.	Proposed mineral	Rough Stone and Gravel
4.	Type of Lease	Fresh Lease
5.	Extent of the lease	4.41.0 Ha
6.	Proposed depth of Mining	57 m
7.	Method of mining	Opencast Semi-mechanized
8.	Proposed lease period	5 Years
9.	Proposed Environmental Clearance	5 Years
10.	Proposed production quantity for five years	Rough Stone - 9,01,561 m ³

PROPOSED ROUGH STONE & GRAVEL QUARRY AT S. F. NOS. 16/7, 16/8, 16/9, 16/10, 16/11B (P), 16/11C, 16/12, 16/13, 16/14, 17/1, 19/8, 19/9, 19/10, AND 19/11 OVER AN EXTENT OF 4.41.0 HA IN MELAKALANGAL VILLAGE, V.K..PUDHUR TALUK, TENKASI DISTRICT (CLUSTER AREA: 8.67.5 HA) – THIRU S. SUBRAMANIAN

The Lessee Thiru. S. Subramanian is an individual with sound experience in the identification, quarrying and marketing of Rough Stone. The proposed land is a Government Poramboke land and the proponent has obtained tender from the government and attached as **Annexure 2.**

1.2 LOCATION

This project site is located in Melakalangal Village, V. K. Pudhur Taluk, Tenkasi District with Latitude 09° 02' 11.42"N to 09° 02' 13.67"N & Longitude 77° 29' 32.60"E to 77° 29' 41.40"E with Survey of India Topo Sheet No. 58 G/08. 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 (winter season i.e. October to Dec)

1.3 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 N450E – S450W with vertical dipping.

1.4 PROJECT DESCRIPTION

This is a proposed Rough Stone quarry by Opencast Semi-mechanized mining method with drilling and blasting. The quarrying is restricted up to a depth of 40m above ground level. The geological reserves are estimated to be 2367302 m³ of Rough Stone and 77014 m³ of Gravel. The mineable reserve calculated by deducting 7.5m & 10m safety distance and bench loss. The mineable reserves are 901561 m³ of Rough Stone and 53474 m³ which will be recovered at the rate of 100% recovery upto a depth of 57m above ground level for the period of five years.

- It is proposed to quarry out rough stone with 5m bench height, 5m width with 80° slope using conventional Open cast Semi-Mechanized method. The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of Rough Stone.

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- There is no overburden anticipated during entire rough stone quarrying operation.

S.No.	Type of Detail	Description
1	Sector	1(a) Non coal mining
2	Fresh/Existing project	Fresh project
3	Category	B1, because of cluster condition
4	Nature of mineral	Minor mineral, Rough Stone and Gravel
5	Production	9,01,561m ³ of Rough Stone and 53,474m ³ of gravel.
6	Life	5 years
7	Waste generation and management	There is no overburden anticipated during the quarrying operation. Hence, no waste generation.
8	Bench height and width	Height and Width – 5m
9	Ultimate pit depth	57m BGL
10	End use	Rough Stone will be loaded into tippers to needy buyers for producing aggregates, M-sand.

1.5 PROJECT REQUIREMENTS

The requirements of the project is given below.

S.No.	Nature of requirement	Description
1	Water requirement	Total water requirement of 5.5 KLD which will be procured from the outside agencies. Out of 5.5 KLD, drinking water requirement is 1.0 KLD, Green belt development and dust suppression is 4.5 KLD.
2	Power requirement	No electricity is needed for mining operations, for office demands, it will be met from the state grid.
3	Manpower requirement	Permanent employees – 22, temporary employees – 12
4	Financial requirement	The total project cost as per AMP will be Rs. 142 Lakhs including Operational cost, Fixed Asset cost and EMP cost
5	Funds for Socio economic development	INR 8.0 Lakhs is allocated.

1.6 DESCRIPTION OF LEASE AREA

The features in the study area is given below.

S. No.	Areas	Distance from proposed project
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,	Odai - 256m (NE) Odai - 280m (W) Karisalkulam Kanmoi - 354m (SE)
B	Coastal zone, biospheres	None in 10km radius
C	Mountains, forests	• Uthumalai R.F - 8.17 km (SE)
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil within 15km radius
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	Defence installations	Nil within 15km radius
8	Densely populated or built-up area	Melakalangal -2.11km, NE
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	All facilities are available in Melakalangal
10	Areas containing important, high quality or scarce resources (ground water resources,	The area contains rock in many places in the surrounding area.

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	surface resources, forestry, agriculture, fisheries, tourism, minerals)	
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 October to December 2023. Air, water, noise and soil samples are collected and analyzed through NABL accredited lab M/s. Shrient Analytical & Research Labs Private Limited, Chennai.

1.7 AIR ENVIRONMENT

The air monitoring have been carried out in 5 locations and the results are given below.

S. No.	Station Code	Locations	Distance & Direction
1	AAQ 1	Project Site	Core Zone
2	AAQ 2	Poovilangapuram	3.60 km, NE
3	AAQ 3	Echchanda	2.52 km, NE
4	AAQ 4	Karikandarkulam	2.32 km, SW
5	AAQ 5	Arunachalapuram	3.46 km, SW
6	AAQ 6	Melakalangal	1.65 km, SE
7	AAQ7	Vellalankulam	2.73 km, NW

Ambient Air Quality Results			
Station ID	Min	Max	Avg.
Particulate matter PM-2.5 (µg/m³)			
AAQ-1	21.4	32.8	27.4
AAQ-2	18.5	27.9	22.8
AAQ-3	19.2	24.5	21.8

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Ambient Air Quality Results			
Station ID	Min	Max	Avg.
AAQ-4	17.8	22.4	19.9
AAQ-5	17.5	23.8	20.7
AAQ-6	19.6	26.0	22.9
AAQ-7	22.2	28.4	25.2
CPCB NAAQS 2009 for PM_{2.5} - 60 µg/m³			
Particulate matter PM₁₀ (µg/m³)			
AAQ-1	45.0	69.0	57.6
AAQ-2	39.6	58.2	48.7
AAQ-3	42.1	53.8	48.0
AAQ-4	38.5	48.5	43.2
AAQ-5	38.5	52.2	45.5
AAQ-6	42.5	56.3	49.4
AAQ-7	46.3	59.2	52.4
CPCB NAAQS 2009 for PM₁₀ - 100 µg/m³			
Sulphur Di-oxide as SO₂ (µg/m³)			
AAQ-1	5.1	7.4	6.3
AAQ-2	4.7	7.0	5.9
AAQ-3	4.4	6.7	5.6
AAQ-4	4.8	7.1	6.0
AAQ-5	4.6	6.9	5.8
AAQ-6	3.7	5.1	4.3
AAQ-7	5.9	7.7	7.1
CPCB NAAQS 2009 for SO₂ - 80 µg/m³			
Oxide of Nitrogen as NO₂ (µg/m³)			
AAQ-1	7.9	11.6	9.3
AAQ-2	7.3	10.5	8.6
AAQ-3	6.8	9.9	8.0
AAQ-4	7.3	11.1	9.0
AAQ-5	7.5	10.9	8.8
AAQ-6	8.1	10.2	9.2
AAQ-7	9.6	12.6	10.9
CPCB NAAQS 2009 for NO₂ - 80 µg/m³			

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

1.8 WATER ENVIRONMENT

S. No	Parameters	GW 1	GW 2	GW 3	GW 4	GW 5	GW 6	GW 7
1	Odour	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE
2	Turbidity	<1	<1	<1	<1	<1	<1	<1
3	pH at 25 C	7.53	7.73	8.10	8.00	7.81	7.75	7.31
4	Electrical Conductivity	228.7	1376	1267	608.1	1248	960.7	1017
5	Total Dissolved Solids	140	840	765	366	750	580	620

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6	Total hardness as CaCO ₃	62.2	442	277	201	329	301	274
7	Calcium as Ca	17.7	98.0	43.4	48.2	75.6	72.3	74.8
8	Magnesium as Mg	4.32	47.2	40.5	19.3	33.7	28.9	20.9
9	Calcium as CaCO ₃	44.2	245	108	121	189	181	187
10	Magnesium as CaCO ₃	18.0	197	169	80.3	140	121	87.0
11	Total alkalinity as CaCO ₃	80.8	190	279	150	262	175.0	246
12	Chloride as Cl ⁻	45.3	268	231	120	215	179.0	250
13	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)	BDL (D.L - 0.2)
14	Sulphates as SO ₄ ²⁻	12.2	197	218	65.4	155	142	110.9
15	Iron as Fe	0.13	0.12	0.06	0.08	0.13	0.08	0.05
16	Nitrate as NO ₃	1.28	5.47	2.68	3.24	2.54	3.65	1.32
17	Fluoride as F	0.27	0.62	0.56	0.45	0.36	0.54	0.36
18	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)	BDL (D.L - 0.05)

All the values were found to be within permissible limits

1.9 NOISE ENVIRONMENT

Noise levels were measured in 5 locations and the results are given below.

Noise Levels	N1	N2	N3	N4	N5	N6	N7
Day Equivalent	53.1	52.1	46.1	47.9	49.1	47.3	51.0
Night Equivalent	40.6	39.6	38.6	41.1	41.9	39.0	39.3
Day Standard	55	55	55	55	55	55	55
Night Standard	45	45	45	45	45	45	45

1.10 SOIL ENVIRONMENT

Soil samples are collected from 3 locations and the results are given below.

S.No	Parameter	Unit	S1	S2	S3	S4	S5	S6	S7
1	pH at 25 °C	-	6.73	5.19	8.03	6.77	7.65	8.03	8.52
2	Electrical Conductivity	µmhos/cm	89.97	138.2	298.0	271.6	376.5	225.0	178.0
3	Dry matter content	%	96.23	92.38	88.99	97.66	90.11	94.83	94.62
4	Water Content	%	3.77	7.62	11.01	2.34	9.89	5.17	5.38

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5	Organic Matter	%	14.80	5.71	7.62	20.47	20.04	12.56	27.75
6	Soil texture	-	SILTY CLAY	CLAY	SILTY CLAY LOAM	CLAY	SILTY CLAY	SILTY CLAY	SILTY CLAY
7	Grain Size Distribution	%	2.53	5.18	7.99	7.76	5.93	6.26	7.47
	i. Sand								
8	ii. Silt								
9	iii. Clay	%	46.73	79.75	27.71	63.58	47.73	51.14	41.14
10	Phosphorous as P	mg/kg	4.20	0.80	2.70	2.90	2.80	3.26	4.20
11	Sodium as Na	mg/kg	635	478	745	559	632	487	910
12	Potassium as K	mg/kg	404	226	369	342	298	246	539
13	Nitrogen and Nitrogenous Compounds	mg/kg	320	124	256	189	221	176	245
14	Total Soluble Sulphate	%	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15	Porosity	%	28.6	42.9	33.3	33.3	43.8	38.5	33.3
16	Water Holding Capacity	Inches/foot	42	40	38	39	40	42	44

1.11 BIOLOGICAL ENVIRONMENT

FLORA

For measuring the extent of flora present in the study area, the area is divided into 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.

1.12 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:

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Classification	Area in Sq.km	Percentage
Built – up Land	7.38	2.305
Crop Land	216.96	67.16
Existing Quarry	0.017	0.005
Fallow Land	11.5	3.56
Hill and Forest	6.11	1.89
Land with Scrub	16.2	5.01
Land without Scrub	47.61	14.73
Plantations	2.52	0.78
Water body	14.73	4.56

1.13 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.

Purposive sampling methods were used for selecting respondents (male and female) for household survey. For official information of village, Gram Panchyat member has been chosen. Structured questionnaire was used for survey. For group discussion, Panchyat bhavan, Aanganwadi bhavan, community halls were used. Out of total 25 villages, 5 villages (20%) were surveyed for which selection criteria is based on proximity to the project site and area with dense and scarce populations were chosen. The chosen villages for the study include: Uchipothai, Melakalangal, Arunachalapuram, Echchanda and Keelakalangal. The following observations were made.

1.14 HYDROGEOLOGY OF THE LEASE AREA

The detailed hydrogeological report is detailed in Chapter 3 under section 3.6.6. (Page No. 66)

1.15 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 Approved depth is 57m as per approved EC & Approved Mining Plan. 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

1.16 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 57m BGL. 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, 3.70.50 Ha of lease area will be left as rain water harvesting pond. 0.67.50 Ha will be developed with green belt. For this, plants like Pongamia pinnata, Syzigium cumini, Albizia lebbeck, Thespesia populnea, Bauhinia racemose, Cassia siamea, Azadirachta

indiacas are selected. A total of 1000 trees are planned to be planted. Spacing will be 3m x 3m.

1.17 WATER ENVIRONMENT: IMPACT AND MITIGATION MEASURES

There is no water body present inside the lease area. The entire water requirement for the project is 5.5KLD 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 and proposed ultimate pit level of 57m BGL 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 7.5H.P.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.

- Odai - 256m (NE)
- Odai - 280m (W)
- Karisalkulam Kanmoi - 354m (SE)

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

1.18 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.

1.19 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.

1.20 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.

1.21 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

1.22 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 8,00,000 for CER activities. This amount will be subjected to change after public hearing.

1.23 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, Rheumatic 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.

1.24 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 25.04 Lakhs** is allocated.

1.25 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 34 people directly. Local people will be hired for unskilled labour.
- Through CSR, nearby schools, hospitals will be benefitted.
- For CSR, INR 8,00,000 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 INR 25.04 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.

1.26 CONCLUSION

Various aspects of mining activities were considered, and related impacts were evaluated. Considering all the possible ways to mitigate the Environmental concerns, an Environmental Management Plan was prepared and INR **25.04 Lakhs** has been allocated for the same. The EMP is dynamic, flexible, and subjected to periodic review. For projects where 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 have a positive impact on the study area.



ANNEXURE-1

From

Thiru. A.Balamurugan, M.Sc., M.B.A.,
Assistant Director (FAC),
Geology and Mining,
Tenkasi.

To

Thiru.S.Subramanian,
S/o.Thiru. Shanmugavel,
196/4, North Street,
Chokkampatti Village,
Kadayanallur Taluk,
Tenkasi District.

Rc.No.M1/177/2024, Dated. 18.12.2024

Sub:

Minerals and Mines - Minor Minerals - Application preferred by Thiru.S.Subramanian, S/o.Thiru. Shanmugavel, for quarrying and transportation of Roughstone and Gravel - over an extent of 04.41.00 hectares of patta lands in SF.No.16/7 (0.09.00), 16/8 (0.10.00), 16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P) (1.42.00), 16/11C (0.31.50), 16/12 (0.07.50), 16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00), 19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) & 19/11 (0.64.50) of Melakalanganal Village, V.K.Pudhur Taluk, Tenkasi District - Precise area communicated - Mining Plan - Environmental Clearance - Called for - Regarding.

Ref:

1. G.O. (Ms) No.169, Industries (MMC-1) Department dated. 04.08.2020.
2. Quarry lease application preferred by Thiru.S.Subramanian, S/o.Thiru. Shanmugavel, dated. 30.08.2024.
3. The Revenue Divisional Officer, Tenkasi, Letter No. RDOTKS/3837/ 2024-A2, dated. 08.12.2024.
4. Inspection report of Assistant Director of Geology and Mining, Tenkasi, dated. 17.12.2024.

Thiru.S.Subramanian, S/o.Thiru.Shanmugavel, 196/4, North Street, Punnaiahpuram, Chokkampatti, Kadayanallur Taluk, Tenkasi District has preferred an application for grant of quarry lease for quarrying Rough Stone and Gravel over an extent of 04.41.00 hectares of patta lands in SF.No.16/7

(0.09.00), 16/8 (0.10.00), 16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P) (1.42.00), 16/11C (0.31.50), 16/12 (0.07.50), 16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00), 19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) & 19/11 (0.64.50) of Melakalangan Village, V.K.Pudhur Taluk, Tenkasi District for a period of 5 years under Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959.

2. The Revenue Divisional Officer - Tenkasi and The Assistant Director of Geology and Mining - Tenkasi have furnished their reports in the reference 3rd and 4th cited respectively and recommended for grant of quarry lease over an extent of 01.15.50 hectares subject to certain conditions.

3. Based on the recommendations of The Revenue Divisional Officer - Tenkasi and The Assistant Director of Geology and Mining - Tenkasi, the quarry lease application preferred by the applicant Thiru.S.Subramanian, S/o.Thiru.Shanmugavel for grant of quarry lease for quarrying and transportation of Roughstone and Gravel is considered to grant of quarry lease for a period of 5 years and precise area is hereby communicated over an extent of 04.41.00 hectares of patta lands in SF.No.16/7 (0.09.00), 16/8 (0.10.00), 16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P) (1.42.00), 16/11C (0.31.50), 16/12 (0.07.50), 16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00), 19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) & 19/11 (0.64.50) of Melakalangan Village, V.K.Pudhur Taluk, Tenkasi District under Amended Rule 19 (1) and 41 (4) Tamil Nadu Minor Mineral Concession Rules, 1959 subject to the following conditions.

- I. A Safety distance to 7.5 meters shall be provided to all along the boundaries of applied area.
- II. A safety distance of 10 meters should be maintained to Government poramboke lands in SF.No.15 (Boostri paarai) on Southern side of the applied area.
- III. No hindrance shall be caused to the adjoining pattadar's lands while carrying out quarrying operations and transportation of minerals.
- IV. Environmental Clearance should be obtained from the State Level Environment Impact Assessment Authority (SEIAA).

4. In view of the above, you are hereby directed to submit mining plan duly prepared by a Recognized Qualified Person in respect of the precise area communicated for approval of the Assistant Director of Geology and Mining, Tenkasi within a period of 90 days from the date of receipt of this notice as required under rule 41 (5) of Tamil Nadu Minor Mineral Concession Rules, 1959.

5. You are further directed to produce Environmental Clearance obtained from the State Level Impact Assessment Authority (SEIAA) as required under Rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 for grant of quarry lease for quarrying Roughstone and Gravel in respect of the precise area communicated.

UChh
18/12/24

J. Manoj
18/12/24
Assistant Director,
Geology and Mining,
Tenkasi.



ANNEXURE-2

From

Thiru. A.Balamurugan, M.Sc., M.B.A.,
Assistant Director (FAC),
Geology and Mining,
Tenkasi.

To

Thiru.S.Subramanian,
S/o.Thiru.Shanmugavel,
196/4, North Street,
Chokkampatti Village,
Kadayanallur Taluk,
Tenkasi District.

Roc.No.M1/177/2024, dated. 26.12.2024

Sir,

Sub: Mines and Minerals - Minor Minerals -
Application preferred by Thiru.S.Subramanian,
S/o.Thiru. Shanmugavel, for quarrying and
transportation of Roughstone and Gravel -
over an extent of 04.41.00 hectares of patta
lands in SF.No.16/7 (0.09.00), 16/8 (0.10.00),
16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P)
(1.42.00), 16/11C (0.31.50), 16/12 (0.07.50),
16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00),
19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) &
19/11 (0.64.50) of Melakalangan Village,
V.K.Pudhur Taluk, Tenkasi District - Precise area
communicated - Mining plan submitted -
Approval accorded - Reg.

- Ref :**
1. G.O. (Ms). No. 79, Industries (MMC 1), Department, dated: 06.04.2015.
 2. G.O (Ms) No. 169, Industries (MMC-I) Department dated. 04.08.2020.
 3. Quarry lease application preferred by Tmt.K.Kasiammal, W/o Thiru. Kasi vishwanathan, dated. 21.09.2023.
 4. Precise Area Communication Notice in Roc.No.M1/177/2024, dated.18.12.2024.
 5. Letter received from the applicant Thiru.S.Subramanian, S/o.Thiru. Shanmugavel dated. 20.12.2024

Kind attention is invited to the references cited above,

Thiru.S.Subramanian, S/o.Thiru.Shanmugavel, 196/4, North Street, Punnaiahpuram, Chokkampatti, Kadayanallur Taluk, Tenkasi District has preferred an application for grant of quarry lease for quarrying Rough Stone and Gravel over an extent of 04.41.00 hectares of patta lands in SF.No.16/7 (0.09.00), 16/8 (0.10.00), 16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P) (1.42.00), 16/11C (0.31.50), 16/12 (0.07.50), 16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00), 19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) & 19/11 (0.64.50) of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District for a period of 5 years under Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959.

2. Based on the recommendations of The Revenue Divisional Officer - Tenkasi and The Assistant Director of Geology and Mining - Tenkasi, precise area has been communicated by the Assistant Director of Geology and Mining - Tenkasi vide reference 4th cited to Thiru.S.Subramanian, S/o.Thiru.Shanmugavel for grant of quarry lease for quarrying and transportation of Rough Stone and Gravel over an extent of 04.41.00 hectares of patta lands in SF.No.16/7 (0.09.00), 16/8 (0.10.00), 16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P) (1.42.00), 16/11C (0.31.50), 16/12 (0.07.50), 16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00), 19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) & 19/11 (0.64.50) of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District for a period of 5 years.

3. In response to the precise area communicated, the applicant has submitted three copies of draft Mining Plan duly prepared by a Recognized Qualified Person and requested for approval of the same vide reference 5th cited.

4. The draft Mining Plan submitted in respect of the precise area communicated have been verified with reference to field conditions. All the conditions stipulated in the precise area

communicated have been incorporated in the Mining Plan. The required safety distance of 7.5 meters to the adjacent patta lands have been clearly demarcated.

5. In exercise of the powers vested under sub rule (2) and (5) of Rule 41 of Tamil Nadu Minor Mineral Concession Rules, 1959, I hereby approve the mining plan subject to the following conditions:-

- i. The mining plan is approved without prejudice to any other order or direction from any court of contempt jurisdiction.
- ii. 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.
- iii. The approval of the mining plan does not in any way imply the approval of The Government in 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, 1986, Indian Explosives Act, 1884 (Central Act IV of 1884) and the Rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.
- iv. Safety distance of 7.5 meters shall be provided to all along the boundaries of applied area.
- v. A safety distance of 10 meters should be maintained to Government poramboke lands in

SF.No.15 (Boostri paarai) on Southern side of the applied area.

- vi. The applicant is entitled for production of 9,01,561 cbm of Rough stone and 53,474 cbm of Gravel upto depth of 57 metres below ground level for a period of 5 years as per the Mining Plan.
- vii. Quarrying operations should be carried out in accordance with the Approved Mining Plan.
- viii. No hindrance shall be caused to the adjoining pattadar's lands while carrying out quarrying operations and transportation of minerals.
- ix. Environmental Clearance should be obtained from the State Level Environment Impact Assessment Authority (SEIAA).

6. As directed by the Assistant Director of Geology and Mining - Tenkasi in the reference 4th cited, you are hereby requested to produce Environmental Clearance obtained from the State Level Environmental Impact Assessment Authority (SEIAA), Chennai as applicable under Rule 42 of Tamil Nadu Minor Mineral concession Rules, 1959 for grant of quarry lease, in respect of the precise area communicated.

Encl: Approved Mining Plan.


Assistant Director,
Geology and Mining,
Tenkasi.


26/12/24



ANNEXURE-3

From

Thiru. A.Balamurugan, M.Sc., M.B.A.,
Assistant Director (FAC),
Geology and Mining,
Tenkasi.

To

Thiru.S.Subramanian,
S/o.Thiru. Shanmugavel,
196/4, North Street,
Chokkampatti Village,
Kadayanallur Taluk,
Tenkasi District.

Rc.No.M1/177/2024, Dated. 26.12.2024

Sub: Mines and Minerals - Minor Minerals - Application preferred by Thiru.S.Subramanian, S/o.Thiru. Shanmugavel for quarrying and transportation of Roughstone and Gravel - over an extent of 04.41.00 hectares of patta lands in SF.No.16/7 (0.09.00), 16/8 (0.10.00), 16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P) (1.42.00), 16/11C (0.31.50), 16/12 (0.07.50), 16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00), 19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) & 19/11 (0.64.50) of Melakalungal Village, V.K.Pudhur Taluk, Tenkasi District - Certain particulars required - Environmental Clearance called for - Reg.

- Ref :**
1. Quarry lease application preferred by Thiru.S.Subramanian, S/o.Thiru. Shanmugavel, dated. 30.08.2024.
 2. Precise Area Communication Notice in Roc.No.M1/177/2024, dated.18.12.2024.
 3. Mining Plan Approved letter No. M1/177/2024, dated.26.12.2024.
 4. Representation of Thiru.S.Subramanian, S/o.Thiru.Shanmugavel vide letter dated.26.12.2024.

Kind attention is invited to the references cited above,

Thiru.S.Subramanian, S/o.Thiru.Shanmugavel, 196/4, North Street,
Punnaiahpuram, Chokkampatti, Kadayanallur Taluk,Tenkasi District has

preferred an application for grant of quarry lease for quarrying Rough Stone and Gravel over an extent of 04.41.00 hectares of patta lands in SF.No.16/7 (0.09.00), 16/8 (0.10.00), 16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P) (1.42.00), 16/11C (0.31.50), 16/12 (0.07.50), 16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00), 19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) & 19/11 (0.64.50) of Melakalangal Village, V.K.Pudhur Taluk, Tenkasi District for a period of 5 years under Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959.

2. The mining plan submitted by the lessee, Thiru.S.Subramanian, S/o.Thiru.Shanmugavel for quarrying Rough Stone has been approved vide this office letter No.M1/177/2024, dated.20.12.2024 for obtaining Environmental Clearance as per newly introduced Rule Number 41 and 42 of Minor Mineral Concession rules 1959.

3. Thiru.S.Subramanian, S/o.Thiru.Shanmugavel vide reference 4th cited has requested the details of existing / proposed / abandoned mines within a radial distance of 500 meters from the periphery of the proposed mining lease area for obtaining environmental clearance from the State Level environmental Impact Assessment Authority, Chennai.

4. The details of quarry leases granted for Rough Stone and Gravel falling within a radial distance of 500 meters from the subject to leasehold area are furnished below:-

Sl. No	Name & Address of the Lessee	Taluk / Village & SF. No.	Extent Hects	Lease Status
1. Abandoned / Expired Quarries				
1.	Nil			

Sl. No	Name & Address of the Lessee	Taluk / Village & SF. No.	Extent Hects	Lease Status
2. Existing Quarries				
1.	Thiru.Senthur pandian, S/o.Muthusamy Pandian, 7-2-4, Aranmanai Street, Surandai, V.K.Pudhur, Tenkasi.	V.K.Pudhur Taluk, Melakalangal Village. SF.No.14/2B (P) (0.09.00), 17/2 (0.10.00), 17/3 & (0.07.50), 17/4	04.26.50	Proceedings Rc.No.M1/36644 /2015, dt.02.02.2023, from 02.02.2023 to 01.02.2028.
3. Proposed Quarries				
1.	Thiru.S.Subra manian, S/o.Thiru.Shanmu gavel,196/4, North Street,Punnaiahpur am, Chokkampatti, Kadayanallur Taluk,Tenkasi District	V.K.Pudhur Taluk, Melakalangal Village. SF.No.16/7 (0.09.00), 16/8 (0.10.00), 16/9 (0.07.50), 16/10 (0.33.00), 16/11B (P) (1.42.00), 16/11C (0.31.50), 16/12 (0.07.50), 16/13 (0.09.00), 16/14 (0.15.50), 17/1 (0.55.00), 19/8 (0.11.00), 19/9 (0.14.00), 19/10 (0.31.50) & 19/11 (0.64.50)	04.41.00	Proposed Quarry, 5 years from the date of execution of lease deed.

The proposed area was already granted quarry lease in favour of Tmt.K.Muthammal, W/o Thiru.Kadarkarai Nadar for the period of 22.06.2006 to 21.06.2011 by the Assistant Director of Geology and Mining - Tenkasi, vide Proceedings No.173/51970/2006, dated. 22.06.2006 and the existing pit dimension is given below.

Pit.No.	Length (in meters)	Width (in meters)	Depth (in meters)
1	98	40	8

In view of the above it is recommended that Environmental clearance may be issued in favor of the applicant subject to the usual terms and conditions.


Assistant Director,
Geology and Mining,
Tenkasi.


26/12/24