

**PRE FEASIBILITY REPORT OF ROUGH STONE AND GRAVEL QUARRY  
LEASE APPLIED AREA FOR OVER AN EXTENT OF 4.13.0 Ha IN  
SATHIRAVELLALAPATTI VILLAGE, VADIPATTI TALUK, MADURAI  
DISTRICT AND TAMILNADU OF THIRU.V.RAJAMANI**  
**(Under the Guidelines of Ministry of Environment and Forest in terms of  
the provisions of EIA notification 2006 and specifically in circular No  
J-12022/41/2006-IA.II (I) dated 20<sup>th</sup> December, 2020)**

**1.1 Executive Summary of the project**

- ❖ The total extent of the Area is 4.13.0Ha, Consent Patta land in Sathiravellalapatti Village of Vadipatti Taluk, Madurai District.
- ❖ The category of project is B2. It is a new quarry in Sathiravellalapatti village.
- ❖ The area applied for quarry lease is exhibits almost plain topography.
- ❖ The quarry operation is proposed to carry out with open cast semi mechanized mining with 5.0m vertical bench width of the bench is not less than bench height.
- ❖ Quarrying operation is carried out Splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone and Gravel from pithead to the needy crushers. Occasionally hydraulic excavators are attached with rock breakers for fragmentation to avoid secondary blasting.
- ❖ The quarry operation is proposed up to depth for 12.0m (Max) below ground level.
- ❖ Geological Resources is estimated at 32,46,320m<sup>3</sup> of Rough stone up to a depth of 82.0m (Max) & 81,158m<sup>3</sup> of Gravel up to a depth of 2.0m only.
- ❖ Mineable Reserves is estimated at 10,45,720m<sup>3</sup> of Rough stone up to a depth of 67.0m (Max) and 68,800m<sup>3</sup> of Gravel up to a depth of 2.0m only.
- ❖ **Production Schedule** is proposed an average production of **2,19,940m<sup>3</sup>** (36,657 Lorry Loads) of **Rough stone** up to a depth of **12.0m** (Max) and **68,800m<sup>3</sup>** (11,467 Lorry Loads) of **Gravel** up to a depth of **2.0m** below ground level for the period of (Five) **5 Years** only.
- ❖ Mining license applied for period of (Five) 5 Years only.
- ❖ Life of the quarry is five years.

*The Prefeasibility report preparing for following condition of Government of India Ministry of Environment and Forests (No.L-12011/47/2011 -IA-II (M) Dated: 24th June, 2013)*

- ❖ The project area does not fall in 'HACA' region.
- ❖ There is no Interstate boundary from the lease applied area.
- ❖ There is no CRZ within the radius of 10Kms from project area.
- ❖ There is no Western Ghats within the radius of 10Kms from project area.
- ❖ There are no Bird Sanctuaries, wild life sanctuaries as per Wild Life Production Act 1972, within the radius of 10 km.
- ❖ Forest Conservation Act, 1980:
  - Alagarmalai R.F – 7.0Km – E
  - Vaguthamalai R.F – 7.5Km - SW
  - Sembathi R.F – 2.5Km - SW
  - Sirumalai R.F – 4.2Km – NW
  - Perumalai R.F – 2.5Km – NE
  - Erakkalamalai R.F – 4.2Km – NW
- ❖ There is no Habitation situated within 300m in the project area.
- ❖ Totally **4.5 KLD** Water requirements, 1.0KLD of water for labor drinking and domestic purpose will be available from nearby village through open well or bore hole on agriland.

2.0KLD and 1.5KLD for dust suppression in haul roads and Green belt during the course of quarrying will be taken from the existing Borehole on near the quarry.

## **2.0 INTRODUCTION OF THE PROJECT OR BACKGROUND INFORMATION**

The Rough Stone and Gravel is proposed to excavate by opencast semi mechanized method in Sathiravellalapatti Village, Vadipatti Taluk, and Madurai District over an extent of 4.13.0 Ha. The Category of project-'B2'

### **(i) Identification of project and project proponent: In case of mining project, a copy of mining lease/letter of intent should be given**

- I.** Precise area communication was issued by the District Collector Madurai District vide ***R.C.No.1696 /2018 - Kanimam Dated 26.10.2018.***
- II.** The Mining Plan was approved by the Deputy/Assistant Director, Department of Geology and Mining, Madurai vide ***R.C.No.1696 /2018 - Kanimam Dated 02.11.2018.***

### **Owner name and address of the Project Proponent:**

Name of owner : **Thiru.V.Rajamani,**  
Address : S/o.Veluchamy,  
No.5/10, Melapoovanthi,  
Poovanthi Post, Tiruppuvanam Taluk,  
Sivagangai District – 630 611

### Location of the Lease Applied Area:

Name of the quarry	: Rough Stone & Gravel quarry
S.F.Nos	: 91/1 (0.84.0), 91/2 (0.52.5), 91/3 (1.12.5), 91/4 (1.30.0) & 91/5 (0.34.0)
Extent	: 4.13.0 Ha
Village	: Sathiravellalapatti
Taluk	: Vadipatti
District	: Madurai
State	: Tamil Nadu

**Ownership:** It is a Patta land registered in the name of the applicant Thiru.V.Rajamani at S.F.Nos. 91/1 & 91/2 vide Patta nos.422 & 416 and S.F.Nos.91/3, 4 & 91/5 is registered Thiru.Moorthy vide Patta Nos – 403 & 431. The applicant should consent from pattadhar. The applicant should get consent from the pattadhar and surface rights to the quarry lease applied area. Please refer Annexure-IV.

### (ii) Brief description of nature of the project

- ❖ The Rough Stone and Gravel operation is proposed to carry out by opencast Semi mechanized method by formation of benches. The width of each bench is proposed not less than the height. The lease applied area is exhibits almost plain topography covered by Rough stone & Gravel formation. The massive Charnockite formation is clearly visible to nearby quarry area followed by the 2.0m (Avg) Gravel and gentle sloping towards southeastern side of the area, the altitude of the area is above 268.0m (maximum) from MSL.
- ❖ The total quantity of Mineable reserve **10,45,720m<sup>3</sup>** of Rough Stone and **68,800m<sup>3</sup>** of Gravel for a period of (Five) **5 Years** only. The excavated Rough Stone and Gravel will be directly loaded into tipper to the Customer / other buyers for road project and construction works for filling and leveling of low lying areas. The quarrying operation is proposed up to a depth of **12.0m** (Max) below ground level. The quarrying rough Stone and Gravel of irrespective of sizes has a good market at present scenario.

### (iii) Need for the project and its importance to the country and or region

- ❖ The Rough Stone and Gravel is important building material to our country and Region, it's a vital material for construction industries and the Rough Stone and Gravel project falls in the area of Madurai District, where plenty of Road widening projects are been carried being under massive

development hence a lot of Rough Stone and Gravel is required for (Granular sub base GSB) and also for the culverts and bridges, Besides catering domestic construction projects.

- ❖ Other infrastructure projects like building, Bridges are also under progress hence there is a huge demand of Rough Stone and Gravel for public sector companies and local private sector projects also.
- ❖ The earning source in the targeted area is limited, most of the people in and around the area depend upon the seasonal agriculture and much of the people migrate to nearby towns where good industries and factories are growing up. Through this project will give employment opportunities to 24 employees directly and 22 employees indirectly.
- ❖ Mineral Industries of the state of Tamil Nadu provides employment opportunities for the people of the state as well as in the specific project area. The Quarrying is one among the major core sector for industries, which plays a vital process of country's economic development.

#### **(iv) Demand and supply gap**

There is a huge demand of Rough Stone and Gravel in Madurai District as many National Road projects is under massive development for its widening and strengthening operation apart from this many bridges and fly over's are also being under construction. There is a huge demand of Rough Stone and Gravel for infrastructure development of the state; hence the project is significant to the state.

The Railway line is also under progress where huge Demand of Rough Stone and Gravel is required as Ballast. Other internal panchayat Roads, State Highway roads and Major District Roads are also under progress, besides all these public works projects the Rough Stone and Gravel ravel is widely used for domestic construction project like Hospital, School, Government Building and Housing, Construction. It is worth mentioning that the Rough Stone and Gravel of Madurai District.

#### **(v) Imports vs indigenous production**

There is no import of Rough Stone and Gravel at present in India.

#### **(vi) Export Possibility**

There are no possibilities for export.

#### **(vii) Domestic/Export Markets**

After obtaining the lease the applicant will fetch a domestic market as mentioned earlier. It is propose to the excavated Rough Stone and Gravel will be

directly loaded into tipper to the needy crushers to needy customers for road project and construction works for filling and leveling of low lying areas.

**(viii) Employment Generation (Direct and Indirect) due to the project**

It is proposed to deploy about 24 directly and 22 persons will be indirectly benefited. The tentative man power required for the proposed Rough Stone and Gravel shall be as follows.

***Management and Supervisor:***

- |   |        |
|---|--------|
| 1. Mines Manager (with valid statutory qualification) | : 1 No |
| 2. Mines Foreman (with valid statutory qualification) | : 1 No |
| 3. Mines Mate (with valid statutory qualification)    | : 1 No |
| 4. Blaster  | : 1 No |

***Laborers, Skilled, Semi-Skilled & Un-skilled***

- |   |          |
|---|----------|
| a. Skilled (Operators- Excavator & Jackhammer)        | : 4 Nos  |
| b. Semi-skilled (Driver)                              | : 4 Nos  |
| c. Unskilled (Musdoor/ Labours, Cleaners & Watch man) | : 12 Nos |

**Total : 24 Nos**

The above man power is adequate to meet out the production schedule and the machinery strength envisaged in the mining plan and also to comply with the stationary provisions of quarry safety regulation.

**It is been ensured that the labours will not be deployed less than 18 years, No Child labours will engaged or entertained for any kind of quarrying operations. All the labours engaged for quarrying operations will be insured till the end of life of quarry.**

**3.0 PROJECT DESCRIPTION**

**(i) Type of project including interlinked and interdependent projects, if any**

There is no interlinked & interdependent project. This is a quarrying project for average Production Schedule is proposed an average production of 2,19,940m<sup>3</sup> (36,657 Lorry Loads) of Rough stone up to a depth of 12.0m (Max) and 68,800m<sup>3</sup> (11,433 Lorry Loads) of Gravel up to a depth of 2.0m below

ground level for the period of (Five) 5 Years only. The project is site specific. The excavated Rough Stone and Gravel will be directly loaded into tipper to the Customer / other buyers for road project and construction works for filling and leveling of low lying areas.

**(ii) Location (map showing general location, specific location, and project boundary & project site layout) with coordinates**

- ❖ The project Rough Stone and Gravel quarrying is about 4.13.0 Ha, It is a Patta land registered in the name of the applicant Thiru.V.Rajamani at S.F.Nos. 91/1 & 91/2 vide Patta nos.422 & 416 and S.F.Nos.91/3, 4 & 91/5 is registered Thiru.Moorthy vide Patta Nos – 403 & 431. The applicant should consent from pattadhar.
- ❖ The applicant should get consent from the pattadhar and surface rights to the quarry lease applied area. Please refer Annexure-IV.
- ❖ The area is mentioned in GSI Toposheet No. 58- J/ 4
- ❖ The Latitude between of 10°08'06.11"N to 10°08'14.31"N
- ❖ The Longitude between of 78°07'37.35"E to 78°07'43.77"EWGS 1984 datum.
- ❖ The Altitude is 268.0m (Maximum) from MSL.

**(iii) Size or magnitude of operation**

The total area of the project is about 4.13.0Ha. It is proposed to excavate **Production Schedule** is proposed an average production of **2,19,940m<sup>3</sup>** (36,657 Lorry Loads) of **Rough stone** up to a depth of **12.0m** (Max) and **68,800m<sup>3</sup>** (11,433 Lorry Loads) of **Gravel** up to a depth of **2.0m** below ground level by Opencast, Semi-mechanized Mining with a bench height of 5.0m and bench width of 5.0m is proposed, Machineries like Tractor mounted compressor attached with Jack hammers are proposed to deploy for quarrying operation.

**(v) Project description with process details (a schematic diagram/flow chart showing the project layout, components of the project etc. should be given):**

The reserves and resource are arrived based upon the Geological investigation

- REMOVAL OF GRAVEL BY EXCAVATORS AND DIRECTLY LOADED INTO TIPPERS.
- REMOVAL OF ROUGH STONE AND GRAVEL BY EXCAVATORS BY DRILLING AND BLASTING.
- SHALLOW DRILLING WITH JACKHAMMER 32-36 mm Dia.
- MINIMUM BLASTING WITH CLASS 2 EXPLOSIVES.
- LOADING OF ROUGH STONE AND GRAVEL BY EXCAVATORS INTO TIPPERS.
- TRANSPORTATION BY TIPPERS TO NEEDY CUSTOMERS/OTHER BUYERS.

**(vi) Raw material required along with estimated quantity, likely source, marketing area of final products, Mode of transport of raw Material and Finished Products**

This is a quarrying project for exploiting Rough Stone and Gravel; hence, there is no requirement for raw material. The final product of Rough Stone and Gravel irrespective of sizes will be sold to needy crushers & needy Customers.

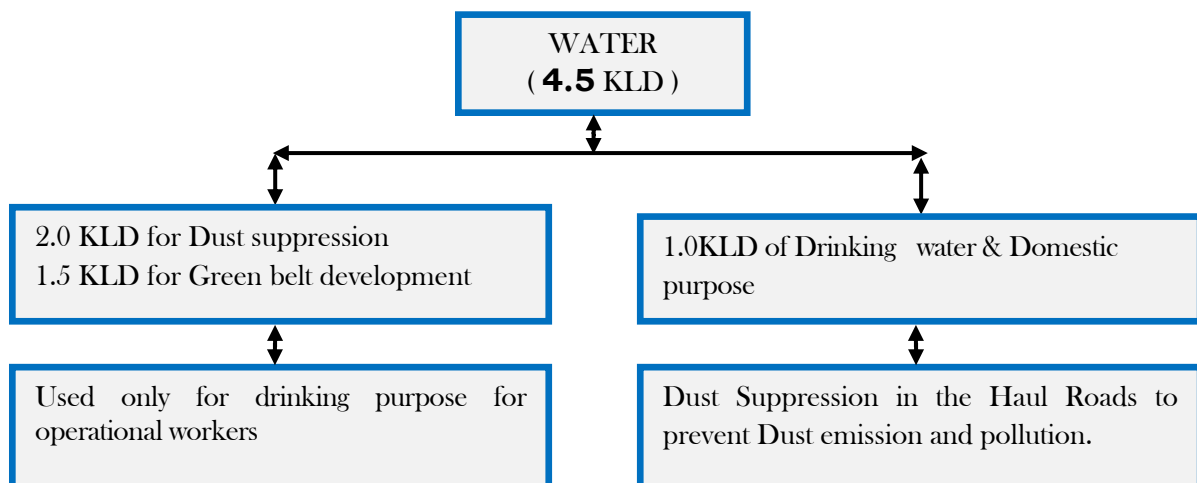
**(vii) Resource optimization/recycling and reuse envisaged in the project, if any, should be briefly outlined**

No optimization/Recycling and Reuse envisaged in the proposed Rough Stone and Gravel.

**(viii) Availability of water its source, Energy/power requirement and source should be given**

This Rough Stone and Gravel and quarry project does not require huge water and Electricity for the project.

**WATER BALANCE CHART**



**Table-1**

Purpose	Quantity	Sources
Drinking & Domestic Purpose	1.0KLD	Drinking water is available in nearby open well of agriland in Sathiravellalapatti Village which is about 1.5Km on Northwestern side of the area.
Dust suppression	2.0KLD	From Existing Borehole on nearby the quarry.
Green belt	1.5 KLD	From Existing Borehole on nearby the quarry.

**Energy**

The Electricity for Mines office and Lights only at nights (working is restricted on day time only between 9 Am to 5 Pm). Diesel (HSD) will be used for quarrying machineries around **1,87,422 Liters of HSD** will be used for the entire project life. Diesel will be brought from nearby diesel pumps. No power is required for the project. Lightings on the Night will be taken from nearby electric poles after obtaining permission from concerned authorities.

**Rough stone:**

The Excavator will consume = 16 Liters / 1 hour  
 The Excavator will excavate = 20m<sup>3</sup> of Rough stone  
 Rough stone quantity = 2,19,940 /20  
 = 10,997 hours  
 Diesel consume = 10,997 hours x 16 liters  
 Total diesel consumption = 1,75,952 Liters of HSD will be utilized for Rough Stone

**Gravel:**

The Excavator will consume = 10 Liters / 1 hour  
 The Excavator will excavate = 60m<sup>3</sup> of Gravel  
 Gravel Quantity = 68,800 / 60  
 = 1147 hours  
 Diesel consume = 1147 hours x 10 Liters  
 Total diesel consumption = 11470 Liters of HSD will be utilized for Gravel formation

Total consumption for Rough stone & Gravel is around=**1,87,422 Liters of HSD** for the entire period of life



### **(ix) Quantity of wastes to be generated (liquid and solid) and scheme for their management/disposal**

The entire quarried Rough Stone and Gravel of irrespective of sizes will be consumed in the needy crushers as even the dust is sold nowadays as M sand. Hence, there is no waste in this quarrying operation. There is no toxic effluent expected to generate in the form of solid or liquid and gases and the no requirement of treatment of waste

### **(x) Schematic representations of the feasibility drawing which give information of EIA purpose**



## **4.0 SITE ANALYSIS**

### **(i) Connectivity**

- ❖ There is an existing road from the area leads Sathiravellalapatti to Senthamangalam road at the Northern side of the area.
- ❖ SH-72 Natham to Madurai road is located which is about 6.0 Km on the Eastern side of the area.
- ❖ NH-7 Dindigul to Madurai road is located which is about 17.3 Km on the Southwestern side of the area.
- ❖ The Nearest Railway line is Vadipatti station line which is about 20.0 Km on the Southwestern side of the area.

### **(ii) Land Form, Land use and Land ownership**

The entire project area is about 4.13.0 Ha, which is Non irrigated and devoid of Vegetation and Habitations.

**Table-2**

District	Taluk	Village	S.F Nos	Area	Classification
Madurai	Vadipatti	Sathiravellalapatti	91/1, 91/2, 91/3, 91/4 & 91/5	4.13.0 Ha	It is a Consent Patta land

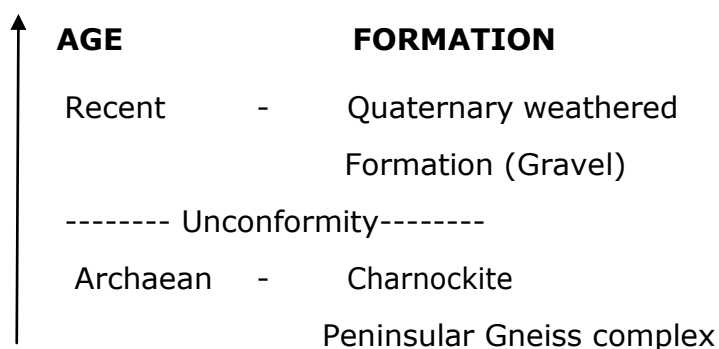
**(iii) Topography (along with map)**

- a. The lease applied area is exhibits almost plain topography covered by Rough stone & Gravel formation. The massive Charnockite formation is clearly visible to nearby quarry area followed by the 2m (Avg) Gravel and gentle sloping towards southeastern side of the area, the altitude of the area is above 268.0m (maximum) from MSL.
- b. No major river is found nearby the lease applied area.
- c. Water table is found at a depth of 55m to 60m below ground level, 55m in Rainy seasons and 60m in summer seasons by monitoring nearby bore hole.
- d. Temperature of the area is reported to be 20<sup>0</sup>C to a maximum of 42<sup>0</sup>C during summer.
- e. Rainfall of this area is about 800mm to 900 mm during the both NE & SW monsoons.

**Regional geology:**

The Peninsular gneiss forms the oldest rock formations, in which the massive formation of Charnockite lies over with rich accumulation of recent quaternary formation. On regional scale the Charnockite body N45<sup>0</sup>W to S45<sup>0</sup>E with dipping SW-60<sup>0</sup>.

**Regional stratigraphic sequence:**



## Estimation of Reserves

### I. GEOLOGICAL RESOURCES :

The Geological Resources is estimated as 32,46,320m<sup>3</sup> of Rough stone up to a depth of 82.0m (Max) & 81,158m<sup>3</sup> Gravel up to a depth of 2.0m.

Table No: 1

GEOLOGICAL RESOURCES						
Section	Length in (m)	Width in (m)	Depth in (m)	Volume m <sup>3</sup>	Geological Reserves of Gravel in m <sup>3</sup>	Geological Reserves of Rough Stone in m <sup>3</sup>
XY-AB	217	187	2	81158	81158	
	217	187	80	3246320		3246320
<b>TOTAL</b>					<b>81158</b>	<b>3246320</b>

### II. AVAILABLE MINEABLE RESERVES :

The available Mineable Reserves are calculated by deducting after leaving the safety distance of 7.5m for adjacent patta lands & 10m Safety should be maintained for S.F.No.99 – Government land (Perumalai) on Southern side of the lease applied area as indicated in precise area communication letter and relevant mining laws in force.

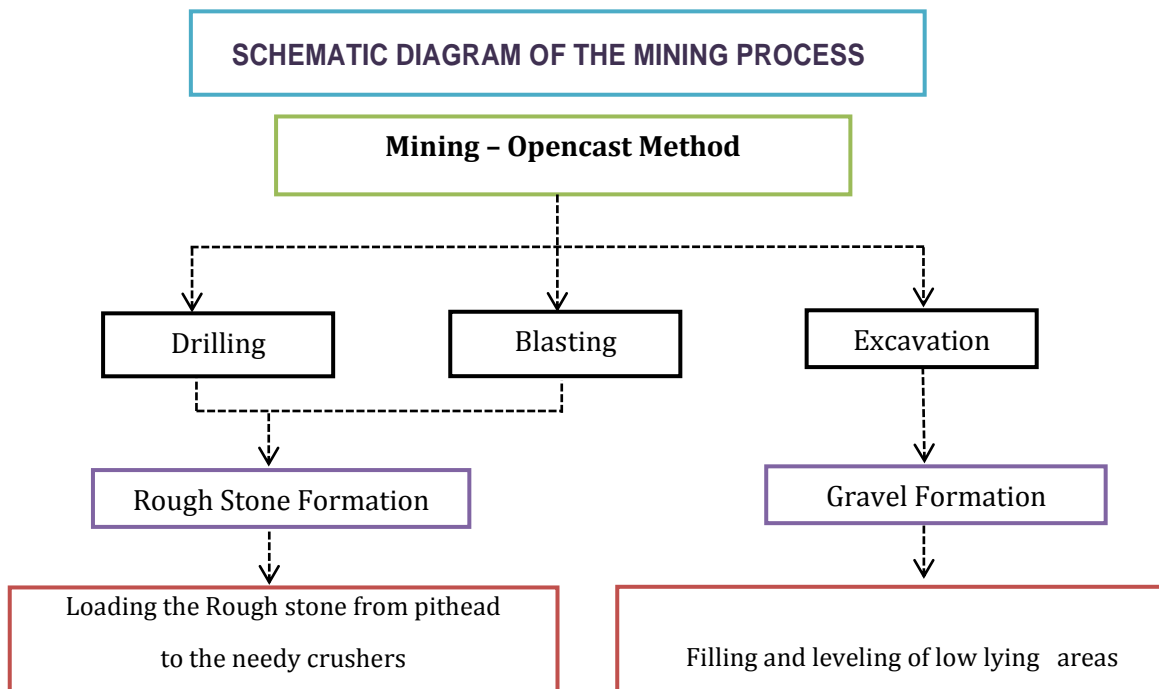
Table No-2

MINEABLE RESERVES							
Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m <sup>3</sup>	Gravel in m <sup>3</sup>	Mineable Reserves of Rough stone in m <sup>3</sup>
XY-AB	268-266	200	172	2	68800	68800	
	266-261	196	168	5	164640		164640
	261-256	186	158	5	146940		146940
	256-251	176	148	5	130240		130240
	251-246	166	138	5	114540		114540
	246-241	156	128	5	99840		99840
	241-236	146	118	5	86140		86140
	236-231	136	108	5	73440		73440
	231-226	126	98	5	61740		61740
	226-221	116	88	5	51040		51040
	221-216	106	78	5	41340		41340
	216-211	96	68	5	32640		32640
	211-206	86	58	5	24940		24940
206-201	76	48	5	18240		18240	
<b>TOTAL</b>						<b>68800</b>	<b>1045720</b>

The available Mineable Reserves is computed as 10,45,720m<sup>3</sup> of Rough Stone and 68,800m<sup>3</sup> of Gravel formation at the rate of 100% recovery upto a depth of 67.0m (Max) below ground level.

**Method of Mining:**

- ❖ The Rough stone is proposed to quarry at 5m bench height & width with conventional Opencast Mechanized Method.
- ❖ The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of Rough stone to the needy crusher.
- ❖ The production of Rough stone in this quarry involves the following method which is typical for Rough stone quarrying in contrast to other major mineral mining.
- ❖ Splitting of rock mass of a considerable volume of the parent rock mass by jackhammer drilling and blasting, hired excavators are used for loading the Rough stone from pithead to the needy crushers.



### III. RECOVERABLE RESERVES :

The Year wise Recoverable Reserves are calculated by deducting after leaving the safety distance of 7.5m for adjacent patta lands for the lease applied area as indicated in precise area communication letter and relevant mining laws in force and bench loss of bench height 5.0m and bench width 5.0m.

Table No: 3

YEARWISE DEVELOPMENT & PRODUCTION RESERVES								
Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m <sup>3</sup>	Gravel in m <sup>3</sup>	Recoverable Reserves of Rough stone in m <sup>3</sup>
I	XY-AB	268-266	52	172	2	17888	17888	
		266-261	50	168	5	42000		42000
<b>TOTAL</b>							<b>17888</b>	<b>42000</b>
II	XY-AB	268-266	148	172	2	50912	50912	
		266-261	50	168	5	42000		42000
<b>TOTAL</b>							<b>50912</b>	<b>42000</b>
III	XY-AB	266-261	50	168	5	42000		42000
<b>TOTAL</b>								<b>42000</b>
IV	XY-AB	266-261	46	168	5	38640		38640
		261-256	10	158	5	7900		7900
<b>TOTAL</b>								<b>46540</b>
V	XY-AB	261-256	60	158	5	47400		47400
<b>TOTAL</b>								<b>47400</b>
<b>GRAND TOTAL</b>							<b>68800</b>	<b>219940</b>

- ❖ The Mineral of Rough Stone Production is proposed to the lease period of (Five) 5 Years only.
- ❖ Recoverable Reserves are estimated **2,19,940m<sup>3</sup>** of **Rough stone** up to depth of **12.0m (Max)** below ground level and **68,800m<sup>3</sup>** of **Gravel** up to depth of **2.0m** for a lease period of (Five) **5 Years** only.

**Machinery Required:**

It is proposed to use the following machineries on rental basis for the development and production work in this quarrying operation,

S.No	Type	Nos	Dia Hole mm	Size capacity	Make	Motive Power
1	Jack Hammer	4	32	1.2m to 6m	Atlas Copco	Compressed air
2	Compressor	1	-	400psi	Atlas Copco	Diesel Drive

***b. Loading***

Manual loading (considerable Rough stone) accumulates the same will be loaded by Hired front end loader like JCB) Excavator of 0.90m<sup>3</sup> bucket capacity (with Rock breaker attachment)

S.No	Type	Nos	Bucket capacity	Make	Motive Power
1	Excavator	2	0.90m <sup>3</sup>	Tata Hitachi - 210	Diesel Drive

***c. Transportation***

Tippers / Trucks = 2Nos. 10 Tons capacity (from the quarry to destination (customer/other buyers)

S.No	Type	Nos	Capacity	Make	Motive Power
1	Tippers	4	10 Tons	Ashok Leyland	Diesel Drive

**Overburden/Waste**

The over burden in the form of Gravel is 68,800m<sup>3</sup> is removed will be used for filling and leveling of low lying areas road project and other infrastructure development work in and around the District.

**Conceptual Mining Plan:**

**Ultimate Pit dimension is given as under**

Length in Max (m)	Width in Max (m)	Depth in (m)
200	172	12.0m (max)

### **Manpower Requirement:**

The following man powers are proposed carry out the day to day quarrying activities at the proposed production and also comply with the statutory provision of the MMR 1961.

#### ***Management and Supervisor:***

- |   |        |
|---|--------|
| 1. Mines Manager (with valid statutory qualification) | : 1 No |
| 2. Mines Foreman (with valid statutory qualification) | : 1 No |
| 3. Mines Mate (with valid statutory qualification)    | : 1 No |
| 4. Blaster  | : 1 No |

#### ***Labours, Skilled, Semi-Skilled & Un-skilled***

- |   |          |
|---|----------|
| a. Skilled (Operators- Excavator & Jackhammer)        | : 4 Nos  |
| b. Semi-skilled (Driver)                              | : 4 Nos  |
| c. Unskilled (Musdoor/ Labours, Cleaners & Watch man) | : 12 Nos |

**Total : 24 Nos**

Allowing 10% absenteeism, the no. of men of roll will be around 22 Nos.

It is been ensured that, ***Child Labours under 18 Years of age will not be engaged for any quarrying operation.***

Necessary Life Insurance policies will be taken by the applicant to all the employees up to the end of the lease period.

**(iv) Existing land use pattern (agriculture, non-agriculture, forest, water bodies (including area under CRZ), shortest distances from the periphery of the project to periphery of the forests, national park, wild life sanctuary, eco sensitive areas, water bodies (distance from the HFL of the river), CRZ. In case of notified industrial area, a copy of the Gazette notification should be given.**

The quarry lease applied area is exhibits almost plain terrain topography. The area is a dry barren land devoid of Agriculture and Habitations. The land is not used for any specific vegetation. The massive Charnockite formation is clearly visible to nearby existing quarry pit. The Ground water occurrence in this quarry area is 55m to 60m depth below ground level.

The quarrying is restricted up to depth **12.0m (Max)** below ground level; hence the quarry operation will not be affected by the ground water. The region experiences

Semi – humid climate and there is scanty growth of vegetation in and around the lease applied area (seasonal vegetation is mostly practiced).

- No CRZ within the radius of 10km
- There is no interstate boundary from the lease applied area.
- No Western Ghats within the radius of 10km

- No Forest Conservation Act, 1980

#### **(v) Existing Infrastructure**

This is a Rough Stone and Gravel project hence there is no existing infrastructure in the proposed quarry area.

#### **(vi) Soil Classification**

The Rough Stone and Gravel are clearly visible to nearby quarry pit. This land does not sustain any type of vegetation or Agriculture

#### **(vii) Climatic data form secondary sources**

The area receives rainfall of about 800mm to 900mm/per annum and the rainy season is mainly from Oct - Jan during North East, monsoon. The summer is hot with maximum temperature of 38°C and winter encounters a minimum temperature of 20°C.

#### **(viii) Social infrastructure available**

There is no social infrastructure within the radius of 300m like schools, universities, hospitals, prisons and community housing etc.

### **5. PLANNING BRIEF**

#### **(i) Planning Concept (type of industries, facilities, transportation etc)**

##### **Town and Country Planning/Development authority Classification**

Opencast Semi Mechanized mining is adapted to in the Rough Stone and Gravel. The excavated Rough Stone and Gravel will be transported to Needy own crushers & Needy customers, Facilities such as power, Transportation and commodities infrastructure facilities are locally available near the project site. There are no habitations or villages en-route between the quarry and crushing site the loaded vehicles are allowed to move only below 40Kms per hour on the roads. The haul roads are sprinkled periodically to prevent dust.

#### **Transportation**

- ❖ There is an existing road from the area leads Sathiravellalapati to Senthamangalam road at the Northern side of the area.
- ❖ SH-72 Natham to Madurai road is located which is about 6.0 Km on the Eastern side of the area.
- ❖ NH-7 Dindigul to Madurai road is located which is about 17.3 Km on the Southwestern side of the area.
- ❖ The Nearest Railway line is Vadipatti station line which is about 20.0 Km on the Southwestern side of the area.

The total area of the project is about **4.13.0Ha**. Open cast semi mechanized method of quarrying by deploys jackhammer drilling and blasting, air driven



compressor, and excavators attached with buckets are used for loading and unloading the Rough Stone and Gravel from pithead to needy own crushers and needy customers.

The project land is devoid of vegetation and lies in the backward town of Madurai District. There are no specific industries or factories in and around the project area. The available Mineable Reserves is estimated at **68,800m<sup>3</sup> of Gravel & 2,19,940m<sup>3</sup> of Rough stone** the applicant proposed to (Five) 5 Years only.

**(ii) Population projection**

The nearest habitations with the population, approx. distance within 5.0Km radius from the proposed quarry site are as given under,

**Table – 3**

S. No	Name of the Village	Approximate distance	Direction from lease applied area	Approximate population
1.	Mettupatti	1.5 Km	South - East	100
2.	Maravarpatti	1.9 Km	South - West	310
3.	Senthamangalam	1.8 Km	North - East	400
4.	Sathiravellalapatti	1.5 Km	North - West	450

Basic human welfare Amenities such as Health Center, Schools, Communication Facilities, and Commercial Centers etc are available at Vadipatti at a distance of 18.5km on the Southwestern side of the area.

**(iii) Land use planning (breakup along with green belt etc.)**

The land use planning of the quarry area of the total extent of 4.13.0Ha is given below.

**Table-4**

S. No.	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)
1.	Quarrying Pit	Nil	3.26.0
2.	Infrastructure	Nil	0.01.0
3.	Roads	Nil	0.01.0
4.	Green Belt	Nil	0.15.0
5.	Unutilized	4.13.0	0.70.0
	<b>Total</b>	<b>4.13.0 Ha</b>	<b>4.13.0 Ha</b>

#### **(iv) Assessment of Infrastructure Demand (Physical & Social)**

The existing road facilities are already available which shall be used and maintained. The labors requirement is drawn from the nearest villages. The labours will be brought by jeeps and vans to the quarry site, Medical facilities are available near the project site, Government and private hospitals and other basic amenities and infrastructure facilities like communication centres, school supermarket, and bus stand are also available in Senthamangalam distance of 1.5Km northeastern side of the area. This quarry project will provide employment for about 24 persons directly and 22 peoples indirectly.

#### **(v) Amenities/Facilities**

The simple methods adopted and the limited scale of activities involved in Rough Stone and Gravel does not require High Tension Electric Power supply or huge worship facilities. The quarrying work is restricted to one general shift during daytime 9.00am to 5.00pm with 1.00pm - 2.00pm lunch break. Major Machinery repair works are attended at Vadipatti repairs are carried out by the nearby mechanics. All facilities and amenities are available in Vadipatti which is 18.5km on Southwestern side of the lease applied area. Drinking water is available from the nearby agriculture land or water vendors. Mine office, storeroom, toilet and first-aid room will be provided on permanent structures within the lease area after the grant of lease.

### **6. PROPOSED INFRASTRUCTURE**

#### **(i) Industrial Area (Processing area)**

There is no processing area proposed within the lease applied area.

#### **(ii) Residential area (Non processing area)**

There is no residential area within 300m of the lease applied area.

#### **(iii) Green Belt**

All along the boundary barrier is selected for Green belt development by planting and maintaining native species. The total area for proposed for Green belt is around 0.15.0Ha out of 4.13.0 Ha.

#### **(iv) Social infrastructure**

About 24 employees will be directly benefited and 22 persons will be indirectly benefited, the lease ensure to share all responsible for special benefits like water, health care, Education benefits, and promotion of socio cultural activities of the nearby villages.

**(v) Connectivity (traffic and transportation road/ Rail/ Metro/ Water ways etc.,)**

- ❖ There is an existing road from the area leads Sathiravellalapatti to Senthamangalam road at the Northern side of the area.
- ❖ SH-72 Natham to Madurai road is located which is about 6.0 Km on the Eastern side of the area.
- ❖ NH-7 Dindigul to Madurai road is located which is about 17.3 Km on the Southwestern side of the area.
- ❖ The Nearest Railway line is Vadipatti station line which is about 20.0 Km on the Southwestern side of the area.

**(vi) Drinking Water management (Source & Supply of water)**

This proposed Rough Stone and Gravel project does not require huge water either for beneficiation or processing. Water required for domestic consumption for labours is around 1.0KLD. The packaged Drinking water for this will be brought from nearby open well or bore hole on agriland.

1. Drinking Water & Domestic purpose	- 1.0 KLD (source: through Nearby open well or bore hole)
2. Dust Suppression	- 2.0 KLD (source: from existing borehole on nearby the quarry)
3. Green Belt Development	- 1.5 KLD(source: from existing borehole on nearby the quarry)

---

**Total - 4.5 KLD**

**(vii) Sewerage System**

Toilets will be constructed on permanent structure and sewage will be discharged once in three months. The sewage waste will be collected in soak pit and discharged as manure after treatment for the Green belt development.

**(viii) Industrial Waste Management**

No industrial waste will be generated from the project.

**(ix) Solid Waste Management**

The waste generated during quarrying activity is negligible rock mass during handling and re handling. Hence, there is no waste in this quarrying operation. There is no solid waste generation during the quarrying operation.

### (x) Power Requirement & Supply / source

The proposed Rough Stone and Gravel quarrying does not required any power supply for the quarrying operation. It is proposed to operate in day time only from 9 Am to 5Pm with 1 Hour lunch interval between 1Pm to 2Pm.

### 7.0 REHABILITATION AND RESETTLEMENT (R & R PLAN)

#### (i) Policy to be adopted (Central/State) in respect of the project affected persons including home ousters, langoustes and landless laborers (a brief outline to be given)

It is a Patta land registered in the name of the applicant Thiru.V.Rajamani at S.F.Nos. 91/1 & 91/2 vide Patta nos.422 & 416 and S.F.Nos.91/3, 4 & 91/5 is registered Thiru.Moorthy vide Patta Nos – 403 & 431. The applicant should consent from pattadhar. The applicant has got surface rights to the quarry lease applied area. Please refer Annexure-IV. Hence there is no Rehabilitation and resettlement is involved. The deployed labours will be insured as per the Government norms till the end of the life of the quarry. Periodical medical test will be conducted for the labors to monitor the occupational disease. The salaries and benefits will be paid as specified by the instruction given by the labor enforcement officers.

#### (ii)Production Capacity

**Production quantity per day** (1Load=6m<sup>3</sup> approx) (1Year=260 Working days)

$$\begin{aligned}\text{Rough stone quantity} &= 2,19,940\text{m}^3 / 36,657 \text{ Loads} \\ &= 2,19,940 / 1300 \text{ days (5 years)} \\ &= 168\text{m}^3 \text{ or } \mathbf{28 \text{ Lorry Loads}} \text{ per day}\end{aligned}$$

$$\begin{aligned}\text{Gravel quantity} &= 68,800\text{m}^3 / 11,433 \text{ Loads} \\ &= 68,800 / 520 \text{ days (2 years)} \\ &= 132\text{m}^3 \text{ or } \mathbf{22 \text{ Lorry Loads}} \text{ per day}\end{aligned}$$

## **8. PROJECT SCHEDULE & COST ESTIMATES**

### **(i) Likely date of start of construction and likely date of completion (Time schedule for the project to be given)**

The proposed quantity is around **2,19,940m<sup>3</sup>** of Rough Stone and **68,800m<sup>3</sup>** of Gravel formation for the period of (Five) 5 Years only.

### **(ii) Estimated project cost along with analysis in terms of economic viability of the project**

#### **I. Fixed Asset Cost :-**

1. Land cost	= Rs.	24,78,000/-
2. Refilling/Fencing cost	= Rs.	1,00,000/-
3. Rest shelter	= Rs.	2,00,000/-
4. Sanitary Facility	= Rs.	1,25,000/-

**II. Machinery Cost** = Rs. 40,00,000/-

**Total Project Cost = Rs. 69,03,000/-**

#### **Expenditure :**

1. Drinking water	= Rs.	1,50,000/-
2. Sanitary Arrangements	= Rs.	90,000/-
3. Safety kits	= Rs.	50,000/-
4. Water Sprinkling	= Rs.	1,20,000/-
5. Afforestation cost	= Rs.	60,000/-

#### **Environment Monitoring / 5 Years :**

1. Air Quality Sampling	= Rs.	2,00,000/-
2. Water Quality Sampling	= Rs.	1,00,000/-
3. Noise Level Monitoring	= Rs.	20,000/-
4. Ground vibration test	= Rs.	50,000/-

*EMP Cost Total* = Rs. 8,40,000/-

(Expenditure Including EMP Studies)

**Total Project Cost = Rs. 69,03,000/-**

**EMP Cost = Rs. 8,40,000/-**

#### **Population Benefit**

The social responsibilities like providing School Note books, Uniforms to the Students below poverty level beside if the villages require any borehole for public use it will ensure to do so.

As a part of corporate social responsibility it is ensured to take part and contribute the native cultural activities in the nearby villages. During summer seasons packaged drinking water will be kept in the village for public and for trespassers.

### **MINE CLOSURE PLAN:**

#### Steps proposed for phased restoration, reclamation of already mined out areas:

After the exploitation the Gravel Bund and fencing will be constructed around the pit to prevent inherent entry of public. The quarried pit will be allowed to collect rain and seepage water which will act as a Reservoir which will enhance the Ground water level of the nearby wells.

There is no proposal for back filling, reclamation and rehabilitation. The quarry pit will be fenced to prevent inherent entry of public. The green belt development will be maintained.

#### Measures to be under taken on mine closure as per Act & Rules:

Measure will be taken as per Act & Rules.

#### Mitigation measure to be undertaken for safety and restoration / reclamation of the already mined out area:

Drilling will be carrying out by wet drilling to control the dust into the air. Blasting will be carrying out on limited scale. Mist spray on haul road will be proposed to prevent the dust propagation into the air.

The plantation will be carried out on the safety barriers to prevent Noise, besides wet drilling will be practiced to prevent dust. All the machineries will be maintained in good conditions as per RTO and TNPCB Norms to prevent Noise, Smoke and vibration.

Machineries will be periodically maintained by experienced mechanic to minimize noise, Smoke and ground vibration.

## **9. ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS)**

### **(i) Financial and social benefits with special emphasis on the benefit to the local people including tribal population, if any, in the area**

There are no tribal populations in and around the area about 24 persons directly and 22 persons indirectly will be benefited by these projects, besides the government. Will get good revenue by taxes, seinerage fees etc.

The socio - Economic conditions of the village and distance will enhance due to the project, hence the project should be allowed after considering all the parameters.

Signature of the Applicant  
**(V.RAJAMANI)**

Signature of the Recognised qualified person

Place : Salem

Date : 15.11.2018