EXECUTIVE SUMMARY FOR

PROPOSED ROUGH STONE AND GRAVEL QUARRY

CATEGORY – B1

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

ToR Identification No. TO24B0108TN5225806N (F.No. 11053), Dated 22.10.2024

PROPOSED QUARRY LEASE DETAILS	
SURVEY NOS	5/1, 5/2 & 4/2
VILLAGE	CHOKKANTHANGAL
TALUK	MARAKKANAM
DISTRICT	VILUPPURAM
EXTENT	3.00.00 ha
CLUSTER EXTENT	9.91.15 ha
PROPOSED PRODUCTION QUANTITY	ROUGH STONE - 4,85,805 m^3, GRAVEL - 41,818 m^3 ROUGH STONE - 4,40,825 m^3, GRAVEL - 41,818 m^3 (1-5 Year) ROUGH STONE – 44,980 m^3, (6-10 Year)
LAND	PATTA LAND

(Sector No. 1(a) Sector No.1 as per NABET)
Category of the Project: B1 Cluster Mining, Total Cluster Area – 9.91.15 Ha
Baseline Monitoring Period – March 2024 to May 2024

APPLICANT

M/S. J.M. MINERALS,

NO.P-II/M29, TNHB, J.J. NAGAR,

KURUMBANCHAVADI ARIYALUR DISTRICT- 621 713

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

NABET ACCREDITATION NO – NABET/EIA/2326/IA 0110

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FEB - 2025

EXECUTIVE SUMMARY

1.1INTRODUCTION

M/s. J.M. Minerals Lessee, has obtained Precise Area communication letter from the Assistant Director, Department of Geology and Mining, Viluppuram to quarry out total production is 4,85,805 m^3 of Rough Stone 41,818 m^3 of Gravel, in which 4,40825 m^3 of rough stone & 41,818 m^3 of Gravel will be mined out in first five years and remaining 44,980 m^3 rough stone will be mined out in second 5 year. Over an extent of 3.00.00 ha., located at the Survey No. S.F.No. 5/1, 5/2 & 4/2 of Chokkanthangal Village, Marakkanam Taluk, Villupuram District, Tamil Nadu State.

As per EIA notification, 2006 and its subsequent amendments the proposed "Rough Stone and Gravel Quarry of M/s. J.M. Minerals 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 was approved vide ToR Identification No. TO24B0108TN5225806N (F.No. 11053), dated 22.10.2024. This report has been prepared in line with the approved TOR for production of maximum excavation of 4,85,805 m^3 of Rough Stone and 41,818 m^3.

S.No.	Description	Status/Remarks
1.	Sector	Non-coal mining
2.	Category of the project	B1
3.	Proposed mineral	Rough Stone and Gravel quarry
4.	Type of Lease	New Quarry
5.	Extent of the lease	3.00.00 Ha
6.	Proposed depth of Mining	47m BGL
7.	Method of mining	Opencast Mechanized Mining with drilling and blasting.
8.	Proposed lease period	10 Years
9.	Proposed Environmental Clearance	10 Years
10.	Proposed production quantity	Rough Stone - 4,85,805 m^3, Gravel - 41,818 m^3 Rough stone - 4,40,825 m^3, gravel - 41,818 m^3 (1-5 Year) Rough Stone – 44,980 m^3, (6-10 Year)

1.2 LOCATION

The proposed project site is located in Chokkanthangal Village, Marakkanam Taluk, Villupuram District, Tamil Nadu and its Latitude : 12°12'46.89"N to 12°12'54.41"N and Longitude: 79°45'11.54"E to 79°45'20.00"E. with Survey of India Topo Sheet No. 57- P/16. 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)

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 $N45^0E$-$S45^0W$ with dipping towards $SE80^0$.

1.4 PROJECT DESCRIPTION

This is a proposed Rough Stone quarry by Opencast Mechanized mining method with drilling and blasting. The quarrying is restricted up to a depth of 47m below ground level. The geological reserves are estimated to be 13,47,795 m^3 of Rough Stone and 59,902 m^3 in Gravel. The mineable reserve calculated by deducting 7.5m , 10m safety distance and bench loss. The mineable reserves 4,85,805m^3 of Rough Stone and 41,818m^3 Gravel which will be recovered at the rate of 100% recovery upto a depth of 47 m Below ground level for the period of five years.

- It is proposed to quarry out rough stone with 5m bench height, 5m width with 45° 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 & Gravel quarrying operation.
-

S.No.	Type of Detail	Description
1	Sector	1(a) Non coal mining
2	Fresh/Existing project	New
3	Category	B1
4	Nature of mineral	Minor mineral
5	Production	10 years
6	Life	10 years
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 10 Nos.
9	Ultimate pit depth	47 m BGL
10	End use	The excavated Rough Stone and Gravel is used for construction industries for Government & Public sector projects besides catering domestic housing and infrastructure projects in and around the district.

1.5 PROJECT REQUIREMENTS

The requirements of the project is given below.7

S.No.	Nature of requirement	Description
1	Water requirement	Total water requirement of 6.0 KLD which will be procured from the outside agencies.
2	Power requirement	All the equipment will be diesel operated. No electricity is needed for mining operation
3	Manpower requirement	35 Nos
4	Financial requirement	The total project cost as per PFR will be INR 501.06 Lakhs including Operational cost, Fixed Asset cost and EMP cost
5	Funds for Socio economic development	INR 8 Lakhs is allocated. In addition, any demand raised by people during public hearing will also be met.

1.6 DESCRIPTION OF LEASE AREA

The features in the study area is given below.

<table>
<tr><th colspan="3">Description of the lease area</th></tr>
<tr><th>S.No.</th><th>Areas</th><th>Distance from project site</th></tr>
<tr><td>1</td><td>Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value</td><td>Nil within 15km radius</td></tr>
<tr><td>2</td><td colspan="2">Areas which are important or sensitive for ecological reasons</td></tr>
<tr><td>A</td><td>Wetlands, water courses or other water bodies,</td><td>
<table>
<tr><th>Water bodies</th><th>Distance</th><th>Direction</th></tr>
<tr><td>Tank</td><td>120m</td><td>E</td></tr>
<tr><td>Tank</td><td>360m</td><td>SW</td></tr>
<tr><td>Tank</td><td>630m</td><td>NW</td></tr>
<tr><td>Tank</td><td>687m</td><td>NE</td></tr>
<tr><td>Perumukkal Lake</td><td>1.1km</td><td>SW</td></tr>
</table>
</td></tr>
<tr><td>B</td><td>Coastal zone, biospheres,</td><td>Nil within 10km radius</td></tr>
<tr><td>C</td><td>Mountains, forests</td><td>Sevur R.F - 1.7km (NW),
Kumalumpattu R.F - 6.0 km (SW)</td></tr>
<tr><td>3</td><td>Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration</td><td>Nil within 15km radius</td></tr>
<tr><td>4</td><td>Inland, coastal, marine or underground waters</td><td>Nil within 15km radius</td></tr>
<tr><td>5</td><td>State, National boundaries</td><td>Nil within 15km radius</td></tr>
<tr><td>6</td><td>Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas</td><td>Nil within 15km radius</td></tr>
<tr><td>7</td><td>Defense installations</td><td>Nil within 15km radius</td></tr>
<tr><td>8</td><td>Densely populated or built-up area</td><td>Tindivanam – 11.0km (west)</td></tr>
</table>

9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Tindivanam – 11.0km (west)
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.

1.7 AIR ENVIRONMENT

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

Details Of Ambient Air Quality Monitoring Locations				
S. No.	**Station Code**	**Locations**	**Distance & Direction**	**Coordinates**
1	AAQ 1	Project site	Core Zone	12°12'50.23"N 79°45'16.1"E
2	AAQ 2	Ravanapuram	2.8 km, W	12°12'34.38"N 79°43'39.71"E
3	AAQ 3	Nalmukkal	1.89 km, E	12°12'41.53"N 79°45'57.32"E
4	AAQ 4	Chokkantangal	1.06 km, S	12°12'13.81"N 79°45'7.33"E
5	AAQ 5	Senalur	1.21 Km, N	12°13'32.96"N 79°45'3.25"E
6	AAQ6	Kunnapakkam	1.88 Km, N	12°13'41.57"N 79°45'56.57"E

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

Station ID	Min	Max	Avg.
Particulate matter PM-$_{2.5}$ ($\mu g/m^3$)			
AAQ-1	19.4	32.2	25.8
AAQ-2	18.3	30.4	24.35
AAQ-3	18.1	26.0	22.05
AAQ-4	20.4	25.8	23.1
AAQ-5	17.38	25.3	21.34
AAQ-6	16.64	25.1	20.87
CPCB NAAQS 2009 for PM $_{2.5}$ - 60 $\mu g/m^3$			
Particulate matter PM-$_{10}$ ($\mu g/m^3$)			
AAQ-1	41.6	67.1	54.35
AAQ-2	38.4	59.0	48.7
AAQ-3	36.4	52.6	44.5
AAQ-4	43.7	55.0	49.35
AAQ-5	36.2	51.2	43.7
AAQ-6	35.2	56.7	45.95
CPCB NAAQS 2009 for PM $_{10}$ - 100 $\mu g/m^3$			
Sulphur Di-oxide as SO_2 ($\mu g/m^3$)			
AAQ-1	4.6	7.7	12.3
AAQ-2	4.0	7.4	11.4
AAQ-3	3.9	7.0	10.9
AAQ-4	3.6	6.2	9.8
AAQ-5	4.1	5.8	9.9
AAQ-6	3.2	5.4	8.6
CPCB NAAQS 2009 for SO_2 – 80 $\mu g/m^3$			
Oxide of Nitrogen as NO_2 ($\mu g/m^3$)			
AAQ-1	6.9	10.3	8.6
AAQ-2	6.7	9.5	8.1
AAQ-3	6.2	9.3	7.75
AAQ-4	7.1	10.3	8.7
AAQ-5	5.5	8.2	6.85
AAQ-6	5.7	7.9	6.8
CPCB NAAQS 2009 for NO_2 – 80 $\mu g/m^3$			

1.8 WATER ENVIRONMENT

Table 11.3 Results of Ground Water sampling Analysis in 6 locations							IS:10500: 2012	
	W1	W2	W3	W4	W5	W6	Desirable	Permissible
Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Turbidity	<1	<1	<1	<1	<1	<1	Agreeable	Agreeable
pH at 25 °C	7.19	7.35	7.08	6.79	7.12	7.48	6.5 - 8.5	No Relaxation
Electrical Conductivity	964.5	1126	1539	735.8	1058	1103	1	5
Total Dissolved Solids	580	676	930	444	640	670	500	2000
Total hardness as CaCO3	376	264	512	238	376	253	1	15
Calcium as Ca	106	83.2	108	65.6	63.4	76.0	200	600
Magnesium as Mg	27.2	13.6	58.6	18.0	52.3	15.2	200	600
Calcium as CaCO3	264	208	271	164	158	190	75	200
Magnesium as CaCO3	112	56.0	241	74.0	218	63.4		
Total alkalinity as CaCO3	301	314	418	266	412	307		
Chloride as Cl-	138	192	252	98.5	180.0	196	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 SO42-	98.9	187	226	84.5	89.2	179.0	45	No Relaxation
Iron as Fe	0.06	0.05	0.08	0.03	0.02	0.05	200	400
Nitrate as NO3	3.45	3.97	5.54	3.62	1.69	3.64	1	No Relaxation
Fluoride as F	0.28	0.34	0.39	0.38	0.44	0.41	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 Specified	Not Specified

All the values were found to be within permissible limits

1.9 NOISE ENVIRONMENT

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

Noise monitoring results					
S. No	**Location**	**Day equivalent**	**Night equivalent**	**Day equivalent limits by CPCB**	**Night equivalent limits by CPCB**
1	Project site	39.9	38.6	75	70
2	Ravanapuram	51.2	42.5		
3	Nalmukkal	47.2	41.2		
4	Chokkantangal	46.0	42.5		
5	Senalur	48.3	39.8		
6	Kunnapakkam	50.9	42.2		

1.10 SOIL ENVIRONMENT

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

Table 11.5 Results of Soil Sample Analysis								
S. No	**Parameter**	**Unit**	**S1**	**S2**	**S3**	**S4**	**S5**	**S6**
1	pH at 25 °C	-	6.08	7.74	7.65	7.36	7.03	8.73
2	Electrical Conductivity	µmhos/ cm	78.65	295.4	122.4	209.7	100.8	509.8
3	Dry matter content	%	92.54	89.72	90.38	92.06	90.40	91.15
4	Water Content	%	7.46	10.28	9.62	7.94	9.60	8.85
5	Organic Matter	%	1.69	2.34	1.87	1.26	1.71	0.8
6	Soil texture	-	SILT LOAM	SILTY CLAY LOAM	SILTY CLAY LOAM	SILTY CLAY LOAM	SILT LOAM	SILTY CLAY LOAM
7	Grain Size Distribution i. Sand	%	36.99	5.05	4.38	5.84	41.47	5.78
8	ii. Silt	%	53.77	66.32	62.17	55.47	50.41	55.84
9	iii. Clay	%	9.24	28.63	33.45	38.69	8.12	38.38
10	Phosphorous as P	mg/kg	1.21	0.59	0.74	0.82	1.03	0.82
11	Sodium as Na	mg/kg	854	932	646	1015	976	1002
12	Potassium as K	mg/kg	410	645	802	674	724	669
13	Nitrogen and Nitregenous Compounds	mg/kg	216	275	176	349	312	340
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	%	12.80	13.1	13.8	13.5	11.9	13.2
16	Water Holding Cabacity	Inches/ foot	41	43	46	45	44	48

1.11 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.

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:

Table No. 11.6: 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	17.23	5.35	Residential	16.94	5.26
				Commercial/Industrial	0.29	0.09
2	Agriculture	247.3	76.80	Crop/fallow land	247.3	76.80
3	Water bodies	35.96	11.17	Reservoir/Lake /Pond	35.45	11.01
				River/Stram	0.51	0.16
4	Waste Land	13.39	4.16	Open without scrub	2.37	0.74
				Open with scrub	11.02	3.42
5	Mines	7.28	2.26	Mines	7.28	2.26
6	Forest	0.85	0.26	Forest	0.85	0.26
Total		**322**	**100**	**Total**	**322**	**100**

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.

The project is located in Chokkanthangal Village, Marakkanam Taluk, Villupuram District. The total population is 106478 which comprise of 53580 males and 52898 females. There are 36 rural villages and one urban area in the study area.

1.14 HYDROGEOLOGY OF THE LEASE AREA

There is tank is located at a distance of 120 m in east direction of lease area. The hydrological and hydrogeological pattern of the study area is studied in detail using satellite imagery.

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 47 m BGL. 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 47 m BGL. Other than quarrying of minerals, no other change will be done since there is no dumping. The mine lease area is devoid of major plantation. Shrubs and bushes are majorly found within the lease area. The proponent has planned to develop green belt in an area of 0.79.5 Ha. Trees like Pongamia pinnata, Syzigium cumini, Albizia lebbeck, Thespesia populnea, Bauhinia racemose, Cassia siamea, Azadirachta indiaca will be planted around the mine lease area. A total of 1500 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 6.0 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 47m (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.

Water bodies	Distance	Direction
Tank	120m	E
Tank	360m	SW
Tank	630m	NW
Tank	687m	NE
Perumukkal Lake	1.1km	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

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 PM_{10}, $PM_{2.5}$. Other than these pollutants, gaseous emissions of sulfur dioxide (SO_2) 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, 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.

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 383.86 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 35 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 383.86 lakhs for the ten 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.

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ANNEXURE-1

ANNEXURE 1

3 OCT 2024

ந.க.எண். ஆ/புவி(ம)சுர/16/2023
நாள்: 10.05.2024.

உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை அலுவலகம்,
விழுப்புரம்.

குறிப்பாணை

பொருள்: கனிமங்களும் குவாரிகளும் - சிறுகனிமம் - சாதாரண கற்கள் மற்றும் கிராவல் - விழுப்புரம் மாவட்டம் - மரக்காணம் வட்டம் - சொக்கந்தாங்கல் கிராமம் - சர்வே எண்கள்: கிராம சர்வே எண்கள்: 5/1 - 0.96.0 ஏர்ஸ், 5/2 - 1.40.0 ஏர்ஸ் மற்றும் 4/2 - 0.64.0 ஏர்ஸ் ஆக மொத்தம் 3.00.0 ஹெக்டேர் பரப்பளவில் பத்தாண்டுகளுக்கு சாதாரண கற்கள் மற்றும் கிராவல் வெட்டியெடுக்க குவாரி குத்தகை அனுமதி வழங்க கோரி அரியலூர் மாவட்டத்தினைச் சேர்ந்த தி/ள். J.M. மினரல்ஸ் நிறுவனத்தினரிடமிருந்து விண்ணப்பம் வரப்பெற்றது - உரிமம் வழங்க பரிந்துரை செய்து அறிக்கை வரப்பெற்றது - தகுதியான நிலப்பரப்பாக கருதி ஏற்பளிக்கப்பட்ட சுரங்க திட்டம் மற்றும் சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணைய இசைவிணை பெற்று சமர்பிக்கக் கோருதல் - தொடர்பாக.

பார்வை:
1. தி/ள். J.M. .மினரல்ஸ், எண்.P-H/M29, THHB, ஜெ.ஜெ. நகர், குறும்பஞ்சாவடி, அரியலூர் மாவட்டம் என்பவரது விண்ணப்பம் நாள்: 23.11.2022 வரப்பெற்ற நாள்: 07.02.2023
2. திண்டிவனம் சார் ஆட்சியர் அவர்களின் கடித எண். ந.க.அ3/3666/2023, நாள்.12.09.2023.
3. விழுப்புரம் மாவட்ட புவியியல் மற்றும் சுரங்கத்துறை உதவி இயக்குநர் அவர்களின் புலத்தணிக்கை அறிக்கை நாள்: 07.05.2024

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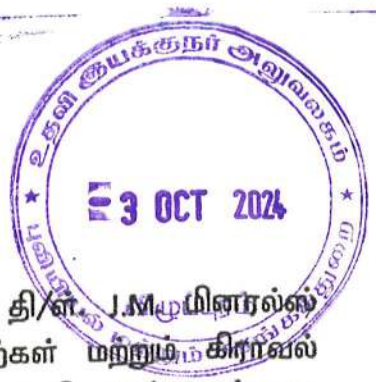
அரியலூர் மாவட்டம், குறும்பஞ்சாவடி, ஜெ.ஜெ. நகர், எண்.P-H/M29, THHB என்ற முகவரியைச் சேர்ந்த தி/ள். J.M. மினரல்ஸ் என்ற நிறுவனத்தினர் விழுப்புரம் மாவட்டம், மரக்காணம் வட்டம், சொக்கந்தாங்கல் கிராம சர்வே எண்கள்: 5/1 - 0.96.0 ஏர்ஸ், 5/2 - 1.40.0 ஏர்ஸ் மற்றும் 4/2 - 0.64.0 ஏர்ஸ் ஆக மொத்தம் 3.00.0 ஹெக்டேர் பரப்பளவில் பத்தாண்டுகளுக்கு சாதாரண கற்கள் மற்றும் கிராவல் வெட்டியெடுப்பது தொடர்பாக 1959-ஆம் ஆண்டு தமிழ்நாடு சிறுவகை கனிமச்சலுகை விதிகள், விதி எண். 19-ன்கீழ் குவாரிபணி செய்ய உரிமம் வழங்கிட கோரி பார்வை 1-ல் காணும் விண்ணப்பம் சமர்ப்பித்துள்ளீர்.

மேற்படி விண்ணப்பம் தொடர்பாக, திண்டிவனம் சார் ஆட்சியர் மற்றும் விழுப்புரம் மாவட்ட புவியியல் மற்றும் சுரங்கத்துறை, உதவி இயக்குநர் ஆகியோரின் புலத்தணிக்கை மற்றும் விசாரணை அறிக்கையின்பேரில், விழுப்புரம் மாவட்டம், மரக்காணம் வட்டம், சொக்கந்தாங்கல் கிராம சர்வே எண்கள்: 5/1 - 0.96.0 ஏர்ஸ், 5/2 - 1.40.0 ஏர்ஸ் மற்றும் 4/2 - 0.64.0 ஏர்ஸ் ஆக மொத்தம் 3.00.0 ஹெக்டேர் பரப்பளவில்



உள்ள பட்டா நிலத்தில் அரியலூர் மாவட்டத்தினைச் சேர்ந்த தி/ள். J.M. மினரல்ஸ் என்ற நிறுவனத்தினருக்கு பத்தாண்டுகளுக்கு சாதாரணக்கற்கள் மற்றும் கிராவல் குவாரி உரிமம் வழங்க கீழ்கண்ட நிபந்தனைகளுக்குட்பட்டு அனுமதி வழங்கலாம் என பரிந்துரை செய்துள்ளனர்.

i. விண்ணப்ப புலன்களின் அருகில் உள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளியும் மற்றும் அரசு புறம்போக்கு நிலங்களுக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளியும் விட்டு குவாரிப்பணி மேற்கொள்ளப்பட வேண்டும்.

ii. குவாரிப்பணி மேற்கொள்ளும் போது அருகிலுள்ள அரசு புறம்போக்கு மற்றும் பட்டா நிலங்களுக்கு எவ்வித இடையூறும் இல்லாமல் குவாரிப்பணி செய்ய வேண்டும்.

iii. குவாரி குத்தகை வழங்கும் முன்பு விண்ணப்பித்துள்ள இடத்தினை DGPS சர்வே பணி மேற்கொண்டு அதன் அறிக்கையை சமர்பிக்க வேண்டும்.

iv. தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959 விதி-41ன்படி தகுதிவாய்ந்த நபரால் சுரங்க திட்டம் தயார் செய்து துணை இயக்குநர் அவர்களின் ஒப்புதல் பெறவேண்டும்.

v. தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959 விதி-42ன்படி மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்திடமிருந்து சுற்றுச்சூழல் சான்று பெற்று சமர்பிக்கப்படவேண்டும்.

எனவே, திண்டிவனம் சார் ஆட்சியர் மற்றும் விழுப்புரம் மாவட்ட புவியியல் மற்றும் சுரங்கத்துறை, உதவி இயக்குநர் ஆகியோரின் பரிந்துரை அறிக்கையின் அடிப்படையில் விழுப்புரம் மாவட்டம், மரக்காணம் வட்டம், சொக்கந்தாங்கல் கிராம சர்வே எண்கள்: 5/1 - 0.96.0 ஏர்ஸ், 5/2 - 1.40.0 ஏர்ஸ் மற்றும் 4/2 - 0.64.0 ஏர்ஸ் ஆக மொத்தம் 3.00.0 ஹெக்டேர் பரப்பளவில் 1959-ம் வருட தமிழ்நாடு சிறுகனிம விதிகள், விதி எண்.19-ன்படி மேற்கண்ட நிபந்தனைகளுக்குட்பட்டு 10 (பத்து) வருட காலத்திற்கு தி/ள். J.M. மினரல்ஸ் என்ற நிறுவனத்தினருக்கு சாதாரணக்கற்கள் மற்றும் கிராவல் குவாரி உரிமம் வழங்குவதற்குரிய தகுதியான நிலப்பரப்பாக கருதப்படுகிறது.

அதனடிப்படையில், தமிழ்நாடு சிறு கனிம சலுகை விதிகள் 1959 விதி எண்.41-ன்படி குவாரிப்பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்க திட்டத்தினை தகுதிவாய்ந்த நபர் (QP) மூலமாக கீழ்கண்ட நிபந்தனைகளுக்குட்பட்டு தயாரித்து அதனை 90 தினங்களுக்குள் உதவி இயக்குநர் (புவியியல் மற்றும் சுரங்கத்துறை) அவர்களின் பரிசீலனைக்கு சமர்ப்பிக்குமாறு விண்ணப்பதாரரை கேட்டுக்கொள்ளப்படுகிறது.

- 3 OCT 2024

விழுப்புரம்

மேலும் ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தின் தொடர்ச்சியாக 1959-ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள், விதி எண்.42-ன்படி சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் தடையின்மை சான்று பெற்று சமர்பிக்கும் பட்சத்தில் மட்டுமே குவாரி உரிமம் வழங்கப்படும் என இதன் மூலம் தெரிவிக்கப்படுகிறது.

i. விண்ணப்ப புலன்களின் அருகில் உள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளியும் மற்றும் அரசு புறம்போக்கு நிலங்களுக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளியும் விட்டு குவாரிப்பணி மேற்கொள்ளப்பட வேண்டும்.

ii. குவாரிப்பணி மேற்கொள்ளும் போது அருகிலுள்ள அரசு புறம்போக்கு மற்றும் பட்டா நிலங்களுக்கு எவ்வித இடையூறும் இல்லாமல் குவாரிப்பணி செய்ய வேண்டும்.

iii. குவாரி குத்தகை வழங்கும் முன்பு விண்ணப்பித்துள்ள இடத்தினை DGPS சர்வே பணி மேற்கொண்டு அதன் அறிக்கையை சமர்பிக்க வேண்டும்.

10/10/2024

உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
விழுப்புரம்.

10.10.24

பெறுநர்:-
தி/ள். J.M. மினரல்ஸ்,
எண்.P-H/M29, THHB,
ஜெ.ஜெ. நகர்,
குறும்பஞ்சாவடி,
அரியலூர் மாவட்டம் - 621 713.

நகல்:-
1. மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையம், சென்னை.
2. ஆணையர், புவியியல் மற்றும் சுரங்கத்துறை, கிண்டி, சென்னை.

ANNEXURE-2

From

Tmt.S. Safiya, M.Sc.,
Assistant Director,
Dept. of Geology and Mining,
Viluppuram District,
Viluppuram.

To

M/s. J.M. Minerals,
No. P - II/M29,
TNHB, J.J. Nagar,
Kurumbanchavadi,
Ariyalur District – 621 713.

Rc.No.A/G&M/16/2023, Dated: 03.10.2024

Sub: Mines & Minerals – Minor Mineral – Rough Stone and Gravel – Viluppuram District – Marakkanam Taluk – Chokkanthangal Village – S.F.Nos. 4/2 – 0.64.0, 5/1 – 0.96.0 & 5/2 – 1.40.0 an Total extend 3.00.0 Hectare of patta lands – Application seeking quarry lease preferred by M/s. J.M. Minerals, Ariyalur – Precise area communicated - Submission of Revised mining plan for approval – Revised Mining plan Approved – Regarding.

Ref:
1. Quarry lease application preferred by M/s. J.M. Minerals, No. P – II/M29, TNHB, J.J. Nagar, Kurumbanchavadi, Ariyalur District Dated: 23.11.2022 (application received dated: 07.02.2023)
2. Assistant Director, Geology and Mining, Viluppuram Letter Rc.No.A/G&M/16/2023 Dated: 10.05.2024
3. Mining Plan submitted by M/s. J.M. Minerals, No. P - II/M29, TNHB, J.J. Nagar, Kurumbanchavadi, Ariyalur District Dated: 17.05.2024.
4. Mining Plan approved by the Assistant Director, Geology and Mining, Viluppuram letter Rc.No.A/G&M/16/2023 Dated: 22.05.2024 & 30.08.2024.
5. Revised Mining Plan submitted by M/s. J.M. Minerals, Ariyalur District Dated: 01.10.2024.

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In response to the precise area communicated vide that the S.F.Nos. 4/2 – 0.64.0, 5/1 – 0.96.0 & 5/2 – 1.40.0 over an extent of 3.00.0 hectares of Chokkanthangal Village, Marakkanam Taluk, Villupuram District as precise area for grant of quarry lease for quarrying rough stone and gravel for a period of 10 years to M/s. J.M. Minerals, Ariyalur with a direction produce on Mining Plan for approval and to obtain Environment Clearance in respect of the precise area as per Rule 41 of Tamil Nadu Mineral Concession Rules, 1959.

2. Accordingly, the applicant has submitted the mining plan prepared by the Qualified Person for approval vide reference 3rd cited. The above mining plan and the revised mining plan were approved by the Assistant Director of Geology and Mining, Viluppuram vide reference 4th cited.

3. In the reference 5th cited, the applicant has stated that the Proposal was placed in 487th meeting of SEAC held on 01.08.2024 the applicant Tvl.J.M.Minerals, applied environment clearance for the period of ten years but the mining plan year wise proposed production was shown first five years only, as a result of the SEAC's objections, the applicant M/s. J.M. Minerals, Ariyalur has submitted three copies of Revised Mining Plan in respect of Rough stone and gravel quarry in the above area.

4. The revised mining plan submitted in respect of the precise area has been examined with reference to the provisions of Rule 41 of Tamil Nadu Minor Minerals Concession Rules, 1959 and the followings are observed.

(i) The field boundaries geographical co-ordinates (GPS readings) for the entire boundary corners (13 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, Viluppuram letter Rc.No.A/G&M/16/2023 dated 10.05.2024.

(iii) The available geological and minable reserves as follows.

Depth in Mts.	**Geological reserves in Cu.m.**	**Minable Reserves in Cu.m.**
47 m. below ground level	Rough stone : 13,47,795 Gravel : 59,902	Rough stone : 485805 Gravel : 41818

(iv) First five year production and tentative next five years has also shown in the Mining Plan.

5. In the above details, in exercise of the powers confirmed under Rule 14(7) of Tamil Nadu Minor Mineral Concession Rules, 1959 the mining plan in respect of Rough stone and gravel quarry to M/s. J M Minerals, Ariyalur is approved subject to the following conditions;

(i) The revised 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) This approval of the revised mining plan does not in any way imply the approval of the Government in terms or any other provisions of the Mines and Minerals (Development and Regulation) Amended Act, 2015, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Explosives Act, 1884 (Central Act IV of 1884) and the Rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.

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

Encl: Two copies of Approved Revised Mining Plan.

03/10/2024

Assistant Director,
Dept. of Geology and Mining,
Viluppuram.

08.10.24

Copy to:
The Commissioner of Geology and Mining, Chennai-32.

ANNEXURE-3

From

Tmt.S. Safiya, M.Sc.,
Assistant Director,
Dept. of Geology and Mining,
Viluppuram District,
Viluppuram.

To

M/s. J M minerals,
No. P - II/M29,
TNHB, J.J. Nagar,
Kurumbanchavadi,
Ariyalur District - 621 713.

Rc.No.A/G&M/16/2023 Dated: 22.05.2024

Sir,

Sub: Mines & Minerals – Minor Mineral – Rough Stone and Gravel – Viluppuram District – Marakkanam Taluk – Chokkanthangal Village – S.F.Nos. 4/2 – 0.64.0, 5/1 – 0.96.0 & 5/2 – 1.40.0 an Total extend 3.00.0 Hectare of patta land – Application seeking quarry lease preferred by M/s. J M Minerals, Ariyalur - Precise area communicated – Details of quarries situated within 500 meter radial distance – furnished - reg.

Ref: 1. Assistant Director, Geology and Mining, Viluppuram Letter Rc.No.A/G&M/16/2023 Dated: 10.05.2024

2. Representation by M/s. J M minerals, No. P - II/M29, TNHB, J.J. Nagar, Kurumbanchavadi, Ariyalur District Dated: 17.05.2024

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With reference to your letter in the reference 2nd cited, the details of existing, proposed and abandoned quarries located within 500 meter radius from the proposed Rough Stone and Gravel quarry lease for a period of 10 Years over an extent of 3.00.0 hectares of patta lands in S.F.Nos. 4/2 – 0.64.0, 5/1 – 0.96.0 & 5/2 – 1.40.0 of Chokkanthangal Village, Marakkanam Taluk, Viluppuram District are as follows.

Existing quarries:

Sl. No.	Name of the lessee / permit holder	Name of the Mineral	Taluk & Village	S.F. Nos.	Extent (in hects)	Lease period	Remarks
1.	Thiru.T. Aravindan S/o. Dinakaran, No.1/132, Dinakaran Salai, PMD Nagar, Kovilampakkam Chennai – 600 129.	Rough Stone and Gravel	Marakkanam Taluk Chokkan thangal Village	2/1A (p) 8/1 (p) 9/1 (p) 9/3 (p) 9/4 9/6 (p)	0.79.0 0.02.0 0.04.0 1.15.5 0.32.5 0.10.0 **2.43.0**	18.08.2023 to 17.08.2033	

2.	Thiru.P. Yuvaraj S/o. Palanisamy No. 7/12 Doming Kuppam, Santhome, Chennai	Rough Stone and Gravel	Marakkanam Taluk Chokkan thangal Village	8/4 (p) 8/7 8/8 8/9	0.37.5 0.10.5 0.03.5 0.25.0 --- **1.15.15**	23.09.2022 to 22.09.2032	

II. Proposed quarries :

Sl. No.	Name of the lessee / permit holder	Name of the Mineral	Taluk & Village	S.F. Nos.	Extent (in hects)	Remarks
1.	Thiru. Rasu S/o. Ramakrishna Gounder, Perumukkal Village, Marakkanam Taluk.	Rough Stone and Gravel	Marakkanam Taluk Azhagiyapakkam Village	2/2 (p) 14/1 (p) 15/2	0.32.5 0.18.0 0.76.5 **1.27.0**	
2.	Thiru.M. Kumaravel S/o. Mani goundar, Keelarungunam Village, Marakkanam Taluk.	Rough Stone and Gravel	Marakkanam Taluk Chokkanthangal Village	1/ 2 (p) 2/1B (p) 2/1C (p)	0.46.0 0.40.0 1.20.0 --- **2.06.0**	-
3.	M/s. J M minerals, No. P - II/M29, TNHB, J.J. Nagar, Kurumbanchavadi, Ariyalur District	Rough Stone and Gravel	Marakkanam Taluk Chokkanthangal Village	4/2 5/1 5/2	0.64.0 0.96.0 1.40.0 --- **3.00.0**	-

III. Abandoned quarries :

Sl. No.	Name of the lessee / permit holder	Name of the Mineral	Taluk & Village	S.F. Nos.	Extent (in hects)	Lease period
1.	Thiru.S. Balaji S/o. Soundirarajan, Panangoor Village, Sundakudi Post, Ariyalur District.	Rough Stone and Gravel	Marakkanam Taluk Azhagiyapakkam Village	14/6 15/3 15/4 15/5 16/5	0.50.0 0.43.0 0.41.0 0.61.0 0.54.0 **2.49.0**	22.08.2014 to 21.08.2019
2.	Thiru.A.L.Varadhan, S/o.Loganathan, School Street, Keelarungunam, Marakkanam Taluk, Viluppuram District	Rough Stone and Gravel	Marakkanam Taluk Keelarungunam village	89/1 (P)	0.60.0	02.07.2012 to 01.07.2017

22/05/2024

Assistant Director,
Dept. of Geology and Mining,
Viluppuram.

22/5/24