

# EXECUTIVE SUMMARY OF DRAFT EIA

## FOR OBTAINING

Environmental Clearance under EIA Notification – 2006

Schedule Sl. No. 1 (a) (i): Mining Project

“B1” CATEGORY – MINOR MINERAL – CLUSTER – NON-FOREST LAND

CLUSTER EXTENT = 10.80.02 hectares

ROUGHSTONE AND GRAVEL QUARRY

At

Magaral-B Village, Walajabad Taluk, Kancheepuram District,

Tamil Nadu State

ToR letter No. SEIAA-TN/F.No. 9631/SEAC/ToR-1362/Dated 10.02.2023.

### NAME AND ADDRESS OF THE PROPOSED PROJECT PROPONENT

Name and Address	Extent & S.F.No.
Mr.D.Govindasamy, S/o. Desingu, No.288, Palla Street, Sitthalapakkam Village, Arasanipalaiyam Post, Vembakkam taluk, Tiruvannamalai District - 631702 Tamil Nadu	2.90.50 ha & 699/2, 699/3

### ENVIRONMENTAL CONSULTANT

#### GEO TECHNICAL MINING SOLUTIONS



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Valid till: Dec 31, 2023



### ENVIRONMENTAL LAB

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Baseline Study Period – March through May 2023

## CHAPTER I INTRODUCTION

As the proposed Rough Stone and Gravel Quarry mining project, known as P1 falls within the 500 m radius cluster of quarries with the total extent of >5 ha (**i.e., 10.80.02 ha**), it is classified under category “B1” and requires submission of EIA report for grant of Environmental Clearance (EC) after conducting public hearing. The cluster contains two proposed projects, known as P1, P2, Two Existing projects E1 and E2 and One Expired project, known as EX1. All the projects mentioned above have been taken for cluster extent calculation as per MoEF & CC Notification S.O. 2269 (E) Dated 1<sup>st</sup> July 2016, as shown in Figure 1.1.

This EIA draft discusses the cumulative impacts of 2 proposed projects in a cluster on the environment and provides a detailed Environmental Management Plan (EMP) to minimize the adverse impacts of those projects situated in the cluster falling in Magaral-B Village, Walajabad Taluk, Kancheepuram District and Tamil Nadu. In compliance with TOR obtained vide Letter No. SEIAA-TN/F.No.9631/ToR-1362/2023 Dated 10.02.2023. This EIA report has been prepared for the project proponent Mr.D.Govindasamy applied for rough stone and gravel quarry lease in the patta land falling in S.F.No.699/2 & 699/3 over an extent of 2.90.50 ha in Magaral-B Village, Walajabad Taluk, Kancheepuram District and Tamil Nadu. This EIA report takes into account the rough stone and gravel quarry within the cluster of 500 m radius from the periphery of the proposed project site. The cluster contains two proposed projects, known as P1, P2, Two Existing Quarries E1 and E2 and One Expired project, known as EX1. All the projects mentioned above have been taken for cluster extent calculation as per MoEF & CC Notification S.O. 2269 (E) dated 1<sup>st</sup> July 2016. The total extent of all the quarries is 2.90.50 ha, also known as the cluster extent. The quarries involved in the calculation of cluster extent are shown in Figure 1.1.

**Table 1.1 Details of Project Proponent**

<b>Name of the Project Proponent</b>	<b>Mr.D.Govindasamy</b>
Address	S/o.Mr.Desingu No.288, Palla Street, Sithalapakkam Village, Arasanipalaiyam Post, Vembakkam Taluk, Tiruvannamalai District, Tamil Nadu-631702
Status	Proprietor

**Table 1.2 Details of Quarries within the Cluster Area of 500 m Radius**

<b>Proposed Quarries</b>				
<b>Code</b>	<b>Name of the Owner</b>	<b>S.F. No/ Village</b>	<b>Extent (ha)</b>	<b>Status</b>
<b>P1</b>	Thiru.D.Govindasamy	699/2, 699/3 Magaral-B	2.90.50	Proposed Area
<b>P2</b>	Sri Sai Infrastructures	728/1(P), 728/2, 728/3, 728/4, 728/5, 728/6, 728/7, 728/8, 728/9, 728/10, 728/11, 728/12, 728/13, 728/14, 728/15, 728/16, 728/17, 728/18 Magaral-B	2.75.02	Applied Area
<b>Existing Quarries</b>				
<b>E1</b>	K.Samiyappan	702/2 Magaral-B	2.02.50	30.06.2018 to 29.06.2023
<b>E2</b>	S.Rathinavelu	700/1(P), 700/2 Magaral-B	2.34.50	23.01.2019 to 22.01.2024
<b>Expired Quarries</b>				
<b>EX1</b>	R.Elumalai	694/31, 694/3N, 694/3H & 694/3O Magaral-B	0.77.5	02.03.2015 to 01.03.2020
<b>Total Cluster Extent</b>			<b>10.80.02</b>	---

**Source:**

*DD Letter - Rc.No.254/Q3/2022, Dated:18.11.2022*

**Note:** Cluster area is calculated as per MoEF & CC Notification – S.O. 2269 (E)

*Dated:01.07.2016.*

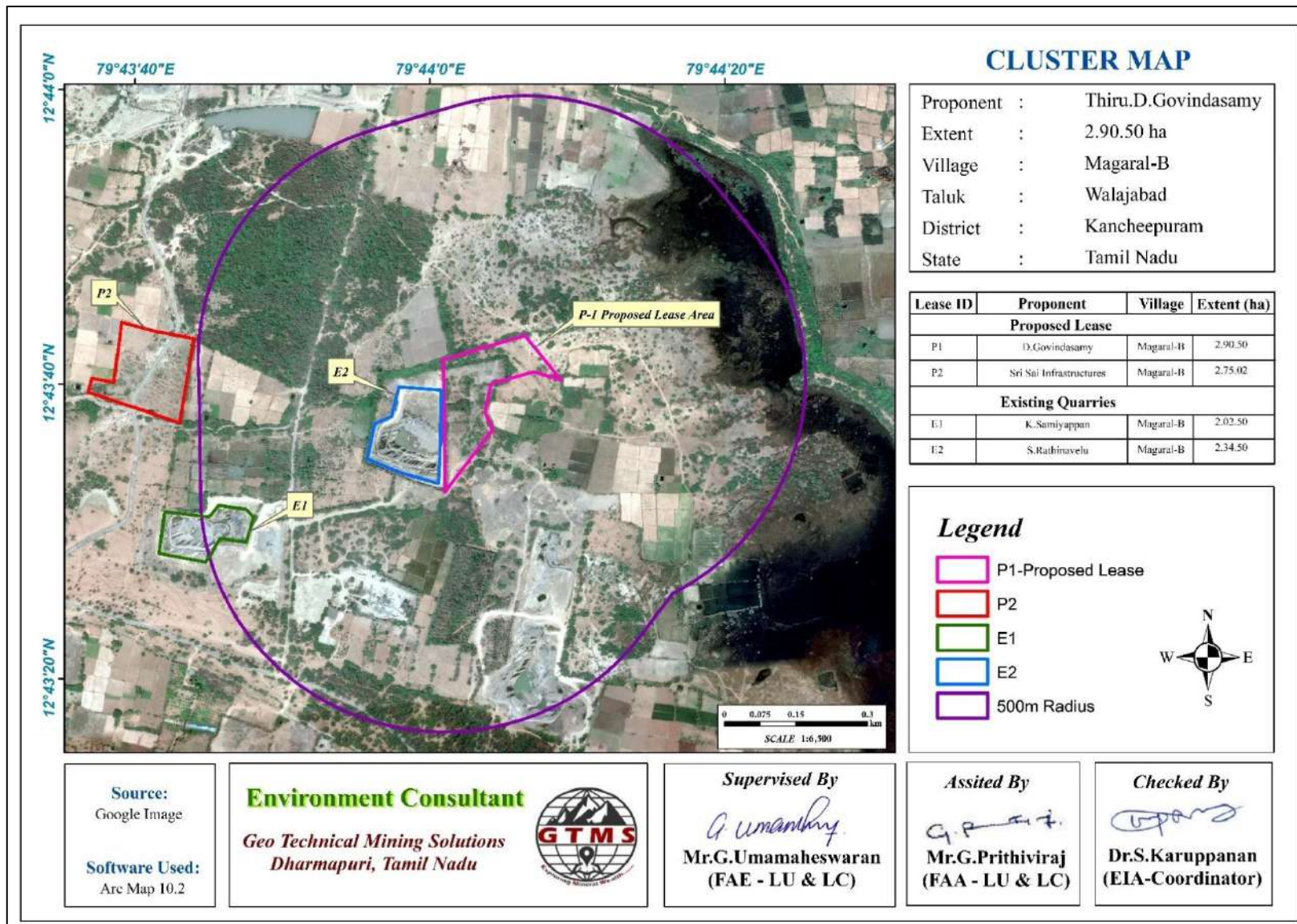


Figure 1.1 Google Earth Image Showing 500m Radius Limits and the Proposed Project and Existing Quarries within the Limit

## CHAPTER II

### PROJECT DESCRIPTION

The proposed project deals with excavation of rough stone and gravel, which is primarily used, in construction projects. The method adopted for rough stone and gravel excavation is a manual open cast mining method involving formation of benches with 5 m height and 5 m width and secondary blasting. The proposed project area is located between latitudes from 12°43'32.65"N to 12°43'43.28"N and from longitudes from 79°44'0.85"E to 79°44'8.88"E in Magaral-B Village, Walajabad Taluk, Kancheepuram District. The project site is a Patta land with the extent of 2.90.50 ha leased for the project proponent, Mr.D.Govindasamy. The proponent had applied for quarry lease on 03.12.2022 to extract rough stone and gravel obtained the precise area communication letter issued by Department of Geology and Mining, Kancheepuram vide Rc.No.254/Q3/2022, dated:27.10.2022. Based on the precise area communication letter, mining plan was prepared. The mining plan thus prepared was approved by Deputy Director of Geology and Mining, Kancheepuram (Rc.No.254/Q3/2022, dated:18.11.2022).

According to the approved mining plan, about 417131 m<sup>3</sup> of rough stone and 45808 m<sup>3</sup> gravel will be mined up to the depth of 30 m BGL in five years. To achieve the estimated production, 4 Jack Hammers, 1 compressor, 1 excavator with bucket/rock breaker, and 10 tippers will be deployed. To operate the machineries and to break the rough stone to preferred dimension, about 18 persons will be employed. At the end of the quarry life, the dimension of the ultimate pit will be 186 m\*77 m\*30 m and about 0.09.5 ha of land is unutilized. Whereas, at the end of the mine life, about 2.18.12 ha of land will have been quarried; about 0.06.24 ha of land will be used for green belt development and the rest will be used for road and infrastructures.

The final mine closure plan shows that about Rs. **987700** capital cost with the annual recurring cost of Rs. **87150** will be spent towards mine closure.

**Table 2.1 Corner Geographic Coordinates of Proposed Project**

Pillar ID	Latitude	Longitude
1	12°43'43.28"N	79°44'6.44"E
2	12°43'40.26"N	79°44'8.88"E
3	12°43'40.82"N	79°44'7.03"E
4	12°43'40.01"N	79°44'4.15"E
5	12°43'38.10"N	79°44'3.74"E
6	12°43'36.90"N	79°44'4.24"E
7	12°43'32.65"N	79°44'1.01"E
8	12°43'41.04"N	79°44'0.91"E
9	12°43'41.64"N	79°44'0.85"E

**Table 2.2 Site Connectivity to the Project Area**

Nearest Roadways	SH-118A Uthirameru -Kancheepuram	1.96 km E
Nearest Town	Magaral	2.12 km E
Nearest Railway Station	Walajabad	11.7 km N
Nearest Airport	Chennai	55.92 km NE
Nearest Seaport	Chennai	72.2 km NE
Nearest Village	Suruttal	0.95 km N
	Sithalapakkam	1.16 km S
	Magaral-A	2.0 km SE
	Bagavandapuram	2.54 km W

## 2.2 DETAILS OF RESERVES

Reserves were calculated using cross-section method after leaving the safety distance as shown in Figure 2.2. Details of resources and reserves of the project are given in Table 2.3.

**Table 2.3 Estimated Resources and Reserves of the Project**

Resource Type	Rough stone in m <sup>3</sup>	Gravel in m <sup>3</sup>
Geological Resource in m <sup>3</sup>	958452	58088
Mineable Reserves as per ToR in m <sup>3</sup>	417131	45804
Proposed production as per ToR for 5 years m <sup>3</sup>	417131	45804

Based on the year wise development and production plan and sections, as shown in Figures 2.3 the year wise production results are given in Table 2.4.

**Table 2.4 Year-Wise Production Details**

Year	Rough stone in (m <sup>3</sup> )	Gravel in (m <sup>3</sup> )
I	90508	24552
II	76433	21252
III	82960	--
IV	90515	--
V	76715	--
<b>Total</b>	<b>417131</b>	<b>45804</b>

**2.3 LAND USE PATTERN**

Land use and land cover information for the proposed project site has been given in Table 2.5.

**Table 2.5 Land use data at present, during scheme of mining, and at the end of mine life**

Description	Present Area (ha)	Area at the end of life of quarry (ha)
Area under quarry	Nil	2.18.12
Infrastructure	Nil	0.02.0
Roads	Nil	0.03.0
Green Belt & Dump	0.08.0	0.06.24
Drainage & Settling Tank	Nil	0.51.64
Unutilized area	2.82.50	0.09.5
<b>Total</b>	<b>2.90.50</b>	<b>2.90.50</b>

*Source: Approved mining plan*

**2.4 METHOD OF MINING**

The quarrying operation is proposed to be carried out by Open -Cast Semi-Mechanized mining method.

**2.5 PROPOSED MACHINERY DEPLOYMENT**

List of machineries proposed for the quarrying operation is given in Table 2.6.

**Table 2.6 Proposed Machinery Deployments**

S. No.	Type	No of Unit	Capacity	Make	Motive Power
1	Jack Hammers	4	Hand held	-	Diesel Drive
2	Compressor	1	Air	-	Diesel Drive
3	Excavator	1	-	-	Diesel Drive
<b>Haulage &amp; Transport Equipment</b>					
4	Tipper	10	-	-	Diesel Drive

**Table 2.7 Conceptual Blasting Design**

Blast hole Diameter (D) in mm	32
Burden (B) in m	1
Spacing (S) in m	0.97
Sub drill in m	0.3
Charge length (C) in m	0.64
Stemming	1
Hole Length (L) in m	1.9
Bench Height (BH) in m	1.6
Mass of explosive/hole in g	400
Stemming material size in mm	3.2
Burden stiffness ratio	1.64
Blast volume/hole in m <sup>3</sup>	1.59
Production of rough stone/day in m <sup>3</sup>	309
Number of blast holes/day	194
Blast hole pattern	Staggered/Rectangular
Mass of explosive /day in kg	78
Powder factor in kg/m <sup>3</sup>	0.25
Loading density	0.63
Type of explosives	Slurry
Diameter of packaging in mm	25
Initiation system	NONEL
Fly rock distance in m	23

**Table 2.8 Fuel Requirement Details**

<b>Fuel Requirement for Excavator</b>			
<b>Details</b>	<b>Rough Stone (417131m<sup>3</sup>)</b>	<b>Gravel (45804 m<sup>3</sup>)</b>	<b>Total Diesel (litre)</b>
Average Rate of Fuel Consumption (l/hr)	16	10	---
Working Capacity (m <sup>3</sup> /hr)	20	60	---
Time Required (hours)	20857	763	---
Total Diesel Consumption for 5 years (litre)	333705	7634	341339
<b>Fuel Requirement for Compressor</b>			
Average Rate of Fuel Consumption/hole (litre)	0.4	---	---
Number of Drillholes/day	194	---	---
Total Diesel Consumption for 5 years (litre)	104760	---	104760
<b>Fuel Requirement for Tipper</b>			



Average Rate of Fuel Consumption/Trip (litre)	20	20	---
Carrying Capacity in m <sup>3</sup>	6	6	---
Number of Trips / days	51	6	---
Number of Trips / 5 years	69522	7634	---
Total Diesel Consumption for 5 years (litre)	1390437	152680	1543117
<b>Total Diesel Consumption by Excavator, Compressor and Tipper</b>			<b>1989215</b>

**Table 2.9 Capital Requirement Details**

S. No.	Description	Cost (Rs.)
1	Fixed Asset Cost	1980000
2	Machinery cost	3000000
3	EMP Cost	3147500
<b>Total Project Cost</b>		<b>81,27,500 /-</b>

Source: Approved Mining Plan

## 2.6 CONCEPTUAL MINE CLOSURE PLAN

- ❖ Mine closure is a process of returning a disturbed site to its natural state for other productive uses to minimize adverse effects on the environment or threats to humans' health and safety.
- ❖ The objective of the mine closure plan is to transform quarries to be physically safe to humans and animals, geo-technically stable, geo-chemically non-polluting, and non-contaminating.
- ❖ At the end of mining life, the mine pit will act as an artificial reservoir for collecting rain water and will help to meet the water demand during drought season.
- ❖ After mine closure, the greenbelt will be developed along the safety barrier and over top benches. Water from the pit will be used to the greenbelt development and maintenance. Budgetary provision for mine closure is provided in Table 2.10.

**Table 2.10 Mine Closure Budget**

Activity	Capital Cost	Recurring Cost/Annum
581 plants inside the lease area	116200	17430
872 plants outside the lease area	261450	26145
Wire Fencing	581000	29050
Renovation of Garland Drain	29050	14525
<b>Total</b>	<b>987700</b>	<b>87150</b>

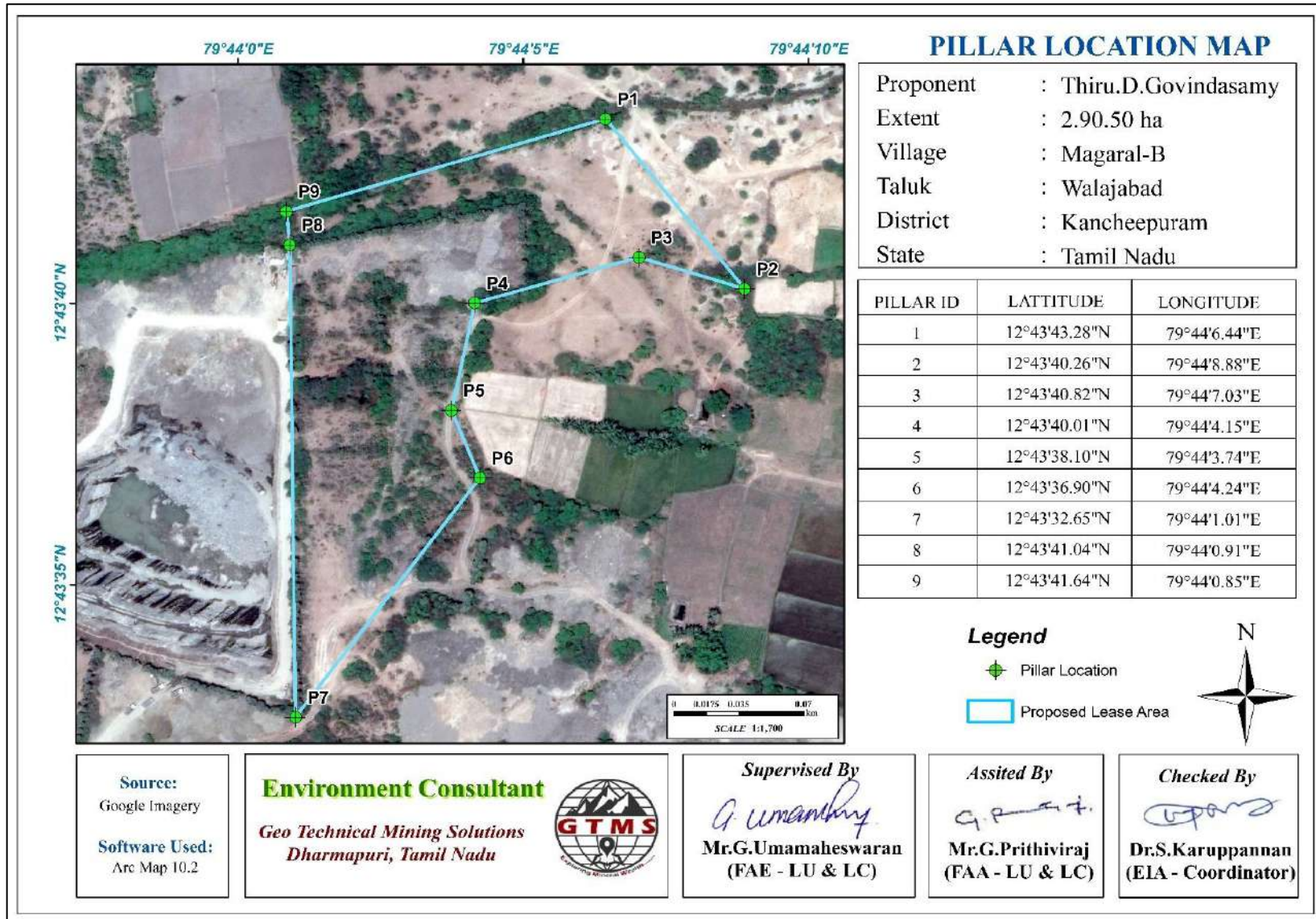


Figure 2.1 Google Earth Image Showing Lease Area with Pillars

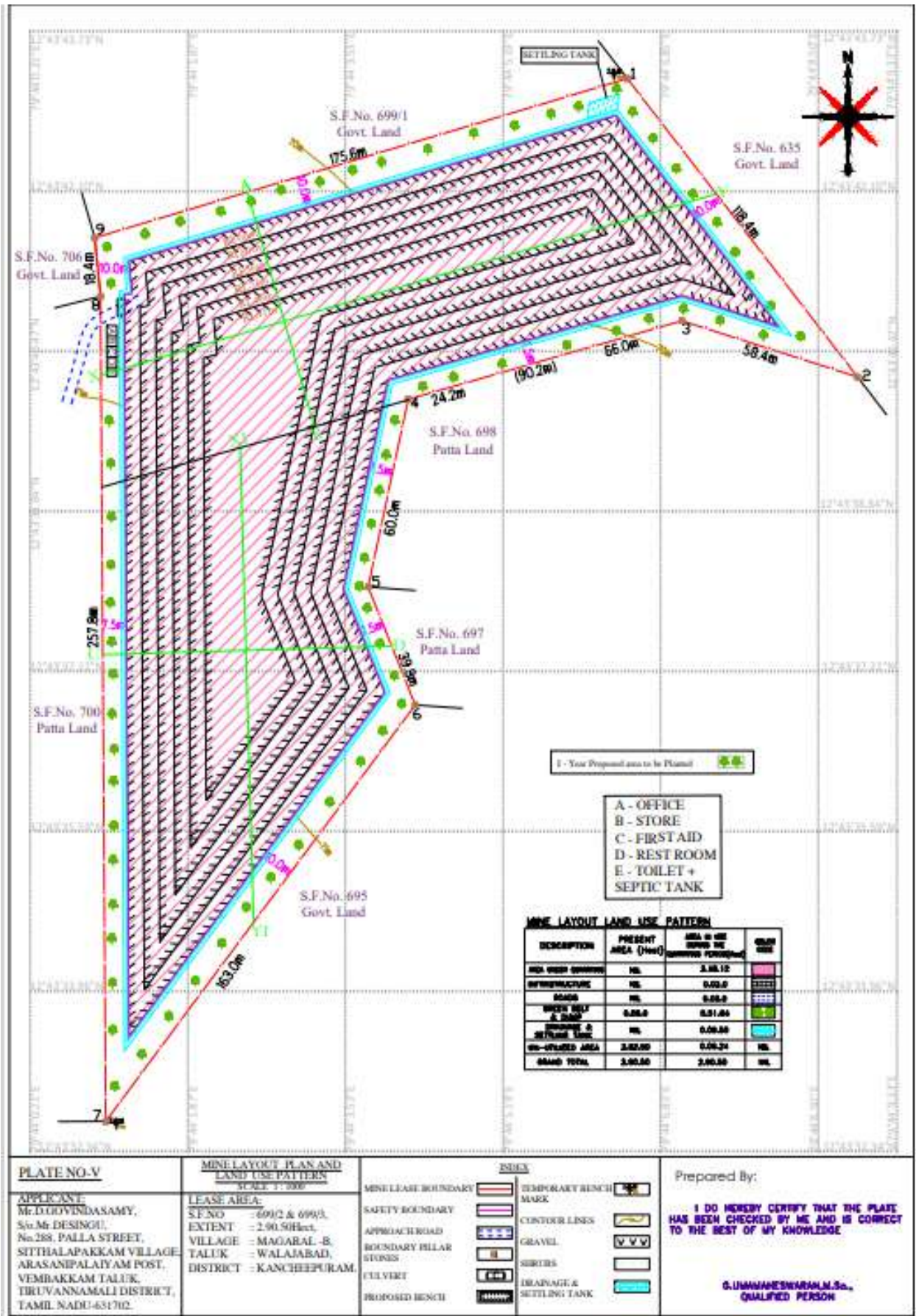


Figure 2.2 Mine Lease Plan

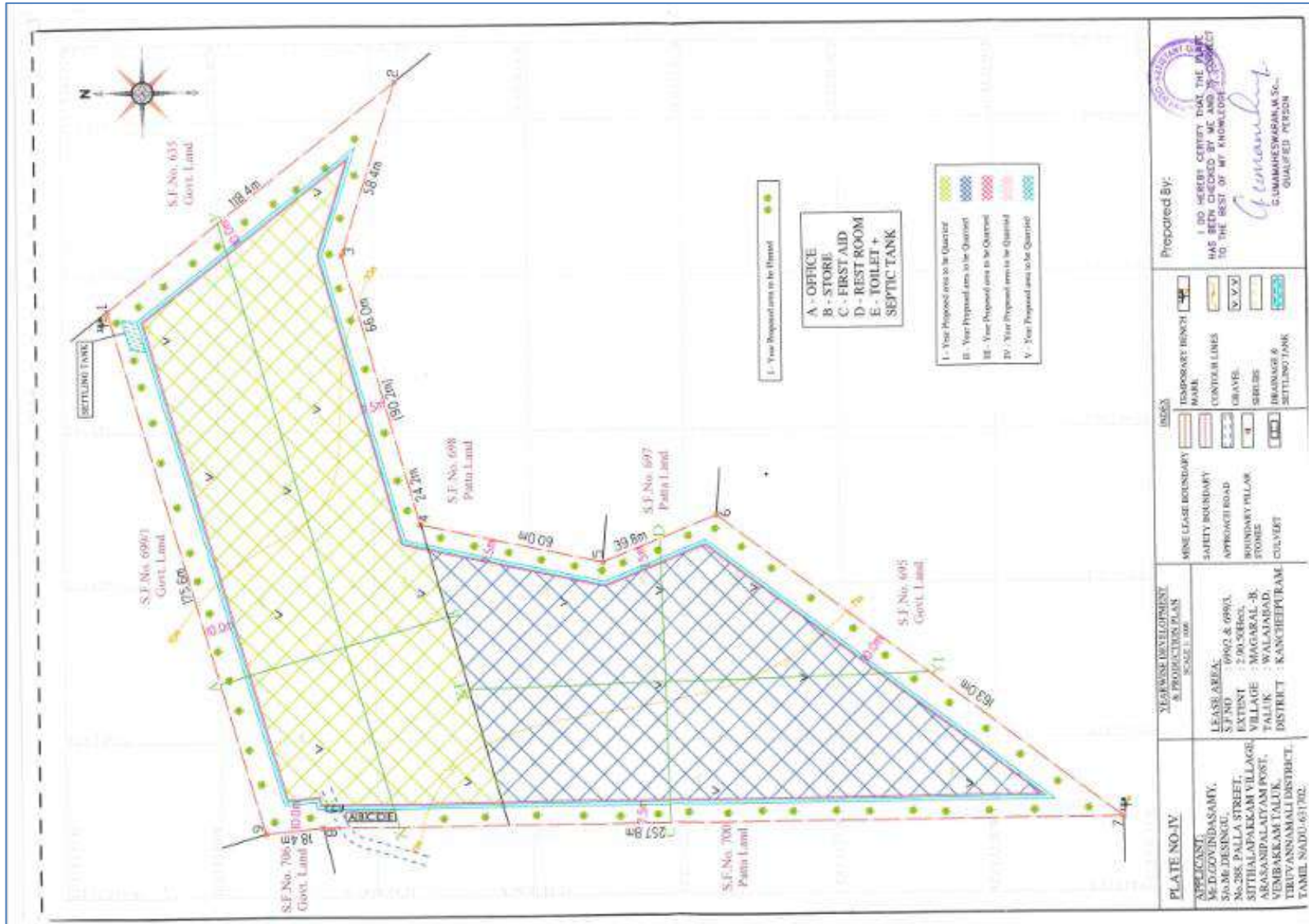


Figure 2.3 Yearwise Development and Production Plan

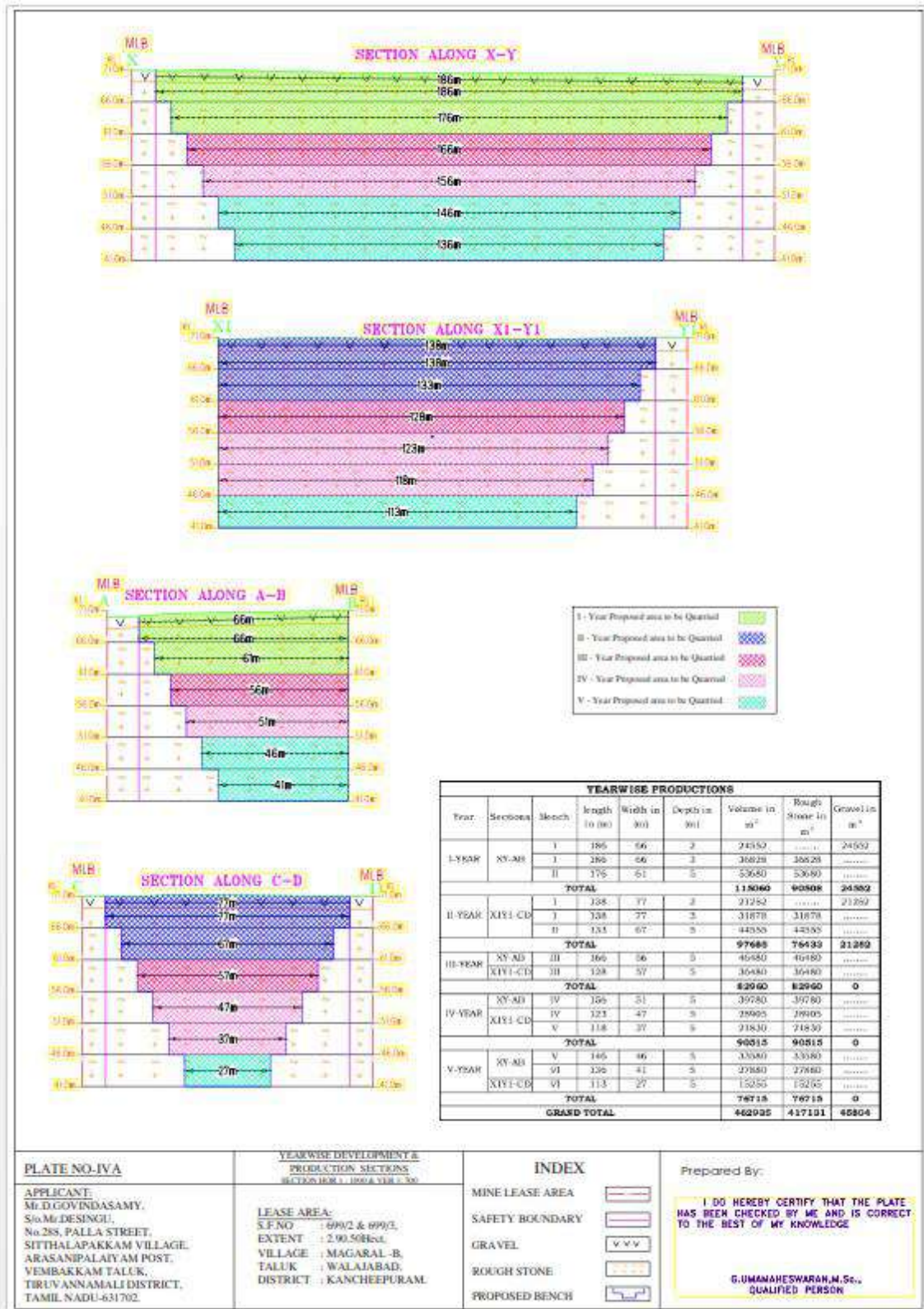


Figure 2.4 Year wise Development and Production Sections

**CHAPTER III**  
**DESCRIPTION OF THE ENVIRONMENT**

**3.0 INTRODUCTION**

Field monitoring studies were carried out to evaluate the existing environmental condition of the project site during **March-May, 2023** as per CPCB guidelines. Environmental baseline data were collected by an NABL accredited and MoEF notified Ekdant Enviro Services (p) limited for the environmental attributes including soil, water, noise, air and by FAEs for ecology and biodiversity, traffic, and socio-economy.

**3.1 LAND ENVIRONMENT**

Land use pattern of the area of 5 km radius was studied using Sentinel II imagery. LULC types and their extent are given in Table 3.1.

**Table 3.1 Land Use / Land Cover Statistics for the Area of 5 km Radius**

<b>S. No.</b>	<b>Classification</b>	<b>Area (ha)</b>	<b>Area (%)</b>
1	Crop land	2232.18	28.88
2	Dense Forest	291.99	3.78
3	Fallow land	297.13	3.84
4	Land with or without scrub	409.89	5.30
5	Mining / Industrial wastelands	37.18	0.48
6	Plantations	3386.35	43.81
7	Settlement	156.93	2.03
8	Water bodies	917.22	11.87
<b>Total</b>		<b>7728.87</b>	<b>100.0</b>

*Source: Sentinel II Satellite Imagery*

**3.2 SOIL ENVIRONMENT**

Seven locations were selected for soil sampling based on soil types, vegetative cover, and industrial & residential activities including infrastructure facilities. The physical and chemical characteristic results of soil samples are provided below.

***Physical Characteristics***

The soil samples in the study area show loamy textures varying between silty clay loam, silty loam and sandy loam. pH of the soil varies from 6.63 to 7.26 indicating slightly acidic to slightly alkaline nature. Electrical conductivity of the soil varies from 168 to 210  $\mu\text{s}/\text{cm}$ . Bulk density ranges between 0.88 and 1.53  $\text{g}/\text{cm}^3$  and water content ranges between 2.16 to 8.56 %.

### ***Chemical Characteristics***

Calcium ranges between 184 and 442 mg/kg. Magnesium ranges between 83 and 184 mg/kg. Sodium ranges between 165 and 219 mg/kg. Potassium ranges between 144.56 and 213.56 mg/kg. Organic matter content ranges between 0.94 and 1.78 mg/kg and Iron ranges between 21.51 and 47.45 mg/kg.

### ***Soil Erosion***

Soil erosion map shows that:

- ❖ Soil erosion is very low in the proposed lease area

## **3.3 WATER ENVIRONMENT**

### ***Surface Water***

Cheyyar River Arasanipalai, Arpakkam Lake and Sithalapakkam Lake are the three prominent surface water resources present in the study area. These are ephemeral in nature, which convey water only after rainfall events. The proposed project area is located 2.47 km SSE of Cheyyar River Arasanipalai, 2.94 ENE of Arpakkam Lake and 2.12 km S of Sithalapakkam Lake, as shown in Table 3.6 and Figure 3.7. Two surface water samples, known as SW1, SW2 and SW3 were collected from the three surface water bodies to assess the baseline water quality. Table 3.6 summarizes surface water quality data of the three samples. Results for surface water samples in the Table 3.6 indicate that the physical and chemical parameters are within permissible limits. Of the two biological parameters, Coliform bacteria are present in the three water samples, whereas E-Coli is absent in the samples.

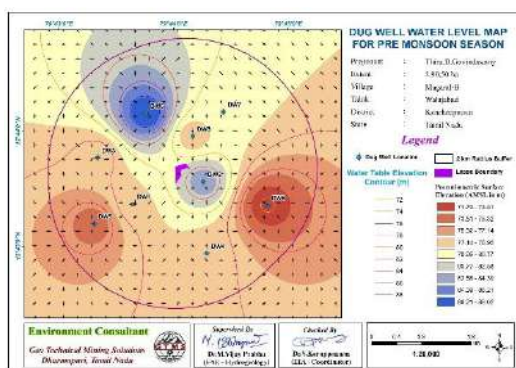
### ***Ground Water Resources***

Groundwater in the study area occurs in the crystalline rocks of Archaean age and Recent alluvium. The movement of the groundwater is controlled by the intensity of weathering and fracturing of crystalline rocks. Dug wells and bore wells are the most common ground water abstraction structures in the area. However, in dry season, people in the study area heavily rely on bore wells for their domestic and agriculture purpose. Five groundwater samples, known as OW1, OW2, OW3, BW4 and BW5 were collected from open wells and bore wells to analysed for physico-chemical conditions, heavy metals and bacteriological contents in order to assess baseline quality of ground water. Ground water sampling locations and their distance and direction from the lease area are provided in Table 3.5 and the spatial occurrence of water sampling locations is shown in Figure 3.6. Table 3.7 summarizes ground water quality data of the five samples.

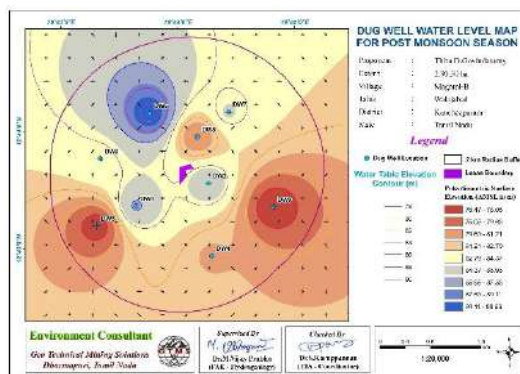
Results for ground water samples in the Table 3.7 indicate that the physical, chemical and biological parameters are within permissible limits in comparison with standards of IS10500:2012.

### **Groundwater Levels and Flow Direction**

As the groundwater moves from the points of highest static groundwater elevation to the points of lowest static groundwater elevation under the influence of gravity, data regarding depth to groundwater levels are essential to infer the direction of groundwater movement within the study area. Knowledge of groundwater flow direction is must in choosing location for background groundwater quality monitoring well and in locating recharge and discharge areas. Therefore, data regarding groundwater elevations were collected from 9 open wells and 9 bore wells at various locations within 2 km radius around the proposed project sites for the period from October through December, 2022 (Post Monsoon Season) and from March through May, 2023(Pre-Monsoon Season). The open well water level data thus collected onsite are provided in Tables 3.8 and 3.9. According to the data, average depths to the static water table in open wells range from 5.5 to 8.8 m BGL in post monsoon and from 8.6 to 13.6 m BGL in pre monsoon. The bore well data thus collected onsite are provided in Tables 3.10 and 3.11. The average depths to static potentiometric surface in bore wells for the period of October through December 2022 (Post-Monsoon Season) vary from 40 to 56 m and from 44 to 59 m for the period of March through May, 2023 (Pre-Monsoon Season).

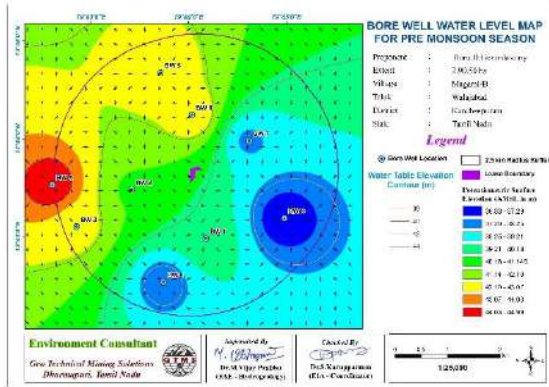


**Figure 3.1 Open Well Static Groundwater Elevation Map Showing the Direction of Groundwater Flow During Pre-Monsoon Season**

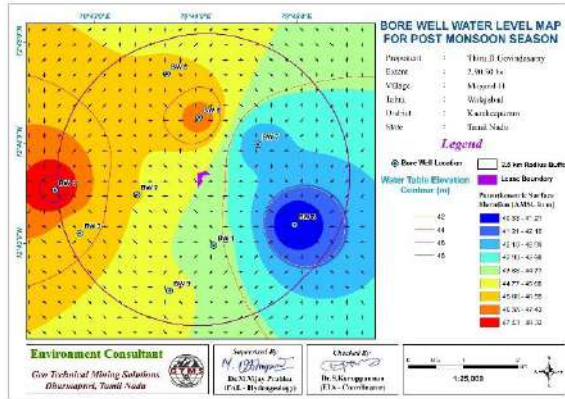


**Figure 3.2 Open Well Static Groundwater Elevation Map Showing the Direction of Groundwater Flow During Post-Monsoon Season**





**Figure 3.3 Borewell Static Groundwater Elevation Map Showing the Direction of Groundwater Flow During Pre-Monsoon Season**



**Figure 3.4 Borewell Static Groundwater Elevation Map Showing the Direction of Groundwater Flow During Post-Monsoon Season**

**3.4 AIR ENVIRONMENT**

The existing ambient air quality of the area is important for evaluating the impact of mining activities on the ambient air quality. The baseline studies on air environment include identification of specific air pollutants and their existing levels in ambient air. The ambient air quality in the study area of 5 km radius around the proposed quarry sites provides the baseline ambient air quality information.

**Ambient Air Quality**

As per the monitoring data, PM<sub>2.5</sub> ranges from 14.7µg/m<sup>3</sup> to 19.9µg/m<sup>3</sup>; PM<sub>10</sub> from 34.1µg/m<sup>3</sup> to 39.5 µg/m<sup>3</sup>; SO<sub>2</sub> from 5.9 µg/m<sup>3</sup> to 9.6 µg/m<sup>3</sup>; NO<sub>x</sub> from 11.5 µg/m<sup>3</sup> to 18.8µg/m<sup>3</sup>. The concentration levels of the pollutants fall within the acceptable limits of NAAQS prescribed by CPCB.

**3.5 NOISE ENVIRONMENT**

The noise level in core zone was 42.4 dB (A) Leq during day time and 38.6 dB (A) Leq during night time. Noise levels recorded in buffer zone during day time varied from 38.4 to 40.6dB (A) Leq and during night time from 33.2 to 38.9dB (A) Leq. Thus, the noise level for industrial and residential area meets the requirements of CPCB.

**3.6 BIOLOGICAL ENVIRONMENT**

Biological assessment of the site was done to identify ecologically sensitive areas and whether there are any rare, endangered, endemic or threatened (REET) species of flora & fauna in the core area as well its buffer zone to be impacted. The study has also been designed to suggest suitable mitigation measures, if necessary, for protection of wildlife habitats and

conservation of REET species if any. The study found that there is no endemic, endangered migratory fauna found in the area. This area is not also a migratory path of any faunal species. Hence, this small mining operation over short period of time will not have any significant impact on the surrounding flora and fauna.

### 3.7 SOCIO ECONOMIC ENVIRONMENT

Socio-economic study is an essential part of environmental study. It is a measure of an individual's or family's or group of people's economic and social position based on education, income, health, and occupation. Socio-economic most important determinant of livelihoods as levels of knowledge, skill and income conditions which mean for their living. The study found that a part of population is suffering from lack of permanent job to run their day-to-day life. Their expectation is to earn some income for their sustainability on a long-term basis. The proposed project will aim to provide preferential employment to the local people there by improving the employment opportunity in the area, which will in turn improve the social standards.

### 3.8 TRAFFIC ENVIRONMENT

**Table 3.2 Traffic Survey Locations**

Station Code	Road Name	Distance and Direction	Type of Road
TS1	Village Road	0.7 Km-SW	Village Road
TS2	Vanthavaasi– Kancheepuram (SH-116)	6.5 Km-WNW	Vanthavaasi– Kancheepuram (SH-116)

*Source: On-site monitoring by GTMS FAE & TM*

**Table 3.3 Existing Traffic Volume**

Station code	HMV		LMV		2/3 Wheelers		Total PCU
	No	PCU	No	PCU	No	PCU	
TS1	35	105	35	35	64	32	172
TS2	95	285	50	50	90	45	380

*Source: On-site monitoring by GTMS FAE & TM*

### 3.9 SITE SPECIFIC FEATURES

**Table 3.4 Details of Environmentally Sensitive Ecological Features in the Study Area**

SI. No	Sensitive Ecological Features	Name	Areal Distance in km from cluster
1	National Park / Wild life Sanctuaries	None	Nil within 10 km radius
		None	Nil within 10 km radius
2	Reserve Forest	Marutham R. F	7.03 km SE
3	Lakes/Reservoirs/ Dams/Streams/Rivers	Cheyyar River	2.30 km S
		Paalar River	5.7 km N
		Mamandur	7.7 km NW
		Uthiramerur	8.65 km S
4	Tiger Reserve/Elephant Reserve/ Biosphere Reserve	None	Nil within 10 km radius
5	Critically Polluted Areas	None	Nil within 10 km radius
6	Mangroves	None	Nil within 10 km radius
7	Mountains/Hills	None	Nil within 10 km radius
8	Notified Archaeological Sites	None	Nil within 10 km radius
9	Industries/ Thermal Power Plants	None	Nil within 10 km radius
10	Defence Installation	None	Nil within 10 km radius

*Source: Survey of India Toposheet*

## CHAPTER IV

### ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

#### 4.0 INTRODUCTION

In order to maintain the environmental commensuration with the mining operation, it is essential to undertake studies on the existing environmental scenario and assess the impact on different environmental components. This would help in formulating suitable management plans for sustainable resource extraction.

#### 4.1 LAND ENVIRONMENT

##### *Anticipated Impact*

- ❖ Permanent impact on mineral resources due to removal of 417131m<sup>3</sup> of rough stone and 45804 m<sup>3</sup> gravel
- ❖ Permanent or temporary change on land use and land cover
- ❖ Change in topography of the mine lease area
- ❖ Problems to agricultural land and human habitations due to dust, and noise caused by movement of heavy vehicles
- ❖ Degradation of the aesthetic environment of the core zone due to quarrying
- ❖ Soil erosion and sediment deposition in the nearby water bodies due to earthworks during the rainy season
- ❖ Siltation of water course due to wash off from the exposed working area

##### *Mitigation Measures*

- ❖ The mining activity will be gradual confined in blocks and excavation will be undertaken progressively along with other mitigative measures like phase wise development of greenbelt etc.
- ❖ Construction of garland drains all around the quarry pits and construction of check dam at strategic location in lower elevations to prevent erosion due to surface runoff during rainfall and also to collect the storm water for various uses within the proposed area.
- ❖ Green belt development along the boundary within safety zone. The small quantity of water stored in the mined-out pit will be used for greenbelt
- ❖ Thick plantation will be carried out on unutilized area, top benches of mined out pits, on safety barrier, etc.,
- ❖ At conceptual stage, the land use pattern of the quarry will be changed into Greenbelt area and temporary reservoir.

- ❖ In terms of aesthetics, natural vegetation surrounding the quarry will be retained (such as in a buffer area i.e., 7.5 m safety barrier and other safety provided) so as to help minimize dust emissions.
- ❖ Proper fencing will be carried out at the conceptual stage, Security will be posted round the clock, to prevent inherent entry of the public and cattle.

## **4.2 SOIL ENVIRONMENT**

### ***Anticipated Impact***

This project does not result in any impact on the soil of the project site as topsoil is neither removed from the project site nor preserved in the safety margin area. However, some of the common mitigation measures have been discussed in the following sections to protect the immediate soil environment surrounding the lease area.

### ***Soil Erosion***

- ❖ Low to moderate soil erosion is observed in the south side of the lease area

### ***Mitigation Measures***

- ❖ Soil erosion is very low in the proposed lease area. Therefore, the lease area will not cause soil erosion in any way. but Run-off diversion – Garland drains will be constructed around the project boundary to prevent surface flows from entering the quarry works areas and will be discharged into vegetated natural drainage lines, or as distributed flow across an area stabilised against erosion.
- ❖ Sedimentation ponds - Run-off from working areas will be routed towards sedimentation ponds. These trap sediment and reduce suspended sediment loads before runoff is discharged from the quarry site. Sedimentation ponds should be designed based on runoff, retention times, and soil characteristics. There may be a need to provide a series of sedimentation ponds to achieve the desired outcome.
- ❖ Retain vegetation – Retain existing or re-plant the vegetation at the site wherever possible.
- ❖ Monitoring and maintenance – Weekly monitoring and daily maintenance of erosion control systems so that they perform as specified specially during rainy season.

## **4.3 WATER ENVIRONMENT**

### ***Anticipated Impact***

- ❖ As the water required for the mining operations, obtained from the approved water supplying agency, the project does not develop any abstraction structures in the lease area. Therefore, no impact responsible for the water table declination is anticipated.

- ❖ Surface and ground water resources may be contaminated due to mine pit water discharge, domestic sewage, waste water from vehicle washing, washouts from surface exposure or working areas, discharge of oil & grease, and suspended solids due to waste from washing of machineries. To address this impact, some of the important mitigation measures is provided as below.

### ***Mitigation Measures***

- ❖ Garland drainage system and settling tank will be constructed along the proposed mining lease area. The garland drainage will be connected to settling tank and sediments will be trapped in the settling tanks and only clear water will be discharged to the natural drainage
- ❖ Rainwater from the mining pits will be collected in sump and will be allowed to store and pumped out to surface settling tank of 15 m x 10 m x 3 m to remove suspended solids if any. This collected water will be judiciously used for dust suppression and such sites where dust likely to be generated and for developing green belt. The proponent will collect and judiciously utilize the rainwater as part of rainwater harvesting system.
- ❖ The water collected will be reused during storm for dust suppression and greenbelt development within the mines.
- ❖ Interceptor traps/oil separators will be installed to remove oils and greases. Water from the tipper wash-down facility and machinery maintenance yard will be passed through interceptor traps/oil separators prior to its reuse.
- ❖ Flocculating or coagulating agents will be used to assist in the settling of suspended solids during monsoon seasons.
- ❖ Periodic (every 6 month once) analysis of ground water quality of quarry pit water and ground water of nearby villages will be conducted.
- ❖ Domestic sewage from site office and urinals/latrines provided in ML is discharged in septic tank followed by soak pits.
- ❖ Waste water discharge from mine will be treated in settling tanks before using for dust suppression and tree plantation purposes.
- ❖ De-silting will be carried out before and immediately after the monsoon season.
- ❖ Regular monitoring (once every 6 months) and analysing the quality of water in open well, bore wells and surface water.

#### 4.4 AIR ENVIRONMENT

##### *Anticipated Impact*

- ❖ Emission of air pollutants such as particular matter (PM), gases such as sulphur dioxide, oxides of nitrogen at various stages of activities such as excavation and transportation of materials. The rate of emission and the incremental concentration of pollutants is estimated in the following sections before providing mitigation measures.

**Table 4.1 Incremental and Resultant PM<sub>2.5</sub>**

Station ID	Distance to core area (km)	Direction	PM <sub>2.5</sub> concentrations(µg/m <sup>3</sup> )			Comparison against air quality standard (60 µg/m <sup>3</sup> )	Magnitude of change (%)	Significance
			Base line	Pred icted	Total			
AAQ1	--	--	20.4	6.49	26.89	Below standard	31.81	Not significant
AAQ2	2.3	SW	16.0	1	17		6.25	
AAQ3	4.95	NW	16.8	0	16.8		0.00	
AAQ4	1.98	NE	15.8	0.5	16.3		3.16	
AAQ5	4.34	N	18.0	0	18		0.00	
AAQ6	2.36	ESE	19.5	0.5	20		2.56	
AAQ7	3.56	NW	15.4	0.5	15.9		3.25	

**Table 4.2 Incremental and Resultant PM<sub>10</sub>**

Station ID	Distance to core area (km)	Direction	PM <sub>10</sub> concentrations(µg/m <sup>3</sup> )			Comparison against air quality standard (100 µg/m <sup>3</sup> )	Magnitude of change (%)	Significance
			Base line	Pred icted	Total			
AAQ1	--	--	39.8	12.9	52.7	Below standard	32.41	Not significant
AAQ2	2.3	SW	37.0	5	42		13.51	
AAQ3	4.95	NW	37.4	0	37.4		0.00	
AAQ4	1.98	NE	34.2	0.5	34.7		1.46	
AAQ5	4.34	N	36.4	0	36.4		0.00	
AAQ6	2.36	ESE	39.7	0.5	40.2		1.26	
AAQ7	3.56	NW	33.7	0.5	34.2		1.48	

**Table 4.3 Incremental & Resultant SO<sub>2</sub>**

Station ID	Distance to core area (km)	Direction	SO <sub>2</sub> concentrations(µg/m <sup>3</sup> )			Comparison against air quality standard (80 µg/m <sup>3</sup> )	Magnitude of change (%)	Significance
			Base line	Pred icted	Total			
AAQ1	--	--	9.5	5.20	14.7	Below standard	54.74	Not significant
AAQ2	2.3	SW	7.0	1	8		14.29	
AAQ3	4.95	NW	7.4	0	7.4		0.00	
AAQ4	1.98	NE	6.6	0.5	7.1		7.58	
AAQ5	4.34	N	7.3	0	7.3		0.00	
AAQ6	2.36	ESE	9.6	0.5	10.1		5.21	
AAQ7	3.56	NW	6.5	0	6.5		0.00	

**Table 4.4 Incremental & Resultant NO<sub>x</sub>**

Station ID	Distance to core area (km)	Direction	NO <sub>x</sub> concentrations(µg/m <sup>3</sup> )			Comparison against air quality standard (80 µg/m <sup>3</sup> )	Magnitude of change (%)	Significance
			Base line	Pred icted	Total			
AAQ1	--	--	16.6	4.47	21.8	Below standard	31.33	Not significant
AAQ2	2.3	SW	11.0	1	12		9.09	
AAQ3	4.95	NW	16.9	0	16.9		0.00	
AAQ4	1.98	NE	15.8	0.5	16.3		3.16	
AAQ5	4.34	N	14.0	0	14		0.00	
AAQ6	2.36	ESE	18.5	0.5	19		2.70	
AAQ7	3.56	NW	15.0	0	15		0.00	

The values of cumulative concentration i.e., background + incremental concentration of pollutant in all the receptor locations are still within the prescribed NAAQ limits without effective mitigation measures. By adopting suitable mitigation measures, the pollutant levels in the atmosphere can be controlled further.



## ***Mitigation Measures***

### ***Haul Road and Transportation***

- ❖ Water will be sprinkled on haul roads twice a day to avoid dust generation during transportation
- ❖ Transportation of material will be carried out during day time and material will be covered with tarpaulin
- ❖ The speed of tippers plying on the haul road will be limited to < 20 km/hr to avoid generation of dust
- ❖ Water sprinkling on haul roads and loading points will be carried out twice a day
- ❖ Main source of gaseous pollution will be from vehicle used for transportation of mineral. Therefore, weekly maintenance of machines improves combustion process and reduces pollution.
- ❖ The un-metalled haul roads will be compacted weekly before being put into use.
- ❖ Overloading of tippers will be avoided to prevent spillage.
- ❖ It will be ensured that all transportation vehicles carry a valid PUC certificate.
- ❖ Haul roads and service roads will be graded to clear accumulation of loose materials.

### ***Green Belt***

- ❖ Planting of trees all along mine haul roads outside the lease and regular grading of haul roads will be practiced to prevent the generation of dust due to movement of tractors/tippers.
- ❖ Green belt of adequate width will be developed around the project site.

### ***Occupational Health***

- ❖ Dust mask will be provided to the workers and their use will be strictly monitored.
- ❖ Annual medical checkups, trainings and campaigns will be arranged to ensure awareness about importance of wearing dust masks among all mine workers and tipper drivers.
- ❖ Ambient air quality monitoring will be conducted every six months to assess effectiveness of mitigation measures proposed.

## 4.5 NOISE ENVIRONMENT

### *Anticipated Impact*

**Table 4.5 Predicted Noise Incremental Values**

Noise Monitoring Location	Distance From Project Site(m)	Baseline Noise Level (dBA)m During Day Time	Predicted Noise Level (dBA)	Total (dBA)
Core	100	42.4	57.16	57.30
Surutal	920	40.6	37.88	42.46
Chinna Elacheri	2280	38.4	30.00	38.99
Vadakalpakkam	4900	39.8	23.36	39.90
Arpakkam	2000	40.2	31.14	40.71
Kalakattur	4410	41.6	24.27	41.68
Magaral	2380	42.6	29.63	42.81
Girijapuram	3510	39.8	26.25	39.99
NAAQ Standards	Industrial Day Time - 75 dB (A) & Night Time- 70 dB (A) Residential Day Time -55 dB (A) & Night Time- 45 dB (A)			

Total noise level in all the sampling areas is well below the CPCB standards for industrial and residential areas. By adopting suitable mitigation measures, the noise levels due to the project can be controlled further.

## 4.6 Ground Vibrations

**Table 4.6 Predicted PPV Values due to Blasting**

Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in mm/s	Fly rock distance in m	Air Blast	
					Pressure (kPa)	Sound Level (dB)
P1	78	920	0.29	23	0.17	139

**Table 4.7 Predicted PPV Values due to Blasting at 100-500 m radius**

Location ID	Maximum Charge in kgs	Radial Distance in m	PPV in mm/s	Fly rock distance in m	Air Blast	
					Pressure (kPa)	Sound Level (dB)
P1	78	100	10.29	23	2.44	162
		200	3.39		1.06	154
		300	1.77		0.65	150
		400	1.12		0.46	147
		500	0.78		0.35	145

### ***Mitigation Measures***

- ❖ Proper maintenance, oiling and greasing of machines will be done every week to reduce generation of noise
- ❖ Provision of sound insulated chambers for the workers working on machines (HEMM) producing higher levels of noise.
- ❖ Silencers / mufflers will be installed in all machineries
- ❖ Green Belt/Plantation will be developed around the project area and along the haul roads. The plantation minimizes propagation of noise
- ❖ Personal Protective Equipment (PPE) like ear muffs/ear plugs will be provided to the operators of HEMM and persons working near HEMM and their use will be ensured through training and awareness
- ❖ Regular medical check-up and proper training to personnel to create awareness about adverse noise level effects.

## **4.7 BIOLOGICAL ENVIRONMENT**

### **Impact on Ecology and Biodiversity**

- There shall be negligible air emissions or effluents from the project site. During loading the truck, dust generation will be likely. This shall be a temporary effect and not anticipated to affect the surrounding vegetation significantly
- The species in the lease area include herbs (7), trees (06), shrubs (05), climbers (02), creepers (01), grass (02). Quarry lease area has the highest abundance of *Prosopis juliflora* followed by *Azadirachta indica*, *Tectona grandis* and *Borassus flabellifer*. Trees are few and shrubs and herbs are more than trees.
- Most of the land in the buffer area is undulating terrain with crop lands, grass patches and small shrubs. Hence, there will be no effect on flora of the region.
- Carbon released from quarrying machineries and tippers during quarrying would be 3949 kg per day, 1066219 kg per year and 5331097 kg over five years, as provided in Table 4.8.

**Table 4.8 Carbon Released During Five Years of Rough Stone and Gravel Production**

	<b>Per day</b>	<b>Per year</b>	<b>Per five years</b>
Fuel consumption of excavator	253	68268	341339
Fuel consumption of compressor	78	20952	104760
Fuel consumption of tipper	1143	308623	1543117
Total fuel consumption in liters	1473	397843	1989215
Co <sub>2</sub> emission in kg	3949	1066219	5331097

**Mitigation Measures on Flora**

- ❖ During conceptual stage, the top bench will be re-vegetated by planting local /native species and lower benches will be converted into rainwater harvesting structure following completion of mining activities, which will replace habitat resources for fauna species in this locality over a longer time.
- ❖ 20 Borasus flabellifer trees are protected in 7.5-meter Safety zone without any damage during quarrying. As the survival rate due to uprooting was only 30%, 20 seedlings were procured at 10 seedlings per tree. Seedlings are planted and protected in a 7.5- and 50-meter safety zone.
- ❖ Existing roads will be used; new roads will not be constructed to reduce impact on flora.

**Carbon Sequestration**

- ❖ To mitigate carbon emission due to mining activities, we recommend planting trees around the quarry to offset the carbon emission during quarrying. A tree can sequester 24 kg of carbon per year. Therefore, we recommend planting large number of trees around the quarry and near school campuses, government wasteland, roadsides etc.
- ❖ As per the greenbelt development plan as recommended by SEAC (Table 4.13), about 2183 trees will be planted within three months from the beginning of mining. These trees, when grown up would sequester carbon of about 129 kg of the total carbon, as provided in Table 4.9.

**Table 4.9 CO<sub>2</sub> Sequestration**

CO <sub>2</sub> sequestration in kg	129	34825	174126
Remaining CO <sub>2</sub> not sequestered in kg	3820	1031394	5156972
Trees required for environmental compensation	42975		
Area required for environmental compensation in hectares	86		

## **4.8 SOCIO ECONOMIC ENVIRONMENT**

### ***Anticipated Impact***

- ❖ Dust generation from mining activity can have negative impact on the health of the workers and people in the nearby area.
- ❖ Approach roads can be damaged by the movement of tippers
- ❖ Increase in Employment opportunities both direct and indirect thereby increasing economic status of people of the region.

### ***Mitigation Measures***

- ❖ Good maintenance practices will be adopted for all machinery and equipment, which will help to avert potential noise problems.
- ❖ Green belt will be developed in and around the project site as per Central Pollution Control Board (CPCB) guidelines.
- ❖ Air pollution control measure will be taken to minimize the environmental impact within the core zone.
- ❖ For the safety of workers, personal protective appliances like hand gloves, helmets, safety shoes, goggles, aprons, nose masks and ear protecting devices will be provided as per mines act and rules.
- ❖ Benefit to the State and the Central governments through financial revenues by way of royalty, tax, duties, etc..., from this project directly and indirectly.
- ❖ From above details, the quarry operations will have highly beneficial positive impact in the area.

## **4.9 OCCUPATIONAL HEALTH MEASURES**

All the persons will undergo pre-employment and periodic medical examination. Employees will be monitored for occupational diseases by conducting the following tests

- ❖ General physical tests
- ❖ Audiometric tests
- ❖ Full chest, X-ray, Lung function tests, Spirometry tests
- ❖ Periodic medical examination – yearly
- ❖ Lung function test – yearly, those who are exposed to dust
- ❖ Eye test

Essential medicines will be provided at the site. The medicines and other test facilities will be provided at free of cost. The first aid box will be made available at the mine for immediate treatment. First aid training will be imparted to the selected employees regularly. The lists of first aid trained members shall be displayed at strategic places.

## CHAPTER V

### ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)

The mineral deposits are site specific in nature; hence question of seeking alternate sites do not arise for the projects.

## CHAPTER VI

### ENVIRONMENT MONITORING PROGRAM

Regular monitoring program of environmental components is essential to take into account the changes in the environmental components as shown in Table 6.1. The Objectives of monitoring is:

- ❖ To check or assess the efficiency of the controlling measures;
- ❖ To establish a data base for future impact assessment studies.

**Table 6.1 Post Environmental Clearance Monitoring Schedule**

S. No.	Environment Attributes	Location	Monitoring		Parameters
			Duration	Frequency	
1	Air Quality	2 Locations (1 Core & 1 Buffer)	24 hours	Once in 6 months	Fugitive Dust, PM <sub>2.5</sub> , PM <sub>10</sub> , SO <sub>2</sub> and NO <sub>x</sub> .
2	Meteorology	At mine site before start of Air Quality Monitoring & IMD Secondary Data	Hourly / Daily	Continuous online monitoring	Wind speed, Wind direction, Temperature, Relative humidity and Rainfall
3	Water Quality Monitoring	2 Locations (1SW & 1 GW)	-	Once in 6 months	Parameters specified under IS:10500, 1993 & CPCB Norms
4	Hydrology	Water level in open wells in buffer zone around 1 km at specific wells	-	Once in 6 months	Depth in m BGL
5	Noise	2 Locations (1 Core & 1 Buffer)	Hourly – 1 Day	Once in 6 months	Leq, Lmax, Lmin, Leq Day & Leq Night

6	Soil	2 Locations (1 Core & 1 Buffer)	–	Once in six months	Physical and chemical characteristics
7	Greenbelt	Within the project area	Daily	Monthly	Maintenance

*Source: Guidance of manual for mining of minerals, February 2010*

## 6.2 BUDGETARY PROVISION FOR EMP

The cost in respect of monitoring of environmental components has been shown in Table 6.2.

**Table 6.2 Environment Monitoring Budget**

S. No.	Parameter	Capital Cost	Recurring Cost per annum
1	Air Quality	-	Rs 60,000/-
2	Meteorology	-	Rs 15,000/-
3	Water Quality	-	Rs 20,000/-
4	Water Level Monitoring		Rs 10,000/-
5	Soil Quality	-	Rs 20,000/-
6	Noise Quality	-	Rs 10,000/-
7	Vibration Study	-	Rs 1,50,000/-
8	Greenbelt	-	Rs 10,000/-
<b>Total</b>		<b>-</b>	<b>Rs 2,95,000 /-</b>

*Source: Field Data*

## CHAPTER VII

### ADDITIONAL STUDIES

#### 7.1 RISK ASSESSMENT

Risk assessment is all about prevention of accidents and to take necessary steps to prevent it from happening. The methodology for the risk assessment is based on the specific risk assessment guidance issued by the Directorate General of Mine Safety (DGMS), Dhanbad vide circular no.13 of 2002 dated 31<sup>st</sup> December 2002. The DGMS risk assessment process is intended to identify existing and probable hazards in the work environment and assess the risk levels of those hazards in order to prioritize those that need an immediate attention. Further, mechanisms responsible for these hazards are identified and control measures are recorded

along with pinpointed responsibilities. The whole quarry operation will be carried out under the direction of a qualified competent mine manager certified by the DGMS, Dhanbad.

## **7.2 DISASTER MANAGEMENT PLAN**

The objective of the disaster management plan is to make use of the combined resources of the mine and the outside services to:

- ❖ Rescue and treat casualties;
- ❖ Safeguard other people;
- ❖ Minimize damage to property and the environment;
- ❖ Initially contain and ultimately bring the incident under control;
- ❖ Secure the safe rehabilitation of affected area; and
- ❖ Preserve relevant records and equipment for the subsequent inquiry into the cause and circumstances of the emergency.

## **7.3 CUMULATIVE IMPACT STUDY**

- The results on the cumulative impact of the two proposed projects on air environment of the cluster do not exceed the permissible limits set by CPCB for air pollutants.
- The cumulative results of noise for the habitation in consideration do not exceed the limit set by CPCB for residential areas for day time.
- The two proposed project will allocate Rs.10,00,000/- towards CER as recommended by SEAC.
- The five proposed projects will directly provide jobs to about 46 local people.
- The proposed projects will plant about 1783 saplings in and around the lease area.

## **7.4 PLASTIC WASTE MANAGEMENT PLAN**

The Project Proponent shall comply with Tamil Nadu Government Order (Ms) No. 84 Environment and Forest (EC.2) Department Dated: 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986.

### ***Objective***

- ❖ To investigate the actual supply chain network of plastic waste.
- ❖ To identify and propose a sustainable plastic waste management by installing bins for collection of recyclables with all the plastic waste
- ❖ Preparation of a system design layout, and necessary modalities for implementation and monitoring.



**Table 7.1 Action Plan to Manage Plastic Waste**

<b>S. No.</b>	<b>Activity</b>	<b>Responsibility</b>
1	Framing of Layout Design by incorporating provision of the Rules, user fee to be charged from waste generators for plastic waste management, penalties/fines for littering, burning plastic waste or committing any other acts of public nuisance	Mines Manager
2	Enforcing waste generators to practice segregation of bio-degradable, recyclable and domestic hazardous waste	Mines Manager
3	Collection of plastic waste	Mines Foreman
4	Setting up of Material Recovery Facilities	Mines Manager
5	Segregation of Recyclable and Non-Recyclable plastic waste at Material Recovery Facilities	Mines Foreman
6	Channelization of Recyclable Plastic Waste to registered recyclers	Mines Foreman
7	Channelization of Non-Recyclable Plastic Waste for use either in Cement kilns, in Road Construction	Mines Foreman
8	Creating awareness among all the stakeholders about their responsibility	Mines Manager
9	Surprise checking's of littering, open burning of plastic waste or committing any other acts of public nuisance	Mine Owner

## CHAPTER VIII

### PROJECT BENEFITS

Various benefits are envisaged due to the proposed mine and benefits anticipated from the proposed project to the locality, neighbourhood, region and nation as a whole are:

- ❖ Direct employment to 18 local people
- ❖ Rain water harvesting structures to augment the water availability for irrigation and plantation and ground water recharge
- ❖ Creation of community assets (infrastructure) like school buildings, village roads/ linked roads, dispensary & health Centre, community Centre, market place etc.,
- ❖ Strengthening of existing community facilities through the Community Development Program
- ❖ Skill development & capacity building like vocational training

- ❖ Awareness program and community activities, like health camps, medical aids, sports & cultural activities, plantation etc.,
- ❖ CSR activities mainly contributing to education, health, training of women self-help groups and infrastructure etc., will be taken up in the Magaral-B Village. CSR budget is allocated as 2.5% of the profit.
- ❖ Rs. 5,00,000 will be allocated for CER.

**Table 8.1 CER Action Plan**

S. No.	Activity	Budget (Rs.in Lakh)
1	The applicant Indents to involve in corporate environment responsibilities (CER) activities such as renovation of existing toilet, plantation within the school premises, donating environment related books to the nearby school library, etc.	Rs.5,00,000
	<b>Total</b>	<b>Rs. 5,00,000</b>

*Source: Field survey conducted by FAE in consultation with project proponent*

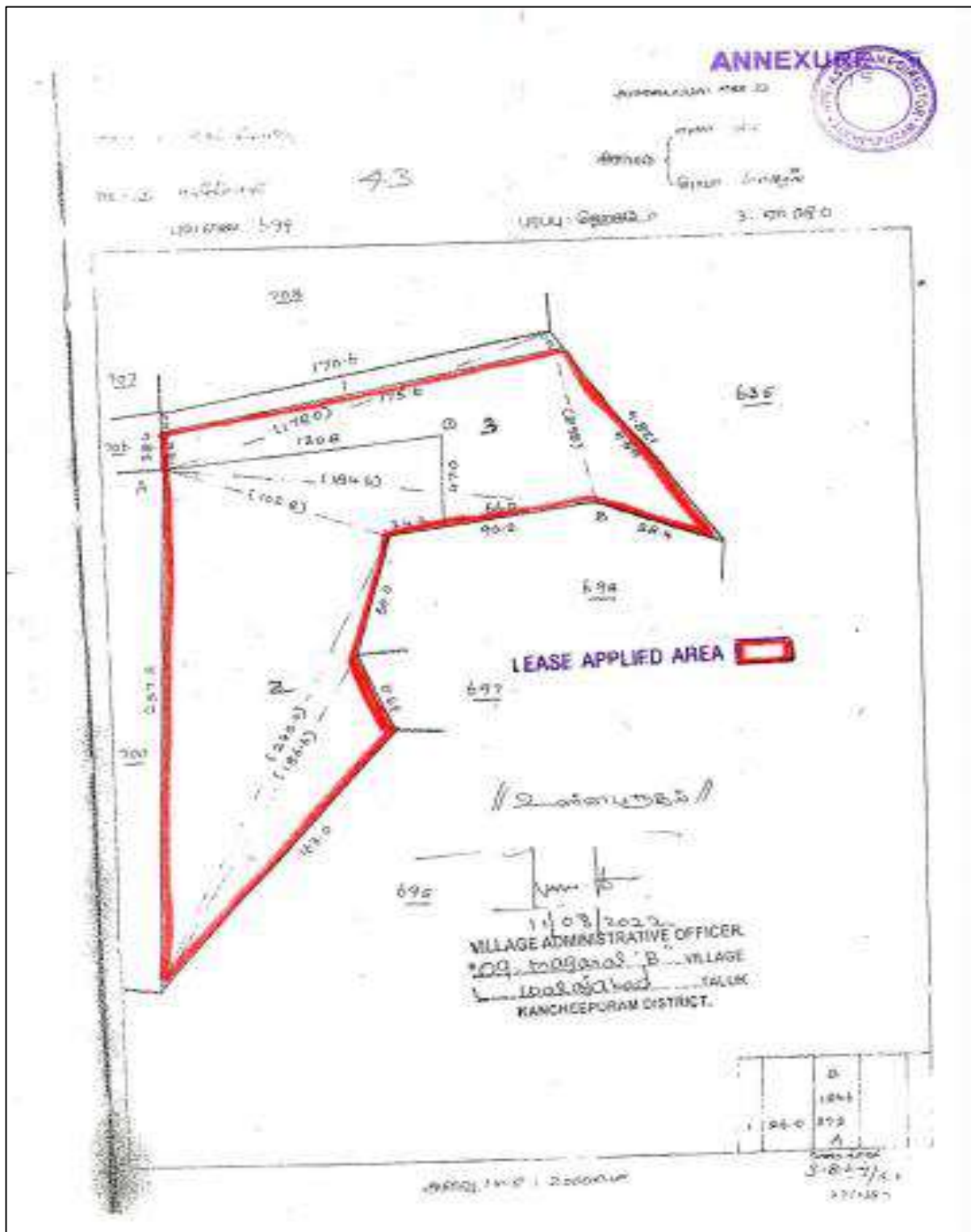
## CHAPTER X

### ENVIRONMENT MANAGEMENT PLAN

In order to implement the environmental protection measures, an amount of **Rs. 4976226** as capital cost and recurring cost as **Rs. 2393437** as recurring cost/annum is proposed considering present market price considering present market scenario for the proposed project. After the adjustment of 5% inflation per year, the overall EMP cost for 5 years will be **Rs. 18300245**.

## LAND DOCUMENTS

Some of the important land related documents are shown in below.



An FMP sketch showing proposed lease area in red colour



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TAMIL NADU GOVT  
DEPARTMENT OF REVENUE

District : Kanchipuram  
Revenue Village : Magaral - A

Circle : Walajabad  
Patta No : 626

Owners' name  
PJR Blue Metals Private Limited Chennai-600045

செ. அளவை எண்.	சு.அளவை எண்.	பகுதி.	பெ.அளவை எண்.	பெ.அளவை எண்.	பெ.அளவை எண்.	பெ.அளவை எண்.	பெ.அளவை எண்.		பெ.அளவை எண்.	பெ.அளவை எண்.	பெ.அளவை எண்.
							பெ.அளவை எண்.	பெ.அளவை எண்.			
699	2	2	335	551	பெ.அளவை எண்.						
699	2	2	664	626	பெ.அளவை எண்.						

VILLAGE ADMINISTRATIVE OFFICER,  
No. 09 - MAGARAL 'B' VILLAGE,  
WALAJABAD TALUK,  
KANCHIPURAM DISTRICT.

380/21-N.F. III-A-10-20,00,000 Cps.-OBP.-Nov.-7-2021

11/03/22, 10:40 AM

District Collector's Office Web Service - Land Title Details


Tamil Nadu Govt  
Department of Revenue  
Land ownership details: e. No. 10(1) Sec

District : Kanchipuram  
Revenue Village : Magaral - A  
Circle : Walajabad  
Patta No : 626

Owners' name  
PJR Blue Metals Private Limited Chennai-600045

Survey Number	subdivision	Punsel	do well		Others		Notes		
			Spread	solution	Spread	solution			
			Heck - air	Rs - Pt	Heck - air	Rs - Pt	Heck - air	Rs - Pt	
692	2C	0 - 56.20	1.72	--	--	--	--	2022/0103/03/248684-2021/03/12/00001450 -- 28-05-2022	
699	3	0 - 88.00	1.64	--	--	--	--	2021/0103/03/223612- -- 20-08-2021	
		1 - 44.20	3.36						

**Note 2 :**



1. The above information / certificate copy details are obtained from E-Registry. Confirm these by entering reference number 03/12/204/00626/90484 at <https://eservices.tn.gov.in>.

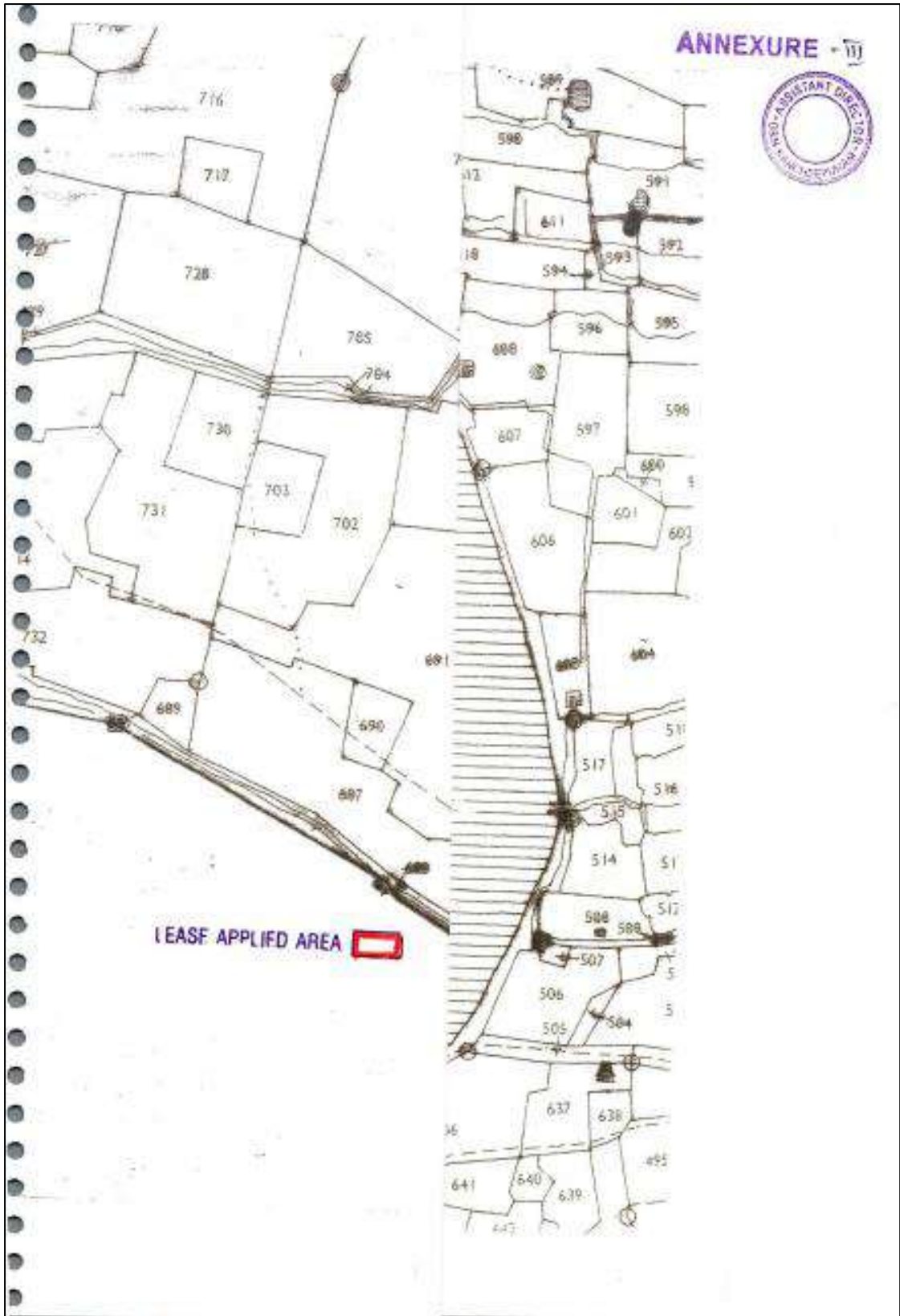
2. This information was printed on 05-11-2022 at 10:36:19 AM.

3. Scan with 2D barcode reader of mobile phone camera and check on website via 3G/GPRS

https://eservices.tn.gov.in/eservices/landtitle/Extract\_an.html?an=

1/1

### Register Documents



Copy of the village map