EXECUTIVE SUMMARY OF DRAFT ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENT MANAGEMENT PLAN

FOR OBTAINING

Environmental Clearance under EIA Notification– 2006

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

"B1" CATEGORY – MINOR MINERAL – CLUSTER – NON-FOREST LAND

Rough Stone & Gravel Quarry

CLUSTER EXTENT = 15.84.05hectares

At

Anjur Village, Pugalur Taluk, Karur District, Tamil Nadu

ToR Identification No. TO26B0108TN5818271N on 27.03.2026, File No.13499

NAME AND ADDRESS OF THE PROPOSED PROJECT PROPONENT

Name and Address	Extent & S.F. No.	Mineral Production
Mr. M. Kumaravadivel, S/o. Muthusamy No.3/246, Velayuthampalaiyam, Anjur, Pandilingapuram, Pugalur Taluk, Karur District.	1.72.0Ha & 775/1D, 775/1E (Part) & 807/2A(Part)	Rough Stone- 183357m^3 or 504232MTMT Gravel- 5643m^3 or 11286MT Depth- 30m (BGL)

ENVIRONMENTAL CONSULTANT

GEO TECHNICAL MINING SOLUTIONS

No: 1/213-B, Ground Floor, Natesan Complex
Oddapatti, Collectorate Post office,
Dharmapuri-636705. Tamil Nadu.
E-mail: info.gtmsdpi@gmail.com,
Website: www.gtmsind.com
NABET ACC. NO: NABET/EIA/23-26/RA 0319
Valid till: 31.12.2026

ENVIRONMENTAL LAB

ACCURACY ANALABS

Plot No 13E, First Floor, Sathya Nagar, Sri Chelliamman Nagar, Dindigul Collectorate, Dindigul, Tamil Nadu- 624004.

Baseline Study Period- March- May 2026

JUNE- 2026

TERMS OF REFERENCE (ToR) COMPLIANCE

ToR File No.13499

TOR Identification No. TO26B0108TN5818271N, dated. 27/03/2026

Anjur Village Rough Stone and Gravel Quarry

Specific Terms of Reference for (Mining of Minerals)

1.Seiaa Specific Conditions:

S.No.	Terms of Reference	Remarks
1.1	After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant Terms of Reference (ToR) along with Public Hearing for the quantity of 1,83,357m^3 of Rough Stone & 5,643 m^3 of Gravel and annual peak production shall not exceed 24,592m^3 of Rough Stone & 2,485 m^3 of Gravel, for a depth of mining 30m (BGL) as per the approved mining plan, under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC normal conditions & the SEIAA Specific & Standard conditions. 1. The PP shall furnish the Certified Compliance Report for the Environmental Clearance issued earlier in the name of Thiru. P. Ravi, at the time of appraisal of EIA.	Proponent thanking the authorities for granting Terms of Reference (ToR) along with Public Hearing for the quantity of 1,83,357m^3 of Rough Stone & 5,643 m^3 of Gravel and annual peak production shall not exceed 24,592m^3 of Rough Stone & 2,485 m^3 of Gravel, for a depth of mining 30m (BGL). Will undergo combined Environment Impact Assessment Study and preparation of separate Environment Management Plan. Will be submitted in final report.

2. Seiaa Standard Conditions:

S.No		Terms of Reference	Remarks
Cluster Management Committee			
2.1	1	Cluster Management Committee shall be framed which must include all the	A cluster management committee including all the proponents of the

		proponents in the cluster as members including the existing as well as proposed quarry.	rough stone quarrying projects within the cluster of 500m radius will be constituted for the effective implementation of green belt development plan, water sprinkling, blasting, etc.
	2	The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,	The members of the cluster management committee will be instructed to carry out EMP in coordination.
	3	The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.	The list of members of the committee formed will be submitted to AD/Mines before the execution of mining lease and will be updated every year.
	4	Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.	All the information has been discussed in Section 2.5 under Chapter II in the EIA report page 17-25.
	5	The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.	Risk management plan will be prepared with mitigation measures. However, quarrying will be stopped during raining conditions. Section 7.2, chapter VII, page-136-138.

	6	The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail in the EIA report.	It will be advised to the cluster management committee to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised will be given in detail.
	7	The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.	A proper action plan regarding the restoration will be followed by the committee.
	8	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity.	The information on the health of the workers and the local people will be updated periodically.
	Agriculture & Agro-Biodiversity		
	9	Impact on surrounding agricultural fields around the proposed mining Area.	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, as shown in Section 4.6.4 under Chapter IV in the EIA report page 125.
	10	Impact on soil flora & vegetation around the project site.	The details on flora have been provided in Section 4.6 under Chapter IV in the EIA report page 122-125. There is no schedule I species of animals observed within study area as per Wildlife Protection Act, 1972 and no species falls in vulnerable,

			endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.
	11	Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.	Details of vegetation in the lease area have been provided in Section 3.7.6 under Chapter III in the EIA report page 79-82. Details about transplantation of plants have been provided in Section 4.6 under Chapter IV in the EIA report page 122-124.
	12	The Environmental Impact Assessment should study the agro-biodiversity, agro-forestry, horticulture plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.	The ecological details have been provided in Section 3.7 under Chapter III in the EIA report page 75-89 and measures have been provided in Section 4.6 under Chapter IV in the EIA report page 123-126.
	13	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	All the essential environmental protective measures will be followed by the proponent to manage the surrounding environment and restore the ecosystem, as discussed as Chapter IV in the EIA report page 107-129.
	14	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.	The impact of project on the land environment has been discussed in Section 4.1 under Chapter IV in the EIA report page 108-109 & 125.
	Forests		
	15	The project proponent shall detail study on impact of mining on Reserve forests free ranging wildlife.	The project proponent shall do barbed wire fencing work and develop a green belt around the lease area to prevent wildlife from entering the site.
	16	The Environmental Impact Assessment should study impact on forest,	The impacts of the project on ecology and biodiversity have been discussed

		vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	in Section 4.6 under Chapter IV in the EIA report page 122-125.
	17	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	The impacts of the project on standing trees and the existing trees have been discussed in Section 4.6 under Chapter IV in the EIA report page 122-125.
	18	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	The protected areas, National Parks, Corridors and Wildlife pathways near project site within 10km radius has been provided in Table 3.42 under Chapter III in the EIA report page 105.
	Water Environment		
	19	Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.	The hydrological study is conducted and discussed in section 3.4.3 & 3.4.4 under chapter III in the EIA report Page 52-58.
	20	Erosion Control measures.	Garland drainage structures will be constructed around the lease area to control the erosion, as discussed in Section 4.3 under Chapter IV in the EIA report page 110-112.

	21	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas.	Has been discussed in section 4.3 under Chapter IV in the EIA report page 110-112.
	22	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.	An analysis for food chain in aquatic ecosystem has been discussed in Section 3.7.9 under Chapter III in the EIA report page 86-87.
	23	The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities.	The impacts of the proposed project on the surrounding environment have discussed in Chapter IV in the EIA report page 107-129.
	24	The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.	The impact of the proposed project on aquatic plants and animals in water bodies has been discussed in Section 4.6 under Chapter IV in the EIA report page 122-125.
	25	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	The impact of mining on soil environment has been discussed in Section 4.2 under Chapter IV in the EIA report page 109-110.
	26	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	The impacts on water bodies, streams, lakes have been discussed in Section 4.3 under Chapter IV in the EIA report page 110-112.
	27	The EIA shall include the impact of mining activity on the following:	
		a) Hydrothermal / Geothermal effect due to destruction in the Environment.	The proposed mining area and the surrounding falls under hard rock formation i.e., Charnockite Formation and the district have not recorded any Hydrothermal / Geothermal effect and

			as per the Seismic Zonation Map of India, the district falls under the Zone II of seismic zones classification. The resultant of this open cast mining shall not have any Hydrothermal/ Geothermal effect on the surrounding environment.
		b) Bio-geochemical processes and its foot prints including environmental stress.	No, Bio-geochemical processes and its foot prints including environmental stress are anticipated and at the end of life of mine the proposed quarry shall be left as an artificial reservoir structure and allowed to collect rain water and shall enrich the ecosystem.
		c) Sediment geochemistry in the surface streams.	Sediment geochemistry in surface streams refers to the analysis of the chemical composition of streambed and suspended sediments to understand natural geological inputs and possible contamination.
	Energy		
	28	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.	The measures taken to control noise, air, water, and dust have been given under Chapter IV in the EIA report page 107-129.
	Climate Change		
	29	The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.	The carbon emission and the measures to mitigate carbon emission have been discussed in Section 4.6 under Chapter IV in the EIA report page 123-124.

	30	The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features.	Has been discussed in section 4.2 under Chapter IV in the EIA report page 109-110.
	31	Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood.	There is no emission impact to local livelihood from this quarry project. All the vehicles used for transportation of the quarry materials will be maintained regularly to keep the GHGs emissions with in statuary limits.
	Mine Closure Plan		
	32	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	A progressive mine closure plan has been attached with the approved mining plan report in Annexure IV. The budget details for the progressive mine closure plan are shown in Table 2.11 under Chapter II in the EIA report page 20.
	EMP		
	33	Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs.	A detailed Environment Management plan has been given under Chapter X in the EIA report page 151-160.
	34	The Environmental Impact Assessment should hold detailed study on EMP with budget for green belt development and mine closure plan including disaster management plan.	A detailed Environment Management plan has been given in Tables 10.1 & 10.2 under Chapter X in the EIA report page 156-158.

	Risk Assessment		
	35	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	The risk assessment and management plan for this project has been provided in Section 7.2 under Chapter VII in the EIA report page 136-138.
	Disaster Management Plan		
	36	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	The disaster management plan for this project has been provided in Section 7.3 under Chapter VII in the EIA report page 138-140.
	Others		
	37	The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.	The VAO certificate of 300 m radius have been attached in the Annexure.
	38	As per the MoEF & CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.	The concerns raised during the public consultation will be included in final report.

	39	The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.	The plastic waste management has been given in Section 7.5 under Chapter VII in the EIA report page 146.

SEAC Conditions - Site Specific:

S.No	Terms of Reference		Remarks
Major Conditions:			
1	The PP shall undertake a detailed study on the potential impacts of the proposed mining activities on the coir industry located at a distance of approximately 200m from the project site. Based on the findings, suitable mitigation measures shall be proposed and incorporated in the Environmental Management Plan (EMP).		Based on the study there will be no significant impact on coir industry, consent got from owner of the coir industry, if any impact will be compensated by the proponent.
General Conditions:			
1	A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal:		The Cluster Management Committee (CMC) regarding following these conditions and same documents will be submitted during the EIA appraisal meeting.
	a.	Copy of the agreement forming CMC.	

	b.	The Organisation chart of the Committee with defining the role of the members	
	c.	The 'Standard Operating Procedures' (SoP) executing the planned activities.	
2	The Geo referenced Boundary pillars to be erected on the field as per the mine rules and the evidence should be submitted along with the EIA report.		The evidence of the boundary pillars will be submitted along with final EIA Presentation.
3	The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report.		The details of enumeration of structures are discussed in table 3.42 under chapter III in the EIA report page 105.
4	The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m & up to 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations.		The structures within 500m radius are discussed in section 3.10, Table 3.42 under chapter III in the EIA report page 105.
5	The proponent shall furnish photographs of adequate fencing; garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.		The greenbelt, fencing and garland drainage photocopy is attached in Annexure.
6	The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report.		The detailed biodiversity report is discussed in section 3.7 under chapter III page no. 75-88.

7	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine	A detailed environment management plan has been prepared following the suggestion made by SEAC, as shown in Chapter X in the EIA report page 151-158. The sworn affidavit stating to abide the EMP for the entire life of mine will be submitted in final presentation.
8	The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures.	Cumulative environmental impacts of existing and proposed quarries are discussed in section 7.4 under chapter VII in the EIA report page- 140- 144.
9	The PP shall prepare a conceptual action plan accommodating the inclusion of haul road accessibility keeping the benches intact, by ensuring the slope stability of the working benches to be constructed and existing quarry wall.	A conceptual action plan design has been prepared and included in section 2.5, Chapter II, page no-17-25.
10	The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/video graphic evidence along with the EIA report	The Photocopy of CCTV installation will be submitted in final presentation.

SEAC Standard Conditions

S.No	Terms of Reference		Remarks
1	In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following:		
	(i)	Original pit dimension	Not applicable, it is a fresh quarry lease.
	(ii)	Quantity achieved vs EC Approved Quantity	
	(iii)	Balance Quantity as per Mineable Reserve calculated.	

	(iv)	Mined out Depth as on date Vs EC Permitted depth	
	(v)	Details of illegal/illicit mining	
	(vi)	Violation in the quarry during the past working.	
	(vii)	Quantity of material mined out outside the mine lease area	
	(viii)	Condition of Safety zone/ benches	
	(ix)	Revised/ Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.	
2	Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.		The VAO certificate is attached in Annexure.
3	The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc		The details of structures are discussed in table 3.42 in section 3.10 under chapter III in the EIA report page 105.
4	The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry.		Hydrological study is conducted and discussed in section 3.4 under chapter III in the EIA report Page 44- 58.

5	The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.	The details of Bio diversity from the reputed institution will be submitted in final presentation.
6	The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc, up to a radius of 25 km from the proposed site.	Not Applicable.
7	In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg. Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.	It's Fresh quarry. So, slope stability report is not required.
8	However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.	It's Fresh quarry. So, slope stability report is not required.
9	The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as	The affidavit for blasting will be submitted in final presentation.

	per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.	
10	The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.	A conceptual design of blasting has been given in Section 2.5.1 under Chapter II in the EIA report page 17-19.
11	The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.	The proponent has no any quarry activities elsewhere.
12	If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,	Not Applicable.
13	What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?	Not Applicable, it is a fresh quarry lease.
14	Quantity of minerals mined out.	
	• Highest production achieved in any one year.	
	• Detail of approved depth of mining.	
	• Actual depth of the mining achieved earlier.	
	• Name of the person already mined in that leases area.	
	• If EC and CTO already obtained, the copy of the same shall be submitted.	

	• Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.	
15	All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Toposheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	All corner coordinates of the mine lease area have been superimposed on a high-resolution Google Earth Image, as shown in Figure 2.2 under Chapter II in the EIA report page 10.
16	The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.	The drone video will be displayed during final presentation.
17	The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	Photographs of adequate fencing, green belt is attached in Annexure.
18	The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.	The Resources and Reserves of Rough Stone were calculated based on cross-section method by plotting sections to cover the maximum lease area for the proposed project. The details reserve estimation has been shown in Table 2.6 under Chapter II in the EIA report page 12.
19	The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in	Details of manpower required for this project have been given in Table 2.16 under Chapter II in the EIA report page 24.

	order to ensure safety and to protect the environment.	
20	The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.	Hydrological study is conducted and discussed in section 3.4 under chapter III in the EIA report Page 44- 58.
21	The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.	The baseline data were collected for the environmental components including land, soil, water, air, noise, biology, socio-economy, and traffic and the results have been discussed under Chapter III in the EIA report page 26-105.
22	The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.	Results of cumulative impact study due to mining operations are given in Section 7.4 under Chapter VII in the EIA report page 140-145.

23	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	As part of rainwater harvesting measures, the rain water from garland drainage system will be diverted to nearby check dams after treating the water in settling tanks.
24	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features have been discussed in Section 3.2.3 under Chapter III in the EIA report page 31-33. The details of surrounding sensitive ecological features have been provided in Table 3.42 under Chapter III in the EIA report page 105. Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Table 2.10 under Chapter II in the EIA report page 19-20.
25	Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.	This condition is not applicable to this project because no dumps have been proposed outside the lease area.
26	Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of	Not Applicable. Project area / Study area is not declared in 'Critically Polluted' Area.

	Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.	
27	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	As part of rainwater harvesting measures, the rain water from garland drainage system will be diverted to nearby check dams after treating the water in settling tanks.
28	Impact on local transport infrastructure due to the Project should be indicated.	Details regarding the impact of the project on traffic are given in Section 3.9 under Chapter III in the EIA report page 103-104.
29	A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.	A detailed tree survey was caried out within 300m radius and the results have been discussed in Section 3.7.6 under Chapter III in the EIA report page 79-82.
30	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	A progressive mine closure plan has been attached with the approved mining plan report in Annexure IV. The budget details for the progressive mine closure plan are shown in Table 2.11 under Chapter II in the EIA report page 20.
31	As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.	The EIA coordinator and the FAE for ecology and biodiversity visited the study area and educated the local students about the importance of protecting the biological environment.
32	The purpose of green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the	A detailed greenbelt development plan has been provided in section 4.6 under chapter IV in the EIA report page 124.

	aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.	
33	Taller/one year old Saplings raised in appropriate size of bags; preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner.	The FAE of ecology and biodiversity has advised the project proponent that saplings of one year old raised in the eco-friendly bags should be purchased and planted with the spacing of 3m between each plant around the proposed project area as per the advice of local forest authorities/ botanist.
34	A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	A disaster management plan for the project has been provided in Section 7.3 under Chapter VII in the EIA report page 138-140.
35	A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	A risk assessment plan for the project has been provided in Section 7.2 under Chapter VII in the EIA report page 136-138.
36	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Occupational health impacts of the project and preventive measures have been discussed in detail in Section 4.8 under Chapter IV in the EIA report 126-127.

37	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	No public health implications are anticipated due to this project. Details of CSR and CER activities have been discussed in Sections 8.6 and 8.7 under Chapter VIII in the EIA report page 148-149.
38	The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	No negative impact on socio-economic environment of the study area is anticipated and this project shall benefit the socio-economic environment by offering employment for 23 people directly as discussed in Section 8.1 under Chapter VIII in the EIA report page 147.
39	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.	No litigation is pending in any court against this project.
40	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	The benefits of the project are discussed in Chapter VIII in the EIA report page 147-149.
41	If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF& CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.	It's a fresh quarry lease.
42	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	A detailed environment management plan has been prepared following the suggestion made by SEAC, as shown in Chapter X in the EIA report page

		152-158. The sworn affidavit stating to abide the EMP for the entire life of mine will be submitted during final presentation.
43	Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.	The EIA report has been prepared keeping in mind the fact that concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may lead to withdrawal of these terms of reference besides attracting penal provisions in the Environment (Protection) Act, 1986.

STANDARD TERMS OF REFERENCE

1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.	Not applicable. It's a fresh quarry lease.
2	A copy of the document in support of the fact that the proponent is the rightful lessee of the mine should be given.	The proposed site for quarrying is a private land. A copy of the document showing that the proponent is the rightful lessee has been enclosed along with the approved mining plan in Annexure.
3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.	All the documents are in the name of the lessee.

4	All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	All corner coordinates of the mine lease area have been superimposed on a high- resolution Google Earth Image, as shown in Figure 2.2 under Chapter II in the EIA report page 10.
5	Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.	Toposheets of Survey of India have been used for showing sampling locations of air, soil, water, and noise, as shown in Chapter III in the EIA report page 42, 48, 68.
6	Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority	The lease area was inspected by the officers of Department of Geology along with revenue officials and found that the land is fit for quarrying under the policy of State Government.
7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the. prescribed operating process/ procedures to bring into focus any infringement/ deviation/ violation of the environmental or forest norms/conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of	The Environmental Policy is discussed in the Section 10.1 under Chapter X in the EIA report page 151.

	environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report	
8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided	It is an opencast quarrying operation proposed to operate in Manual method. The rough stone formation is a hard, compact and homogeneous body. The height and width of the bench will be maintained as 5m with 90º bench angles. Quarrying activities will be carried out under the supervision of Competent Persons like Mines Manager, Mines Foreman and Mining Mate. Necessary permissions will be obtained from DGMS after obtaining Environmental Clearance.
9	The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc., should be for the life of the mine / lease period.	The study area considered for this study is of 5km radius for air, soil, water, and noise level sample collections, while the study area is 10km radius for ecology and biodiversity studies and all data contained in the EIA report such as waste generation etc., is for the life of the mine / lease period.
10	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational,	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features have been discussed in under

	operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Chapter III in the EIA report page 32-33. The details of surrounding sensitive ecological features have been provided in Table 3.42 under Chapter III in the EIA report page 105. Land use plan of the project area showing pre- operational, operational and post- operational phases are discussed in Table 2.10 under Chapter II in the EIA report page 19.
11	Details of the land for any over burden dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.	It is not applicable as no dumps have been proposed outside the lease area. The entire quarried out rough stone will be transported to the needy customers.
12	Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative ofthe State Forest Department to assist the Expert Appraisal Committees.	It is not applicable as there is no forest land involved within the proposed project area. The details have been discussed in Table 3.42 under Chapter III in the EIA report page 105.
13	Status of forestry clearance for the broken- up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation	It is not applicable as the proposed project area does not involve any forest land.

	(CA) should be indicated. A copy of the forestry clearance should also be furnished.	
14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.	Not Applicable. The project doesn't attract Recognition of Forest Rights Act, 2006 as there are neither forests nor forest dwellers / forest dependent communities in the mine lease area. There shall be no forest impacted families (PF) or people (PP). Thus, the rights of Traditional Forest Dwellers will not be compromised on account of the project.
15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given.	Reserve Forest is found within the study area. Has been given in table 3.42 under Chapter III in the EIA report page 105.
16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.	There is no any wildlife/ protected area within 10km radius from the periphery of the project area. Information regarding the same has been given in Table 3.42 under Chapter III in the EIA report page 105.
17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/ (existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the	There are No National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/ Elephant Reserves within 10km radius from the periphery of the project area. Information regarding the same has been given in Table 3.42 under Chapter III in the EIA report page 105.

	ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.	
18	A detailed biological study of the study area [core zone and buffer zone (10 KM radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.	A detailed biological study was carried out in both core and buffer zones and the results have been discussed in Section 3.7 under Chapter III in the EIA report page 75-88.
19	Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravalli Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.	Not Applicable. Project area / Study area is not declared. in 'Critically Polluted' Area and does not come under 'Aravalli Range.
20	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area,	Not Applicable The project doesn't attract the C.R.Z. Notification, 2018.

	location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).	
21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need-based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspect should be discussed in the Report	Not Applicable. There are no approved habitations of SCs/STs and other weaker sections in the lease area. Therefore, R&R Plan / Compensation Plan for the Project Affected People (PAP) are not provided.
22	One season (non-monsoon) [i.e., March- May (Summer Season); October-December (post monsoon season); December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should	Baseline data were collected for the period of March- May 2026 as per CPCB notification and MoEF & CC Guidelines. Primary baseline data and the results have been included in Chapter III in the EIA report page 26- 104.

	be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.	
23	Air quality modelling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modelling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map	Air quality modelling for prediction of incremental GLCs of pollutants was carried out using AERMOD view 11.2.0. The model results have been given in Section 4.4 under the Chapter IV in the EIA report page 113-118.
24	The water requirement for the project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the project should be indicated.	The water requirement for the project, its availability and source have been provided in Table 2.13 under Chapter II in the EIA report page 20.
25	Necessary clearance from the competent Authority for drawl of requisite quantity of water for the project should be provided.	Not Applicable. Water for dust suppression, greenbelt development and domestic use will be sourced from accumulated rainwater/seepage water in mine pits and purchased from local water vendors through water tankers on daily requirement basis. Drinking

		water will be sourced from the approved water vendors.
26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	Part of the working pit will be allowed to collect rain water during the spell of rain. The water thus collected will be used for greenbelt development and dust suppression. The mine closure plan has been prepared for converting the excavated pit into rain water harvesting structure and serve as water reservoir for the project village during draught season.
27	Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.	Impact studies and mitigation measures of water environment including surface water and ground water have been discussed in Section 4.3 under Chapter IV in the EIA report page 110-112.
28	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.	The ground water table is found at the depth of 60-55m below ground level. The ultimate depth of quarry is 30m BGL. Therefore, the mining activity will not intersect the ground water table. Data regarding the occurrence of groundwater table have been provided in Section 3.4.3 under Chapter III in the EIA report page 52-58.

29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out	Not Applicable. There are no streams, seasonal or other water bodies passing within the project area. Therefore, no modification or diversion of water bodies is anticipated
30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and BGL. A schematic diagram may also be provided for the same.	The highest elevation of the project area is 206m AMSL. Ultimate depth of the mine is 30m BGL. Depth to the water level in the area is 60-55m BGL.
31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up. Front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution	Greenbelt development plan has been given in Table 4.13 under Chapter IV in the EIA report page 124.
32	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the	Traffic density survey was carried out to analyses the impact of transportation in the study area as per IRC guidelines 1961 and it is inferred that there is no significant impact due

	incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.	to the proposed transportation from the project area. Details have been provided in Section 3.9 under Chapter III in the EIA report page 103-104.
33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	Infrastructure & other facilities will be provided to the mine workers after the grant of quarry lease and the same has been discussed in Section 2.5.7 under Chapter II in the EIA report page 20.
34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.	Progressive mine closure plan has been prepared for this project and is given in Section 2.7.5 under Chapter II in the EIA report page 21.
35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Occupational health impacts of the project and preventive measures have been explained in detail in Section 2.5.5 under Chapter IV in the EIA report page 20.
36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	No public health implications are anticipated due to this project. Details of CSR and CER activities have been discussed in Sections 8.6 and 8.7 & 8.8 under Chapter VIII in the EIA report page 148-149.
37	Measures of socio-economic significance and influence to the local community proposed to	No negative impact on socio-economic environment of the study

	be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	area is anticipated and this project shall benefit the socio-economic environment by offering employment for 20 people directly as discussed in Section 8.1 under Chapter VIII in the EIA report page 147.
38	Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.	A detailed Environment Management Plan has been prepared and provided in Tables 10.1 & 10.2 under Chapter X in the EIA report page 151-158.
39	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.	The outcome of public hearing will be included in final presentation.
40	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given	No litigation is pending in any court against this project.
41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.	Project Cost is **Rs. 78.46Lakhs**, CER Cost is **Rs.5,00,000/-** In order to implement the environmental protection measures, an amount of **Rs. 35.04Lakhs** as capital cost and recurring cost as **Rs. 16.43Lakhs** 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 10 years will be Rs. **Rs. 248.62Lakhs** as shown in Tables 10.1 & 10.2 under Chapter X in the EIA report page 152-158.
42	A disaster management plan shall be prepared and included in the EIA/EMP Report.	The disaster management plan for this project has been provided in Section 7.3 under Chapter VII in the EIA report page 138-140.
43	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	Benefits of the project details have been given as Chapter VIII in the EIA report page 147- 149.
44	Besides the above, the below mentioned general points are also to be followed:	
a)	Executive Summary of the EIA/ EMP Report	Tamil and English versions of executive summaries are given separate booklets.
b)	All documents to be properly referenced with index and continuous page numbering.	All the documents have been properly referenced with index and continuous page numbering.
c)	Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.	List of tables and source of the data collected have been mentioned.
d)	Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF & CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.	All Original Baseline test reports will be attached in final EIA report.
e)	Where the documents provided are in a language other than English, an English translation should be provided.	All the documents provided here are in English language.

f)	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	The questionnaire will be attached in final report.
g)	While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF & CC vide O.M. No. J- 11013/41/2006-IA. II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.	Instructions issued by MoEF & CC O.M. No. J-11013/41/2006-IA. II (I) dated 4th August, 2009 have been followed while preparing this EIA report.
h)	Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF & CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation	No changes are made in the basic scope and the project parameters.
i)	As per the circular no. J-11011/618/2010- IA. II(I) Dated: 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.	It's Fresh Quarry, applying for Environmental Clearance.
j)	The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if	All the plans including surface & geological plans, and progressive closure plan have been included in Annexure.

	any, clearly showing the land features of the adjoining area.	

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CHAPTER I

INTRODUCTION

1.0 PREAMBLE

Environmental Impact Assessment (EIA) study is a process used to identify the environmental, social and economic impacts of a project prior to decision-making. EIA systematically examines both beneficial and adverse consequences of the proposed project and ensure that these impacts are considered during the project designing. According to the Ministry of Environment and Forests, Govt. of India, EIA notification S.O. 1533(E) of 14th September 2006 and its subsequent amendments the projects are categorized into A, B1 & B2 to determine the level of scrutiny and process. The mining projects whose extent is ≥ 5 ha or the cluster of quarries (if homogeneous mineral) within 500m radius extent is greater than 5ha falls under category B1. These projects require preparation and submission of an EIA report after public consultation to SEIAA to obtain environmental clearance as per the Office Memorandum F.No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018.

1.1 PURPOSE OF THE REPORT

The purpose of the report is to evaluate the project's potential environmental, social and economic effects of the before it is implemented adhering to the guidelines outlined in the MoEF & CC Notification, S.O. 996 (E) dated 10.04.2015 and MoEF & CC Office Memorandum dated 29.08.2017.

1.2 ENVIRONMENTAL CLEARANCE

The Environmental Clearance process for the project will comprise of four stages. These stages are screening, scoping, public consultation & appraisal.

Screening

The project had applied in PARIVESH 2.O proposal no. SIA/TN/MIN/571110/2026, Dated: 06.03.2026 to obtain terms of reference.

Scoping

The mechanism for issuing online system generated Standard ToR as well as reference to SEAC has been enabled on the PARIVESH Portal on the acceptance of the complete application online. The concerned Member Secretary of SEAC shall refer the project to the concerned SEAC for prescribing additional ToR as per the circular F.No. IA 3-22/15/2022-IA-III Dated: 6th May 2022.

Public Consultation

In this stage, an application along with the draft EIA and EMP report will be made to the Member Secretary of the Tamil Nadu Pollution Control Board (TNPCB) and request to conduct Public Hearing as per EIA notification 2006. The outcome of the public hearing is given in Chapter VII.

Appraisal

In this stage, the final EIA report will submit in PARIVESH 2.O to SEIAA, TN. Based on the recommendations of SEAC the SEIAA, TN will grant EC or castoff.

1.3 TERMS OF REFERENCE (ToR)

The total extent of quarries within the 500m radius is greater than 5Ha. The details of the quarries within the cluster are given in Table 1.1 & Figure 1.1.

Table 1.1 Details of Quarries within the cluster area of 500m radius

Proposed Quarries					
Code	**Name of the Owner**	**S.F. No**	**Village**	**Extent (ha)**	**Status**
P1	M. Kumaravadivel	775/1D, 775/1E (Part) & 807/2A (Part)	Anjur	1.72.00	Proposed Area
Existing Quarry					
E1	S.Kuppusamy	764/3, 765/3,766/1, 766/2, 766/3A, 767/1, 767/2A	Anjur	4.82.70	28.08.2024 to 27.08.2029
E2	P. Palanisamy	773/2, 776/3, 777/1, 778/1A (P), 807/2C2	Anjur	4.47.85	20.06.2025 to 19.06.2030
E3	P. Sampathkumar	759/2(P),761/2(P), 761/3(P), 762/2, 762/3, 762/2, 763/3	Anjur	4.81.50	23.06.2025 to 22.06.2030
Total Cluster Extent				**15.84.05**	

Source: *AD Letter - Rc.No. 870/Mines/2025, dated:19.01.2026.*

The file was appraised in 690th SEAC meeting on 11.03.2026 and issued terms of reference (ToR) identification no **TO26B0108TN5818271N** on **27/03/2026** by SEIAA, TN.

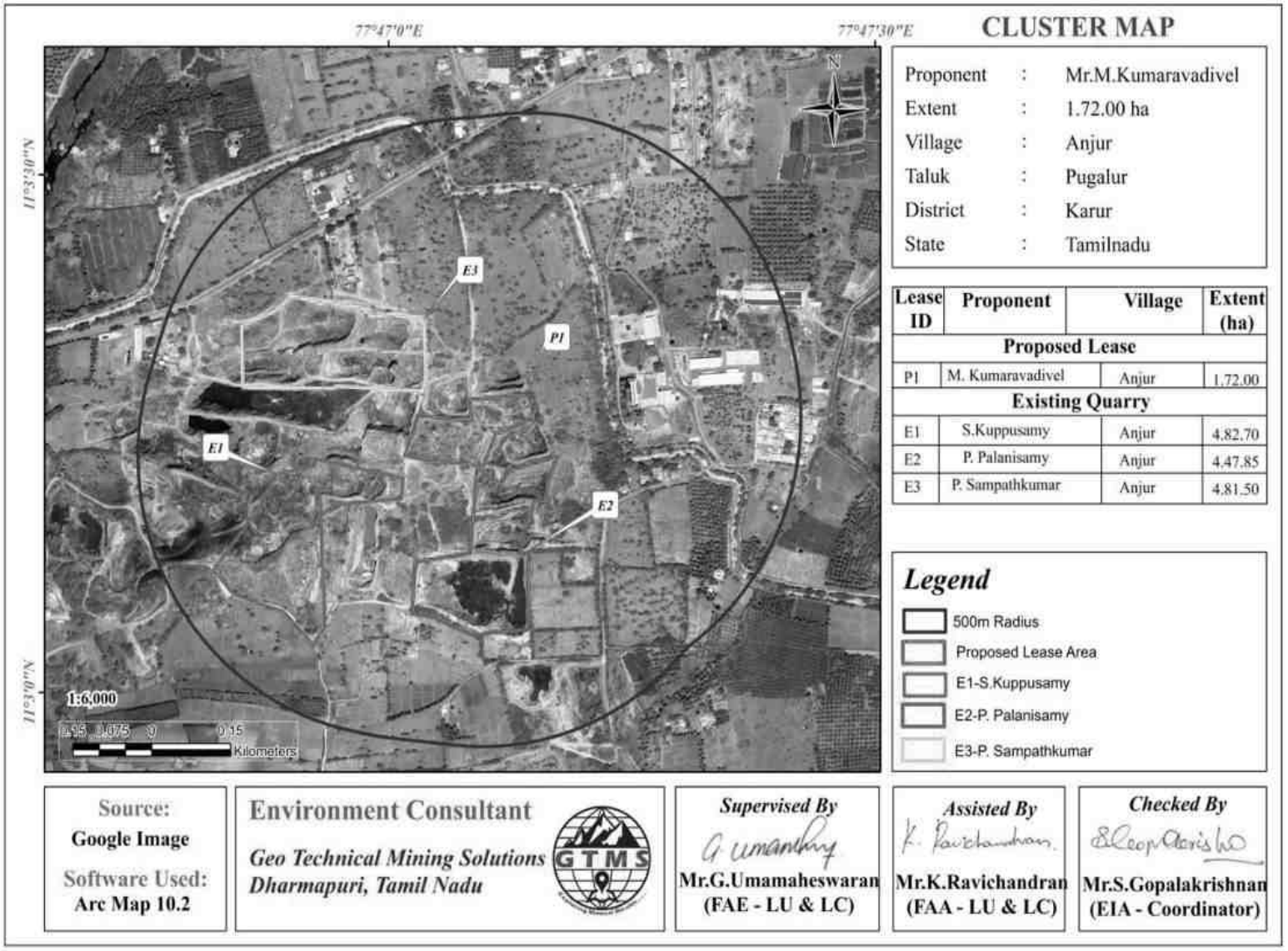


Figure 1.1 Location of the proposed and existing rough stone and gravel quarries in the cluster of 500m radius

1.4 POST ENVIRONMENT CLEARANCE MONITORING

- The project proponent shall prominently advertise in the newspapers indicating that the project has been accorded environmental clearance and the details of the website where it is displayed.
- The project proponent will submit a half-yearly compliance report of the stipulated environmental conditions to Regional Office, MoEF & CC & SEIAA on 1st June and 1st December of every year.

1.5 TRANSFERABILITY OF ENVIRONMENTAL CLEARANCE

The prior environmental clearance granted for a project or activity may be transferred as per the provisions of para 11 of the Environmental Impact Assessment Notification, 2006 and its subsequent amendments and the office memorandum File No. IA3-22/19/2023- IA.III [E226246] Dated: 3rd November 2023.

1.6 IDENTIFICATION OF THE PROJECT PROPONENT

The profile of the project proponent who has involved in this quarrying project has been given in Table 1.2.

Table 1.2 Details of Project Proponent

Name of the Project Proponent	Mr. M. Kumaravadivel
Address	S/o. Muthusamy No.3/246, Velayuthampalaiyam, Anjur, Pandilingapuram, Pugalur Taluk, Karur District.
Status	Private - Active

1.7 BRIEF DESCRIPTION OF THE PROJECT

The method adopted for rough stone excavation is open cast semi mechanized method involving formation of benches with 5m height and 5m width and the overall bench slope is less than 65. The quarry operation involves shallow jackhammer drilling, slurry blasting, excavation, loading and transportation.

The overall extent of the project site is 1.72.0ha and it is located in Anjur Village, Pugalur Taluk, Karur District, Tamil Nadu.

The proposed project deals with excavation of rough stone and gravel which is primarily used in construction projects. The increasing demand for rough stone fuelled by a booming construction industry presents a valuable opportunity. This project will not only meet the rising demand for rough stone but also create jobs for the surrounding villages.

1.8 SCOPE OF THE STUDY

The main scope of the EIA study is to quantify the cumulative impact of the quarries in the cluster and formulate the effective mitigation measures. The baseline monitoring study has been carried out during the period of **March to May 2026** for various environmental components such as land, soil, air, water, noise, ecology, etc. to assess the anticipated impacts of the cluster on the environment and suggest suitable mitigation measures for likely adverse impacts due to the proposed project.

1.9 LEGISLATION APPLICABLE TO MINING OF MINERAL SECTOR

A few important legislations are given below:

- The Mines Act, 1952.
- The Mines and Mineral (Development and Regulation) Act, 1957.
- Mines Rules, 1955.
- Mineral Concession Rules, 1960.
- Mineral Conservation and Development Rules, 1988.
- State Minor Mineral Concession Rules, 1960.
- Granite Conservation and Development Rule, 1999.
- The Water (Prevention and Control of pollution) Act, 1974.
- The Air (Prevention and Control of pollution) Act,1981.
- The Environment (Protection) Act, 1986.
- The Forest (Conservation) Act, 1988.
- The Wildlife (Protection) Act, 1972.

CHAPTER II

PROJECT DESCRIPTION

2.0 DECSCRIPTION OF THE PROJECT

The proponent Mr. M. Kumaravadivel has involved in the mining and its auxiliary activities. The proponent had applied for quarry lease on 18.08.2025 to extract rough stone and gravel. The precise area communication letter was issued by Deputy Director of Geology and Mining, Karur vide (Roc.No. 870/Mines/2025, Dated 19.12.2025). The mining plan thus prepared was approved by Deputy Director Department of Geology and Mining, Karur (Rc.No.870/Mines/2025, Dated. 19.01.2026). The project area and the proposed excavation details were given in Table 2.1.

Table 2.1 Proposed project area and excavation details

Name of the Quarry	Mr. M. Kumaravadivel**,** Rough stone and gravel quarry			
Type of Land	Patta Land			
Extent	1.72.0 Ha			
S.F.No	775/1D, 775/1E (Part) & 807/2A (Part)			
Toposheet No	58-E/16			
Location of Project Site	11°3'13.12"N to 11°3'17.31"N 77°47'1.01"E to 77°47'8.95"E			
Highest Elevation	206m AMSL			
Proposed depth of Mining	30m (BGL)			
Description	Rough Stone		Gravel	
	m^3	Tons (m^3 * 2.75)	m^3	Tons (m^3 * 2)
Geological Resources	4,95,782	13,63,401	9,140	18,280
Mineable Reserves	1,83,357	5,04,232	5,643	11,286
Proposed production for ten years	1,83,357	5,04,232	5,643	11,286
Method of Mining	Open- Cast Mechanized mining			
Topography	Flat Terrain			
Machinery proposed	Jack Hammer		2	
	Compressor		2	
	Tipper		5	
	Hydraulic Excavator		2	
	Rock Breaker		1	
Blasting Method	The quarrying operation is proposed to carried out by open cast mining in conjunction with conventional method using jack hammer drilling and blasting for shattering effect and loosen the rough stone.			
Proposed Manpower Deployment	20Nos			
Project Cost	Rs. 78,46,000/-			
CER Cost	Rs. 5,00,000/-			
Proposed Water Requirement	3.5KLD			

2.1 LOCATION AND ACCESSIBILITY

The proposed quarry project is located in Anjur Village, Pugalur Taluk, Karur District, Tamil Nadu as shown in Figure 2.2.

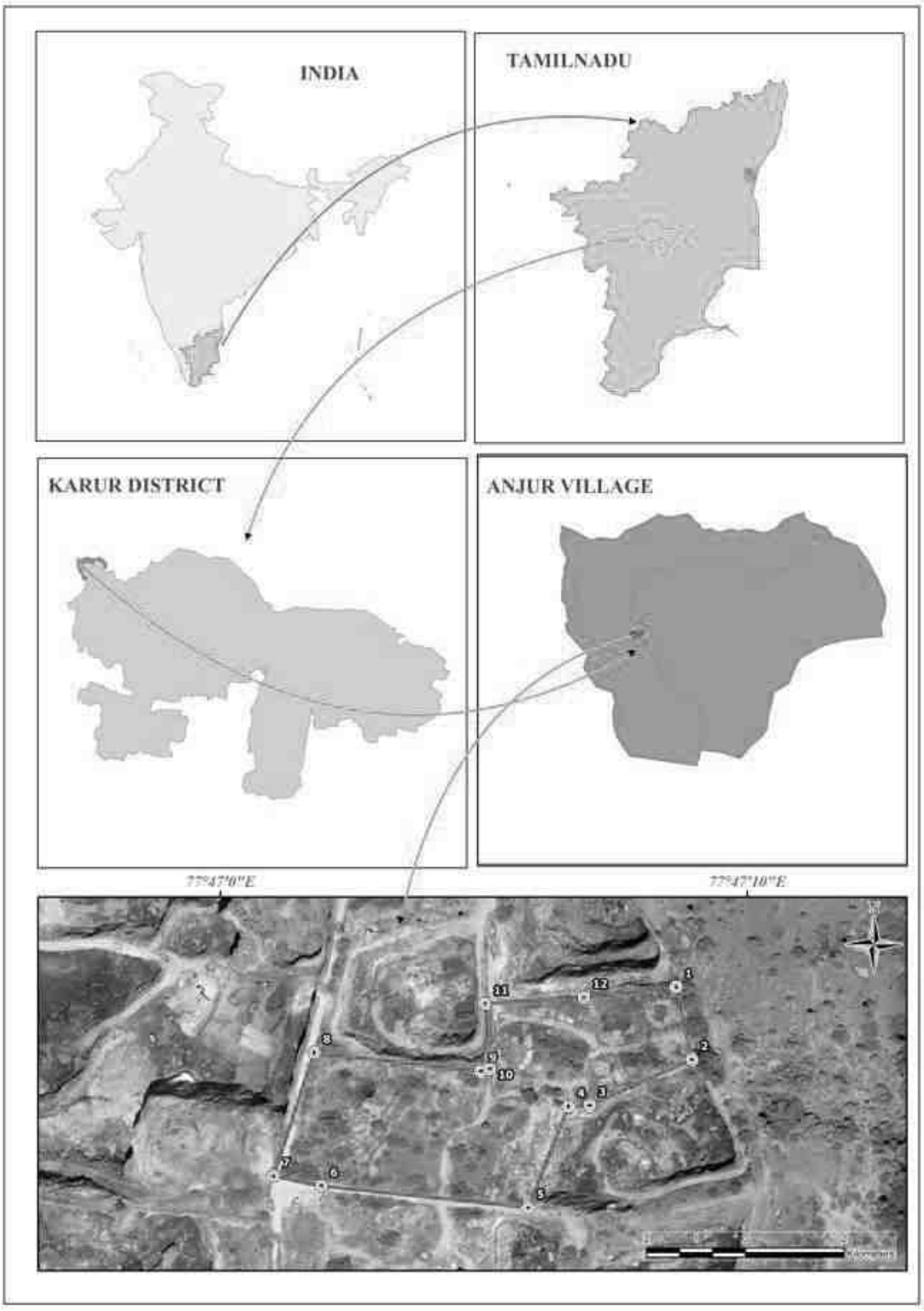


Figure 2.1 Location Map Showing the Project Site

The aerial distance between the project site Coimbatore- Trichy NH- 81 road is about 11.65m in Northern site. The travel to Vellakovil in right side distance 11.40km- North site, Muthur Village from takes a right turn and travel upto 5.10km from lease area. Accessibility details to the proposed project site have been given in Table 2.2.

Table 2.2 Site Connectivity to the Project Area

Nearest Roadways	NH-81 K. Paramathi- Karur	11.65km- N
	SH-189 Muthur - Kodumudi	0.57km- N
	NH – 381A Erode - Vellakovil	5.34km W
Nearest Town	Erode	29.78km- N
Nearest Railway Station	Kodumudi	11.30km NE
Nearest Airport	Coimbatore	81.60km E
Nearest Seaport	Tuticorin	254.0 km S
Nearest Village	Velayudampalaiyam	0.8km- N
	Anjur	1.8km- E
	Pillapalaiyam	1.0km- S
	Tottipalaiyam	1.7km- W

2.2 LEASEHOLD AREA

The details of the field survey number, subdivision and their extent and the overall extent of the proposed project site is given in Table 2.3.

Table 2.3 Lease hold area details

Survey No	Sub Division	Total Extent in Hect	Patta No.	Village and Name of the Land Owner	Mine lease Applied S.F.No.	Mine lease Applied area out of total area in hect.
775	1D	0.37.0	2378	Mrs.Rajalakshmi W/o.Kumaravadivel	775/1D	0.37.0
775	1E	1.12.5	1625	Mr.Muthusamy S/o Ramasamy Gounder	775/1E (Part)	1.05.0
807	2A	0.35.0	2378	Mrs.Rajalakshmi W/o.Kumaravadivel	807/2A (Part)	0.30.0
Total Extent		**1.84.5**	**Applied lease area extent**			**1.72.0**

The proposed project is site specific. There is no mineral beneficiation or processing proposed inside the project area. There is no forest land involved in the proposed area and is devoid of major vegetation and trees. The overall extent of the project area is 1.72.0Ha as per the precise area communication letter vide Roc.No.870/Mines/2025 Dated 19.12.2025 issued by Dept of

Geology and Mining, Karur District lies near the Anjur village, Pugalur Taluk, Karur District, Tamil Nadu. The breakup of the existing land use for mining and ancillary feature is given in Table 2.4.

Table 2.4 Present Land use pattern of the project area

Description	Present Area (ha)
Area under Mining	Nil
Infrastructure	Nil
Roads	Nil
Unutilized	1.72.0
Green belt	Nil
Settling Tank & Drainage	Nil
Total	**1.72.0**

2.2.1 Corner Coordinates

The proposed lease area is flat topography. The maximum elevation (206m) was observed north of the site. The boundary corner and the intermediate stone geographic coordinates is given in Table 2.5. The quarries within the cluster of 500m radius as per the letter Rc.No.870/Mines/2025, Dated: 29.01.2026 is enclosed as Annexure II is shown in Figure 2.3.

Table 2.5 Corner Coordinates of Proposed Project

PILLAR ID	LATITUDE	LONGITUDE
1	11° 3'17.31"N	77°47'8.65"E
2	11° 3'15.93"N	77°47'8.95"E
3	11° 3'15.06"N	77°47'7.01"E
4	11° 3'15.04"N	77°47'6.61"E
5	11° 3'13.12"N	77°47'5.84"E
6	11° 3'13.53"N	77°47'1.92"E
7	11° 3'13.72"N	77°47'1.01"E
8	11° 3'16.06"N	77°47'1.78"E
9	11° 3'15.71"N	77°47'4.94"E
10	11° 3'15.75"N	77°47'5.11"E
11	11° 3'16.99"N	77°47'5.02"E
12	11° 3'17.11"N	77°47'6.90"E

2.3 GEOLOGY

The compositional characteristics of coexisting orthopyroxene, garnet and biotite have established several petrographic varieties within the Charnockites– Enderbites such as the

granulite's and gneisses. Plagioclase feldspars, alkali feldspars and quartz are the salic minerals present in this series of rocks.

Age	Group	Rock Formation
Recent to Sub recent	---	Gravel
Archean	Charnockite Group	Charnockite

The Gravel is obtained the average of 0-1.0m and a rough stone starts from 1.0m to 30m (R.L.206-176m) from the surface level.

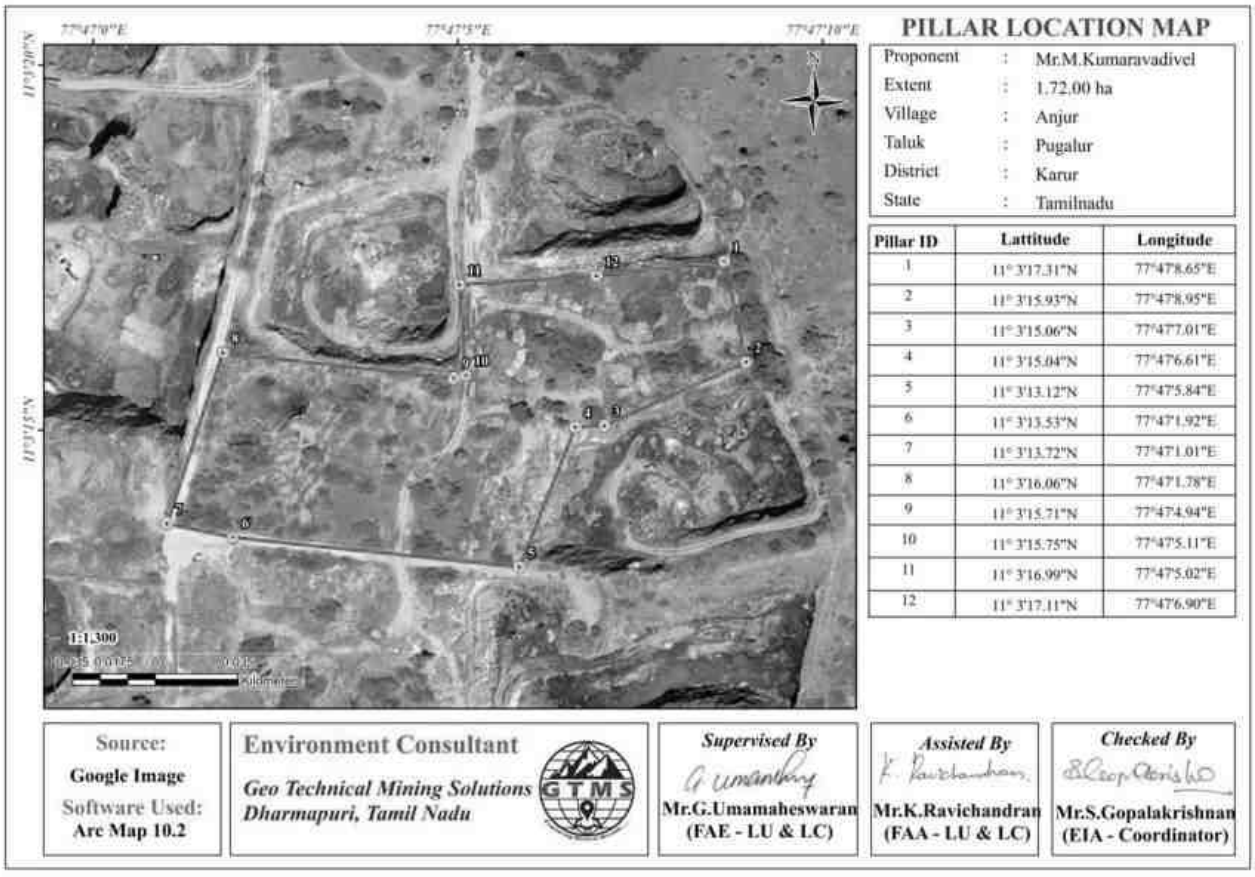
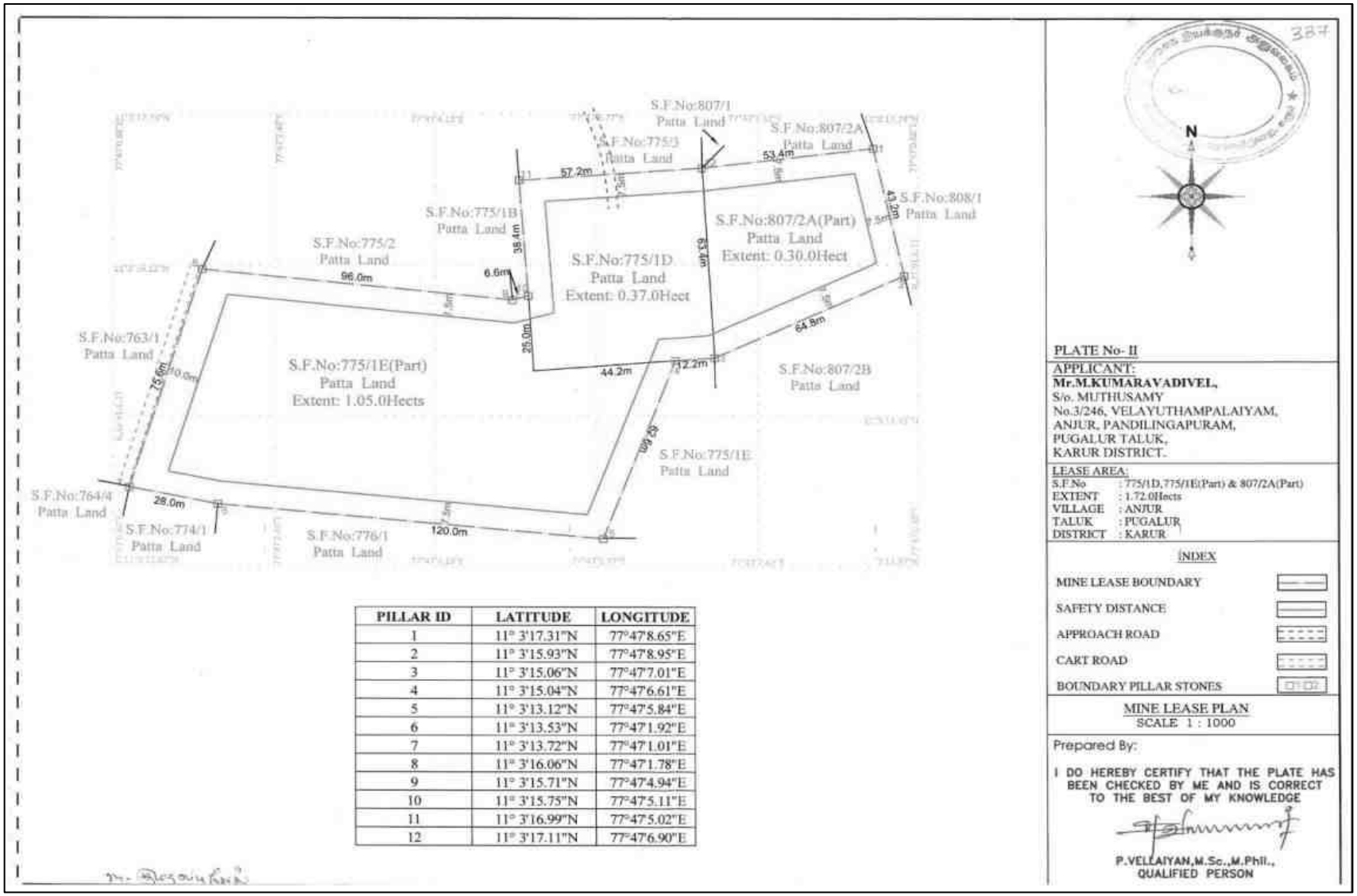


Figure 2.2 Google Earth Image Showing Lease Area with Pillars



PILLAR ID	LATITUDE	LONGITUDE
1	11° 3'17.31"N	77°47'8.65"E
2	11° 3'15.93"N	77°47'8.95"E
3	11° 3'15.06"N	77°47'7.01"E
4	11° 3'15.04"N	77°47'6.61"E
5	11° 3'13.12"N	77°47'5.84"E
6	11° 3'13.53"N	77°47'1.92"E
7	11° 3'13.72"N	77°47'1.01"E
8	11° 3'16.06"N	77°47'1.78"E
9	11° 3'15.71"N	77°47'4.94"E
10	11° 3'15.75"N	77°47'5.11"E
11	11° 3'16.99"N	77°47'5.02"E
12	11° 3'17.11"N	77°47'6.90"E

Figure 2.3 Mine Lease Plan

2.4 QUANTITY OF RESERVES

The resources and reserves of rough stone and gravel were calculated based on cross-section method by plotting sections to cover the maximum lease area for the proposed project. Based on the availability of geological resources, the mineable reserves are calculated by considering excavation system of bench formation and leaving essential safety distance of 7.5m and 10m safety distance as per precise area communication letter and deducting the locked-up reserves during bench formation (also called as bench loss). The mineable reserves are calculated up to the depth of 30m below the ground level considering there is no waste/ overburden/ side burden (100% Recovery anticipated) for the proposed project. The plate used for reserve estimation has been attached in approved mining plan results of geological resources and reserves have been shown in Table 2.6.

Table 2.6 Estimated Resources and Reserves of the Project

Resource Type	Rough Stone		Gravel in	
	m^3	Ts	m^3	Ts
Geological Resource in m^3 & Ts	4,95,782	13,63,401	9,140	18,280
Mineable Reserves in m^3 & Ts	1,83,357	5,04,232	5,643	11,286
Ten years Production m^3 & Ts	1,83,357	5,04,232	5,643	11,286

Based on the year wise development and production plan and sections, the year wise production results have been given in Table 2.6, Year- Wise Production plan has been shown in Figure 2.4- 2.7.

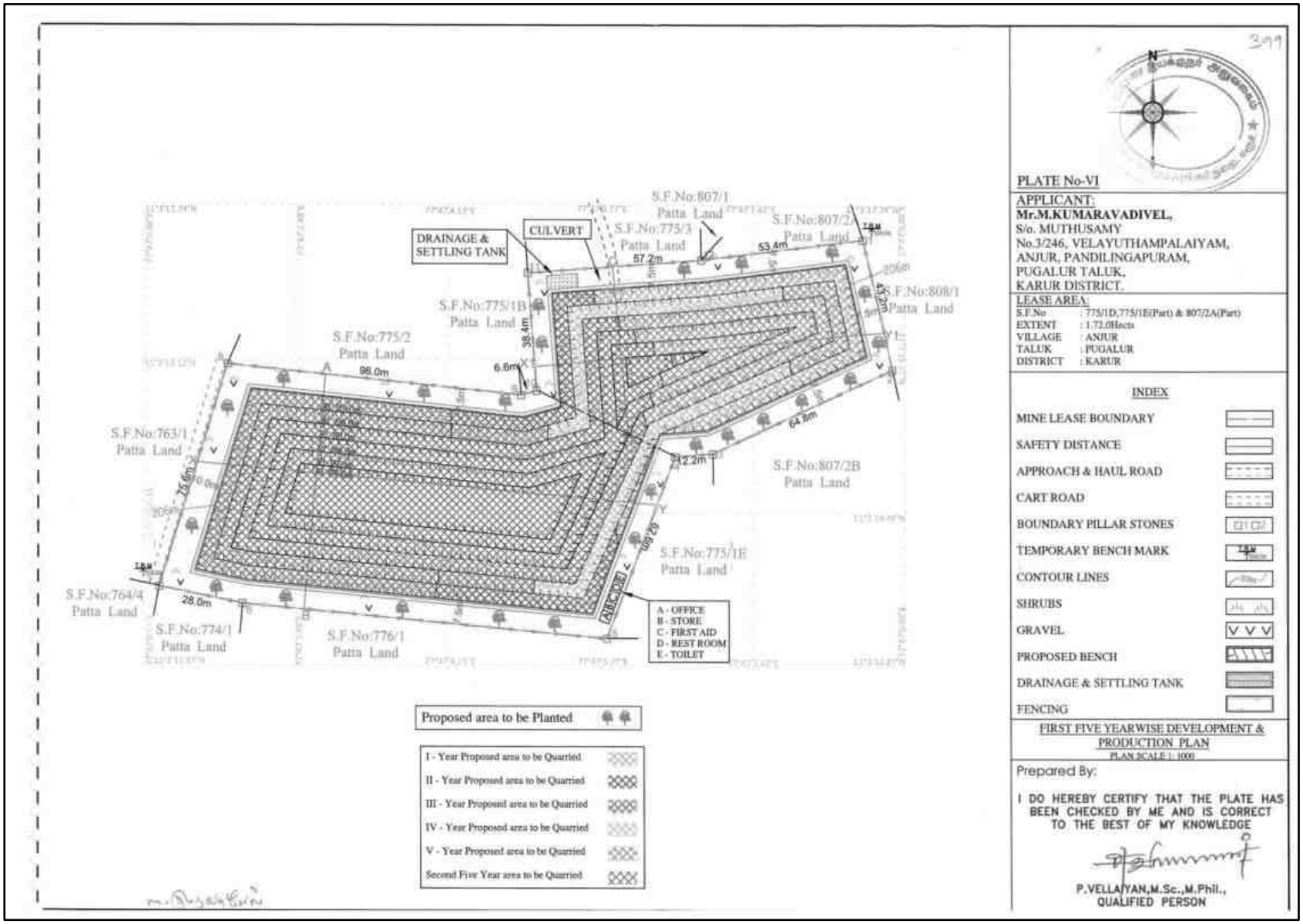
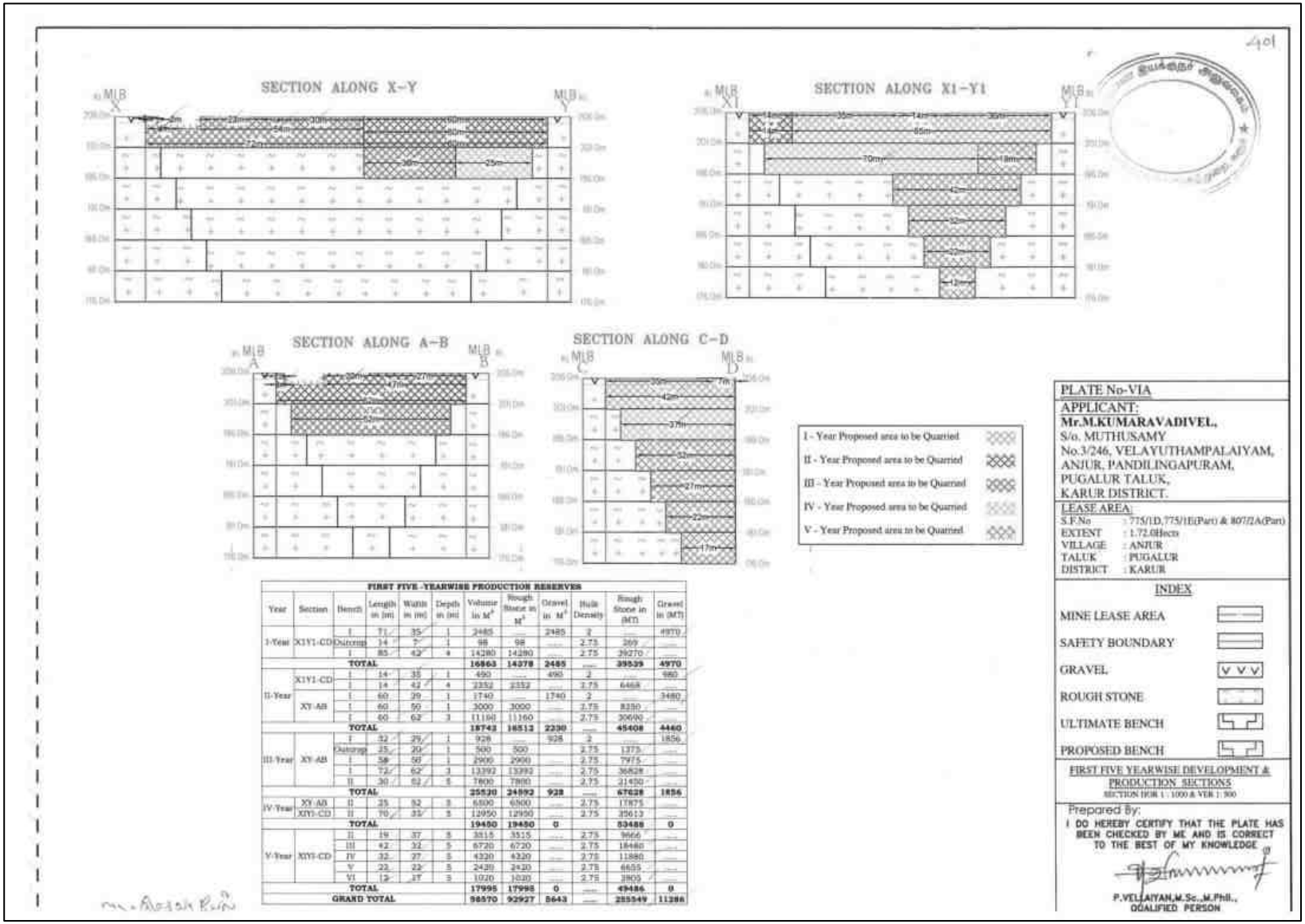


Figure 2.4 Year- Wise Production Plan & Section (First Five Years)



FIRST FIVE -YEARWISE PRODUCTION RESERVES

Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in M^3	Rough Stone in M^3	Gravel in M^3	Bulk Density	Rough Stone in (MT)	Gravel in (MT)
I-Year	X1Y1-CD	I	71	35	1	2485	----	2485	2	----	4970
		Outcrop	14	7	1	98	98	----	2.75	269	----
		I	85	42	9	14280	14280	----	2.75	39270	----
		TOTAL				**16863**	**14378**	**2485**	**----**	**39539**	**4970**
II-Year	X1Y1-CD	I	14	35	1	490	----	490	2	----	980
		I	14	42	4	2352	2352	----	2.75	6468	----
	XY-AB	I	60	29	1	1740	----	1740	2	----	3480
		I	60	50	1	3000	3000	----	2.75	8250	----
		I	60	62	3	11160	11160	----	2.75	30690	----
		TOTAL				**18742**	**16512**	**2230**	**----**	**45408**	**4460**
III-Year	XY-AB	I	32	29	1	928	----	928	2	----	1856
		Outcrop	25	20	1	500	500	----	2.75	1375	----
		I	58	58	1	2900	2900	----	2.75	7975	----
		I	72	62	3	13392	13392	----	2.75	36828	----
		II	30	62	5	7800	7800	----	2.75	21450	----
		TOTAL				**25520**	**24892**	**928**	**----**	**67628**	**1856**
IV-Year	XY-AB	II	25	32	5	6500	6500	----	2.75	17875	----
	XIY1-CD	II	70	35	5	12950	12950	----	2.75	35613	----
		TOTAL				**19450**	**19450**	**0**		**53488**	**0**
V-Year	XIY1-CD	II	19	37	5	3515	3515	----	2.75	9666	----
		III	42	32	5	6720	6720	----	2.75	18480	----
		IV	32	27	5	4320	4320	----	2.75	11880	----
		V	22	22	5	2420	2420	----	2.75	6655	----
		VI	12	17	3	1020	1020	----	2.75	3805	----
		TOTAL				**17995**	**17995**	**0**	**----**	**49486**	**0**
		GRAND TOTAL				**98570**	**92927**	**5643**	**----**	**255549**	**11286**

Figure 2.5 Year- Wise Production Section (First Five Years)

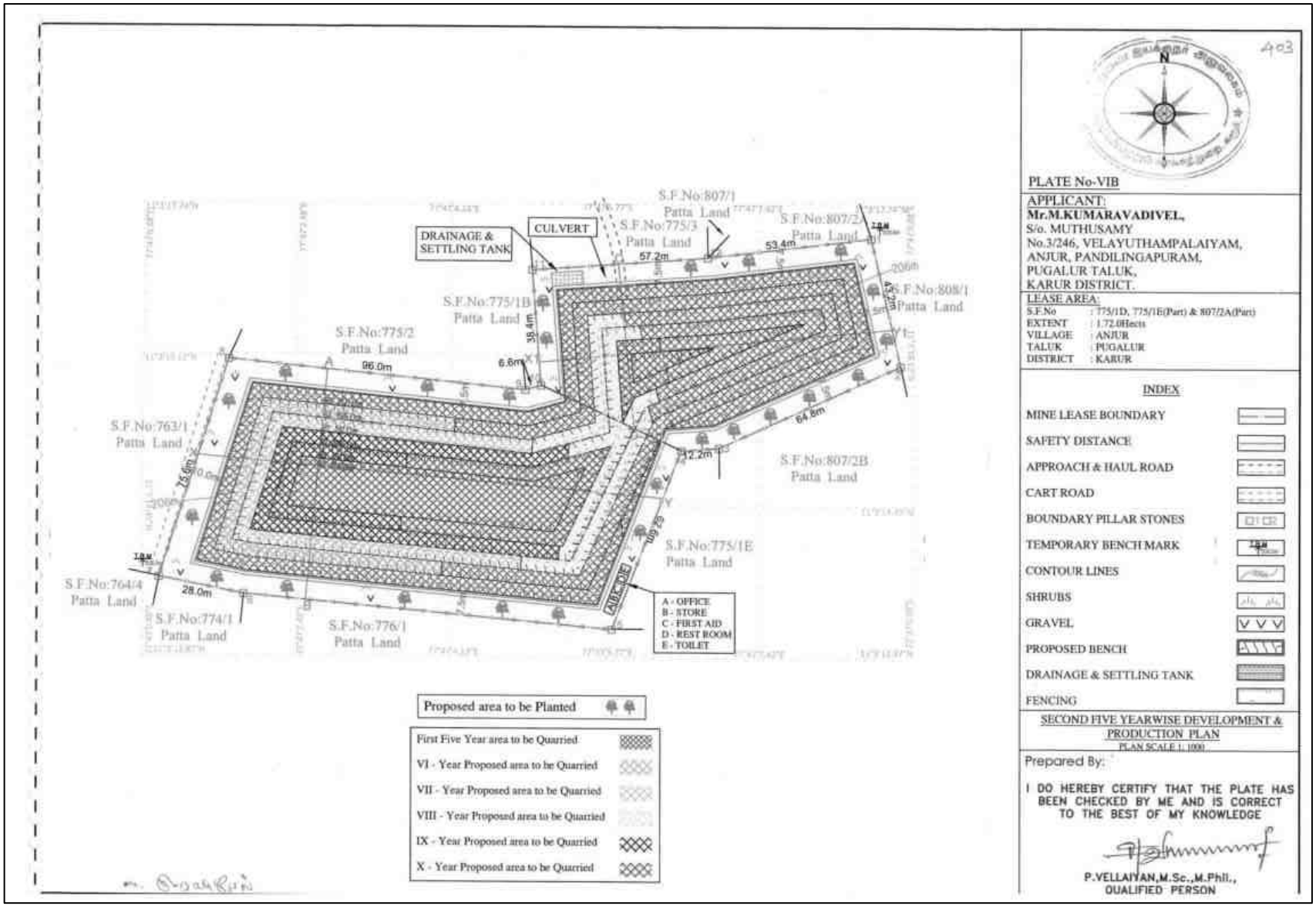
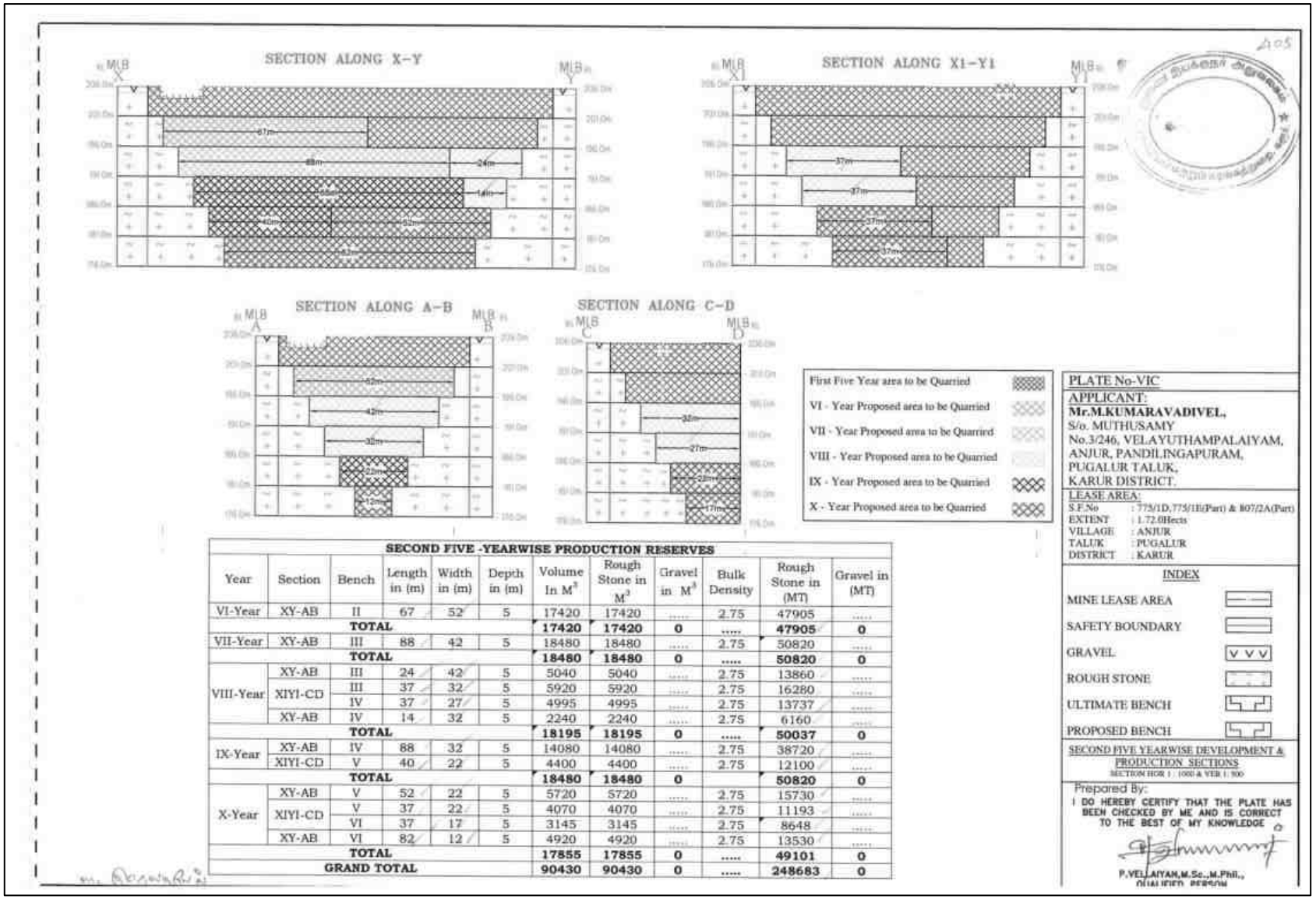


Figure 2.6 Year-Wise Production Plan (Second Five Years)



SECOND FIVE -YEARWISE PRODUCTION RESERVES

Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume In M^3	Rough Stone in M^3	Gravel in M^3	Bulk Density	Rough Stone in (MT)	Gravel in (MT)
VI-Year	XY-AB	II	67	52	5	17420	17420	.....	2.75	47905	.....
TOTAL						**17420**	**17420**	**0**	.....	**47905**	**0**
VII-Year	XY-AB	III	88	42	5	18480	18480	.....	2.75	50820	.....
TOTAL						**18480**	**18480**	**0**	.....	**50820**	**0**
VIII-Year	XY-AB	III	24	42	5	5040	5040	.....	2.75	13860	.....
	XIYI-CD	III	37	32	5	5920	5920	.....	2.75	16280	.....
		IV	37	27	5	4995	4995	.....	2.75	13737	.....
	XY-AB	IV	14	32	5	2240	2240	.....	2.75	6160	.....
TOTAL						**18195**	**18195**	**0**	.....	**50037**	**0**
IX-Year	XY-AB	IV	88	32	5	14080	14080	.....	2.75	38720	.....
	XIYI-CD	V	40	22	5	4400	4400	.....	2.75	12100	.....
TOTAL						**18480**	**18480**	**0**		**50820**	**0**
X-Year	XY-AB	V	52	22	5	5720	5720	.....	2.75	15730	.....
	XIYI-CD	V	37	22	5	4070	4070	.....	2.75	11193	.....
		VI	37	17	5	3145	3145	.....	2.75	8648	.....
	XY-AB	VI	82	12	5	4920	4920	.....	2.75	13530	.....
TOTAL						**17855**	**17855**	**0**	.....	**49101**	**0**
GRAND TOTAL						**90430**	**90430**	**0**	.....	**248683**	**0**

Figure 2.7 Year-Wise Production Section (Second Five Years)

2.5 MINING METHOD

The Quarrying operation is proposed to be carried out by open cast semi- mechanized mining method with the bench height and width of 5m each. The open cast semi- mechanized method involving drilling and blasting is proposed to extract rough stone and gravel. The extracted rough stone will be loaded manually to the trucks for dispatch to the customers. In this project, NONEL blasting will be adopted to extract rough stone.

2.5.1 Conceptual Blasting Design

In this project, NONEL blasting will be employed to win rough stone. This method will involve closed spaced perimeter holes to reduce the overbreak/ backbreak on a blast. The objective of the blasting design is to prevent fly rocks from damaging the nearby structures.

Rules of Thumb for Blast Design

Based on practical experience and technical information, a set of rules for blasting have been provided as below (Chapter 8 (nps.gov)). These rules will be applied to blast rocks in the proposed project.

Rule 1: **The detonation velocity (VOD) of the explosive should be close to the same value of the sonic velocity (VSO) of the rock to be blasted.**

The sonic velocity of a rock is considered to be a reliable indicator of its structural integrity and resistance to fragmentation. As the VOD of the explosive approaches close to the VSO of the rock, the blasting would result in relatively smaller size of fragmentation with uniformity. There is no value in using an explosive that has a VOD greatly in excess of the VSO of the rock, since there is little or no improvement in fragmentation above the VSO. When selecting an explosive to match up the VSO of a rock mass, variance of <10% in the velocities is acceptable.

Rule 2: Generally, select the densest explosive possible.

When the density of explosives is higher, the potential energy of the explosives can be greater and the more of it can be placed within a borehole of a given size.

Rule 3: Select explosives according to the characteristics of the rock formation to be blasted.

When planes of separation in the rock are smaller than the degree of fragmentation required, the rock can often be blasted by using lower density and lower detonation velocity explosives.

Rule 4: When using slurry or water gel explosives, always determine the critical temperature below which the explosive will fail to reliably detonate.

Almost all slurry explosives have a critical temperature below which they may not detonate, or may not sustain detonation in elongated columns. The explosives should not be used when the temperature of the explosive at time of loading is below that critical temperature.

Rule 5: The distance between holes (spacing) should not be greater than one-half the depth of the borehole.

When the distance between holes in a row is greater than one-half the depth of the hole, the angles of breakage intersect above the bottom of the holes. This causes both a great deal of vertical throw and a very uneven bottom.

Rule 6: Stemming should be equal to the burden.

Stemming is useful to confine and maximize efficient use of the explosive's energy. It also reduces noise as much as possible. If the stemming is greater than the burden, the rock at the top of the borehole will have less cracking from reflection and refraction of compressive and tensile waves. Therefore, stemming should be equal to burden. Drill fines can be used for loading the borehole.

Rule 7: Subdrill (if necessary) should be between 0.3 and 0.5 of spacing/ burden.

Subdrill should be equal to 0.3 of burden. It will work when there is row-for-row delay. In blasts where the delay system is both row-for-row and hole-for-hole, the subdrill should be determined by the largest dimension, which can be the spacing or the burden. An average subdrill of 0.4 of spacing is best to use for planning purposes. Based on the above-mentioned rules, blasting design has been conceptualized and has been provided in Table 2.7.

Table 2.7 Conceptual Blasting Design

BLAST DESIGN	
Blasthole Diameter (D) in mm	32
Burden (B) in m	1.2
Spacing (S) in m	1.38
Subdrill in m	0.5
Charge length (C) in m	0.70
Stemming	0.5
Hole Length (L) in m	1.2
Bench Height (BH) in m	2.5
Mass of explosive/hole in g	437.5
Stemming material size in mm	3.2
Burden stiffness ratio	2.08
Blast volume/hole in m^3	4.14
Production of rough stone/day in m^3	68
Number of blast holes/day	16
Number of blast round/day	2
Blasthole pattern	Staggered
Mass of explosive /day in kg	**6.53**
Powder factor in kg/m^3	0.11
Loading density	0.63
Type of explosives	Slurry
Diameter of packaging in mm	25
Initiation system	NONEL

Note: If> 2kg of explosives per day use for blasting if proponent get the permission from the DGMS

Statutory Provision & Precaution during Blasting: -

- Blasting permission from DGMS will be taken by the proponent within 6 months from the date of execution of mine.
- Control blasting will be carried out by using delay detonators during multi rows blasting
- No secondary blasting will be carried out.
- Stemming column will be half of the depth of hole with coarse sand.
- Only Statutory designated Blaster will supervise the blasting operation.
- All persons in the radius of minimum 300m from the blasting site will be removed by siren.
- Blasting operation will be carried out during day time only particularly at noon time.

2.5.2 Magnitude of Operation

Based on the results of estimated production for the 10 years, details about the size of operation have been provided in Table 2.8.

Table 2.8 Operational Details for Proposed Project

	Rough Stone in (m^3 & Ts) years	Gravel in (m^3 & Ts) / 3 year
Proposed production for 5 years	183357 & 504232	5643 & 11286
Number of Working Days /Annum	270	270
Production of /Day (m^3 & Ts)	68 & 187	7 & 14
No. of Lorry Loads	11	1

2.5.3 Extent of Mechanization

List of machineries proposed for the quarrying operation is given in Table 2.9.

Table 2.9 Machinery Details

S. No.	Type	No. of Unit	Size /Capacity	Motive Power
1	Jack Hammers	2	Hand held	Diesel
2	Compressor	2	Air	Diesel
3	Hydraulic Excavator	2	2.9-4.5m^3	Diesel
4	Tipper	5	-	Diesel

2.5.4 Post Mining land use

The progressive quarry closure plan of the proposed project shows past, present, and future land use statistics. According to the land use results, as shown in Table 2.10 At present about 1.72.0ha of land is unutilized. Whereas, at the end of the mine life, about 1.23.5ha of land is used for area under quarry, about 0.05.0ha will be used for roads, 0.02.0ha is used for infrastructure and 0.35.5ha is used for Greenbelt and 0.06.0ha is used for Drainage & settling tank.

Table 2.10 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 Mining	Nil	1.23.5
Infrastructure	Nil	0.02.0
Roads	Nil	0.05.0
Unutilized	1.72.0	Nil
Green belt	Nil	0.35.5

Settling Tank & Drainage	Nil	0.06.0
Total	**1.72.0**	**1.72.0**

2.5.5 Progressive Quarry Closure Budget

As the proposed project has the enormous potential for continuous operations even after the expiry of lease period, mine closure plan is not proposed for now. Based on the progressive mine closure plan for the scheme period, the mine closure cost is given in Table 2.11.

Table 2.11 Mine Closure Budget

Activity	Capital Cost
500 plants inside the lease area	1,50,000
360 plants outside the lease area	72,000
Wire Fencing	7,20,000
Renovation of Garland Drain	36,000
Total	**9,78,000**

Source: Environment Management plan

2.5.6 Conceptual Mining Plan

The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc. Details of ultimate pit dimensions have been derived from given in Table 2.12. Conceptual Plan has been shown in Figure 2.9.

Table 2.12 Ultimate Pit Dimension

Pit	Length (m)	Width (m) (Max)	Depth (m)
I	132	62	30

Source: Approved Mining Plan & ToR

2.5.7 Infrastructures

Infrastructures like mines office, temporary rest shelters for workers, latrine and urinal facilities have been proposed as per the mine rule and will be established after the grant of quarry lease. There is no proposal for the mineral processing or ore beneficiation plants in this project.

2.5.7.1 Other Infrastructure Requirement

Domestic effluent from the mine office will be discharged to septic tank and soak pit. As there is no toxic effluent expected to generate in the form of solid, liquid or gaseous form, there is no requirement of waste treatment plant.

2.5.8 Water Requirement

Detail of water requirement in 3.5 KLD is given in Table 2.13.

Table 2.13 Water Requirement for the Project

Purpose	Quantity	Source
Dust Suppression	1.0 KLD	Will obtained from water vendors
Green Belt development	1.2 KLD	
Drinking & Domestic	1.3 KLD	
Total	**3.5KLD**	

2.5.9 Energy Requirement

High speed Diesel (HSD) will be used for quarrying machineries. As per the data shown in Table 2.14. Around **7,75,107**litres of HSD will be used for rough stone and gravel extraction during this 10 years plan period. The diesel will be brought to the site from nearby diesel pumps.

Table 2.14 Fuel Requirement Details

Fuel Requirement for Excavator			
Details	**Rough Stone (183357m^3)**	**Gravel (5643m^3) For 3 Years**	**Total Diesel (litre)**
Average Rate of Fuel Consumption (1/hr)	16	10	---
Working Capacity (m^3/hr)	20	60	---
Time Required (hours)	9168	94	---
Total Diesel Consumption for 10 years (litre)	146686	941	**147627**
Fuel Requirement for Compressor			
Average Rate of Fuel Consumption/hole (litre)	0.4	---	---
Number of Drill holes/day	16	---	---
Total Diesel Consumption for 10 years (litre)	17280	---	**17280**
Fuel Requirement for Tipper			
Average Rate of Fuel Consumption/Trip (litre)	20	20	---
Carrying Capacity in m^3	6	6	---
Number of Trips / days	11	1	---
Number of Trips / 10 years	29700	810	---
Total Diesel Consumption for 10 years (litre)	594000	16200	**610200**
Total Diesel Consumption by Excavator, Compressor and Tipper			**775107**

** Number of truck loads for gravel has been calculated for ten years.*

2.5.10 Capital Requirement

The project proponent will invest **Rs. 78,46,000/-**to the project. The breakup summary of the investment has been given in Table 2.15.

Table 2.15 Capital Requirement Details

S. No.	**Description**	**Cost (Rs.)**
1	Fixed Asset Cost	18,26,000/-
2	Machinery cost (Rental)	30,00,000/-
3	EMP Cost	30,20,000/-
Total Project Cost		**78,46,000/-**

Source: Approved Mining Plan

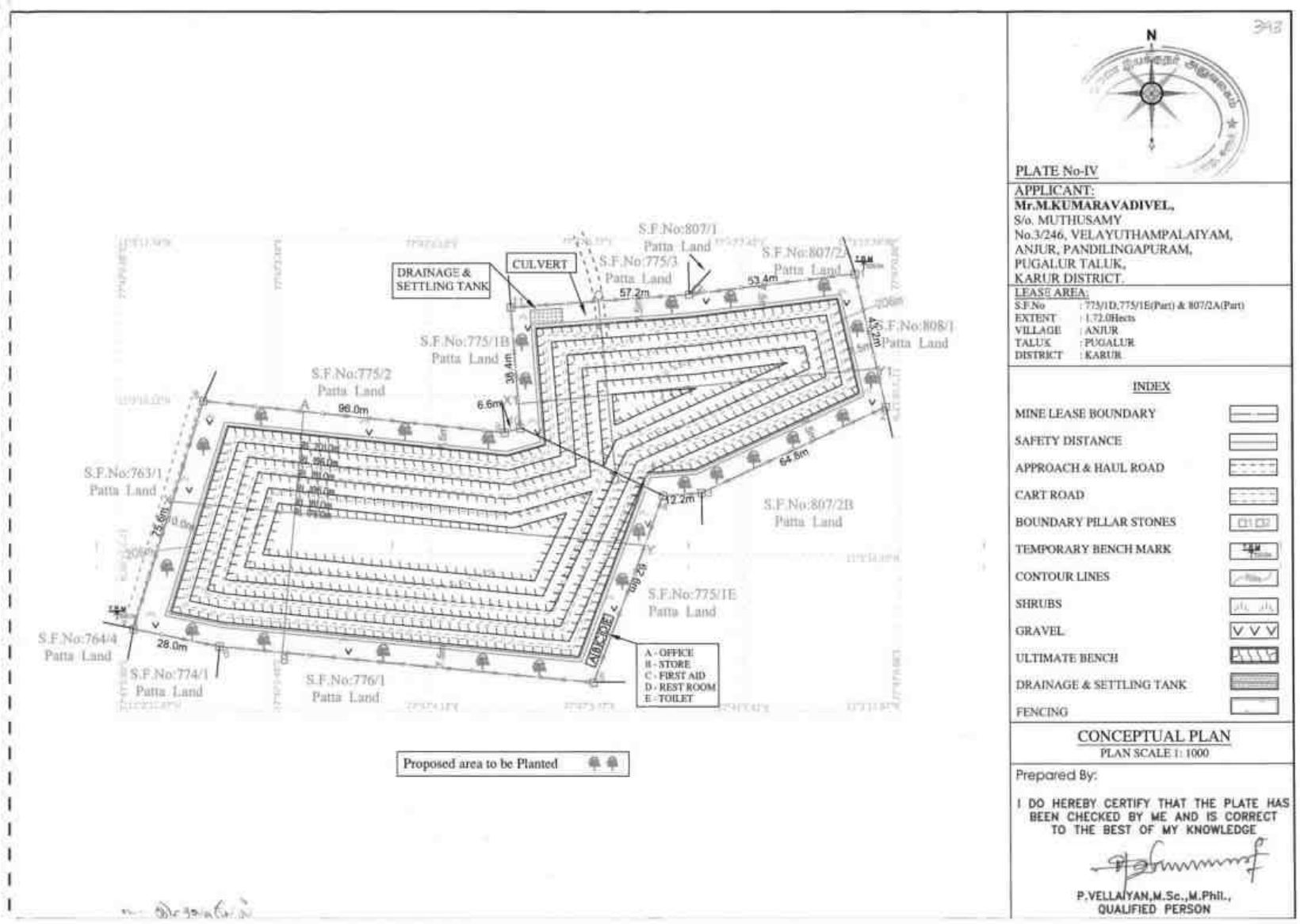
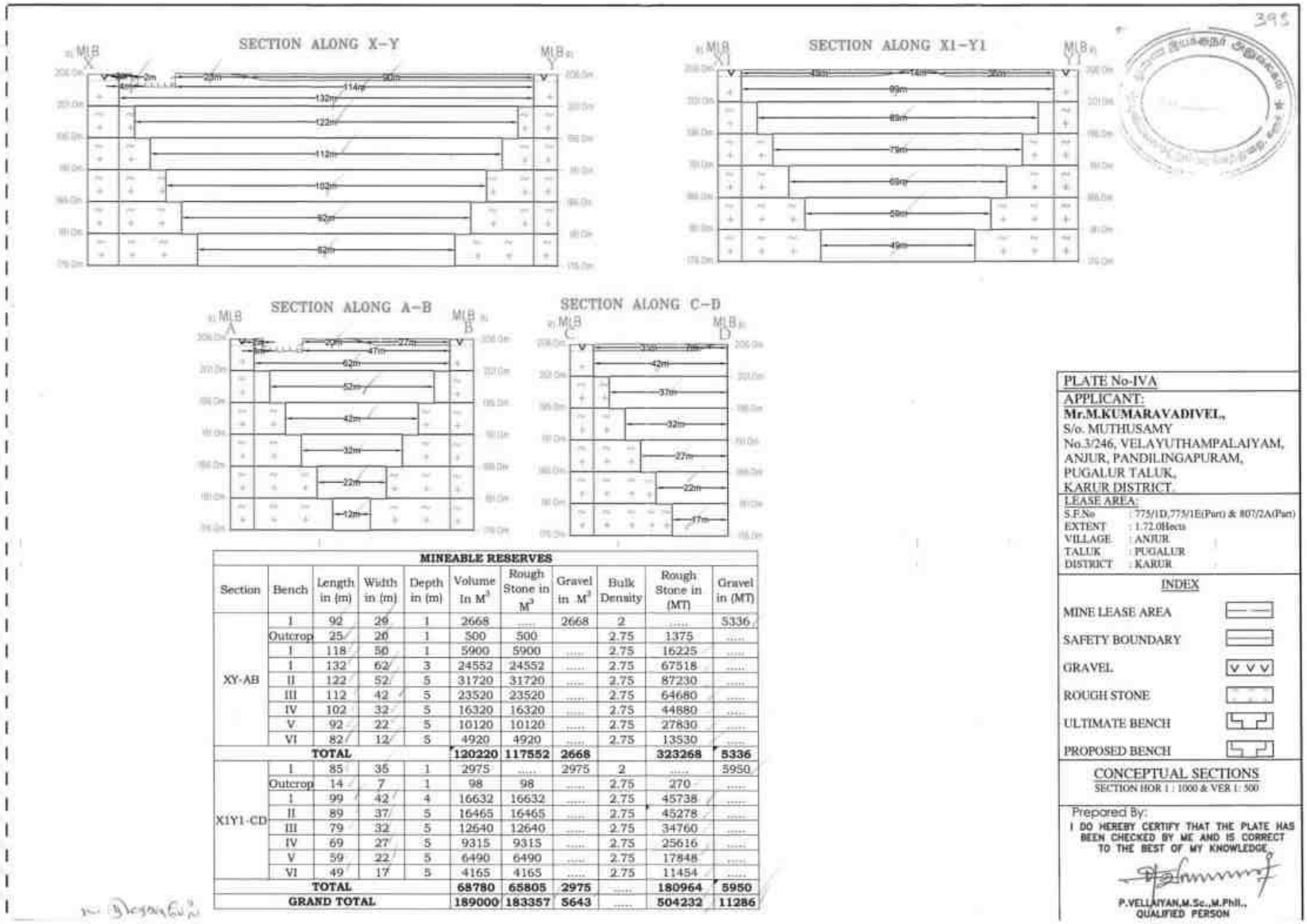


Figure 2.8 Conceptual Plan



MINEABLE RESERVES

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume In M^3	Rough Stone in M^3	Gravel in M^3	Bulk Density	Rough Stone in (MT)	Gravel in (MT)
XY-AB	I	92	29	1	2668	.....	2668	2	.....	5336
	Outcrop	25	20	1	500	500		2.75	1375	.....
	I	118	50	1	5900	5900	.....	2.75	16225	.....
	I	132	62	3	24552	24552	.....	2.75	67518	.....
	II	122	52	5	31720	31720	.....	2.75	87230	.....
	III	112	42	5	23520	23520	.....	2.75	64680	.....
	IV	102	32	5	16320	16320	.....	2.75	44880	.....
	V	92	22	5	10120	10120	.....	2.75	27830	.....
	VI	82	12	5	4920	4920	.....	2.75	13530	.....
TOTAL					**120220**	**117552**	**2668**		**323268**	**5336**
X1Y1-CD	I	85	35	1	2975	.....	2975	2	.....	5950
	Outcrop	14	7	1	98	98	.....	2.75	270	.....
	I	99	42	4	16632	16632	.....	2.75	45738	.....
	II	89	37	5	16465	16465	.....	2.75	45278	.....
	III	79	32	5	12640	12640	.....	2.75	34760	.....
	IV	69	27	5	9315	9315	.....	2.75	25616	.....
	V	59	22	5	6490	6490	.....	2.75	17848	.....
	VI	49	17	5	4165	4165	.....	2.75	11454	.....
TOTAL					**68780**	**65805**	**2975**	.....	**180964**	**5950**
GRAND TOTAL					**189000**	**183357**	**5643**	.....	**504232**	**11286**

Figure 2.9 Conceptual Section

2.6 MANPOWER REQUIREMENT

The skilled, competent qualified statutory persons will be engaged for quarrying operation, preference will be given to the local community. Number of employees required for this project have been provided in Table 2.16.

Table 2.16 Employment Potential for the proposed project

S. No.	Category	Role	Nos.
1.	Highly Skilled	Mines manager	1
		Mine Engineer	1
		Mines Geologist	1
		Blaster	1
2.	Unskilled	Musdoor/ Labours	19
		Total	**23**

Source: Prefeasibility Report

2.7 PROJECT IMPLEMENTATION SCHEDULE

The commercial operation will commence after the grant of Environmental Clearance. CTO and CTE will be obtained from the Tamil Nadu State Pollution Control Board. The conditions imposed during the environmental clearance will be compiled before the start of mining operation. Expected time schedule for the quarrying operation is given Table 2.17.

Table 2.17 Expected Time Schedule

S. No.	Particulars	Time Schedule (in Months)							Remarks if any
		1st	2nd	3rd	4th	5th	6th	7th	
1	Baseline Environmental Study for preparing EIA report based on the Standard and Specific ToR Conditions								Soil, Water, Air, Noise, Socio Economics, Ecological Biodiversity and Traffic studies to be carried out by NABL accredited Laboratory and FAE's.
2	Draft EIA Report								Submission to TNPCB

3	Public Hearing Meeting								Minutes will be provided by the Tamil Nadu Pollution Control Board.
4	Final EIA Report (including Public reviews)								Submission to PARIVESH 2.0 Portal for obtaining EC
5	SEIAA Meeting								For environmental clearance
Note: Time line may vary; subjected to rules and regulations /& other unforeseen circumstances									

Source: Anticipated based on Timelines framed in EIA Notification & CPCB Guidelines

CHAPTER III
DESCRIPTION OF THE ENVIRONMENT

3.1 BASELINE ENVIRONMENTAL STUDIES

Baseline environmental studies were carried out within 5km radius of the extraction of rough stone quarry to assess the existing environmental scenario in the area by **Accuracy Analabs (OBC) Private Limited**, which is MoEF recognized and NABL certified lab. For the purpose of EIA studies, Quarry lease area of rough stone quarry was considered as the core zone and area outside the mine upto 5km radius was considered as buffer zone. The baseline environmental monitoring for various components of environment viz. air, noise, water, land was carried out during **Pre- Monsoon Season** (**March to May 2026)** in the study area covering 5km radius distance from the rough stone quarry. Other environmental data on flora and fauna, land-use pattern, forest etc. Were also generated through field surveys and secondary information collected from different departments of State Govt. socio-economic survey was conducted, through interaction with the people, medical officers by floating questionnaires and collection of information is supported by census data for demographic structures, amenities and infrastructure availability within the study area.

Study Area

Study area covers 5km radius from the mine located at S.F.No's. 764/3, 765/3, 766/1, 766/2, 766/3A, 767/1 & 767/2A of Anjur Village, Pugalur Taluk, Karur District and Tamil Nadu. Core zone and buffer zone. Core zone is considered as lease area and buffer zone as 5km radius from the periphery of the cluster, except for ecological study, which considers 10km as buffer zone. Both core and buffer zones are taken as the study area briefly given in Table 3.1 & 3.2. The study area map on Topo- sheet is represented in Figure 3.1.

Table 3.1 Classification of study Area

Sl. No	Classification of Study area	Type of Baseline data collection	Environmental Attributes
1	Core Zone (Cluster Lease Area)	Primary Data	Soil Environment, Water Quality, Ambient Air Quality, Noise Levels, Flora Fauna, Socio Economic study.
2	Extended Core Zone (upto 500m radius from the Cluster lease boundary)	Primary and Secondary Data	Soil Environment, Water Quality, Ambient Air Quality, Noise Levels, Flora Fauna, Socio Economic study.

3	Buffer Zone (Cluster lease boundary of 500m to 10km radius)	Primary and Secondary Data	Meteorological Data, Soil Environment, Water Quality (Surface/ Groundwater), Ambient Air Quality, Noise Levels, Flora Fauna, Socio Economic study.

Table 3.2 Monitoring Attributes and Frequency of Monitoring

Attribute	Parameters	Frequency of Monitoring	No. of Locations	Protocol
Land Use/ Land Cover	Land-use Pattern within 5 km radius of the study area	Once during the study period	Study Area	Satellite Imagery & Primary Survey
*Soil	Physico-Chemical characteristics	Once during the study period	5 (1 in core & 4 in buffer zone)	IS 2720 Agriculture Handbook - Indian Council of Agriculture Research, New Delhi
*Water Quality	Physical, Chemical and Bacteriological Parameters	Once during the study period	5 (3 Ground water & 2 Surface water)	IS 10500& CPCB Standards
Meteorology	Wind speed Wind direction Temperature Cloud cover Dry bulb temperature Rainfall	1 hourly continuous mechanical/automatic weather station	1	Site specific primary data & secondary data from IMD Station
*Ambient Air Quality	PM_{10} $PM_{2.5}$ SO_2 NO_X	24 hours, twice a week	5 (1 core & 4 buffer)	IS 5182 Part 1-23 National Ambient Air Quality Standards, CPCB
*Noise Levels	Ambient noise	Hourly observation for 24 hours per location	5 (1 core & 4 buffer zone)	IS 9989 As per CPCB Guidelines

Ecology	Existing flora and fauna	Through field visit during the study period	Study area	Primary Survey by Quadrate & Transect Study Secondary Data – Forest Working Plan
Socio Economic Aspects	Socio-economic characteristics, Population statistics and existing infrastructure in the study area	Site visit & Census Handbook, 2011	Study area	Primary Survey, census handbook & need based assessments.

**All monitoring and testing have been carried out as per the Guidelines of CPCB and MoEF & CC.*

Components and Methodology

To achieve the objectives of ToR, NABET approved in Functional Area Experts (FAE) of Geo Technical Mining Solutions- members visited the study area and monitored the environmental parameters in accordance with the Guidelines of EIA, issued by the Ministry of Environment, Forests and Climate Change (MoEF and CC) Government of India. The components of the study are given in Table no. 3.3.

Table No. 3.3 Component of the EIA/EMP studies

Sl. No	Component	Sl. No	Component
1.	Geology & Geomorphology	7.	Air Quality and Meteorology
2.	Land Use & Land Cover	8.	Noise Environment
3.	Hydrogeology	9.	Biological Environment
4.	Soil Environment	10.	Socio-economic Environment
5.	Water Environment	11.	Solid and Hazardous waste
6.	Air Environment	12.	Risk Assessment

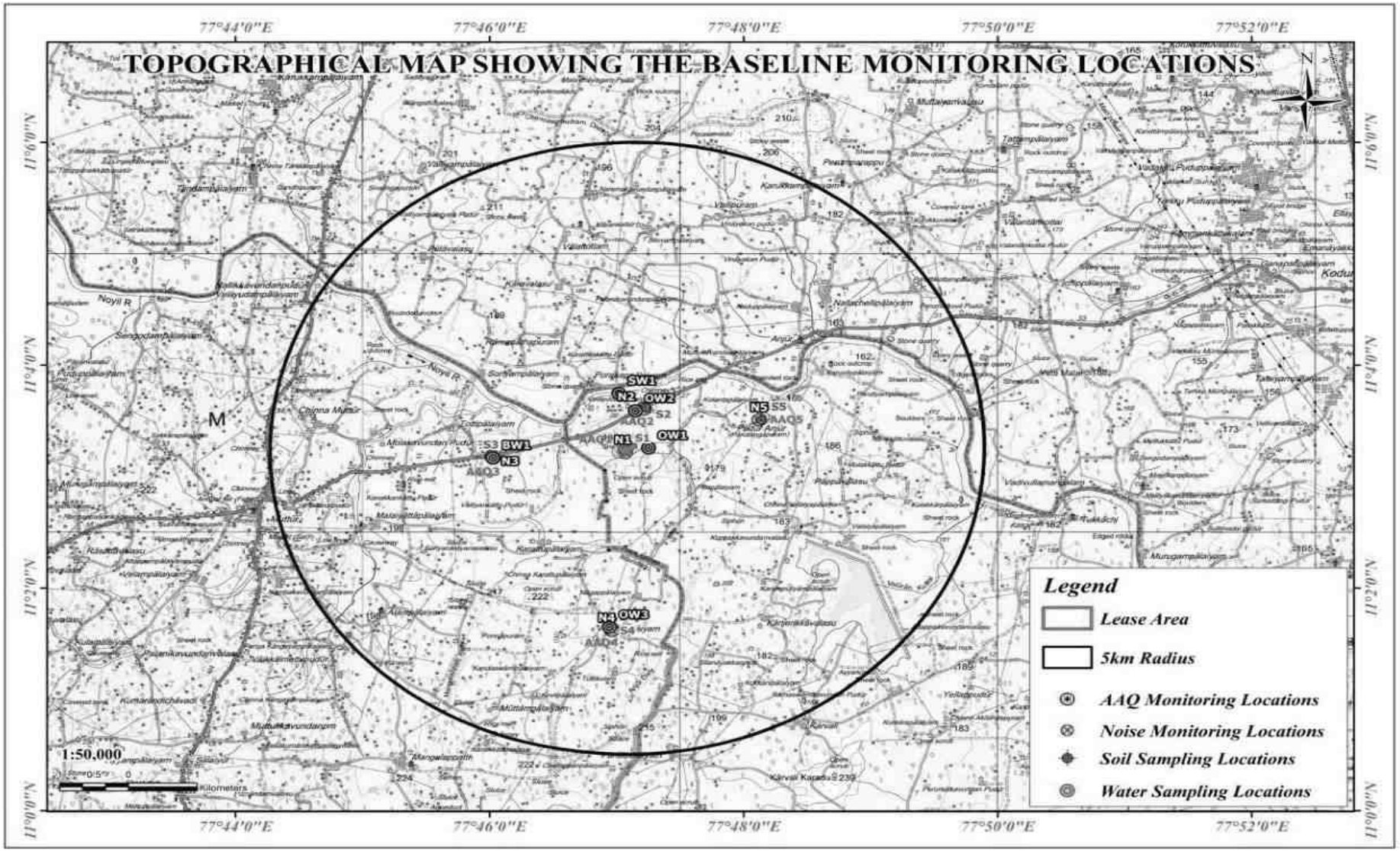


Figure 3.1. Topographical Map of 5Km Radius Study Area

3.2 LAND ENVIRONMENT

Since mining involves in an excavation of minerals the land environment is mainly affected by it, especially in the case of opencast mines.

3.2.1 Geology and Geomorphology

(i) Geology

Geologically, the entire district can be broadly classified into hard rock and sedimentary formations.

a) Hard rock formations More than 90% of the district is underlain by hard rock of Archaean age. The gneissic type of formation is the major formation among the various types of hard rocks. Charnockite occurs in this district as pockets in Karur and Aravakurichi taluks. Quartzites which are resistant to weathering are also seen as patches in charnockite and gneiss varieties.

b) Sedimentary formations Recent alluvial deposits such as sand, silt, clay, gravel, etc., which are transported sediments by river are found on either side of Cauvery River in Karur, Krishnarayapuram and Kulithalai blocks. These formations are overlying the hard rock.

(ii) Geomorphology

The entire area of the district is a pediplain. The Rangamalai hills and Kadavur hills occurring in the southern side of the district constitutes the remnants of the much-denuded Eastern Ghats and rise to heights of over 1031m above mean sea level. There are numerous small residual hills represented by Ayyarmalai, Thanthonimalai and Velayuthampalayam hills. The general elevation of the area is ranging between 100m and 200m above mean sea level. The prominent geomorphic units identified in the district through interpretation of Satellite imagery are 1) Structural hill, 2) Pediments, 3) Shallow Pediments, 4) Buried Pediments and 5) Alluvial plain.

3.2.2 Purpose of Land Use Map

The given land use map has been prepared as a requirement for the Environmental Impact Assessment (EIA) reporting. It enables the decision makers in various stages of EIA. The map is prepared by creating a buffer of 5km around the project site. It provides a description of land use types present in the given square kilometre of area which in turn facilitates in assessing the environmental consequences of a development project on the present land use. It describes the baseline conditions which are required for the setting up of the project. A land use map is a vital spatial planning aid identifying suitable areas not only for establishing the project, but also other features associated with it. Additionally, it is extremely functional in

the process of identification and assessment of magnitude of potential impacts thereby enabling the planners to devise mitigation strategies.

3.2.3 Land Use classification system

The land use/land cover classes used in the map have been designed according to the MoEF & CC guidelines in the EIA Guidance of Mining and Minerals as given in Table 3.4.

Table 3.4 Land Use/ Land Cover classification according to EIA Guidance

Level- I	Level- II	Level- III
Built – up land	Built –up land	Urban (towns and cities)
Agricultural land	Crop land i. Kharif ii. Rabi iii. Double cropped	Irrigated crop land
		Unirrigated crop land
	Fallow	Fallow
	Plantation	Types of plantations casurina, coconut, Teak etc.,
Forest	Evergreen/ Semi-Evergreen	Dense/ closed
		Open
	Deciduous	-
	Degraded scrub land	-
	Forest blank	Degraded forest
		Forest blank
	Forest Plantation	Type of plantation e.g. Teak, sal etc
	Mangrove	-
Wastelands	Salt affected land	-
	Waterlogged land	-
	Marshy / swampy land	-
	Gullied / ravinous land	-
	Land with or without scrub	-
	Sandy area (coastal and desertic)	Minimum mappable unit is 2.25 hectares on 1:50,000 scale
	Barren rocky/ stony waste/ sheet rock areas	-
Water bodies	River/ stream	-

	Lake/reservoir/tank/canal	-
Others	Shifting cultivation	Current
		Old / abandoned
	Grassland / grazing land	Grassland / grazing land
	Snow covered/glacial area	Snow covered / glacial area
	Mining area	Mining dumps

3.2.4 Land Use/ Land Cover

Land Use and Land Cover (LULC) map, as shown in Figure 3.4 & 3.4a was prepared using Sentinel II image for the study area of 5km radius to provide a baseline status of the study area covering 5km radius around the proposed mine site. Totally, 6 LULCs were mapped using ArcGIS software version- 10.2. The areal extent of each LULC is provided in Table 3.5 of the total cluster area, mining area covers only 81.39ha accounting for 1.00%, of which lease area of 1.72.00ha contributes only about 0.043%. Hence very least percentage of mining activities shall not have any significant impact on the land environment.

Table 3.5 LULC Statistics of the Study Area

S. No.	Classification	2025	
		Area (ha)	Area (%)
1	Water bodies	78.60	0.96
2	Plantation	276.98	3.39
3	Crop lands	6413.95	78.51
4	Built-up land	1205.16	14.75
5	Mining/Industrial area	81.39	1.00
6	Fallow land	113.31	1.39
Total		**8169.39**	**100**

Source: Sentinel II Satellite Imagery

Comparative study of Land Use Land Cover (LULC) Changes within 5km Radius (2020 vs 2025) was done and significant changes in land use and land cover were observed (Table 3.5a). Crop land has decreased from 6413.95ha (78.51%) to 6413.95ha (78.51%), indicating the decrease in agricultural activities, this change is due to the land are not suitable for agriculture and source of irrigation is uncertain. But that cultivation land is included in the fallow land whose extent have been increased. Mining activity has been increased to a little extent from 80.18 ha (0.98%) to 81.39 ha (1.00%), suggesting increased demand of building materials for various infrastructure developments. The increase in common vegetation has noticed of 2.12 ha (0.03%) in last five years due to the afforestation activities carried out by the past quarry proponents. Built-up areas also rise from 958.53 ha (11.73%) to 1205.16 ha

(14.75%), pointing out the urban development due to increase in economic activity. In fact, the agricultural land has been reduced but that too included in fallow land which can be reversible during availability of irrigation factors.

Table 3.5a Comparison of LULC Statistics of the 5km Radius

S. No.	Classification	2020		2025	
		Area (ha)	Area (%)	Area (ha)	Area (%)
1	Water bodies	80.35	0.98	78.60	0.96
2	Plantation	58.89	0.72	276.98	3.39
3	Crop lands	6921.14	84.72	6143.95	78.51
4	Built-up land	958.53	11.73	1205.16	14.75
5	Mining/ Industrial area	80.18	0.98	81.39	1.00
6	Fallow land	70.31	0.86	113.31	1.39
Total		**8169.39**	**100**	**8169.39**	**100**

Source: Sentinel II Satellite Imagery

3.2.5 Topography

The proposed lease area Exhibits flat topography the height elevation in (206m) AMSL observed in northwest Side of the lease area the Slope is towards southeast Side and falls in Toposheet No 58-E/16.

3.2.6 Drainage Pattern

Drainage pattern is the pattern formed by the streams, rivers, and lakes in a particular drainage basin over time that reveals characteristics of the kind of rocks and geological structures in a landscape. The proposed area shows dendritic drainage pattern indicating uniform lithology beneath the surface, as shown in Figure 3.5.

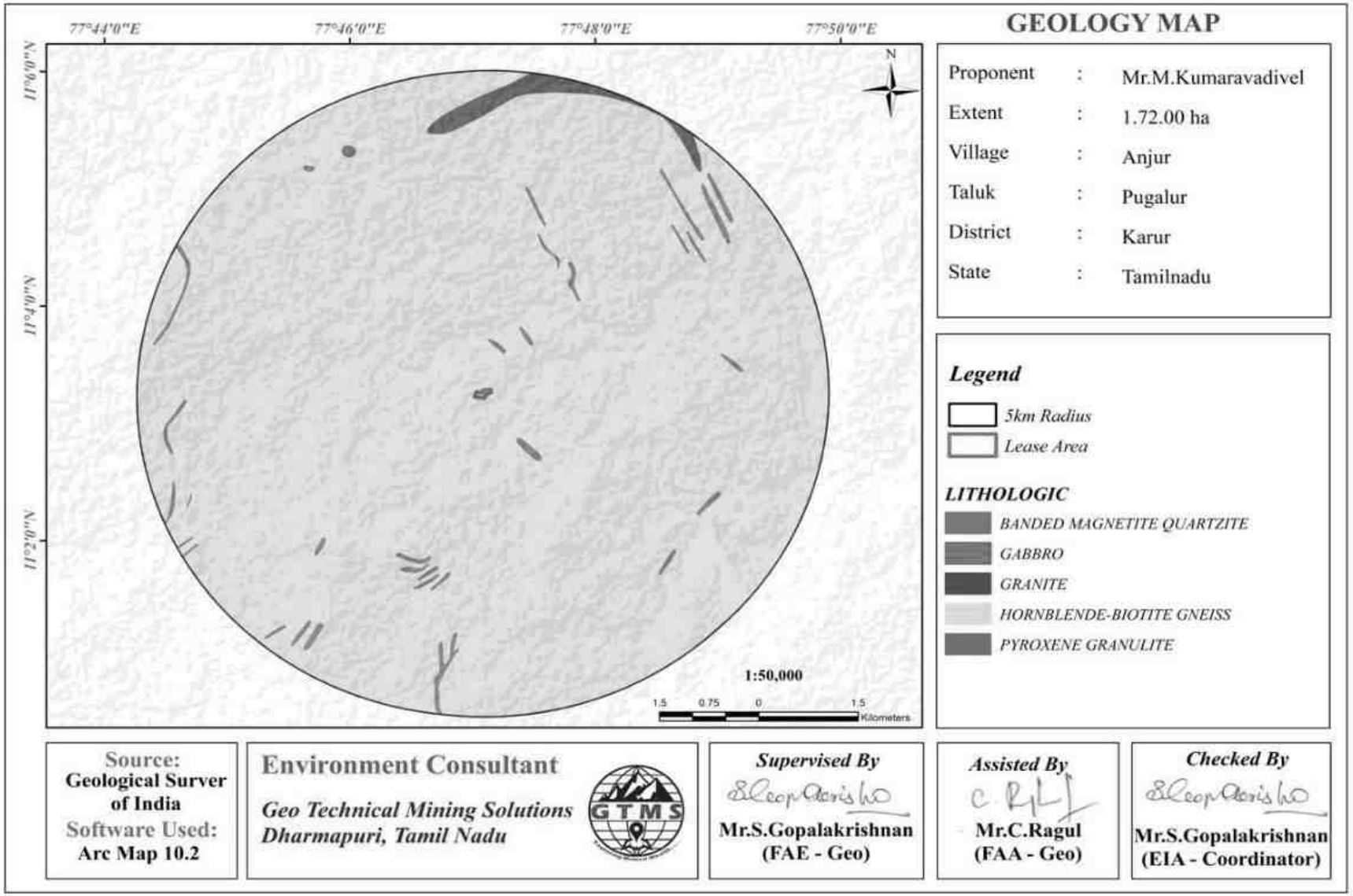


Figure 3.2 Geology Map of 5 km Radius from Proposed Project Site

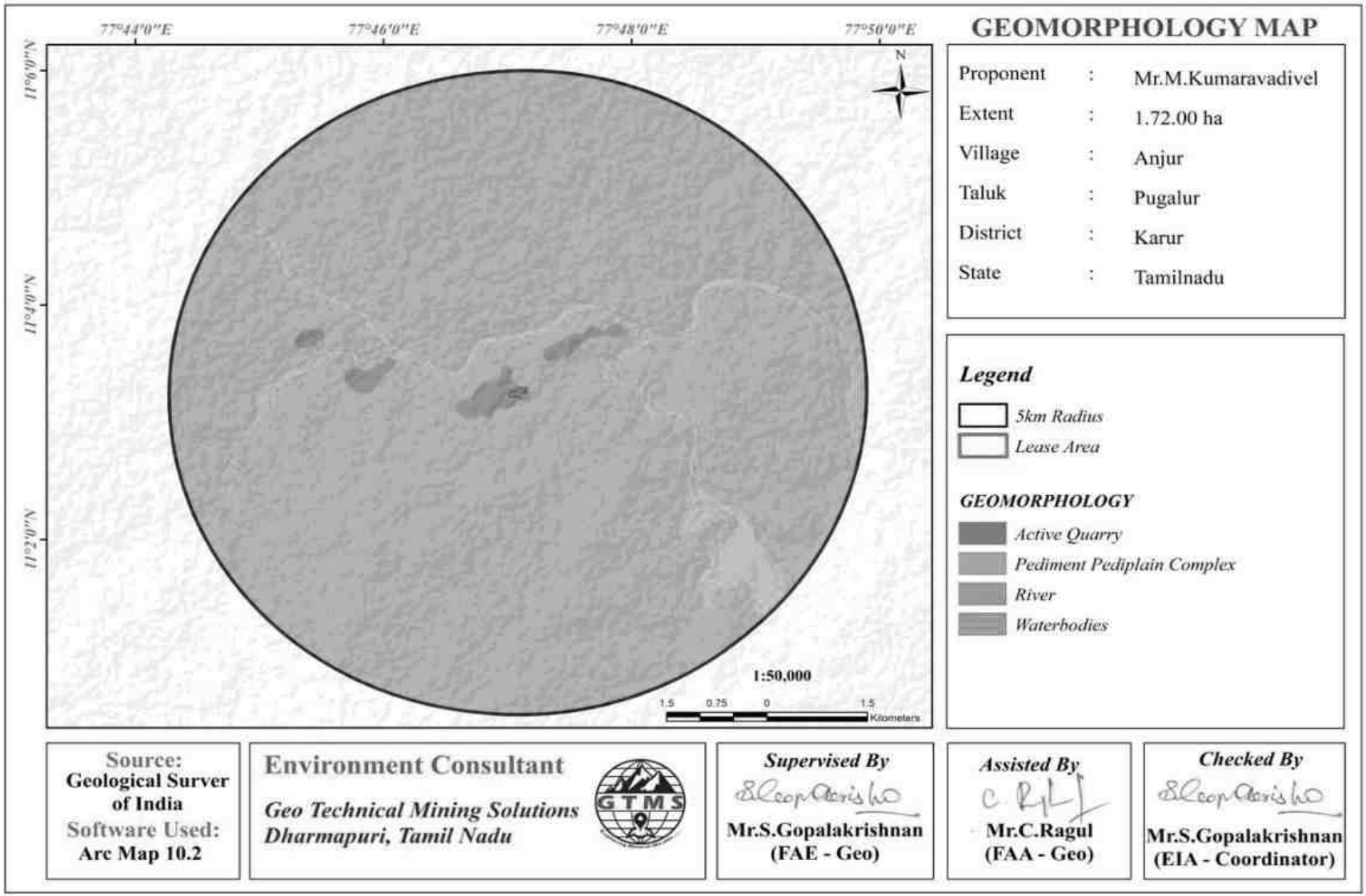


Figure 3.3 Geomorphology Map of 5 km Radius from Proposed Project Site

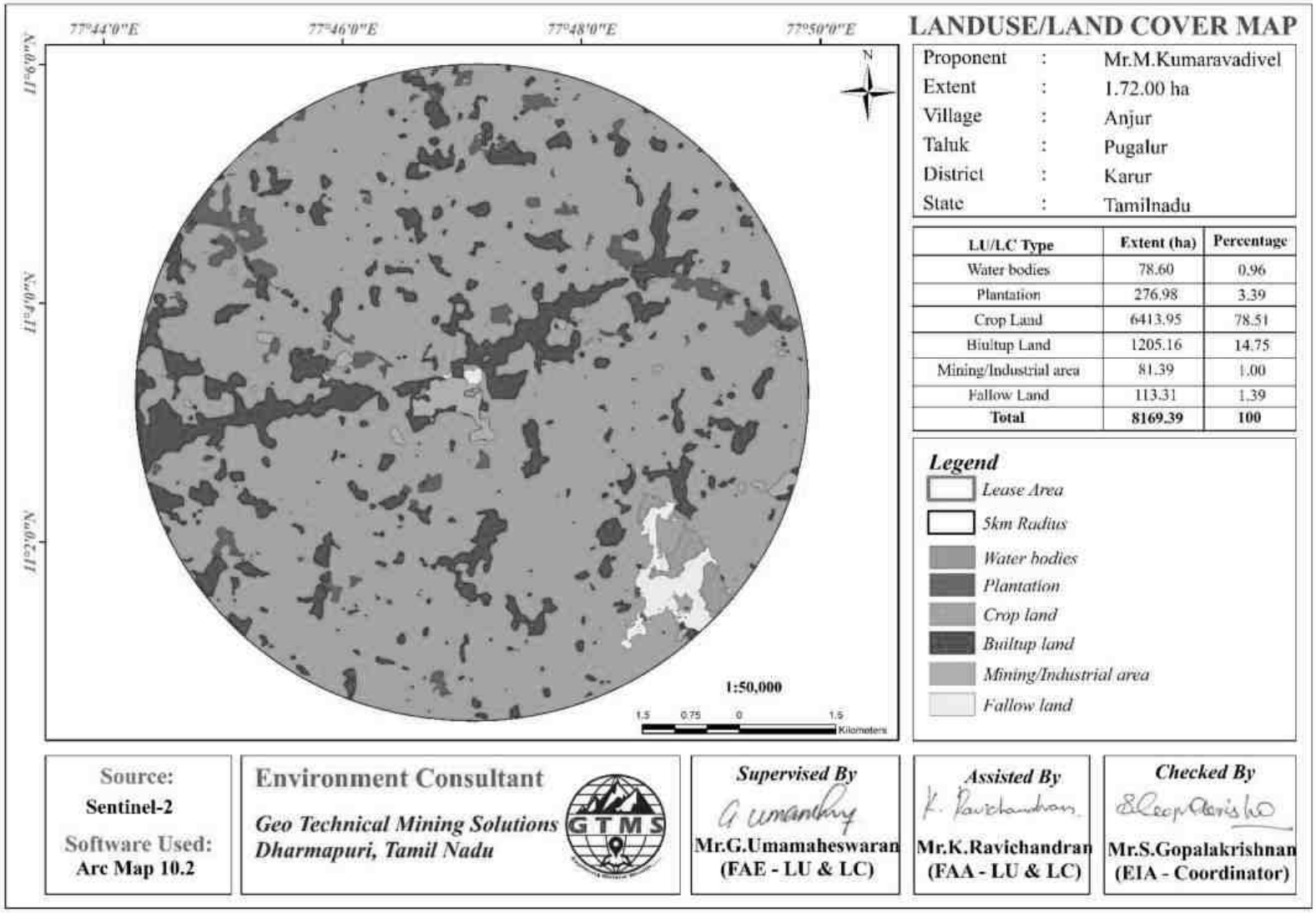


Figure 3.4 LULC Map of 5 km Radius from Proposed Project Site

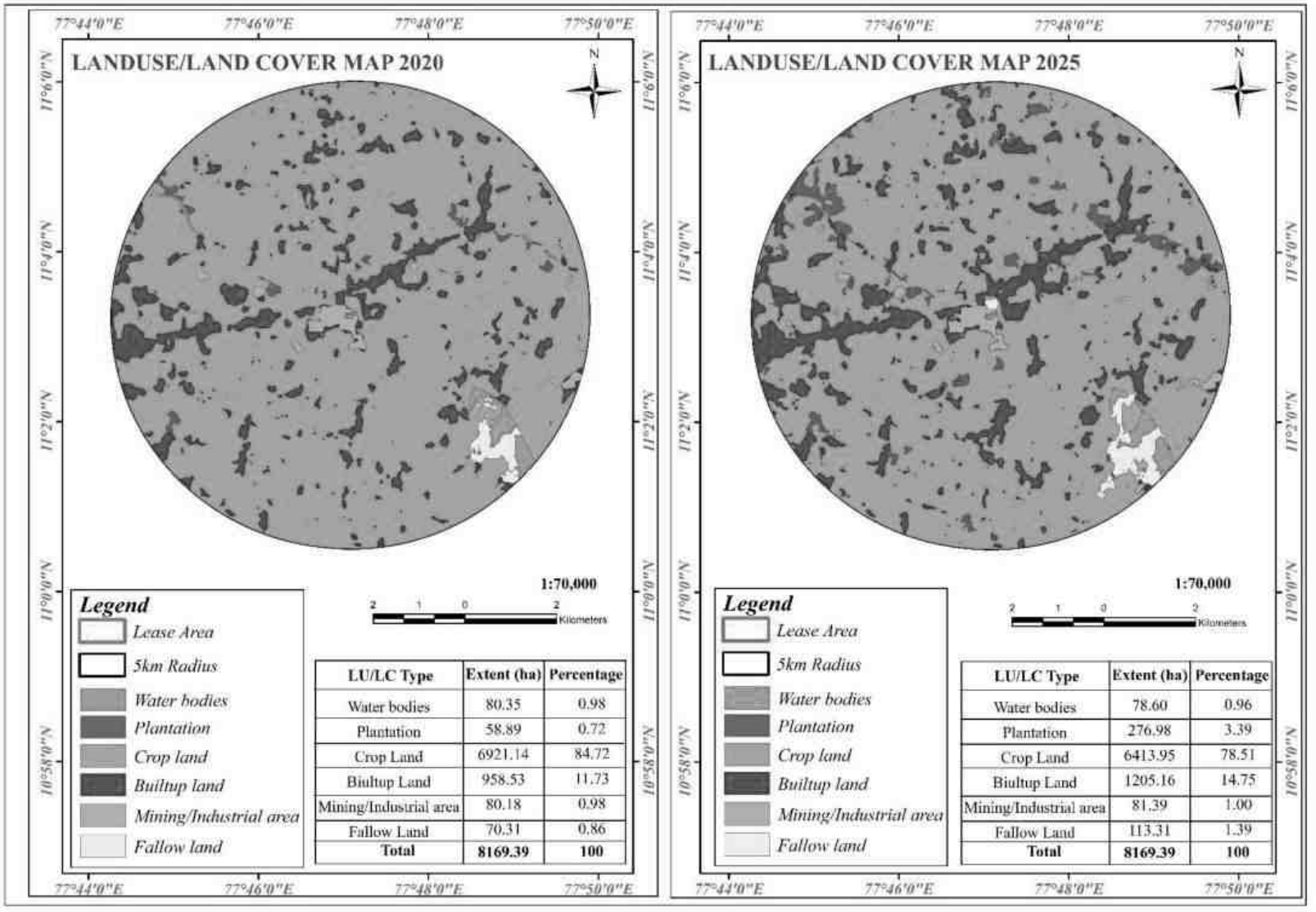


Figure 3.4a LULC Map of 5km Radius from Proposed Project Site (2020 - 2025)

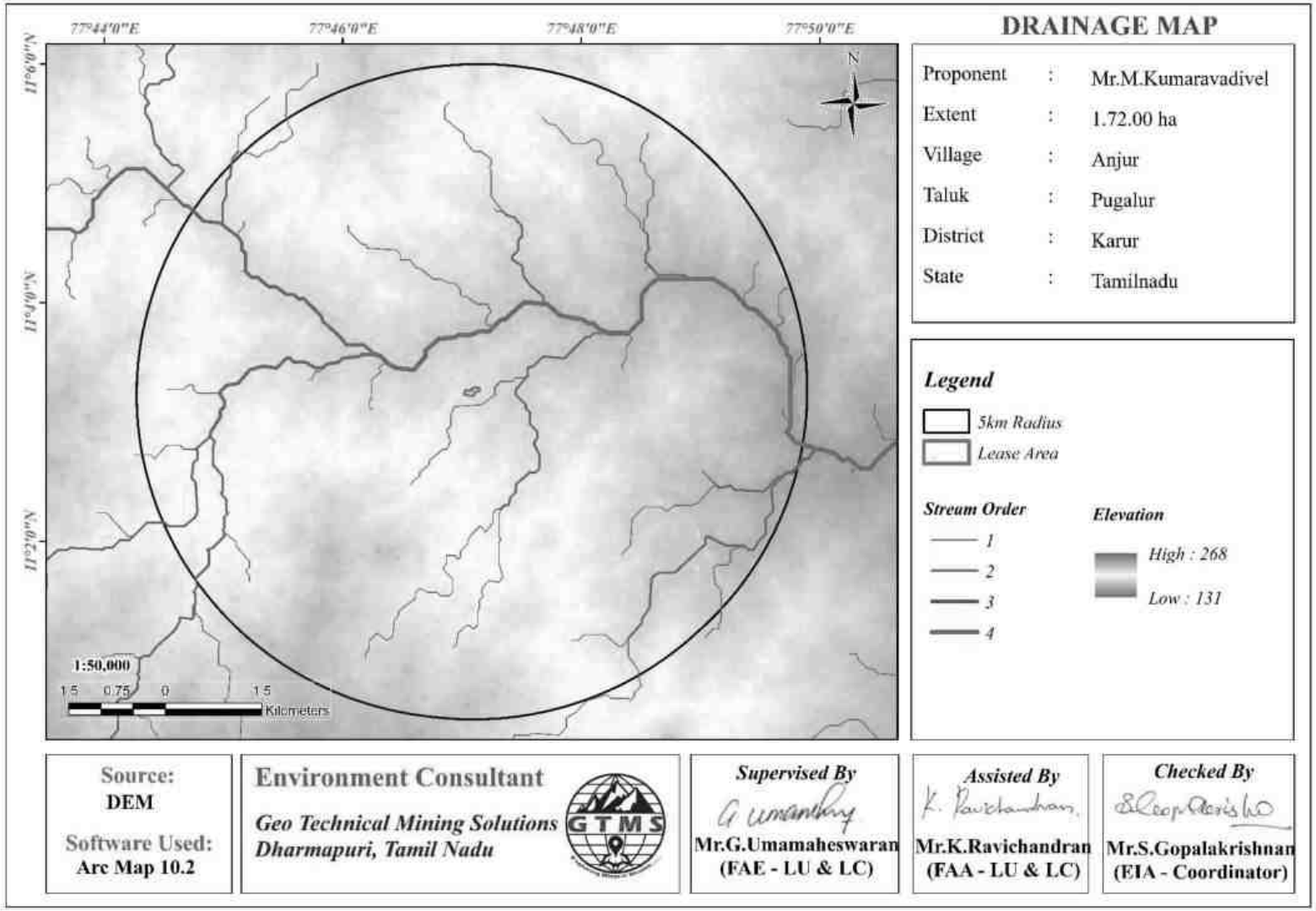


Figure 3.5 Drainage Map of 5 km Radius from Proposed Project Site

3.2.7 Seismic Sensitivity

The proposed lease area is situated in a Seismic Zone II, as defined by National Centre for Seismology (Official Website of National Centre of Seismology). The Zone II is defined as the region where only minor damage is expected from seismic events. In this respect, the proposed lease area is located in a low earthquake hazard area.

3.3 SOIL ENVIRONMENT

Soil samples were collected from 5 locations of the study area using a hand auger method at depth of 90cm below ground level filled in polythene bags, coded and sent to laboratory for analysis. The sampling was conducted in accordance with standard soil sampling protocols to ensure representativeness and consistency. The analyses were carried out following standardized procedures as prescribed by relevant national and international guidelines (e.g., APHA, BIS, or ASTM standards, as applicable). The coordinates and descriptions of the soil sampling locations are provided in Table 3.6 and Figure 3.7. The locations were selected for soil sampling based on soil types, vegetative cover, and industrial & residential activities including infrastructure facilities. The samples thus collected were analysed for physical and chemical characteristics. The physical and chemical characteristic results of soil samples are provided in Table 3.7 & 7a.

Table 3.6 Soil Sampling Locations

Location code	Monitoring Locations	Distance in m	Directions	Coordinates	
				Latitude	Longitude
S1	Core	---	-	11° 3'13.66"N	77°47'3.92"E
S2	Kulathupalayam	0.63	N	11° 3'37.14"N	77°47'13.67"E
S3	Thottiyapalayam	1.84	W	11° 3'10.02"N	77°46'0.44"E
S4	Oodayam	2.93	S	11° 1'38.32"N	77°46'56.77"E
S5	Pillapalayam	1.85	E	11° 3'30.50"N	77°48'8.22"E

*Source: On-site monitoring/sampling **Accuracy Analabs (OBC) Private Limited**, in association with GTMS.*

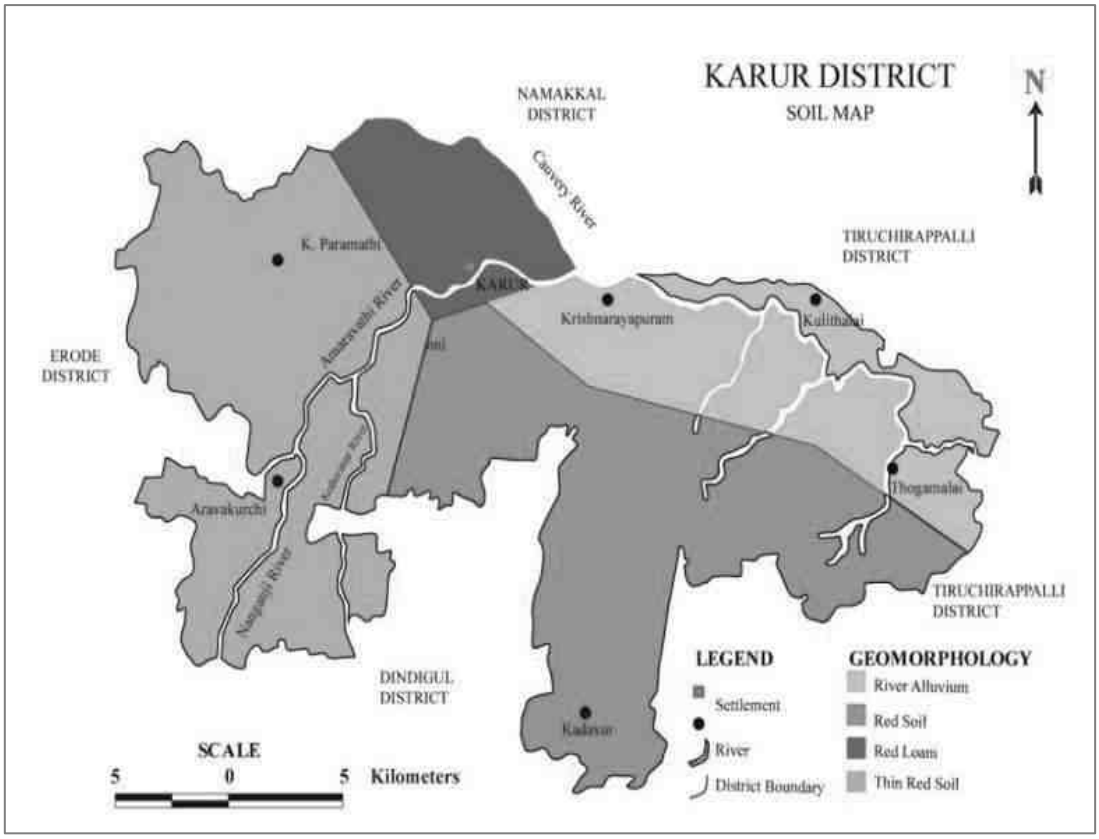


Figure 3.6 Soil Map of Karur District

Physical Characteristics & Chemical Characteristics

1. Soil pH and Electrical Conductivity (EC):

- **pH ranged from** 7.21 to 8.21 indicating that the soil is **neutral to slightly alkaline**, which is favourable for most crops.
- **EC** value ranged from 0.21 to 0.35 dS/m, suggesting low salt concentration and non-saline soil across the sampling area.

2. Physical Properties

- **Moisture** values ranged from 7.45 to 10.1%, which are within the typical range for loamy soils and support good root penetration and aeration.

3. Soil Fertility Status:

- **Organic matter** levels ranged from 2.49 to 3.24mg/kg by weight, classifying soils as low to moderately fertile in terms of organic matter.
- **Nitrogen (N)** content varied from 31.0 to 42.0mg/kg by mass indicating moderate nitrogen availability.
- **Potassium (K)** ranged from 50.0 to 71.0mg/kg by mass moderate fertility potential in terms of potassium.

- **Phosphorous (P)** ranged from 16.0 to 20.0mg/kg by mass moderate fertility potential in terms of Phosphorous.

4. **Base Elements and Cation Ratios:**

- **Manganese (Mg)** ranged from 3.4 to 4.5mg/kg.
- **Zinc (Zn)** ranged from 0.5 to 1.2mg/kg.

Conclusion:

The soils in the study area are generally non-saline, neutral to slightly alkaline, and moderately fertile with low contamination levels. They exhibit good permeability, porosity, and suitable textural classes for agriculture and greenbelt development. The absence of heavy metals confirms that baseline soil conditions are unpolluted and safe for reclamation and vegetation growth.

Table 3.7 Assigning Scores to Soil Quality Indicators

S. No.	OM	pH	EC	Total Score	Recommendation
S1	3.15	6	5	14.15	The Soil Requires Major and Immediate Treatment
S2	3.34	6	5	14.34	
S3	4.23	6	5	15.23	
S4	2.32	9	5	16.32	
S5	3.21	6	5	14.21	

Organic Matter- (%- 0.1 to 2.0- 15), (2.5 to 3.5- 20), (3.5 to 5.0- 25), Bulk Density- (0.64 to 0.92- 6), (0.92 to 0.98- 3), (0.98> - 1) pH- (5.8 to 7.3- 9), (7.3 to 8.0- 6), (8.0> - 3), Electrical Conductivity-dS/m (<0.98- 5), (0.98 to 1.71- 3), (1.71> - 1)

OM (Organic Matter) BD (Bulk Density) pH (Potential of Hydrogen) EC (Electrical Conductivity) Source: PSS-2262_Soil_Quality_Monitoring.pdf (okstate.edu)

Agricultural Suitability Evaluation

Due to the dominant sandy loam texture, low organic matter content, and favourable drainage characteristics, the soil is more suitable for horticultural crops than for conventional wet-paddy cultivation.

Summary of Vehicular Stress Effects on Soil Sample S1

Soil Component	Change Due to Stress	Effect on Plant Growth
Silt Content	Increases due to grain crushing	Restricts root penetration
Bulk Density	Increases rapidly	Reduces air and water movement
Organic Matter	Fragmentation and accelerated decomposition	Loss of nutrient-holding capacity
Pore Structure	Loss of macropores	Causes root hypoxia

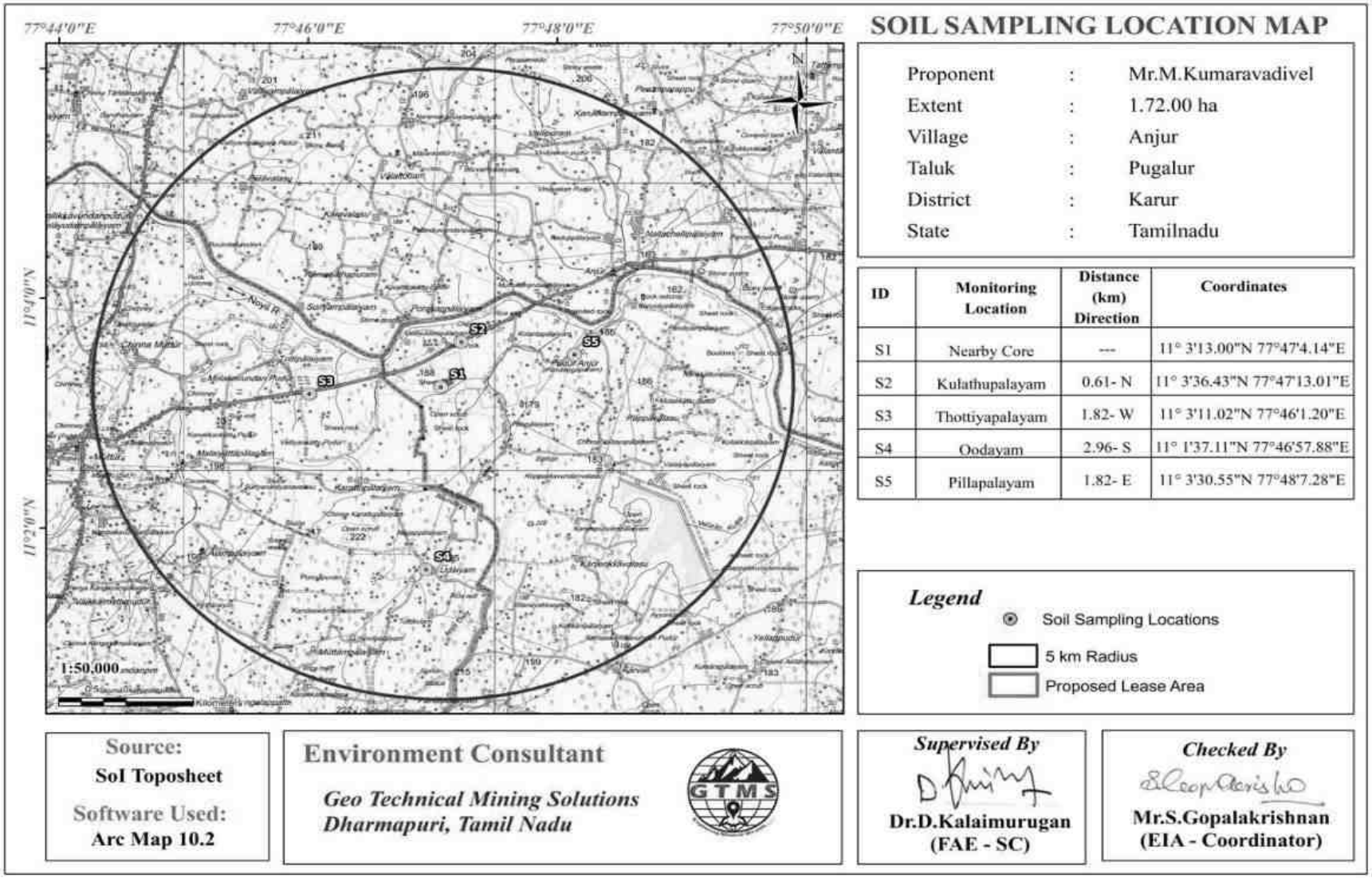


Figure 3.7 Map Showing Soil Sampling Locations within 5km Radius around Proposed Project Site

Table 3.7a Soil Quality of the Study Area

S. No	Parameters	Units	S1	S2	S3	S4	S5
1.	Textural Classification	%	Silt Clay	Silt Clay	Silt Clay	Silt Clay	Silt Clay
2.	pH Value	-	7.77	8.21	7.21	7.89	7.50
3.	Electrical Conductivity	dS/m	0.35	0.21	0.24	0.24	0.30
4.	Organic Carbon	%	2.2	1.9	1.8	1.2	2.9
5.	Moisture content	%	9.18	7.45	10.1	7.65	9.24
6.	Organic Matter	mg/kg	3.14	2.94	3.24	2.49	3.07
7.	Nitrogen	mg/kg	40	42	31	38	42
8.	Phosphorous	mg/kg	17	20	18	19	16
9.	Potassium	mg/kg	69	71	50	65	65
10.	Iron	mg/kg	3.7	2.4	3.0	2.4	2.1
11.	Manganese	mg/kg	3.8	3.8	4.5	3.4	3.4
12.	Zinc	mg/kg	0.5	0.8	1.2	0.9	1.2
13.	Copper	mg/kg	0.8	0.5	1.5	1.6	0.8
14.	Sodium Adsorption Ratio (SAR)	-	7	7	9	5	12

Source: On-site monitoring/Sampling Results ***Accuracy Analabs (OBC) Private Limited in association with GTMS****.*

3.4 WATER ENVIRONMENT

The status of water environment has been assessed through field monitoring/ sampling of groundwater and surface water quality from the study area play a significant role in the development of the area and through secondary data sources from government/ semi government organizations such as Central Ground Water Board, Water Resource Information System, Central Water Commission, Tamil Nadu Water Authority etc. The water sample collected locations were given in Table 3.8 as well as in Figure 3.8.

Table 3.8 Water Sampling Locations

ID	Location	Distance (km) Direction	Latitude	Longitude
OW1	Nearby Core	0.18km- E	11° 3'15.43"N	77°47'15.10"E
OW2	Kulathupalayam	0.55km- N	11° 3'35.39"N	77°47'8.86"E
SW1	Neyyal River	0.86km- N	11° 3'44.85"N	77°47'1.06"E
BW1	Thottiyapalayam	1.81km- W	11° 3'10.11"N	77°46'1.52"E
OW3	Oodayam	2.90km- S	11° 1'38.90"N	77°46'56.63"E

*Source: On-site monitoring/sampling **Accuracy Analabs (OBC) Private Limited**, in association with GTMS.*

3.4.1 Water Consumption and Sources:

The water consumption in this opencast mine is mostly used for dust suppression by water sprinkling on haulage road, afforestation and domestic use etc.

Table No.3.9 Water Requirement

Sl. No	Activities	Average demand (m^3 /day)	Peak demand (m^3 /day)
1	Drinking water	0.2	0.2
2	Utilized Water	0.8*	0.8*
3	Afforestation	1.3	2.5
4	Dust suppression	1.2*	0.5*
	Total	**3.5***	**4.0***

*Water for dust suppression and afforestation may not be required for four to five months during the monsoon

- The water required for quarrying activities shall be drawn from the Rainwater Harvesting Ponds and from nearby old pits.
- 4-5 months during the monsoon season, water is not required for dust suppression.
- Packed drinking water shall be provided at site for workers.

WATER BALANCE DIAGRAM

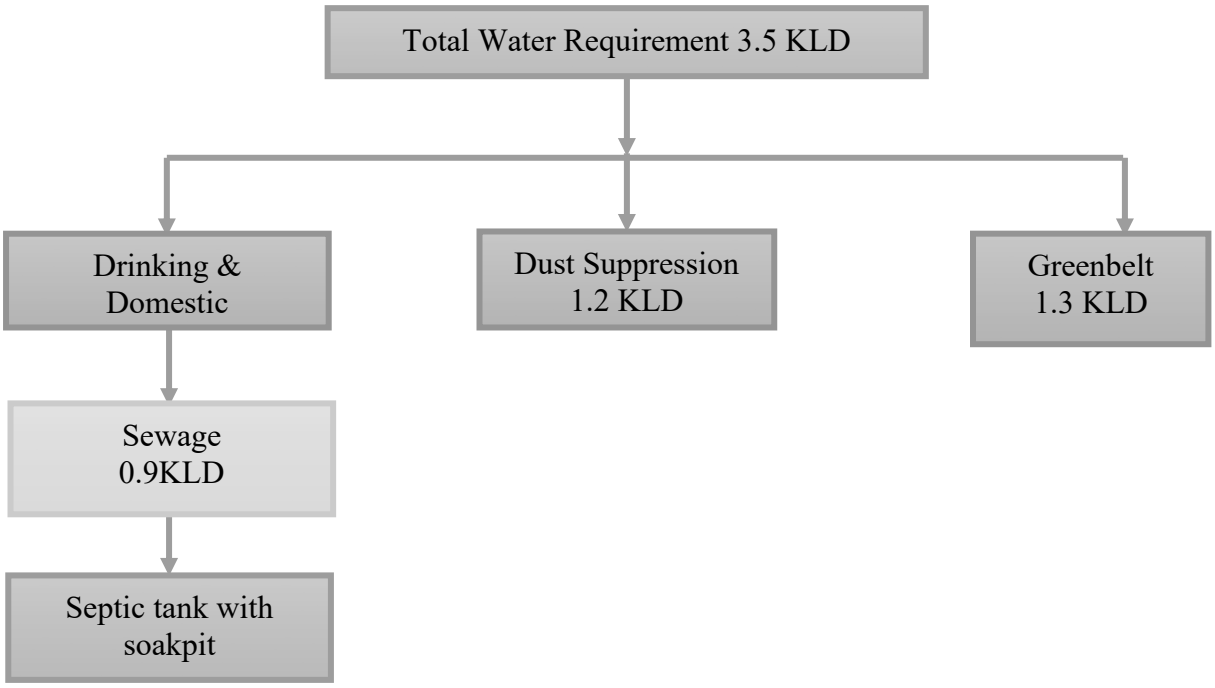


Table 3.10 Nearest Water Bodies

S. No	Location	Distance (km)	Direction
1.	Noyyal River	0.94km	N
2.	Karvazhi Noyyal Dam	2.84km	SE

3.4.2. Ground Water Quality Result

1. Ammonia, Phenolphthalein Alkalinity, Potassium, RFC, BOD, COD, Chromium, Zinc – All " Below the Limit of Quantification (BLQ)"

- These are toxic heavy metals. Their presence in groundwater is usually due to industrial effluents or natural geogenic sources (minerals in rocks).
- Since all are below detection limits, there is no sign of industrial or geogenic contamination from these toxic metals.
- This is positive from an environmental and health risk perspective.
- Interpretation: No heavy metal pollution.

2. Calcium (57.0 – 125mg/l)

- Calcium contributes to hardness of water. High calcium makes water hard but is not harmful.
- Acceptable limit is 75 mg/l, permissible up to 200 mg/l.
- Slightly above acceptable but within limits.
- Interpretation: Slightly hard water, no major concern.

3. Magnesium (17.0– 36.0mg/l)

- Also contributes to water hardness.
- BIS acceptable limit: 30mg/l (permissible up to 100 mg/l).
- Some samples exceed acceptable but are still under permissible limits.
- Interpretation: Water is moderately hard, but usable.

4. Chloride (76.0 – 155mg/l)

- High chloride affects taste and can cause corrosion in pipelines.
- Acceptable limit: 250mg/l; permissible up to 1000 mg/l.
- Your values are slightly above the acceptable limit but safe.
- Interpretation: Mild salinity – may affect taste but not health.

5. Fluoride- (BQL (0.001))

- Fluoride is beneficial in small quantities but harmful in excess (>1.5 mg/l causes fluorosis).
- All values are below the 1.0 mg/l limit.
- Interpretation: No risk of dental or skeletal fluorosis.

6. Nitrate (12.0– 27.0mg/l)

- Nitrates come from agricultural runoff or sewage.
- Safe limit is 45mg/l (to avoid blue baby syndrome in infants).
- Your values are below the limit.
- Interpretation: No significant nitrate pollution.

7. Iron (BQL (0.001))

- Iron causes staining, bad taste, and bacterial growth when >0.3 mg/l.
- Your samples are well below the limit.
- Interpretation: No iron-related issues.

8. pH (7.28 – 7.85)

- pH is 6.5–8.5 for drinking water.
- All values within this range.
- Interpretation: Neutral pH, no corrosion or scaling tendency.

9. Total Dissolved Solids (TDS) (371 – 722mg/l)

- TDS represents total minerals and salts in water.
- Acceptable limit is 500 mg/l; permissible up to 2000 mg/l.
- BW01, BW03, and BW05 exceed the acceptable but are within permissible.
- Interpretation: Slightly mineral-rich water; taste may be affected but safe to use.

10. Electrical Conductivity (EC) (585 – 1040µS/cm)

- Indicates overall ionic concentration in water.
- Higher EC = higher salinity.
- EC > 1000 µS/cm (in BW01 and BW05) suggests moderately saline water.
- Interpretation: Suitable for irrigation, but may need softening for drinking.

11. Total Alkalinity (124 – 246mg/l)

- Indicates the buffering capacity (resistance to pH change).
- Acceptable: 200 mg/l; Permissible: 600 mg/l.
- High alkalinity may indicate presence of bicarbonates/carbonates.
- Interpretation: Alkaline nature is common in groundwater. No health issue but may affect taste.

12. Total Hardness (TH) (246 – 420mg/l)

- Acceptable: 200 mg/l; Permissible: 600 mg/l.
- TH > 200 (BW03, OW01) means moderately hard water.
- Interpretation: May require softening for household use.

13. Turbidity (BQL (1.0))

- Very clear water, no suspended solids.
- Interpretation: Visually and physically very good water quality.

14. Coliform bacteria (Absent)

- Acceptable: Absent
- Normal in groundwater.
- Interpretation: No concern.

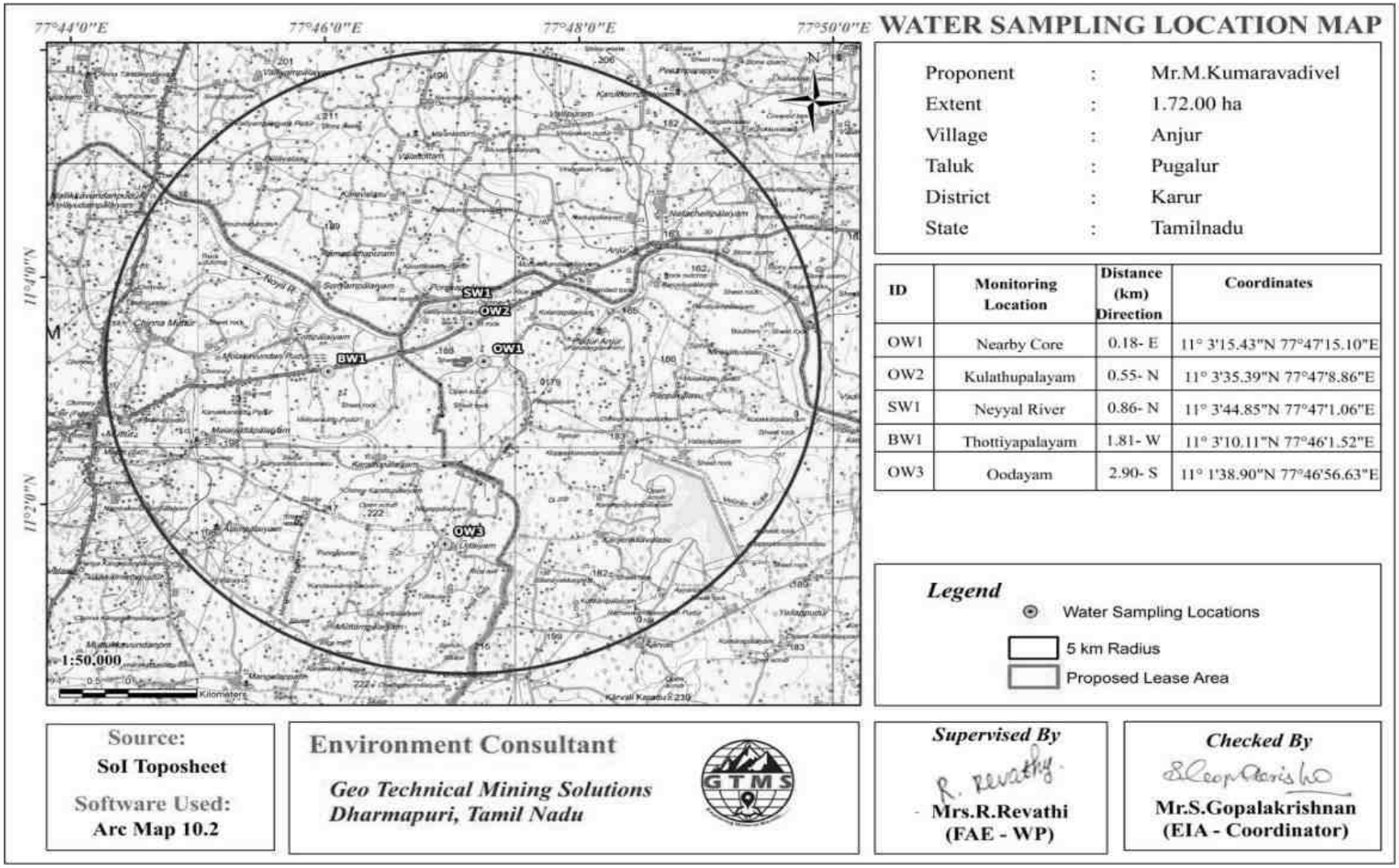


Figure 3.8 Map Showing Water Sampling Locations within 5km Radius around Proposed Project Site

Table 3.11 Ground Water & Surface Water Quality Result

S. No.	Parameters	Units	OW 1	OW 2	OW3	BW1	SW 1	IS: 10500: 2012 LIMITS	
								Acceptable	Permissible
1.	pH	---	7.55	7.85	7.28	7.47	7.52	**6.5 - 8.5**	-
2.	Colour	Hazen	BQL (1.0)	BQL (1.0)	BQL (1.0)	BQL (1.0)	BQL (1.0)	**5.0**	15
3.	Odour	Odourless	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4.	Temperature	0^C	25	25	25	25	25	-	-
5.	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
6.	Turbidity	NTU	BQL (1.0)	BQL (1.0)	BQL (1.0)	BQL (1.0)	BQL (1.0)	10	5.0
7.	Electrical Conductivity	µS/cm	590	585	1040	928	826	-	-
8.	Total Dissolved Solids	mg/l	371	410	722	668	485	500	2000
9.	Aluminium as Al	mg/l	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	0.03	0.2
10.	Ammonia as total ammonia	mg/l	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	0.5	-
11.	Barium as Ba	mg/l	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	0.7	-
12.	Boron as B	mg/l	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	0.5	1.0
13.	Calcium as Ca	mg/l	72	57	113	72	125	75.0	200

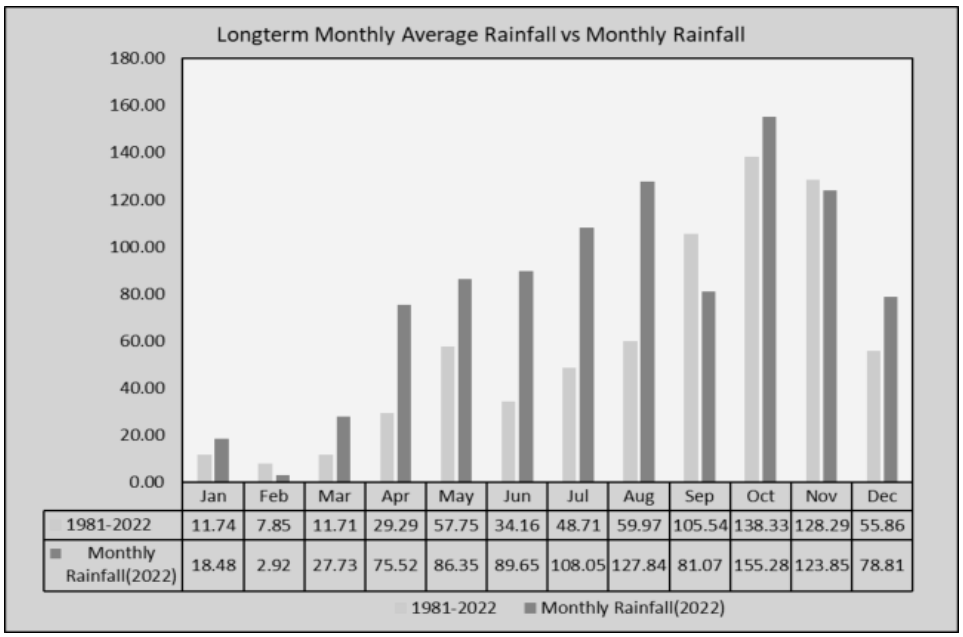
14.	Chloramines	mg/l	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	4.0	-
15.	Chloride as CI	mg/l	81	76	155	104	155	250	1000
16.	Copper as Cu	-	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	0.05	1.5
17.	Fluoride (F)	mg/l	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	1.0	1.5
18.	Free Residual Chloride (RFC)	mg/l	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	0.2	1.0
19.	Iron (Fe)	mg/l	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	0.3	-
20.	Magnesium (Mg)	mg/l	34	17	35	34	36	30.0	100
21.	Manganese as Mn	mg/l	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	0.1	0.3
22.	Nitrate as NO3	mg/l	15	12	27	23	21	45.0	-
23.	Phenolic compound	mg/l	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	0.001	0.002
24.	Sulphates (SO_4)	mg/l	46	4	27	59	69	0.1	-
25.	Sulphide (H2S)	mg/l	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	200	400

26.	Alkalinity to Phenolphthalein	mg/l	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	0.05	-
27.	Alkalinity to methyl orange	--	127	124	24 0	246	140	200	600
28.	Total Hardness (as CaCO3)	mg/l	246	249	420	328	316	200	600
29.	Zinc (Zn)	mg/l	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	5.0	15
30.	Cadmium (as Cd)	mg/l	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	0.003	-
31.	Lead (as Pb)	mg/l	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	0.01	-
32.	Mercury (as Hg)	--	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	0.001	-
33.	Nickel (as Ni)	--	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	BQL (0.001)	0.07	-
34.	Coliforms	MPN/100ml	Absent	Absent	BQL (0.001)	Absent	Absent	Absent	Absent
35.	Escheria Coli	MPN/100	Absent	Absent	Absent	Absent	Absent	Absent	Absent
36.	F. Coliforms	MPN/100	Absent	Absent	Absent	Absent	Absent	Absent	Absent
37.	Total Plate Count	CFU/100ml	Absent	Absent	Absent	Absent	Absent	Absent	Absent

*Source: On-site monitoring/sampling **Accuracy Analabs (OBC) Private Limited**, in association with GTMS.*

Rainfall

Rainfall data for the study area were collected for the period of 1981-2021(POWER | Data Access Viewer (nasa.gov)**)**. Long term monthly average rainfall was estimated from the data of 1981-2021 and compared with the monthly rainfall for the year 2022, shown in Figure 3.9. The Figure 3.9 shows that rainfall is generally high in the months of September through November in every year. Particularly, rainfall in April through August and October of 2022 is higher than the previous years.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1981-2022	11.74	7.85	11.71	29.29	57.75	34.16	48.71	59.97	105.54	138.33	128.29	55.86
Monthly Rainfall(2022)	18.48	2.92	27.73	75.52	86.35	89.65	108.05	127.84	81.07	155.28	123.85	78.81

Figure 3.9 Long-Term Monthly Average Rainfall Vs Monthly Rainfall

HYDROGEOLOGICAL STUDY

3.4.3 Groundwater Levels and Flow Direction

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 2km radius around the proposed project sites for the period from March through May 2026 (Pre- Monsoon Season) and from October through December 2025, (Post Monsoon Season).

The open well water level data thus collected onsite are provided in Tables 3.12 and 3.13. According to the data, average depths to the static water table in open wells range from 20.60 to 23.57 m BGL in pre monsoon and 11.57 to 16.33m BGL in post monsoon. The bore well data thus collected onsite are provided in Tables 3.14 and 3.15. The average depths to static potentiometric surface in bore wells for the period of October through December (Post-

Monsoon Season) vary from 62.33 to 66.17 m and from 63.83 to 67.67 m for the period of March through May, (Pre-Monsoon Season). Data on the depths to static water table and potentiometric surface were used to draw contour lines connecting groundwater elevation (also known as equipotential hydraulic head) to determine the groundwater flow direction perpendicular to the contour lines.

Table 3.12 Pre-Monsoon Water Level of Open Wells within 2 km Radius

Station ID	Depth to Static Water Table BGL (m)				Latitude	Longitude
	Mar-2026	Apr-2026	May-2026	Average		
OW01	21.5	22.7	23	22.40	12°34'34.84"N	77°52'44.97"E
OW02	22	23.5	24.6	23.37	12°34'21.68"N	77°52'43.30"E
OW03	21	22.5	23.5	22.33	12°34'36.92"N	77°53'26.06"E
OW04	20.5	21	22.5	21.33	12°34'25.39"N	77°51'48.06"E
OW05	22.5	23.7	24.5	23.57	12°34'57.81"N	77°52'17.22"E
OW06	20.5	21.7	22.5	21.57	12°33'52.25"N	77°52'39.66"E
OW07	22	23.5	24.7	23.40	12°35'15.52"N	77°52'36.74"E
OW08	19.5	20.5	21.8	20.60	12°33'43.85"N	77°53'35.41"E
OW09	21.5	22.7	23.5	22.57	12°35'20.52"N	77°53'40.91"E

Source: Onsite monitoring data

Table 3.13 Post-Monsoon Water Level of Open Wells within 2 km Radius

Station ID	Depth to Static Water Table BGL(m)				Latitude	Longitude
	Oct-2025	Nov- 2025	Dec-2025	Average		
OW01	12.5	11.9	10.4	11.60	12°34'34.84"N	77°52'44.97"E
OW02	13.4	12.5	11	12.30	12°34'21.68"N	77°52'43.30"E
OW03	12.7	11.5	10.5	11.57	12°34'36.92"N	77°53'26.06"E
OW04	14.5	13.5	12	13.33	12°34'25.39"N	77°51'48.06"E
OW05	13.7	12.4	11.5	12.53	12°34'57.81"N	77°52'17.22"E
OW06	15.5	14.5	13	14.33	12°33'52.25"N	77°52'39.66"E
OW07	16.5	15.5	14	15.33	12°35'15.52"N	77°52'36.74"E
OW08	17.5	16.5	15	16.33	12°33'43.85"N	77°53'35.41"E
OW09	16.5	15.5	14	15.33	12°35'20.52"N	77°53'40.91"E

Source: Onsite monitoring data

Table 3.14 Pre-Monsoon Water Level of Bore Wells within 2 km Radius

Station ID	Depth to Static Potentiometric Surface BGL(m)				Latitude	Longitude
	Mar-2026	Apr-2026	May- 2026	Average		
BW01	64	65.5	66.5	65.33	12°35'9.90"N	77°52'25.40"E
BW02	63.5	64	65.5	64.33	12°35'24.72"N	77°52'30.26"E
BW03	65	66.5	67.5	66.33	12°35'34.42"N	77°53'20.06"E
BW04	66.5	67.5	69	67.67	12°34'15.73"N	77°53'50.12"E
BW05	66	67.5	68.5	67.33	12°33'34.72"N	77°53'24.43"E
BW06	64	65.5	66.5	65.33	12°34'22.13"N	77°52'0.53"E
BW07	62	63.5	66	63.83	12°33'53.29"N	77°52'49.29"E
BW08	65	66.5	67.5	66.33	12°34'56.92"N	77°53'39.10"E
BW09	63.5	65	67.5	65.33	12°34'18.25"N	77°53'2.75"E

Source: Onsite monitoring data

Table 3.15 Post-Monsoon Water Level of Bore Wells within 2 km Radius

Station ID	Depth to Static Potentiometric Surface BGL(m)				Latitude	Longitude
	Oct-2025	Nov-2025	Dec-2025	Average		
BW01	64.5	63.5	62	63.33	12°35'9.90"N	77°52'25.40"E
BW02	63.5	62.5	61	62.33	12°35'24.72"N	77°52'30.26"E

BW03	65.5	64	63	64.17	12°35'34.42"N	77°53'20.06"E
BW04	68	66	64.5	66.17	12°34'15.73"N	77°53'50.12"E
BW05	66.5	64.5	64	65.00	12°33'34.72"N	77°53'24.43"E
BW06	66	64.5	63	64.50	12°34'22.13"N	77°52'0.53"E
BW07	63.5	62.5	61	62.33	12°33'53.29"N	77°52'49.29"E
BW08	66	63.5	62	63.83	12°34'56.92"N	77°53'39.10"E
BW09	65.5	64	62.5	64.00	12°34'18.25"N	77°53'2.75"E

Source: Onsite monitoring data

The water samples were collected from both borewells and dug wells during the pre-monsoon and post-monsoon in order to understand the water table dynamics within 2km radius of the lease area. After interpreting the observed values of water table depths in the sampling locations gradual variations in the depths were inferred from pre-monsoon to the post monsoon (Table 3.12 to 3.15). But this variation might be the usual due to differential downpour in the region. The uncertainty of the monsoon plays a vital role in the fluctuation of water depths in and around the lease area. As mentioned in rainfall data (1981-2021) and 2023, the region experiencing higher rainfall during the months of September to November than the other months of the year. The difference in depth of water table of open wells and borewells in the sampling locations exposes a gradual increase during the pre-monsoon and evidencing the decrease in depth during the post monsoon. This shows the rainfall influencing the water table of the region by the recharging the water bearing bodies naturally and regularly. And can be concluded that, mining activities has no impact on the quality and quantity of ground water in and around the lease area.

Water Balance management in site

A sustainable eco-friendly water management strategy will be adopted in this project. Since the water requirement during the mining period is estimated about 3.5KLD for drinking, domestic and sanitary needs, creation and maintenance of green belt and for sprinkling purposes. The drinking water must be pure and safe, so it will be outsourced from nearby vendors/ RO- water plant will be installed in the site. The artificial rainwater harvesting structures are planned in and around the site. The excavated pits nearby the site will be connected by the garland drain system and water will be stored and this water will be utilised for the green belt maintenance and dust suppression sprinkling purpose. The rooftop harvesting structure is also planned from the labour sheds and other structures will be connected to the nearby excavated pits and utilised. These implementations will reduce the dependency of water from the nearby borewells and open wells. According to the soil resistivity data of the region, few locations are porous and permeable in nature. It will help in infiltration of rainwater and recharge the aquifer naturally during monsoon. This sustainable strategy will be helpful in maintaining the water balance within 2km radius of project site.

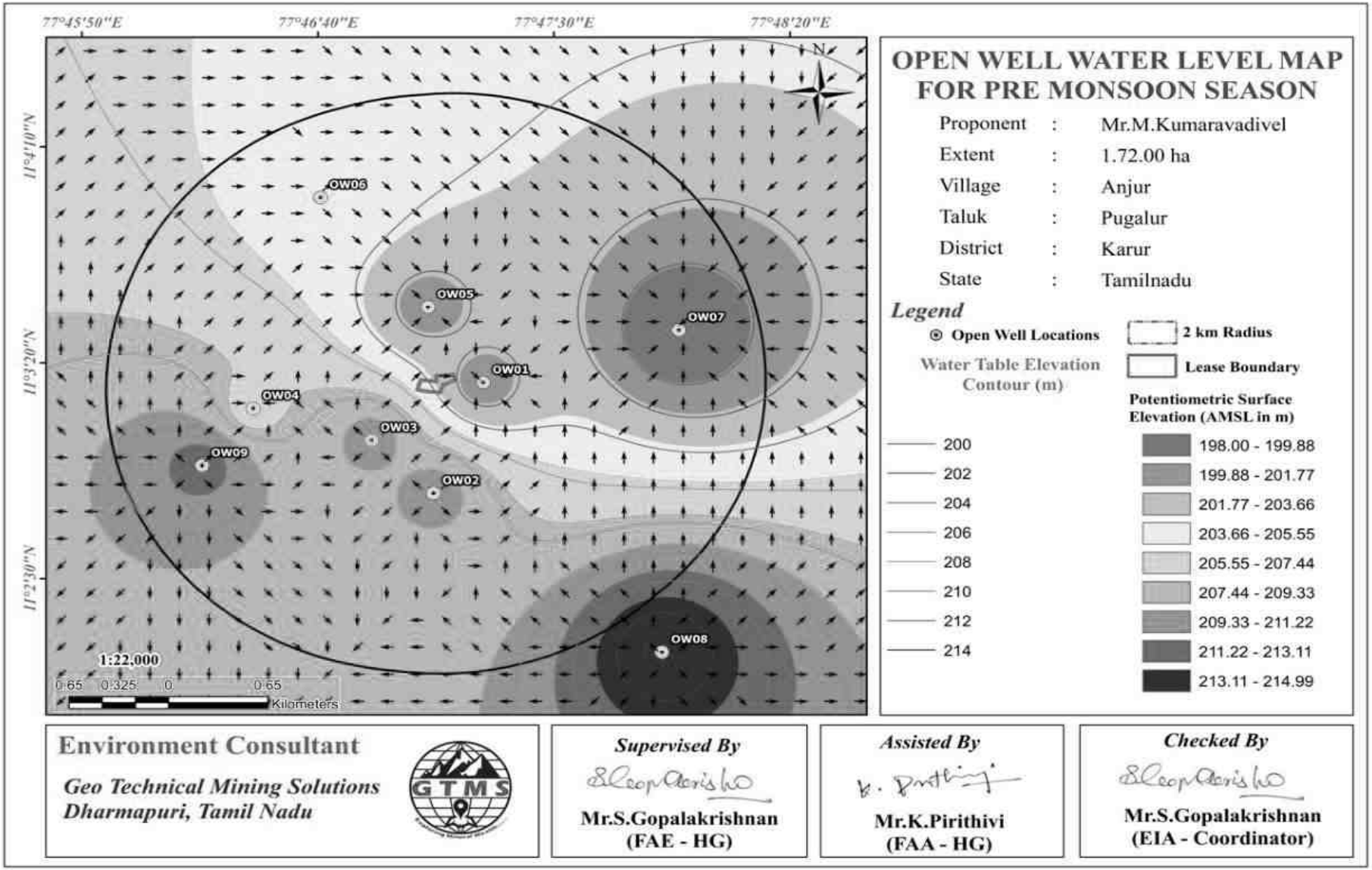


Figure 3.10 Open Well Static Groundwater Elevation Map Showing Direction of Groundwater Flow during Pre-Monsoon Season

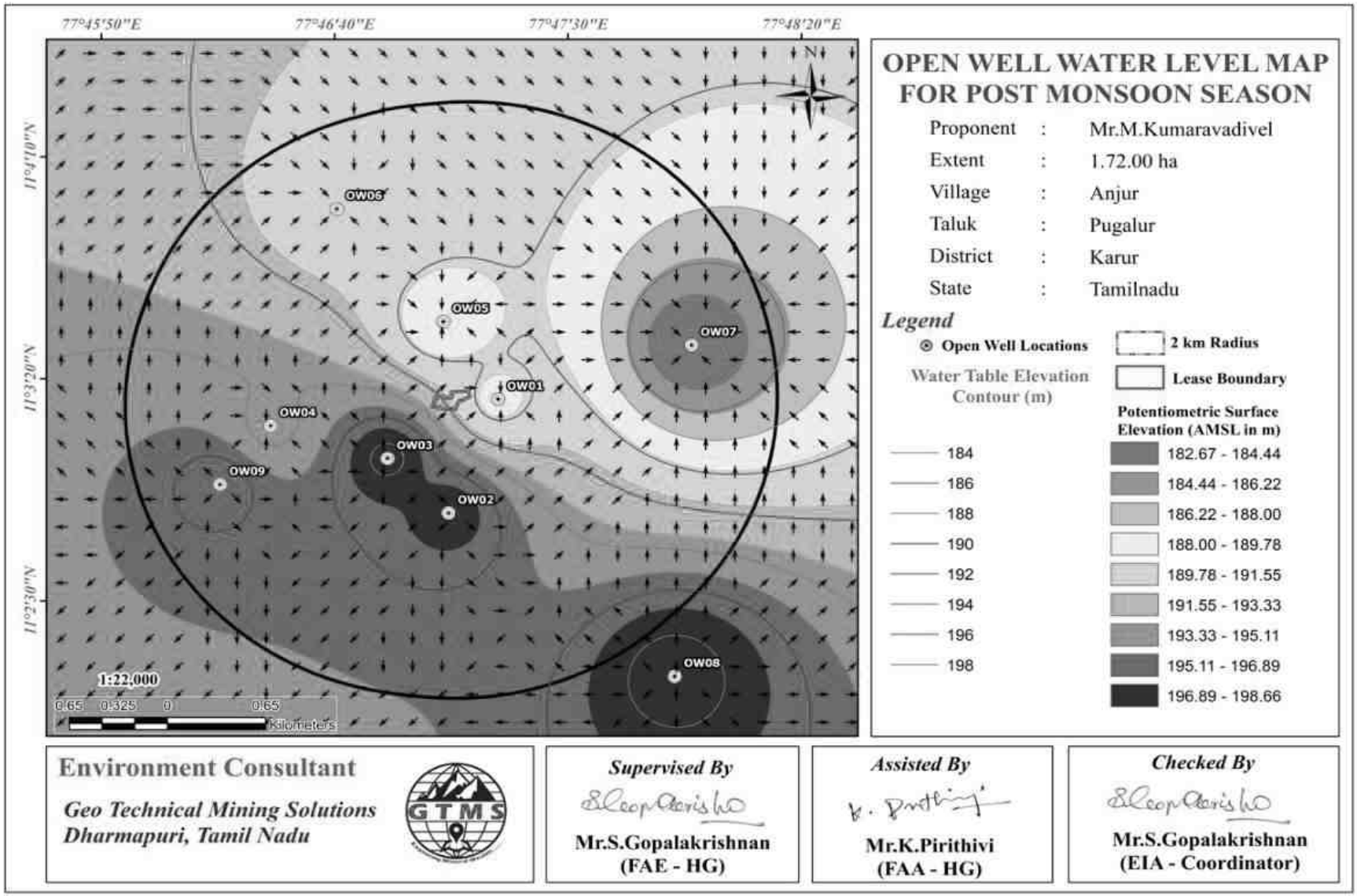


Figure 3.11 Open Well Static Groundwater Elevation Map Showing Direction of Groundwater Flow during Post-Monsoon Season

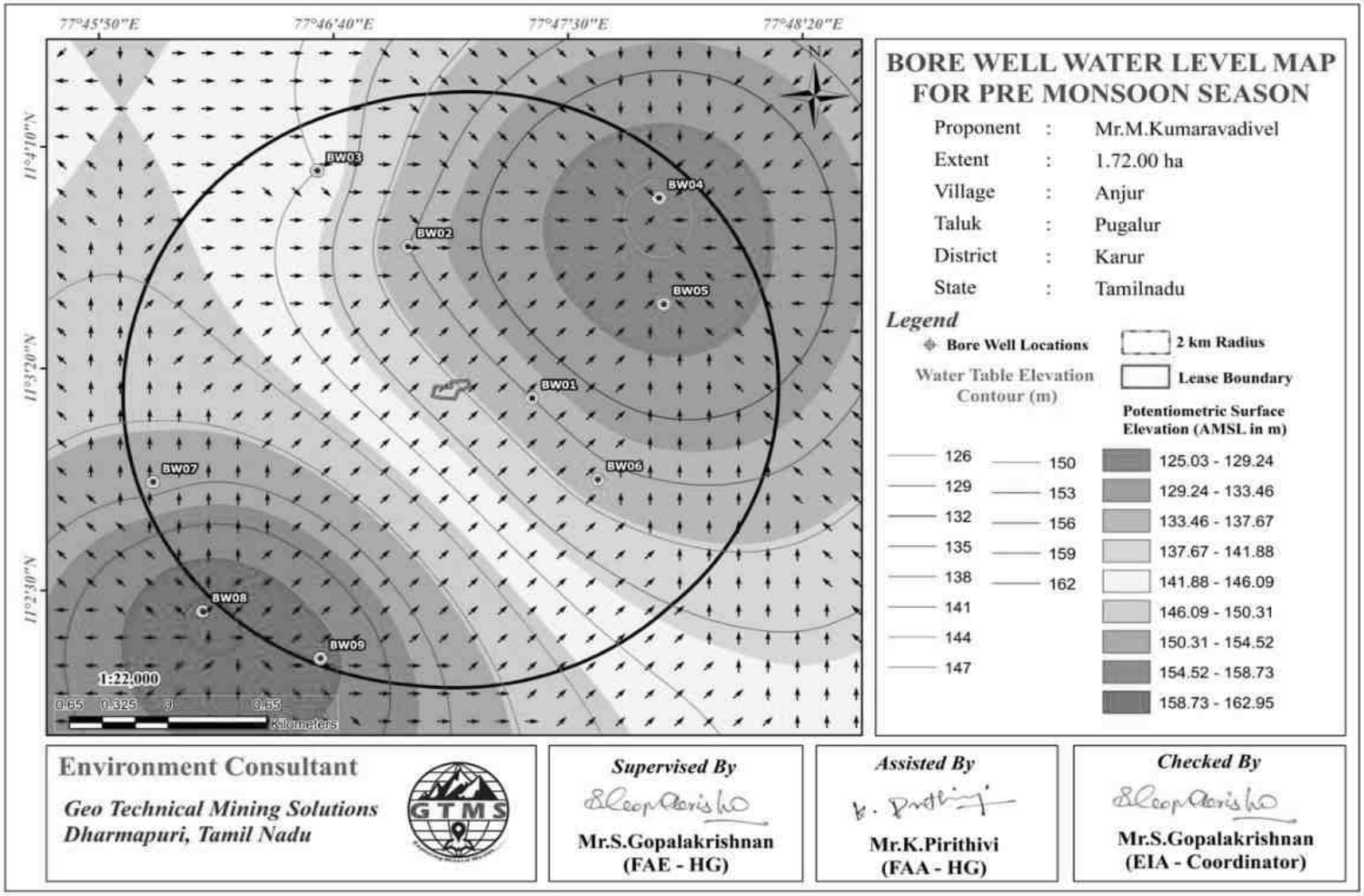


Figure 3.12 Borewell Static Groundwater Elevation Map Showing Direction of Groundwater Flow during Pre-Monsoon Season

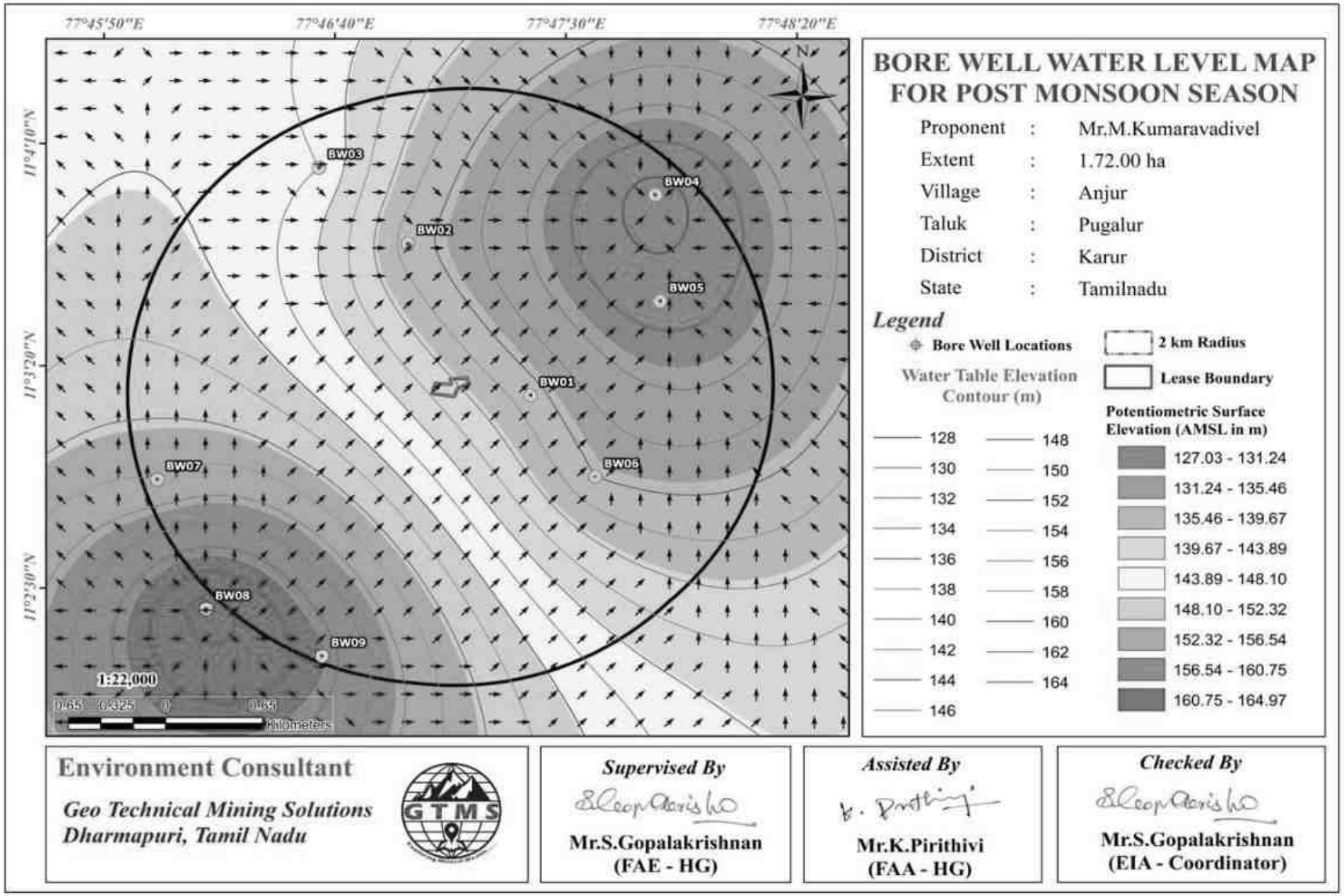


Figure 3.13 Borewell Static Groundwater Elevation Map Showing Direction of Groundwater Flow during Post-Monsoon Season

3.4.4 Electrical Resistivity Investigation

Electrical resistivity investigation is especially useful in the areas where there are no adequate exploratory well data about the aquifer conditions. The present study makes use of vertical electric sounding (VES) to delineate earth's subsurface layers. The electrical resistivity investigation uses four electrodes set up where current is sent through outer electrodes into the ground and the inner electrodes measure the potential difference.

Result

The Geophysical VES data obtained from the project site have been shown in Table 3.16. The field data obtained from a detailed geophysical investigation were plotted using excel spreadsheet for interpretation. The plot for the purpose of interpretation has been shown in Figure 3.14.

Table 3.16 Vertical Electrical Sounding Data

Location Coordinates - 11° 3'14.47"N 77°47'4.68"E					
S. No.	**AB/2 (m)**	**MN/2 (m)**	**Geometrical Factor (G)**	**Resistance in Ω**	**Apparent Resistivity in Ωm**
1	5	2	16.5	2.769	45.68
2	10	2	75.43	1.372	103.48
3	15	2	173.65	0.982	170.52
4	20	2	311.15	0.585	182.02
5	25	5	188.58	1.317	248.35
6	30	5	275.21	0.989	272.18
7	35	5	377.16	0.971	366.22
8	40	5	495.02	0.892	441.55
9	45	5	628.6	0.764	480.25
10	50	5	777.89	0.789	613.75
11	60	5	1123.62	0.511	573.04
12	70	5	1532.21	0.492	692.55
13	80	5	2003.66	0.496	993.81
14	90	5	2537.97	0.417	1058.33
15	100	5	3135.14	0.366	1147.46

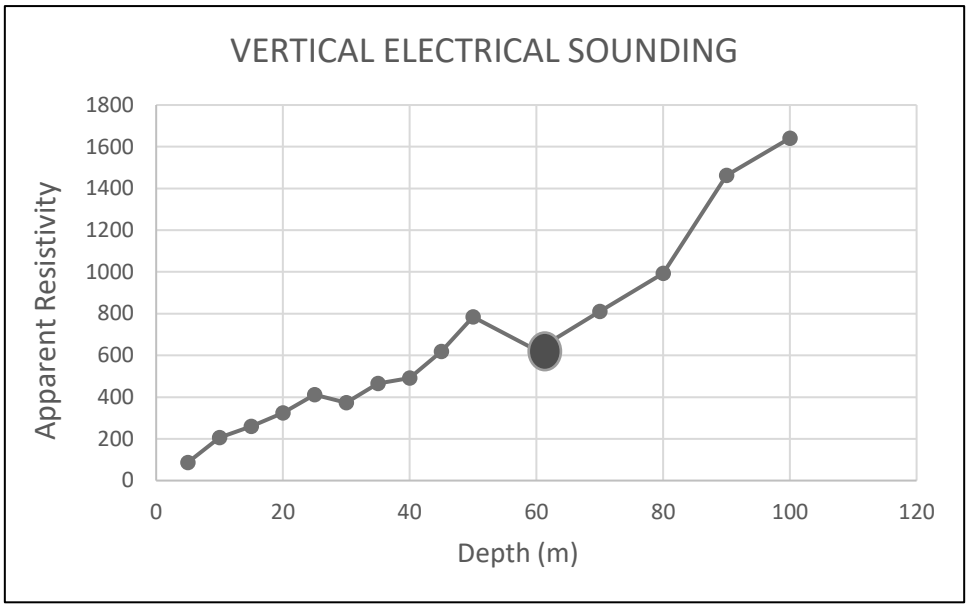


Figure 3.14 Graph Showing Occurrence of Water Bearing Fracture Zones at the Depth of 55-60m Below Ground Level in Proposed Project

The rock formation of low resistivity values indicates occurrence of water at the depth of about 55-60m below ground level. The ultimate depth of the proposed project is 30m below ground level. Therefore, the mining operation will not affect the aquifer throughout the entire mine life period.

Soil Resistance Test (SRT)

Soil electrical resistivity testing involves a systematic approach. The procedure includes site preparation, electrode placement, current injection, voltage measurement, and subsequent data analysis. The collected data helps in creating a resistivity profile of the soil, offering valuable insights for various applications. It assesses the soil's electrical properties, providing valuable data for diverse applications, including construction, grounding systems, and environmental impact assessments.

WENNER METHOD

Wenner Method is a widely used technique for soil resistivity testing. This method involves placing four equally spaced electrodes in the ground, forming a square or rectangle. The distance between these electrodes and the depth of insertion are crucial parameters in the accurate measurement of soil resistivity. It involves inserting electrodes into the soil and measuring the voltage drop to calculate the soil's resistivity. High resistivity soils are generally less corrosive than low resistivity soils.

In this formula:

$$Resistivity,\ \rho = 2\pi AR$$

- **ρ** represents the soil resistivity, measured in ohm-meters (Ω· m).

- **a** is the spacing between adjacent electrodes, measured in meters (m).
- **R** denotes the measured resistance between the inner electrodes, in ohms (Ω).
- The factor **2π** accounts for the geometric arrangement of the electrodes in the Wenner configuration.

Field Procedure to conduct Werner's test:

- Four electrodes are inserted into the earth at an equal distance, to a depth of one-third of their distance.
- The outer electrodes are called current electrodes (C1 and C2) and the inner probes are called potential electrodes (P1 and P2).
- You can use an earth resistance tester to measure the soil resistance. Connect the measurement probes to the electrodes and to the measurement and read the resistance values.
- Continue measuring the soil resistivity by moving the electrodes far apart from C1 at an equal distance and inserting the probes deeper.
- Note down the resistances at difference distances and depths and calculated the resistivity using the following formula.

In conclusion, soil resistivity testing is a vital component in various industries, ensuring the efficient design and implementation of projects while meeting regulatory requirements. Understanding the methods, procedures, and associated costs empowers professionals and stakeholders to make informed decisions, fostering sustainable development.

3.5 AIR ENVIRONMENT

The baseline studies on air environment include identification of specific air pollutants and their existing levels in ambient air. The sources of air pollution in the region are mostly due to vehicular traffic, dust arising from unpaved village road and domestic & agricultural activities.

3.5.1 Meteorology

3.5.1.1 Climatic Variables

A temporary meteorological station was installed at the project sites by covering cluster quarries. The station was installed at a height of 3m above the ground level as there are no obstructions facilitating flow of wind, wind speed, wind direction, humidity and temperature. Meteorological data obtained from the onsite monitoring station are provided in Table 3.17.

Table 3.17 Onsite Meteorological Data

S. No.	Parameters		March,2026	April,2026	May,2026
1	Temperature (^{0}C)	Min	19.84	21.36	22.84
		Max	39.74	39.66	39.13
		Avg	29.65	30.93	28.75
2	Relative Humidity (%)	Min	16.25	19.02	28.24
		Max	90.93	88.77	98.73
		Avg	47.36	47.28	68.52
3	Wind Speed (m/s)	Min	0.09	0.04	0.12
		Max	4.95	4.43	8.26
		Avg	1.87	1.61	3.01
4	Wind Direction (degree)	Min	0.90	10.60	5.10
		Max	359.20	348.70	359.30
		Avg	120.28	156.91	230.49
5	Surface Pressure(kPa)	Min	97.18	95.73	95.49
		Max	98.31	96.69	97.74
		Avg	97.75	96.22	96.71

*Source: On-site monitoring/sampling by **Accuracy Analabs (OBC) Private Limited** in association with GTMS*

3.5.1.2 Wind Pattern

Wind pattern will largely influence the dispersion pattern of air pollutants and noise from the proposed project site. Analysis of wind pattern requires hourly site-specific data of wind speed and direction. Two types of wind rose were generated: historical seasonal wind rose for the period of March through May of the years from 2022 to 2025 and the seasonal wind rose for the study period of March through May 2026. The wind rose diagrams thus produced are shown in Figures 3.15-3.15a. Figure 3.16 reveals that:

- The measured average wind velocity during the study period is 2.15m/s.
- Predominant wind was dominant in the directions ranging from East to West.

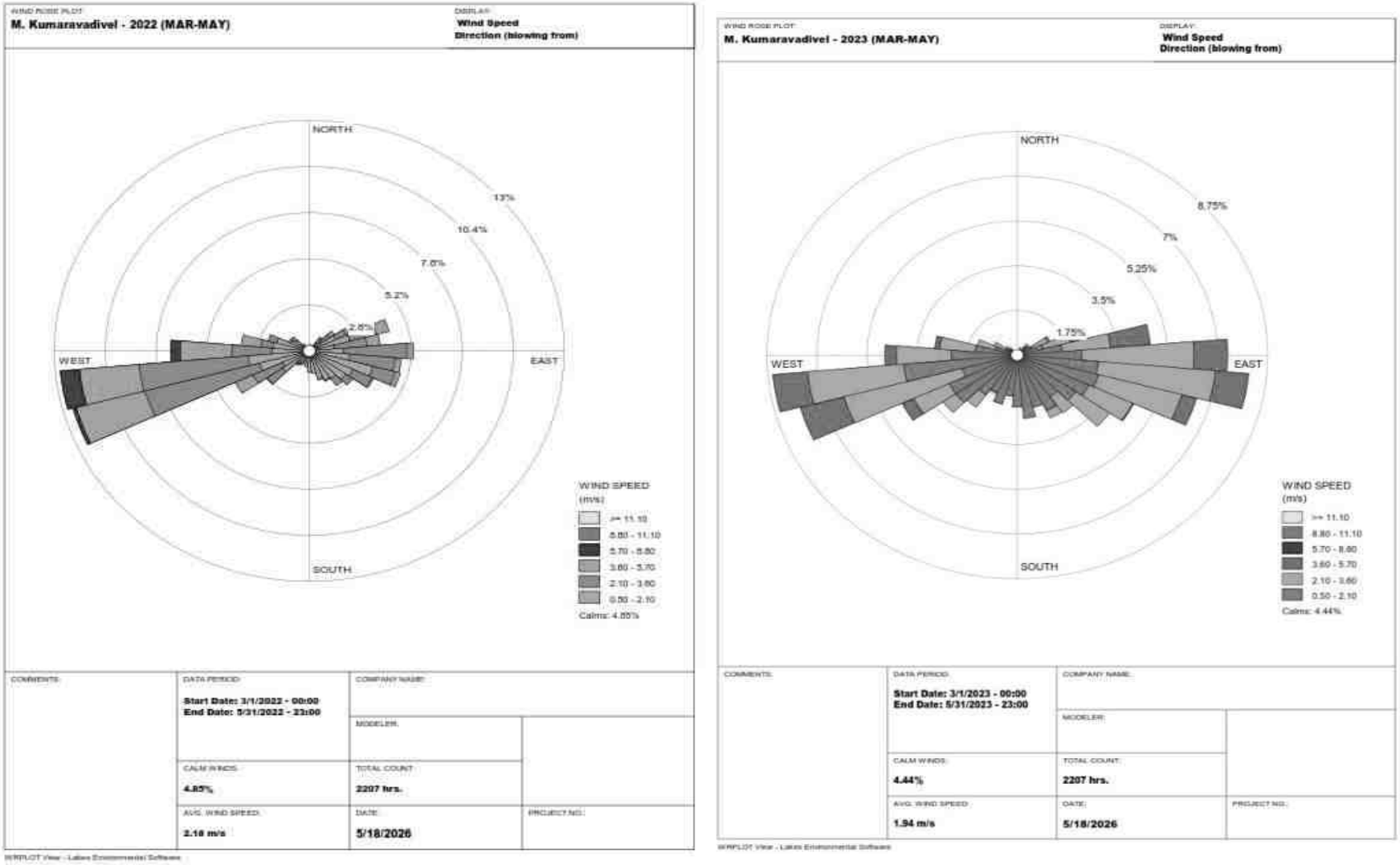
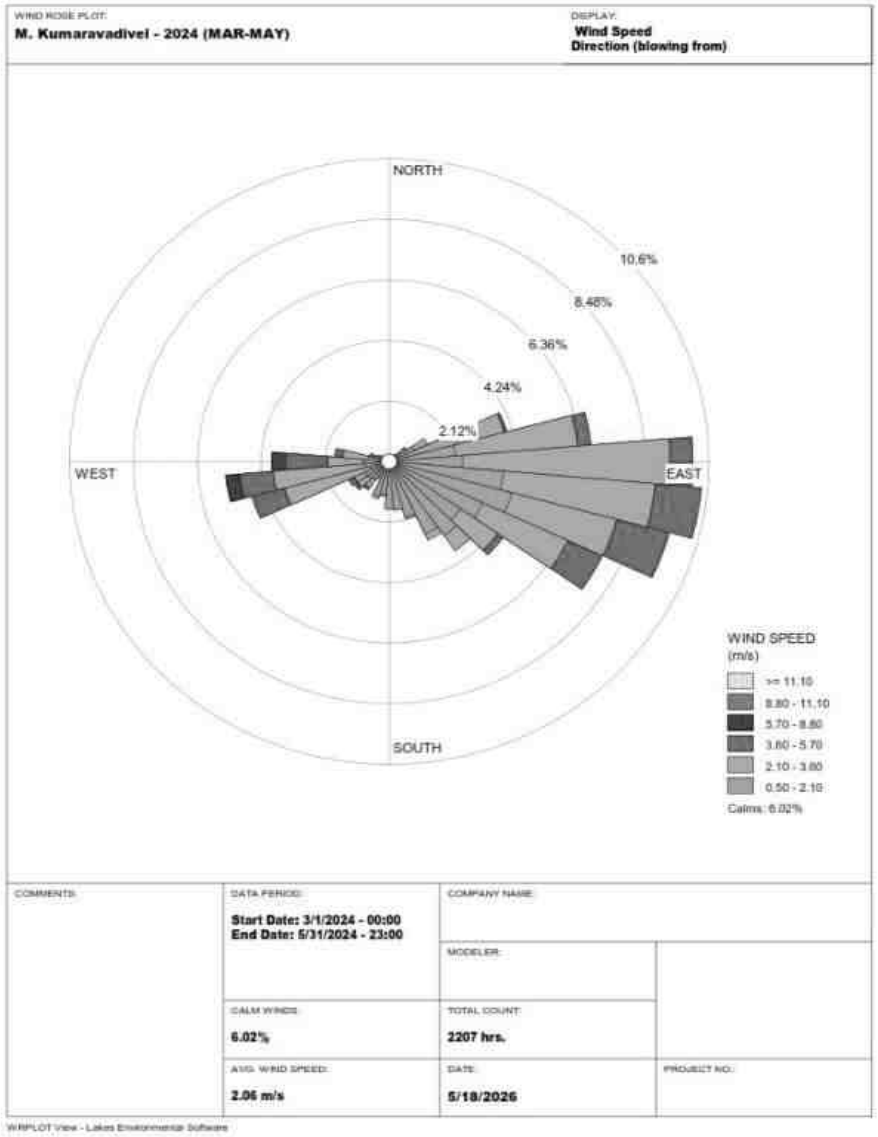


Figure 3.15 Windrose Diagram for 2022 and 2023 (March to May)



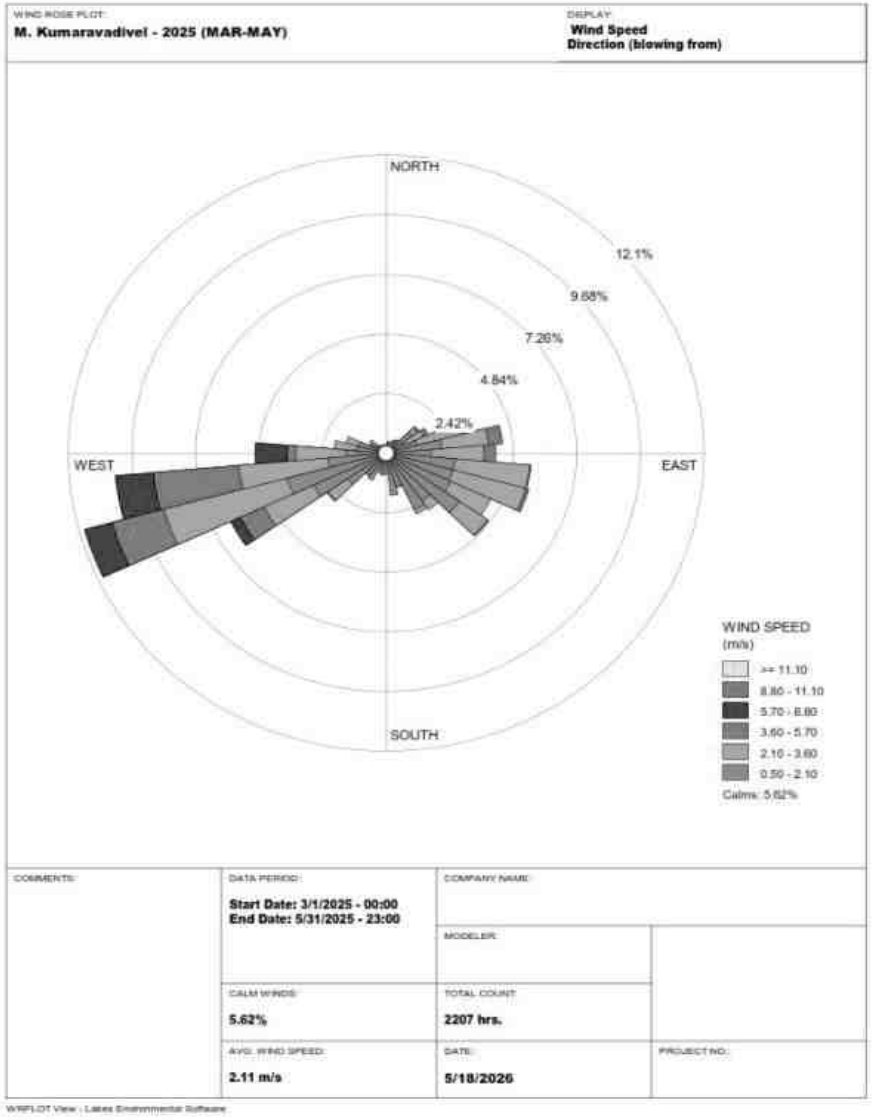


Figure 3.15a Windrose Diagram for 2024 and 2025 (March to May)

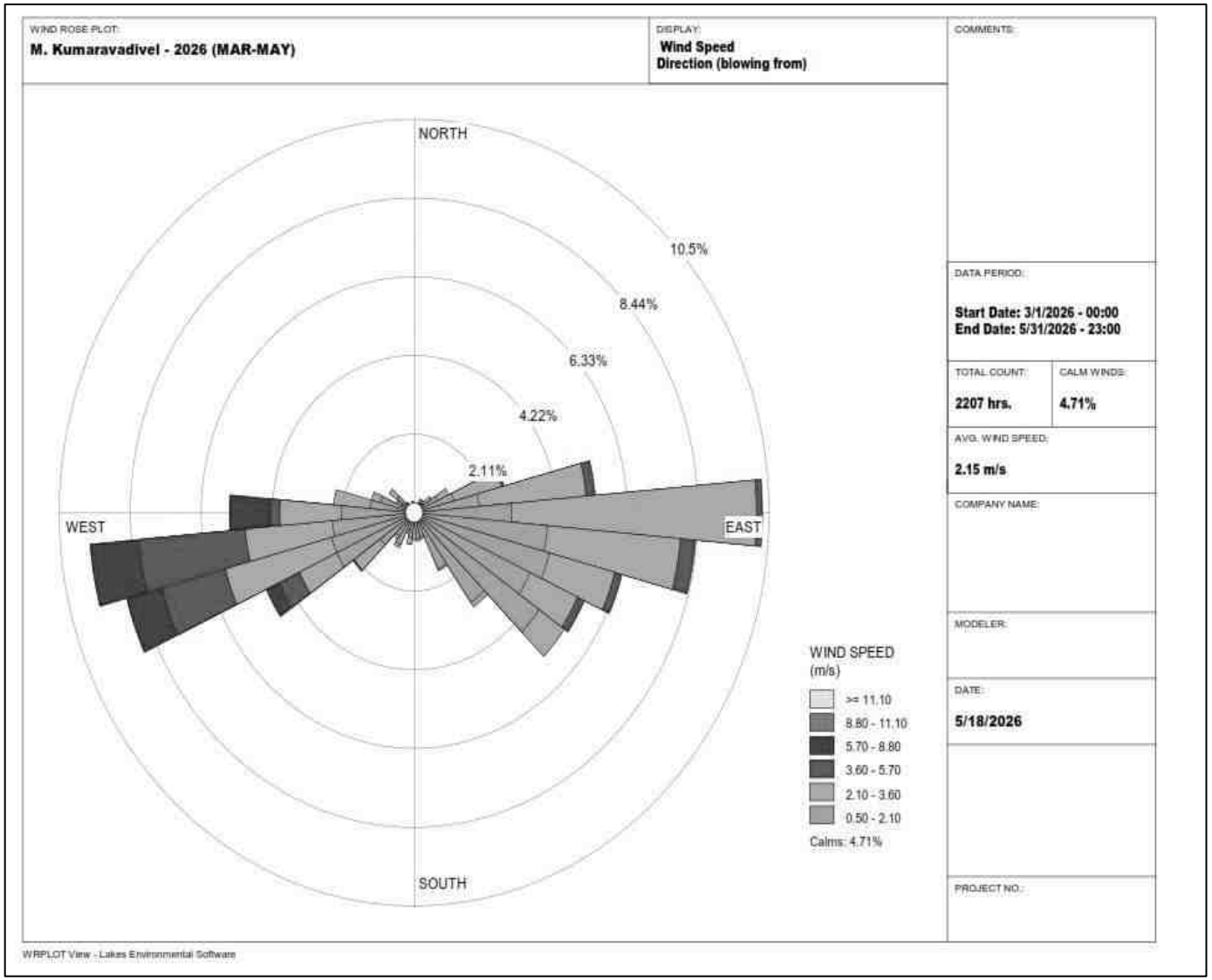


Figure 3.16 Onsite Wind Rose Diagram- 2026 (March to May)

3.5.2 Ambient Air Quality Study

The baseline ambient air quality is studied through a scientifically designed ambient air quality monitoring network considering the followings

- Meteorological condition on synoptic scale
- Topography of the study area
- Representatives of regional background air quality for obtaining baseline status
- Location of residential areas representing different activities
- Accessibility and power availability

Table 3.18 Methodology and Instrument Used for AAQ Analysis

Parameter	Method	Instrument
$PM_{2.5}$	Gravimetric method Beta attenuation method	Fine Particulate Sampler
PM_{10}	Gravimetric method Beta attenuation method	Respirable Dust Sampler
SO_2	IS-5182 Part II (Improved West & Gaeke method)	Respirable Dust Sampler with gaseous attachment
NO_x	IS-5182 Part II (Jacob & Hoch heiser modified method)	Respirable Dust Sampler with gaseous attachment

Source: Sampling Methodology based ***Accuracy Analabs (OBC) Private Limited*** *& CPCB* Notification

Table 3.19 National Ambient Air Quality Standards

S. No.	Pollutant	Time Weighted Average	Concentration in ambient air	
			Industrial, Residential, Rural & other areas	Ecologically Sensitive area (Notified by Central Govt.)
1	SO_2 (µg /m^3)	Annual Avg.* 24 hours**	50.0 80.0	20.0 80.0
2	NO_x (µg/m^3)	Annual Avg. 24 hours	40.0 80.0	30.0 80.0
3	PM_{10} (µg/m^3)	Annual Avg. 24 hours	60.0 100.0	60.0 100.0
4	$PM_{2.5}$ (µg/m^3)	Annual Avg. 24 hours	40.0 60.0	40.0 60.0

Source: NAAQS CPCB Notification No. B-29016/20/90/PCI-I Dated: 18th Nov 2009

Methodology

Ambient air quality monitoring was carried out with a frequency of two samples per week at five (05) locations, adopting a continuous 24 hourly (3 shift of 8- hour) schedule for the period March to May, 2026 as per the CPCB, MoEF guidelines and notifications.

It was ensured that the equipment was placed preferably at a height of at least 3 ± 0.5m above the ground level at each monitoring station for negating the effects of wind-blown ground

dust. The equipment was placed at space free from trees and vegetation which otherwise act as a sink of pollutants resulting in lower levels in monitoring results. The baseline data of ambient air were generated for $PM_{2.5}$, PM_{10}, sulphur dioxide (SO_2) and nitrogen dioxide (NO_x). The sampling locations are shown in Figure 3.17 and average concentrations of air pollutants are summarized in Tables 3.20 and are shown in Figures 3.18-3.22.

Table 3.20 Ambient Air Quality (AAQ) Monitoring Locations

ID	Location	Distance (km) Direction	Latitude	Longitude
AAQ1	Nearby Core	---	11° 3'13.26"N	77°47'1.33"E
AAQ2	Kulathupalayam	0.62km- N	11° 3'37.01"N	77°47'12.62"E
AAQ3	Thottiyapalayam	1.81km- W	11° 3'9.96"N	77°46'1.70"E
AAQ4	Oodayam	2.94km- S	11° 1'37.80"N	77°46'58.11"E
AAQ5	Pillapalayam	1.87km- E	11° 3'31.70"N	77°48'8.76"E

*Source: On-site monitoring/sampling **Accuracy Analabs (OBC) Private Limited** in association with GTMS*

Table 3.21 Summary of AAQ Result

	$PM_{2.5}$				PM_{10}			
Station ID	**Max**	**Min**	**Mean**	**98th Percentile**	**Max**	**Min**	**Mean**	**98th Percentile**
AAQ1	24.1	21.0	22.5	24.1	53.9	49.1	51.2	53.9
AAQ2	19.1	17.7	18.4	19.0	47.7	44.2	46.0	47.6
AAQ3	19.5	18.1	18.8	19.3	48.7	45.2	47.0	48.6
AAQ4	18.9	15.2	17.0	18.6	38.7	35.2	37.0	38.6
AAQ5	21.9	18.2	20.0	21.6	41.7	38.2	40.0	41.6
	SO_2				NOx			
AAQ1	8.4	6.0	7.1	8.3	18.5	13.2	15.6	18.3
AAQ2	7.7	5.3	6.4	7.7	16.9	11.7	14.1	16.8
AAQ3	7.7	5.3	6.4	6.7	16.9	11.7	14.1	16.8
AAQ4	6.0	3.6	4.7	6.0	15.6	9.4	12.2	15.5
AAQ5	6.7	4.3	5.4	6.7	13.8	11.7	12.9	13.8

Results

As per the monitoring data, $PM_{2.5}$ ranges from 18.0µg/m^3 to 20.7µg/m^3; PM_{10} from 42.4 µg/m^3 to 46.1µg/m^3; SO_2 from 4.9µg/m^3 to 7.3µg/m^3; NO_x from 11.5µg/m^3 to 16.4g/m^3. The concentration levels of the pollutants fall within the acceptable limits of NAAQS prescribed by CPCB.

Air quality Index

The AQI shows that the air quality of the study area falls within good category 44 causing minimal impact to human health.

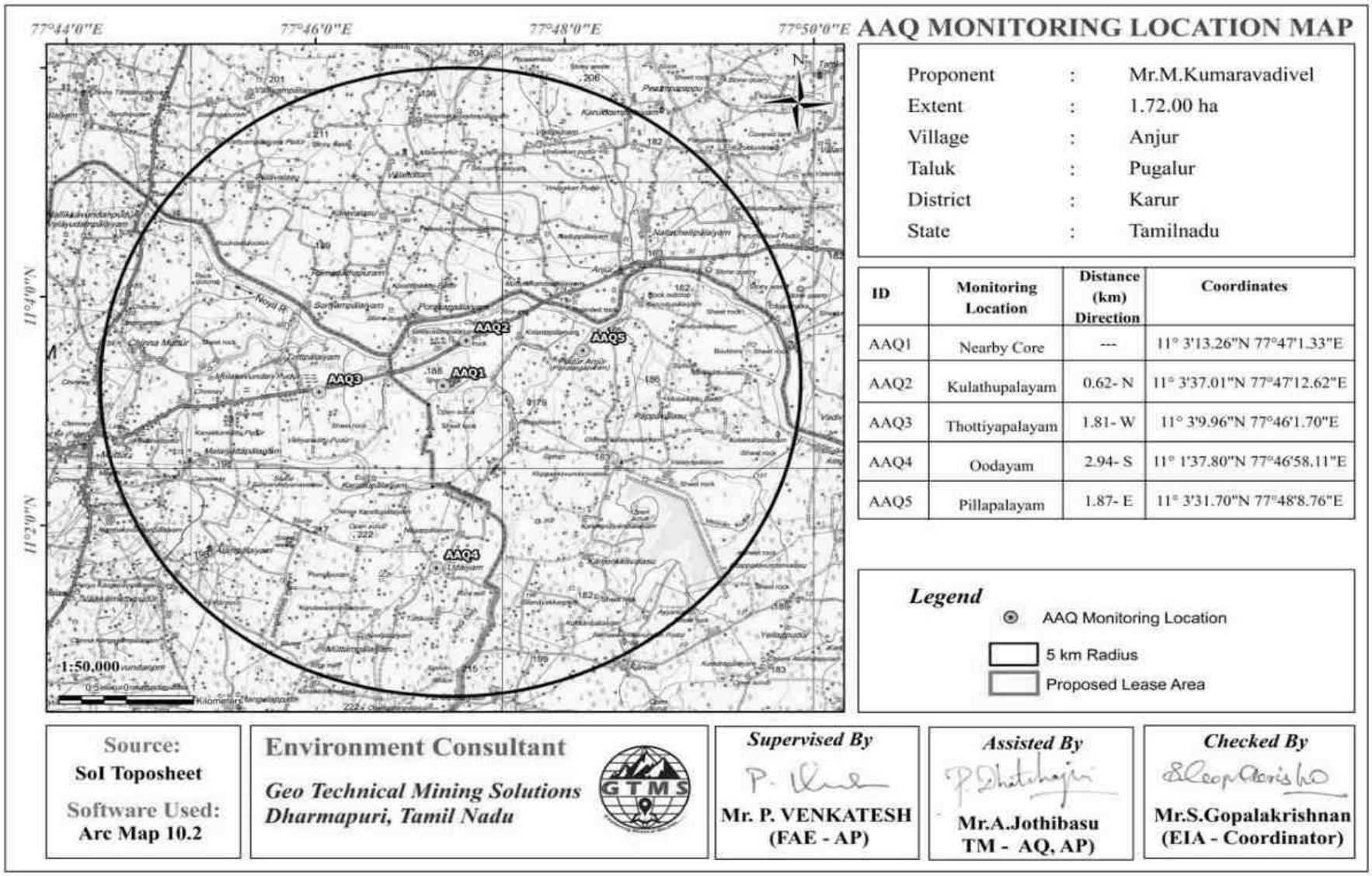
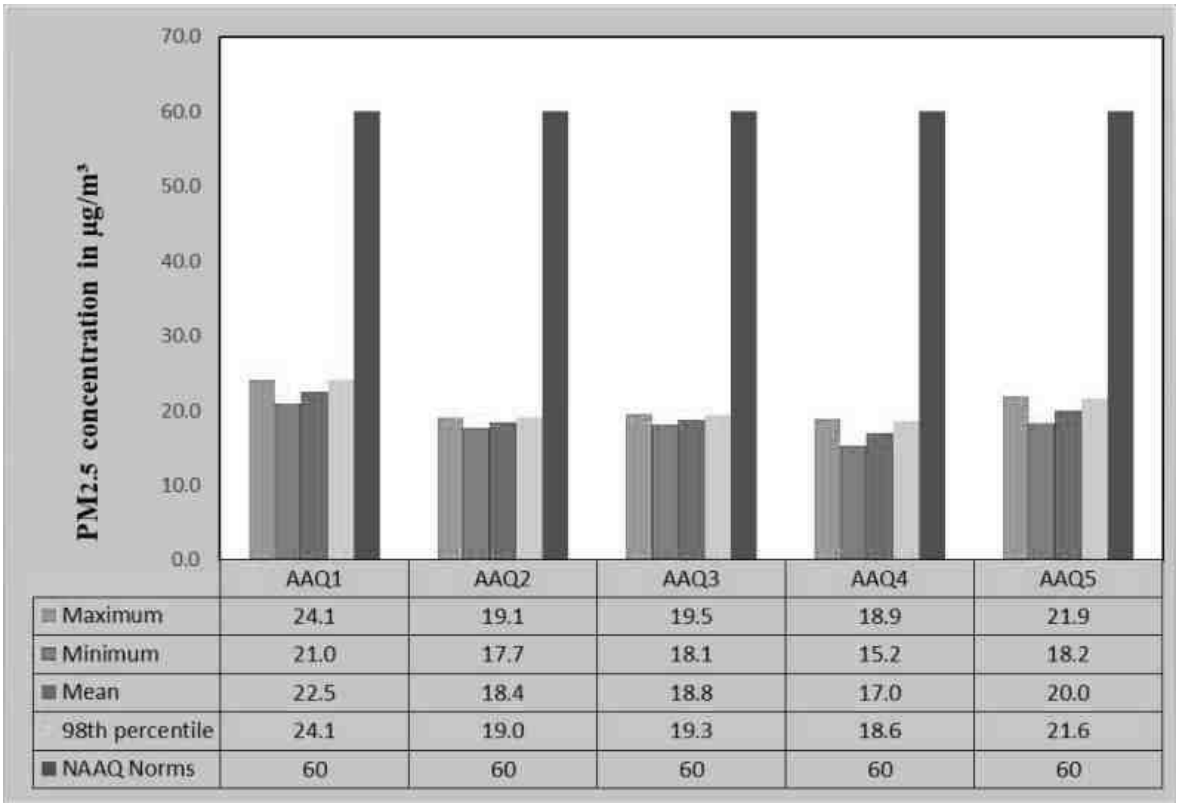
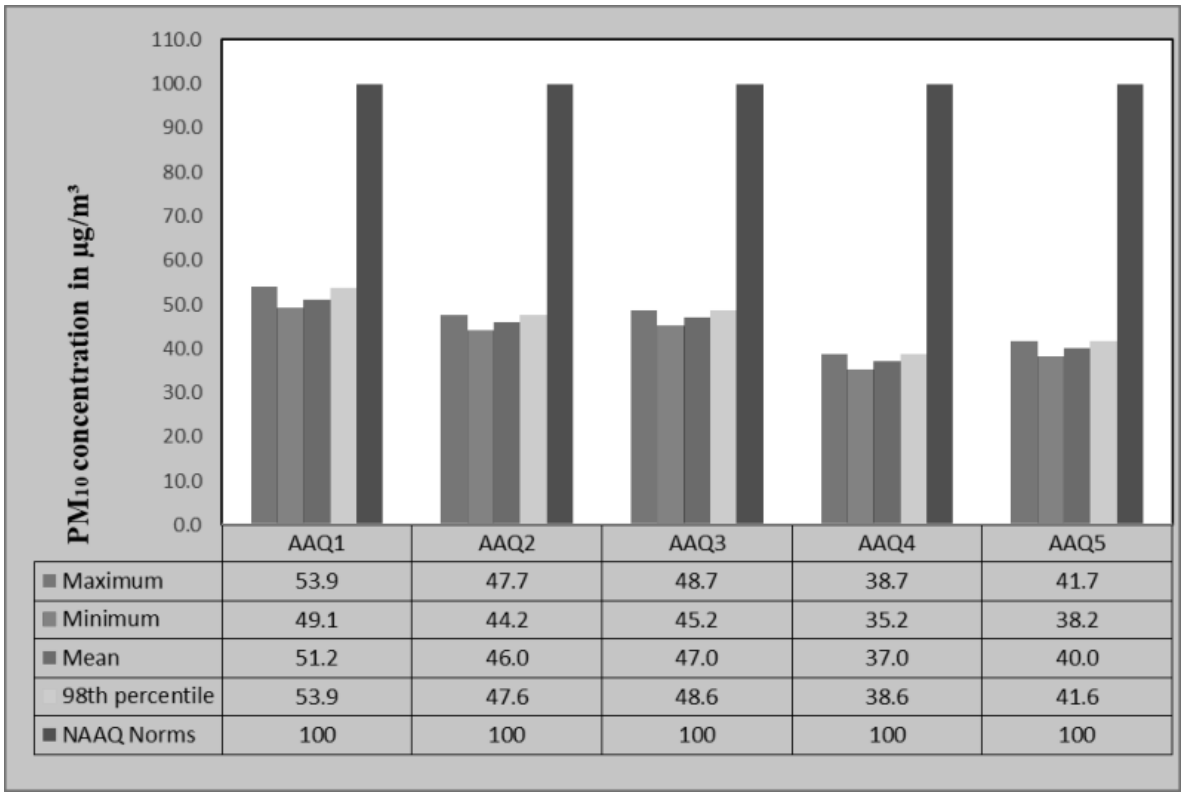


Figure 3.17 Map Showing Ambient Air Quality Monitoring Station Locations Around 5km Radius from Proposed Project Site



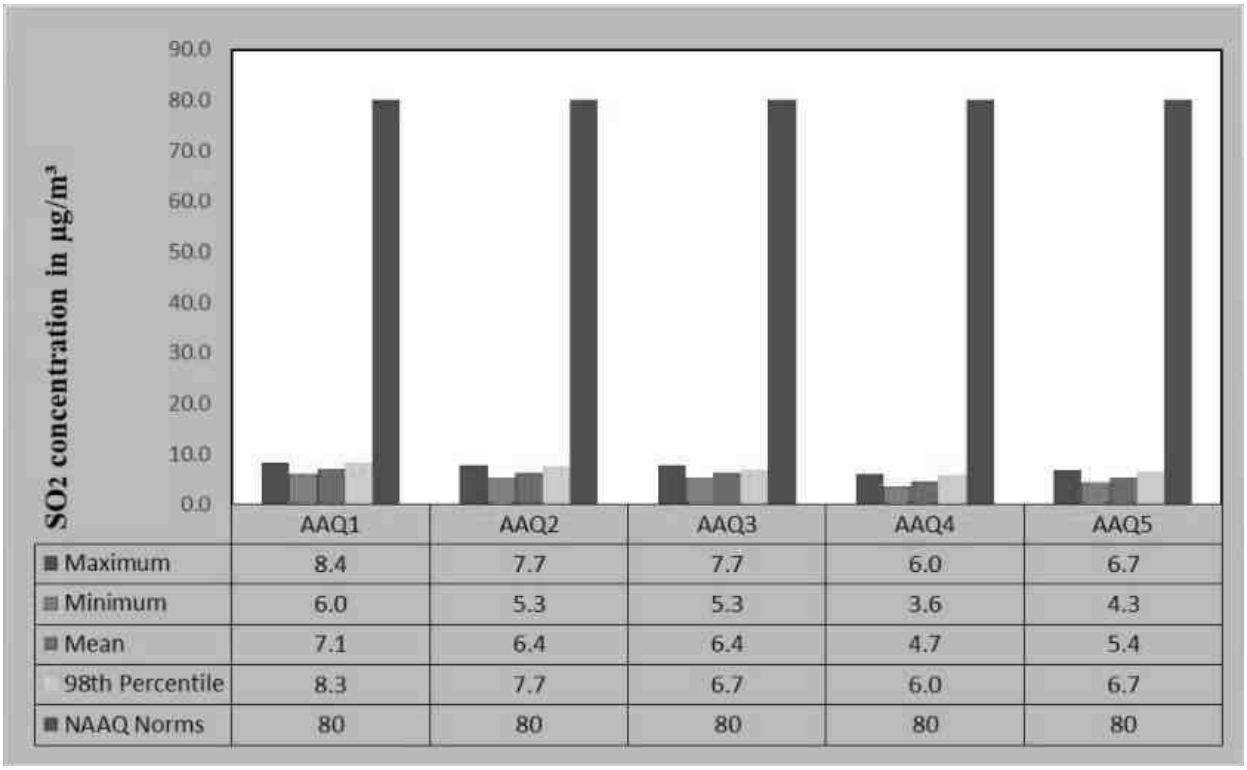
	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5
Maximum	24.1	19.1	19.5	18.9	21.9
Minimum	21.0	17.7	18.1	15.2	18.2
Mean	22.5	18.4	18.8	17.0	20.0
98th percentile	24.1	19.0	19.3	18.6	21.6
NAAQ Norms	60	60	60	60	60

Figure 3.18 Bar Chart Showing Maximum, Minimum, and Average Concentrations of $PM_{2.5}$ Measured from 5 Air Quality Monitoring Stations within 5km Radius



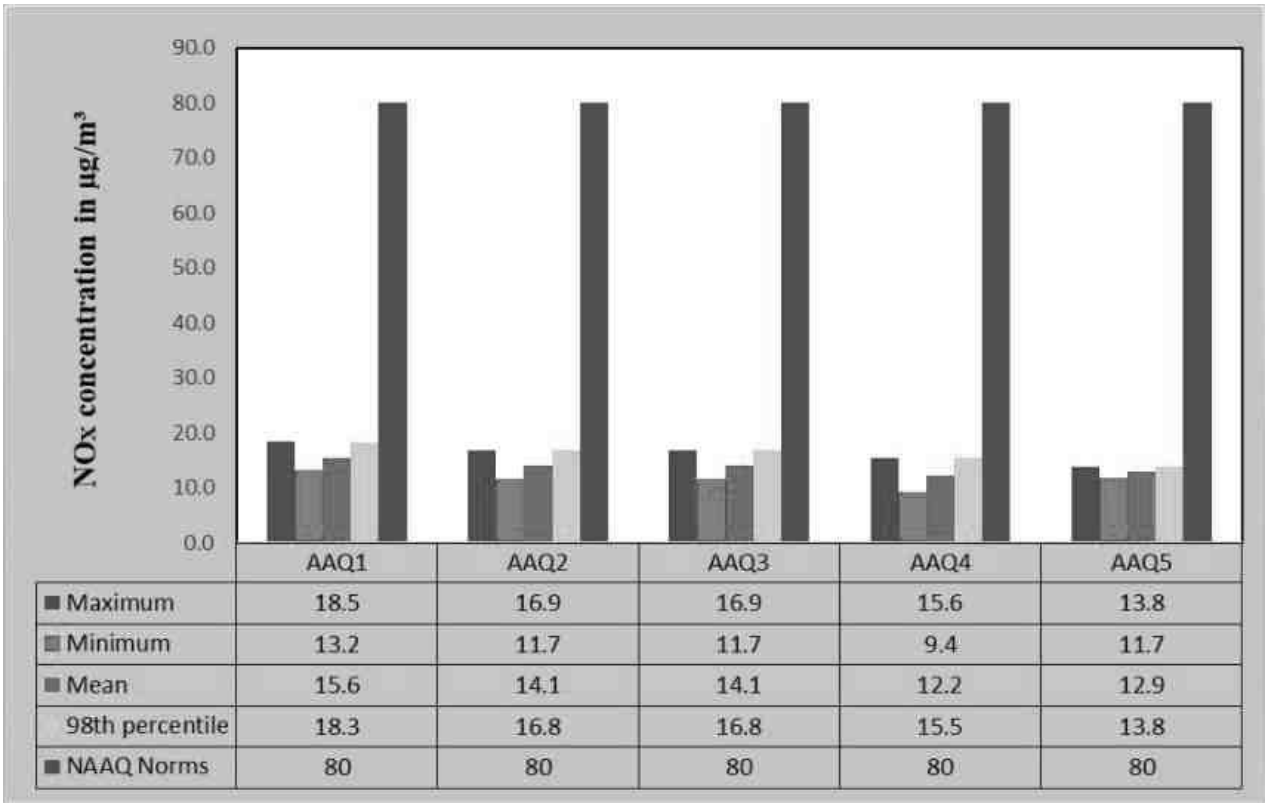
	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5
Maximum	53.9	47.7	48.7	38.7	41.7
Minimum	49.1	44.2	45.2	35.2	38.2
Mean	51.2	46.0	47.0	37.0	40.0
98th percentile	53.9	47.6	48.6	38.6	41.6
NAAQ Norms	100	100	100	100	100

Figure 3.19 Bar Chart Showing Maximum, Minimum, and Average Concentrations of PM_{10} Measured from 5 Air Quality Monitoring Stations within 5km Radius



	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5
Maximum	8.4	7.7	7.7	6.0	6.7
Minimum	6.0	5.3	5.3	3.6	4.3
Mean	7.1	6.4	6.4	4.7	5.4
98th Percentile	8.3	7.7	6.7	6.0	6.7
NAAQ Norms	80	80	80	80	80

Figure 3.20 Bar Chart Showing Maximum, Minimum, and Average Concentrations of SO_2 Measured from 5 Air Quality Monitoring Stations within 5km Radius



	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5
Maximum	18.5	16.9	16.9	15.6	13.8
Minimum	13.2	11.7	11.7	9.4	11.7
Mean	15.6	14.1	14.1	12.2	12.9
98th percentile	18.3	16.8	16.8	15.5	13.8
NAAQ Norms	80	80	80	80	80

Figure 3.21 Bar Chart Showing Maximum, Minimum, and Average Concentrations of NO_x Measured from 5 Air Quality Monitoring Stations within 5km Radius

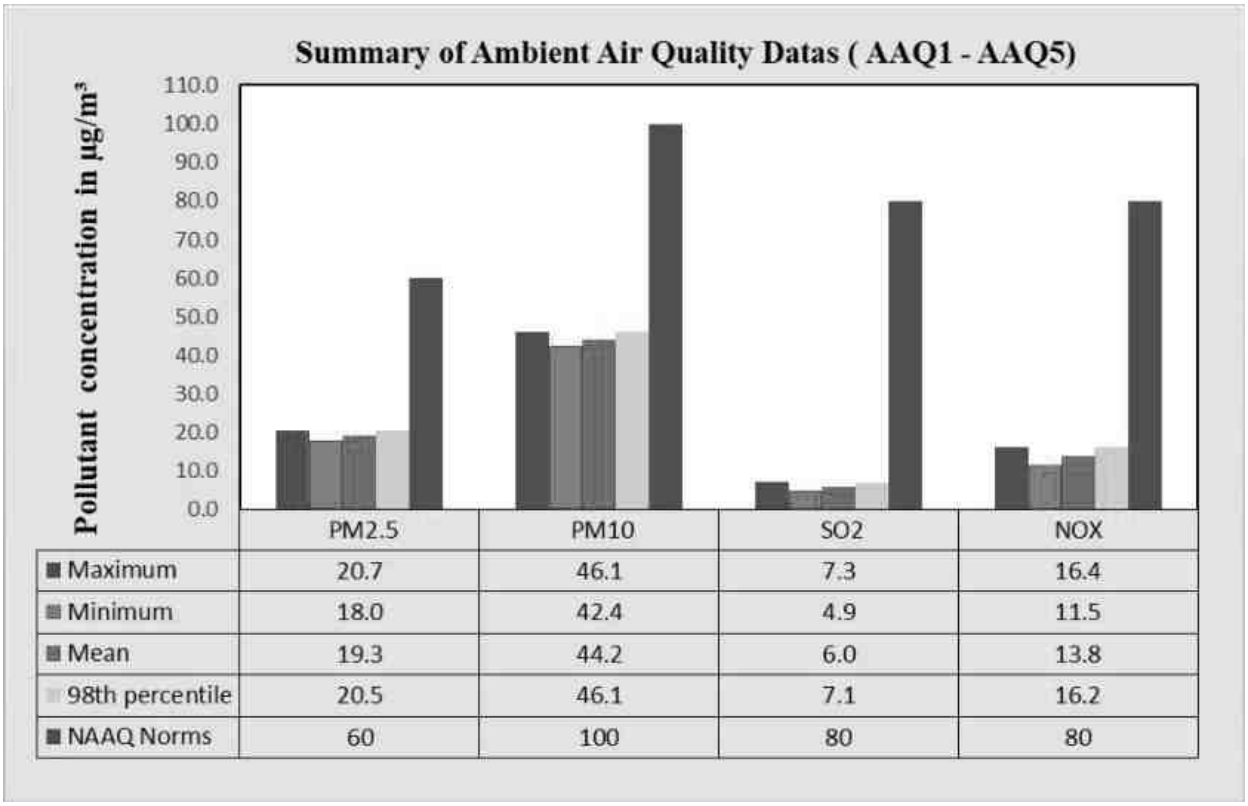


Figure 3.22 Bar Chart Showing Maximum, Minimum, And Average Concentrations of Pollutants in Atmosphere within 5km Radius

3.6 NOISE ENVIRONMENT

The vehicular movement on road and mining activities is the major sources of noise in the study area. The main objective of noise monitoring in the study area is to establish the baseline noise level, which will in turn be used to assess the impact of the total noise expected to be generated during the project operations around the project site. In order to assess the ambient noise levels within the study area, noise monitoring was carried out at five (05) locations covering commercial, residential, rural areas within the radius of 5 km. Details of noise monitoring locations are provided in Table 3.22 and spatial occurrence of the locations are shown in Figure 3.23.

Table 3.22 Noise Monitoring Locations

ID	Location	Distance (km) Direction	Latitude	Longitude
N1	Nearby Core	---	11° 3'13.00"N	77°47'4.14"E
N2	Kulathupalayam	0.61km- N	11° 3'36.43"N	77°47'13.01"E
N3	Thottiyapalayam	1.82km- W	11° 3'11.02"N	77°46'1.20"E
N4	Oodayam	2.96km- S	11° 1'37.11"N	77°46'57.88"E
N5	Pillapalayam	1.82km- E	11° 3'30.55"N	77°48'7.28"E

*Source: On-site monitoring/sampling by **Accuracy Analabs (OBC) Private Limited** in association with GTMS*

Table 3.23 Ambient Noise Quality Result

Station ID	Location	Environmental setting	Average day noise level (dB(A))	Average night noise level (dB(A))	Day time (6.00 AM – 10.00 PM)	Night time (10.00 PM – 6.00 AM)
					Standard (L_{eq} in dB (A))	
N1	Nearby Core	Industrial Area	46.2	35.4	75	70
N2	Kulathupalayam	Residential Area	40.3	36.1	75	70
N3	Thottiyapalayam		43.5	30.1	55	45
N4	Oodayam		42.8	32.9	55	45
N5	Pillapalayam		44.2	32.4	55	45

*Source: On-site monitoring/sampling by **Accuracy Analabs (OBC) Private Limited** in association with GTMS*

The Table 3.23 shows that noise level in core zone was 46.2dB (A) Leq during day time and 35.4dB(A) Leq during night time. Noise levels recorded in buffer zone during day time varied from 40.3 to 44.2dB (A) Leq and during night time from 30.1 to 36.1 dB (A) Leq. Thus, the noise level for industrial and residential area meets the requirements of CPCB. The results are also depicted below in Figures 3.24 and 3.25.

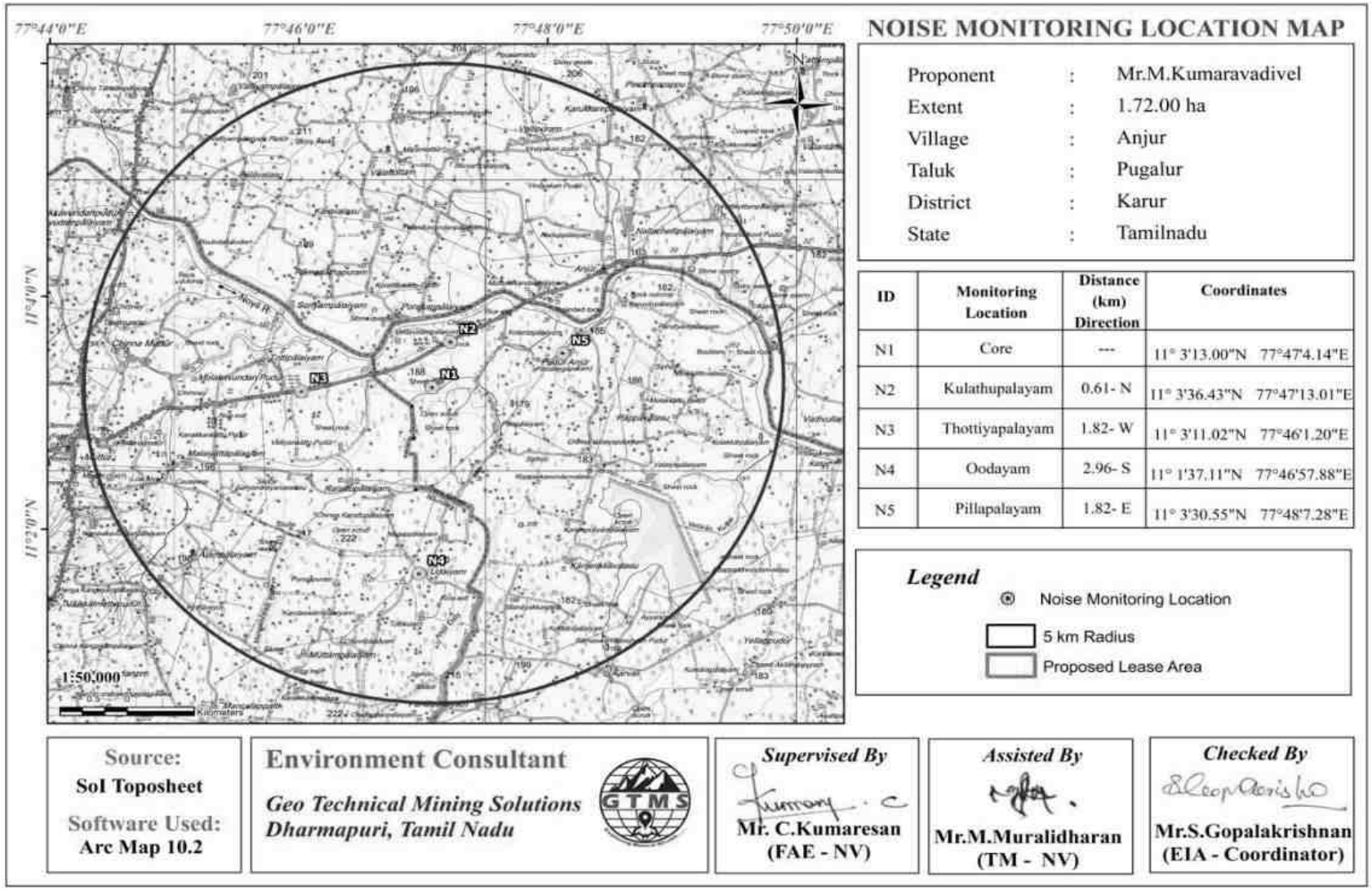


Figure 3.23 Map Showing Noise Level Monitoring Station Locations around 5 km Radius from Proposed Project Site

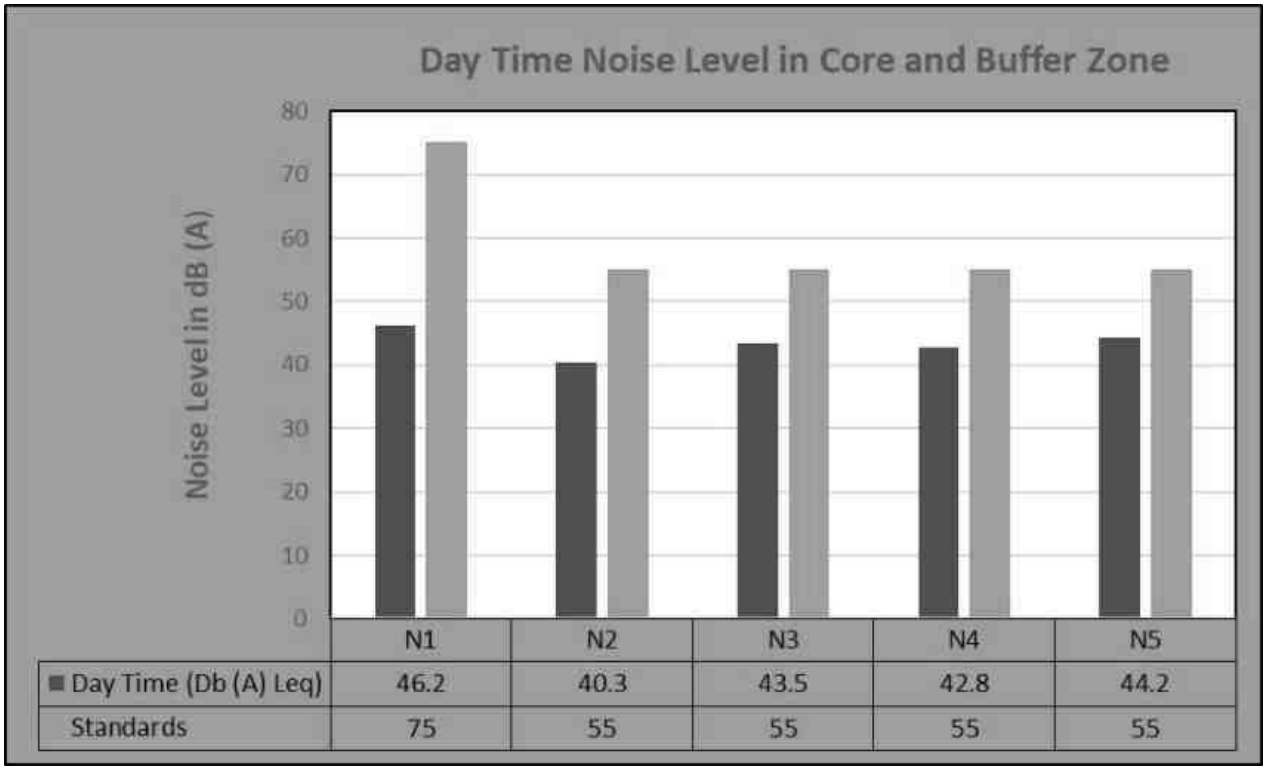


Figure 3.24 Bar Chart Showing Day Time Noise Levels Measured in Core and Buffer Zones

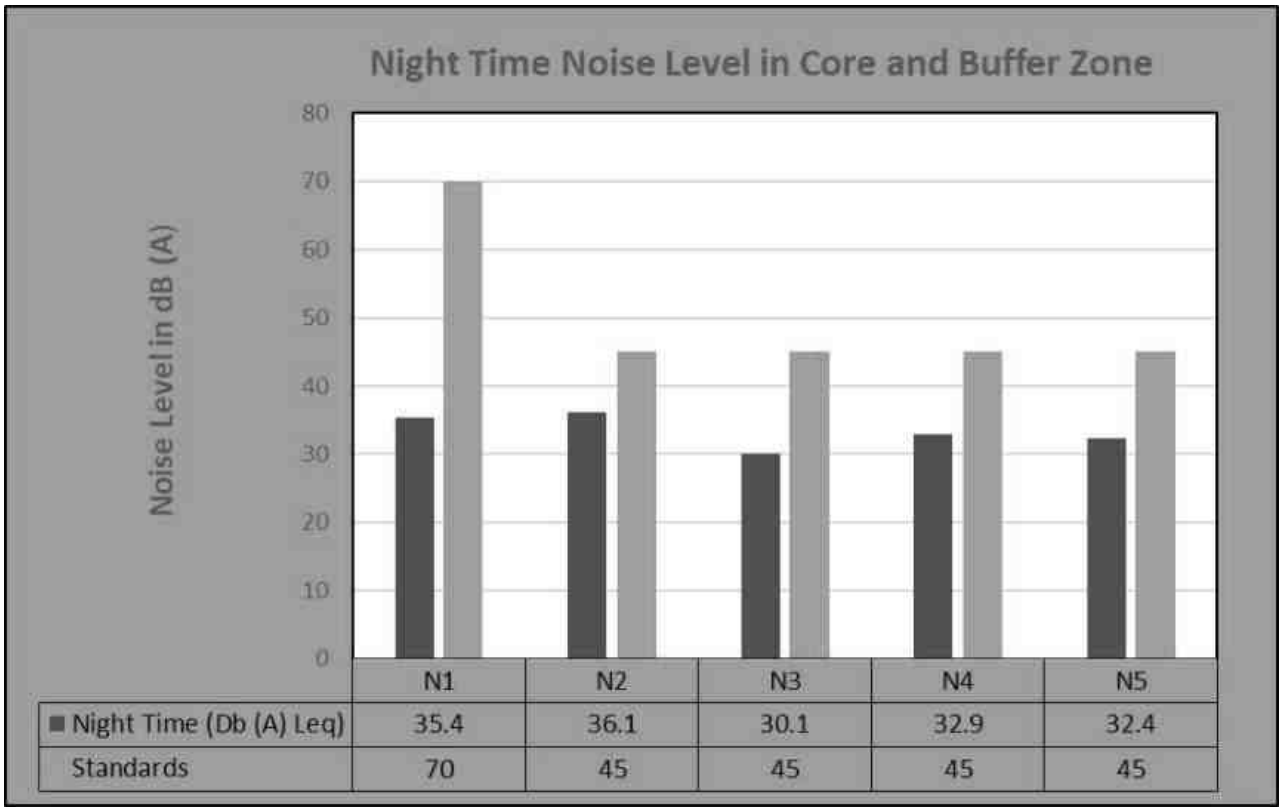


Figure 3.25 Bar Chart Showing Night Time Noise Levels Measured in Core and Buffer Zones

3.7 BIOLOGICAL ENVIRONMENT

Biological study of the ecosystem is essential to understand the impact of rough stone quarry on existing flora and fauna of the study area. Studies on various aspects of ecosystem play an important role in identifying sensitive issues for undertaking appropriate action to mitigate the impact, if any. A survey was conducted to study the flora and fauna in 10km radius by direct and indirect sightings/ data. Some of the information was gathered from the local habitants. All the collected data were classified to interpret the impact of pollution on the flora and fauna of that region. Survey of the wild plants as well as cultivated crop plants was made, and all the available information was recorded.

3.7.1 Biodiversity assessment methods

The Rapid Biodiversity Assessment (RBA) provides information about individual flora and fauna species and their habitats, ecosystems and communities, and threatening processes. It reviews existing information and the results of priority taxa and communities.

A major systematic program of fauna survey has been undertaken during the preparation of this RBA. Analysis of data involves the information identifying the flora and selected fauna groups in relation to different environmental strata across the site, and analysis of species and their responses to disturbance.

The RBA has focused primarily on the ecosystem and species levels of biodiversity because information about genetic variation within species is limited. The trees in each plot have been marked with metal plates so as to cater further field inspection easier. Physical marking of biodiversity has been dealt with for flora only, because of logical reasons. Floristic studies are dealt with in detail in the second part of the RBA.

The biodiversity information presented here is intended to reflect the best understanding of the available information, including information obtained through data audit, expert scientific opinion, and analysis of available data. It also points to deficiencies in existing information. The data presented will be used in the development of the restoration plans, including configuration of the quarry closure, and in the formulation of management recommendations by the experts.

The study has covered the following aspects to appraise the biodiversity of the site

S. No	Floral Component	Fauna elements
1	Plantations/ Agro-forestry	Total Listing of major Faunal elements
2	Natural Vegetation/ Forest type	Endangered Species / Endemic Species
3	Flora Identification- Trees	Wildlife Schedules
4	Flora Identification- Shrubs	Migratory Species

5	Flora Identification- Herbs	Migratory corridors or Paths
6	Flora Identification- Climbers	Breeding & Spawning Grounds

The objective of this Section is to characterize and understand the present status of the ecosystems in the study area to assess the bio-diversity and to identify the critical areas. The present study was undertaken as a part of EIA report to understand the present status of ecosystem prevailing in the study area, to compare it with the past condition with the help of available data, to predict changes as a result of present activities and to suggest measures for maintaining the conditions.

3.7.2 Objectives of Biological Studies

The present study was undertaken with the following objectives:

- To study the likely impact of the proposed mining project on the local biodiversity and to suggest mitigation measure, if required, for vulnerable biota.
- To assess the nature and distribution of vegetation (Terrestrial and Aquatic) in and around the mining activity.
- Detail of flora and fauna, Endemic, Rare, Endangered and Threatened (RET Species) separately for core and buffer area based on such primary field survey and clearly indicating the Schedule of fauna present. In case of any schedule- I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished.
- Devise management & conservation measures for biodiversity.

3.7.3 Methodology

A methodology of Sampling Flora and fauna studies were carried out to assess the list of terrestrial plant and animal species that occur in the core area and the buffer area up to 10km radius from the project site. No damage is created to flora and fauna during the sampling.

3.7.4 Flora Study

Identification of vegetation in relation to the natural flora and crops was conducted through reconnaissance field surveys and onsite observations in core and buffer zone. The plant species identification was done based on the reference materials and also by examining the morphological characteristics and reproductive materials i.e. flowers, fruits and seeds. Land use pattern in relation to agriculture crop varieties were identified through physical verification of land and interaction with local villagers. Transect method is used in the floral documentation in the buffer zone. Six

transects were selected for the study. Each transects were occupied within 10km radius. For trees plots of (10x10-m), shrubs (5x5-m) and herbs (1x1-m) were used and recorded.

3.7.5 Fauna Study

The faunal elements of core and buffer zone were identified by direct sightings or indirect evidences by recording occurrences such as holes, markings, hairs, spines, scats, pellets, droppings and quills (Menon 2003). Standard binocular was used for the observations. The authenticity of faunal elements occurrence was confirmed by interaction with the local people. Avifauna identification was done with pictorial descriptions of published literature. Information pertaining to existence of any migratory corridors and paths were obtained from local inhabitants. The status of each faunal element was determined and wildlife schedule category was ascertained as per the IUCN-Red Data Book and Wildlife protection (Amendment) Act 2022. The Birds, butterflies, reptiles and odonates were mainly focused during faunal assessment, in which transect method was employed for birds and butterflies. Transect is a path along which one counts and records the occurrence of an individual for study. A straight-line walk covering one km, within a time span of one hour to 30 minutes was carried out in each of the habitats. Each transects were occupied within the 10km radius of the site. Bird species were recorded during the hours of peak activity 07 am to 12 am and evening 3.00 pm to 5.00 pm. Direct observations and bird calls used for bird documentation. Same transects were used for counting birds and butterflies. Opportunistic observations were made for Amphibians, reptiles and odonates. Presence of mammals were recorded by indirect signs. They were classified into species level as and when possible. Recorded bird species were identified to species level using standard books (Ali & Ripley 1987, Grimmett et al., 2016).

Important Value Index (IVI)

The concept of 'Important Value Index (IVI)' has been developed for expressing the dominance and ecological success of any species, with a single value (Mishra, 1968, Sharma, 2005). This index utilizes three characteristics, they are (i) Relative frequency and (ii) Relative density. The three characteristics computed using frequency, density and abundance for all the species falling in all the quadrat by using the following formula. The relative frequency, relative density and relative abundance has been calculated to calculate the IVI value

IVI = Relative frequency + Relative abundance + Relative density [RF + RA + RD]

Relative Value Index (RVI) = Relative Density +Relative Frequency [RD + RF].

Relative Value Index used for Expressing dominance and Ecological success of Shrub and herb Species in a particular area.

Shannon – Wiener Index, Evenness and Richness

Biodiversity index is a quantitative measure that reflects how many different types of species, there are in a dataset, and simultaneously takes into account how evenly the basic entities (such as individuals) are distributed among those types of species. The value of biodiversity index increases both when the number of types increases and when evenness increases. For a given number of type of species, the value of a biodiversity index is maximized when all type of species is equally abundant.

The **Shannon Diversity Index** (sometimes called the Shannon-Wiener Index) is a way to measure the diversity of species in a community.

The species diversity index (H) for floral and faunal diversity is calculated by the use of Shannon Wiener Index (Shannon Wiener, 1963) as:

$$H = - \Sigma (ni/n) \times \ln (ni/n)$$

- Where, ni is individual density of a species and n is total density of all the species
- The Evenness Index (E) is calculated by using Shannon's Evenness formula (Magurran, 2004).
- The higher the value of H, the higher the diversity of species in a particular community

The lower the value of H, the lower the diversity. A value of H = 0 indicates a community that only has one species

$$\text{Evenness Index (E)} = H / \ln(S)$$

Where, H is Shannon Wiener Diversity index; S is number of species

The Shannon evenness Index is a way to measure the evenness of species in a community. The term “evenness” simply refers to how similar the abundances of different species are in the community.

Floral diversity Analysis

Flora study was conducted using the above said methodology to inventory the existing terrestrial plants in both core and buffer zones. Details of plants have been described in the succeeding sections.

3.7.6 Flora Composition in Core Zone

The core zone presents in tree, shrubs, herbs and grasses. Taxonomically total of 18 species belonging to 9 families have been recorded from the core mining lease area. Based on habitat classification of the enumerated plants the majority of species were Herbs 9 followed by Trees 3, Shrubs 4 and Climbers 2. The result of core zone of flora studies shows that Fabaceae and Solanaceae are the main dominating species in the study area it mentioned in Table 3.24 & 3. 25. No species found as threatened category.

3.7.7 Flora Composition in buffer Zone

There are 144 different species identified in the buffer zone. Among the identified, floral (144) species were 50 trees, 39 herbs, 31 shrubs, 11 climbers, 5 Creepers, and 8 grasses. According to the findings of the buffer zone flora studies, the dominant species in the study area are Fabaceae, Asteraceae, and Euphorbiaceae, as shown in Table 3.26. Apart from the proposed project area, there is agricultural land. Horticulture and agricultural land are untouched. There are no Rare, Endangered, and Threatened Flora species in the mining area and their surrounding study area. Details of flora with the scientific name were mentioned in Table 3.26. A list of floral species has been prepared based on a primary survey (site observations) and discussion with local people. The total number of different plant life forms under trees, shrubs, herbs, and climbers is shown in Table 3.26.

Table 3.24 Number of flora life in study area

S. No	Plant Life form	Number of Species
1.	Trees	3
2.	Shrubs	4
3.	Herbs	9
4.	Climber	1
5.	Creepers	-
6.	Grasses	1
Total No. of Species		**19**

Table 3.25 Flora in mine lease area

S.no	Local name	Scientific name	Family name	IUCN Conservation Status
Trees				
1	Karuvealan	*Prosopis juliflora*	Fabaceae	Not Listed
2	Arapu maram	*Albizia amara*	Fabaceae	Not Listed

3	Vetpalai	*Wrightia tinctoria*	Apocynaceae	Vetpalai
Shrubs				
4	Avaram chedi	*Senna auriculata*	Fabaceae	Not Listed
5	Communist pacha	*Chromolaena odorata*	Asteraceae	Not Listed
6	Earuku	*Calotropis gigantea*	Apocynaceae	Not Listed
7	Unnichadi	*Lantana camara*	Verbenaceae	Not Listed
Herbs/ Climber				
8	Perandai	*Cissus quadrangularis*	Vitaceae	Not Listed
9	Thathapondu	*Tridax procumbens*	Asteraceae	Not Listed
10	Kolunji chadi	*Tephrosia purpurea*	Fabaceae	Not Listed
11	Nayuruvi	*Achyranthes aspera*	Amaranthaceae	Not Listed
12	Nearunji mull	*Tribulus zeyheri*	Zygophyllaceae	Not Listed
13	Pulapoo	*Aerva lanata*	Amaranthaceae	Not Listed
14	American mint	*Hyptis suaveolens*	Lamiaceae	Not Listed
15	Veetukaayapoondu	*Tridax procumbens*	Asteraceae	Not Listed
16	Mukkirattai	*Boerhaavia diffusa*	Nyctaginaceae	Not Listed

NE- Not evaluated; LC- Least Concern, NT –Near Threatened, T-Threatened

Table 3.25a Species Richness (Index) in mine lease area

Details	H	H max	Evenness	Species Richness
Trees	1.77	1.79	0.99	1.57
Shrubs	1.60	1.61	0.99	1.11
Herbs	2.98	3.0	1.00	3.78

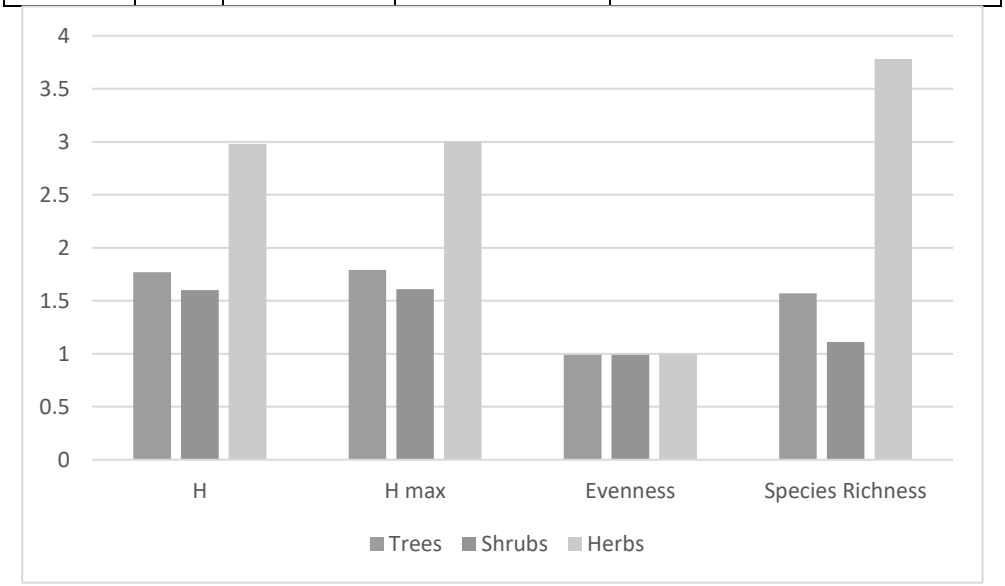


Figure 3.26 Species Richness (Index) in Mine Lease area

Table 3.26 Flora in Buffer Zone

S. No	Local Name	Scientific name	Family name
TREES			
1	Vembu	*Azadirachta indica*	Meliaceae
2	Thekku	*Tectona grandis*	Verbenaceae
3	Pongam oiltree	*Pongamia pinnata*	Fabaceae
4	Thennai maram	*Cocos nucifera*	Arecaceae
5	Manga	*Mangifera indica*	Anacardiaceae
6	Puliyamaram	*Tamarindus indica*	Legumes
7	Vadanarayani	*Delonix elata*	Fabaceae
8	Thenpazham	*Muntingia calabura*	Tiliaceae
9	Punnai	*Calophyllu inophyllum*	Calophyllaceae
10	Ilanthai	*Ziziphus jujubha*	Rhamnaceae
11	Karuvelam	*Acacia nilotica*	Mimosaceae
12	Nettilinkam	*Polylathia longifolia*	Annonaceae
13	Arai nelli	*Phyllanthus acidus*	Euphorbiaceae
14	Panai maram	*Borassus flabellifer*	Arecaceae
15	Sapota	*Manilkara zapota*	Sapotaceae
16	Navalmaram	*Sygygium cumini*	Myrtaceae
17	Alamaram	*Ficus benghalensis*	Moraceae
18	Vazhaimaram	*Musa*	Musaceae
19	Karuvelam maram	*Vachellia nilotica*	Fabaceae
20	Nelli	*Emblica officinalis*	Phyllanthaceae
21	Eucalyptus	*Eucalyptus globules*	Myrtaceae
22	Maramalli	*Millingtonia hortensis*	Bignoniaceae
23	Kuduka puli	*Pithecellobium dulce*	Mimosaceae
24	Karungali	*Acacia sundra*	Legumes
25	Nochi	*Vitex negundo*	Lamiaceae
26	Karimurungai	*Moringa olefera*	Moraginaceae
27	Pappali maram	*Carica papaya L*	Caricaceae
28	Poovarasu	*Thespesia populnea*	Malvaceae
29	Arasanmaram	*Ficus religiosa*	Moraceae
30	Vilvam	*Aegle marmelos*	Rutaceae
31	Nuna maram	*Morinda citrifolia*	Rubiaceae
32	Nettilingam	*Polyalthia longifolia*	Annonaceae
33	Koyya	*Psidium guajava*	Myrtaceae
34	Seethapazham	*Annona reticulata*	Annonaceae
35	Savukku	*Casuarina L.*	Casuarinaceae
SHRUBS			
1	Avarai	*Senna auriculata*	Fabaceae
2	Sundaika	*Solanum torvum*	Solanaceae
3	Puramuttai	*Chrozophora rottleri*	Euphorbiaceae
4	Arali	*Nerium indicum*	Apocynaceae
5	Seemaiagaththi	*Cassia alata*	Caesalpinaceae
6	Chemparuthi	*Hibiscu rosa-sinensis*	Malvaceae
7	Kattamanakku	*Jatropha curcas*	Euphorbiaceae
8	Chaturakalli	*Euphorbia antiquorum*	Euphorbiaceae
9	Idlipoo	*xoracoc cinea*	Rubiaceae

10	Thuthi	*Abutilon indicum*	Meliaceae
11	Nithyakalyani	*Cathranthus roseus*	Apocynaceae
12	Uumaththai	*Datura metel*	Solanaceae
13	Kundumani	*Abrus precatorius*	Fabaceae
14	Erukku	*Calotropis gigantea*	Apocynaceae
15	Neermulli	*Hydrophila auriculata*	Acanthaceae
Herbs, Climber, Creeper & Grasses			
1	Nayuruv	*Achyranthes aspera*	Amaranthaceae
2	Veetukaayapoondu	*Tridax procumbens*	Asteraceae
3	Mukkirattai	*Boerhaavia diffusa*	Nyctaginaceae
4	Kuppaimeni	*Acalypha indica*	Euphorbiaceae
5	Karisilanganni	*Eclipta prostata*	Asteraceae
6	Korai	*Cyperus rotundus*	Cyperaceae
7	Thumbai	*Leucas aspera*	Lamiaceae
8	Nai kadugu	*Celome viscosa*	Capparidaceae
9	Parttiniyam	*Parthenium hysterophorus*	Asteraceae
10	Thulasi	*Ocimum tenuiflorum*	Lamiaceae
11	Arugampul	*Cynodon dactylon*	Poaceae
12	Thoiya keerai	*Digeria muricata*	Amarantheceae
13	Kovai	*Coccinia grandis*	Cucurbitaceae
14	Perandai	*Cissus quadrangularis*	Vitaceae
15	Mudakkotan	*Cardiospermum helicacabum*	Sapindaceae
16	Karkakartum	*Clitoria ternatea*	Fabaceae
17	Kovakkai	*Trichosanthes dioica*	Cucurbitaceae
18	Sangupoo	*Clitoriaternatia*	Fabaceae
19	Siru puladi	*Desmodium triflorum*	Fabaceae
20	Sithrapaalavi	*Euphorbia prostrata*	Euphorbiaceae
21	Thumattikai	*Cucumis callosus*	Cucurbitaceae
22	mookuthi poondu	*Wedelia trilobata*	Asteraceae
23	Kattu kanchippul	*Apluda mutica*	Poaceae
24	Musthakasu	*Kyllinga brevifolia*	Cyperaceae
25	Nagathali	*Opuntia dillenii*	Cactaceae

NE- Not evaluated; LC- Least Concern, NT –Near Threatened, T-Threatened

3.7.8 Fauna

The faunal survey was carried out for Mammals, Birds, Reptiles, Amphibians and Butterflies. All the listed species were compared with Red Data Book and Indian Wildlife Protection Act, 1972. There are no rare, endangered, threatened (RET), and endemic species present in the core area.

Table 3.27 Methodology applied during survey of fauna

S. No.		Method of Sampling	References
1	Insects	Random walk, Opportunistic observations	Pollard (1977); Kunte (2000)
2	Reptiles	Visual encounter survey (Direct Search)	Daniel J.C (2002)

3	Amphibians	Visual encounter survey (Direct Search)	
4	Mammals	Tracks and Signs	Menon V (2014)
5	Avian	Random walk, Opportunistic observations.	Grimmett R (2011); Ali S (1941)

3.7.8.1 Fauna Composition in Core Zone

The 25 varieties of species observed in the core zone. Among them numbers of Insects 8 (32%), Reptiles 3 (12%), Mammals 5 (20%) and Avian 9 (36%). A total of 25 species belonging to 22 families have been recorded from the core mining lease area. Number of species decreases towards the mining area this might be due the lack of vegetation. None of these species are threatened or endemic. There is no Schedule I species and eight species are under schedule IV according to Indian wild life Act 1972. A total eight species of birds were sighted in the mining lease area. There are no critically endangered, endangered, vulnerable and endemic species were observed. Details of fauna in core zone with the scientific name were mentioned in Table. 3.28.

Table 3.28 Fauna in Core Zone

S. No	Common name/English Name	Family Name	Scientific Name	Schedule list wildlife Protection act 1972	IUCN Red List data
INSECTS					
1	Common Tiger	Nymphalidae	*Danaus genutia*	NL	NL
2	Red-veined darter	Libellulidae	*Sympetrum fonscolombii*	NL	LC
3	Grasshopper	Acrididae	*Hieroglyphus sp*	NL	LC
4	Blue tiger	Nymphalidae	*Tirumala limniace*	Schedule IV	LC
5	Stick insect	Lonchodidae	*carausius morosus*	NL	LC
6	Mottled emigrant	Peridae	*Catopsilia pyranthe*	NL	LC
7	Striped tiger	Nymphalidae	*Danaus plexippus*	Schedule IV	LC
8	Acraea violae	Nymphalidae	*Acraea violae*	NL	LC
REPTILES					
1	Garden lizard	Agamidae	*Calotes versicolor*	NL	LC
2	Common house gecko	Gekkonidae	*Hemidactylus frenatus*	NL	LC
3	Fan-Throated Lizard	Agamidae	*Sitanaponticeriana*	NL	LC
MAMMALS					
1	Indian Field Mouse	Muridae	*Mus booduga*	Schedule IV	NL
2	Cow	Bovidae	*Bos taurus*	NL	NL
3	Common dog	Canidae	*Canis lupus familiaris*	NL	NL
4	Common cat	Felidae	*Felis silvestris catus*	NL	NL
5	Squirrel	Sciuridae	*Funambulus palmarum*	NL	NL
AVES					

1	Asian green bee-eater	Meropidae	*Meropsorientalis*	NL	LC
2	Koel	Cucalidae	*Eudynamys*	Schedule IV	LC
3	Common myna	Sturnidae	*Acridotheres tristis*	NL	LC
4	Cattle egret	Ardeidae	*Bubulcus ibis*	NL	LC
5	House crow	Corvidae	*Corvus splendens*	NL	LC
6	Koel	Cucalidae	*Eudynamys scolopaceus*	Schedule IV	LC
7	Crow Pheasant	Cucalidae	*Centropus sinensis*	Schedule IV	LC
8	Indian pond heron	Ardeidae	*Ardeola grayii*	Schedule IV	LC
9	Grey drongo	Dicruridae	*Dicrurus leucophaeus*	Schedule IV	LC

*NE- Not evaluated; LC- Least Concern, NT –Near Threatened, T-Threatened

3.7.8.2 Fauna Composition in Buffer Zone

A total of 47 species belonging to 34 families were recorded in the buffer zone. Based on habitat classification the majority of species were Birds 18 (40%), followed by Insects 15 (31%), Reptiles 7 (15%), 4 Mammals (8%) and amphibians 3 (6%). There are 4 schedule II species and 24 schedule IV species according to Indian wild life Act 1972. There are no critically endangered, vulnerable and endemic species observed. List of fauna in the buffer zone is provided in Table 3.29.

Table 3.29 Fauna in Buffer Zone

S. No.	Common Name/English Name	Family Name	Scientific Name	Schedule List Wildlife Protection Act 1972	IUCN Red List Data
INSECTS					
1	Blue tiger	Nymphalidae	*Tirumala limniace*	Schedule IV	LC
2	Milkweed butterfly	Nymphalidae	*Danainae*	NL	LC
3	Tawny coster	Nymphalidae	*Danaus chrysippus*	Schedule IV	LC
4	Indian honey bee	Apidae	*Apis cerana*	Schedule IV	LC
5	Grasshopper	Acrididae	*Hieroglyphus sp*	NL	LC
6	Red-veined darter	Libellulidae	*Sympetrum fonscolombii*	NL	LC
7	Lime butterfly	Papilionidae	*Papilio demoleus*	Schedule IV	LC
8	Ant	Formicidae	*Camponotus Vicinus*	NL	NL
9	Dragonfly	Gomphidae	*Ceratogomphus pictus*	Schedule IV	LC
10	Common Tiger	Nymphalidae	*Danaus genutia*	Schedule IV	LC
11	Common Indian crow	Nymphalidae	*Euploea core*	Schedule IV	LC
12	Praying mantis	Mantidae	*mantis religiosa*	NL	NL

13	Striped tiger	Nymphalidae	*Danaus plexippus*	Schedule IV	LC
14	Lesser grass blue	Lycaenidae	*Zizina otis indica*	Schedule IV	LC
15	Jewel beetle	Buprestidae	*Eurythyrea austriaca*	Schedule IV	NA
REPTILES					
16	Garden lizard	Agamidae	*Calotes versicolor*	NL	LC
17	Common house gecko	Gekkonidae	*Hemidactylus frenatus*	NL	LC
18	Indian chameleon	Chamaeleonidae	*Chamaeleo zeylanicus*	Sch II (Part I)	LC
19	Olive keelback water snake	Natricidae	*Atretium schistosum*	Sch II (Part II)	LC
20	Brahminy skink	Scincidae	*Eutropis carinata*	NL	LC
21	Rat snake	Colubridae	*Ptyas mucosa*	Sch II (Part II)	LC
22	Common skink	Scincidae	*Mabuya carinatus*	NL	LC
MAMMALS					
23	Indian palm squirrel	Sciuridae	*Funambulus palmarum*	Schedule IV	LC
24	Indian hare	Leporidae	*Lepus nigricollis*	Schedule IV	LC
25	Indian Field Mouse	Muridae	*Mus booduga*	Schedule IV	LC
26	Asian Small Mongoose	Herpestidae	*Herpestes javanicus*	Schedule (Part II)	LC
AVES					
27	Indian pond heron	Ardeidae	*Ardeola grayii*	Schedule IV	LC
28	Black drongo	Dicruridae	*Dicrurus macrocercus*	Schedule IV	LC
29	Asian green bee-eater	Meropidae	*Meropsorientalis*	NL	LC
30	Red-breasted parakeet	Psittaculidae	*Psittacula alexandri*	NL	LC
31	Common Coot	Rallidae	*Fulica atra*	Schedule IV	LC
32	Common myna	Sturnidae	*Acridotheres tristis*	NL	LC
33	Shikra	Accipitridae	*Accipiter badius*	NL	LC
34	Koel	Cucalidae	*Eudynamys*	Schedule IV	LC
35	Common Quail	Phasianidae	*Coturnix coturnix*	Schedule IV	LC
36	Red-vented Bulbul	Pycnonotidae	*Pycnonotuscafer*	Schedule IV	LC
37	Brahminy starling	Sturnidae	*Sturnia pagodarum*	Schedule IV	LC
38	Indian golden oriole	Oriolidae	*Oriolus kundoo*	Schedule IV	LC

39	Rose-ringed parkeet	Psittaculidae	*Psittacula krameria*	NL	LC
40	Common quail	Phasianidae	*Coturnix coturnix*	Schedule IV	LC
41	White-breasted waterhen	Rallidae	*Amaurornis phoenicurus*	NL	LC
42	Two-tailed Sparrow	Dicruridae	*Dicrurus macrocercus*	Schedule IV	LC
43	Grey Francolin	Phasianidae	*Francolinus pondicerianus*	Schedule IV	LC
44	House crow	Corvidae	*Corvussplendens*	NL	LC
AMPHIBIANS					
45	Indian Burrowing frog	Dicroglossidae	*Sphaerotheca breviceps*	Schedule IV	LC
46	Green Pond Frog	Ranidae	*Rana hexadactyla*	Schedule IV	LC
47	Tiger Frog	Chordata	*Hoplobatrachus tigerinus (Rana tigerina)*	Schedule IV	LC

**NL-Not listed, LC-Least concern, NT-Near threatened*

3.7.9 Aquatic Vegetation

The field survey for assessing the aquatic vegetation was also undertaken during the study period. Fish is commonly found in all types of natural water bodies and very common source of food in Easterner South India. The local fishermen were enquired and also the secondary resources were reviewed to collect information on the fishes found in the study area. Few common species are; *Catla (Catla catla), Channa striata, Oreochromis niloticus.*

Table 3.30 Aquatic Fauna and Flora

Sl. No	Common Name	Scientific name	Family Name	IUCN Red List of Threatened Species
Flora				
1	Water hyacinth	*Eichornia crassipes*	Pontederiaceae	NA
2	Blue waterlily	*Nymphaea nouchali*	Nymphaeaceae	LC
3	Cross Grass	*Carex cruciata*	Cyperaceae	NA
4	Scutch grass	*Cynodon dactylon*	Poaceae	LC
Fauna				
5	Thilopia	*Oreochromis niloticus*	Cichlidae	LC
6	Catla	*Catla*	Cyprinidae	LC
7	Koravi meen	*Channa striata*	Channidae	LC
8	Roghu	*Labeo rohita*	Cyprinidae	LC

*LC- Least Concern, NA-Not yet assessed

Phytoplankton's:

Microcystis, Nitzschia, Oscillatoria, Navicula and Pediastrum sps.

Zooplanktons:

These consist of microscopic organisms from groups Protozoa, Rotifers, Cladocera and Copepoda etc. Some common species of zooplanktons are; *Deflandre, Arcella vulgaris, Centropyxis spinosa Arcella discoides, Arcella hemispherica, Centropyxis aculeate, Trigonopyxis arcula, Brachionus calyciflorus, Lecane curvicornis, Brachionus angularis, Polyarthra vulgaris, Filinia longiseta.*

Food chain

The food chain in aquatic ecosystems often begins with the algae or phytoplankton producers, and then the zooplankton that feed on them. This type of food chain is found in nearby lakes and rivers with phytoplankton, zooplankton, fish Artiola gray and humans.

Ex: Phytoplankton→ Zooplankton→ small fish→ large fish → Human

3.7.10 Agriculture & Horticulture in Karur district:

The principal crops of the district are paddy, millets, pulses, oilseeds, sugarcane and banana. The major paddy area is in Kulithalai and Krishnarayapuram taluks. Pulses are grown in rice fallow areas. In uplands millets like sorghum, pearl millet pulses such as red gram, horse gram oilseeds such as groundnut, gingelly and sunflower are grown both under irrigated and rain fed conditions.

Major Agricultural Crops

Major horticulture crops cultivated in this district are vegetables crops like tomato, brinjal, chillies, onion and turmeric. Details of major field crops and Agricultural in 1km radius is given in Table. 3.31.

Table 3.31 Major Crops in 1km radius

S. No	Major crops	Scientific name	Families
1	Sorghum	*Sorghum bicolor*	Poaceae
2	Gingelly	*Sesamum indicum*	Pedaliaceae
3	Groundnut	*Arachis hypogaea*	Legumes
4	Millets	*Panicum miliaceum L*	Poaceae
5	Sesame	*Sesamum indicum*	Pedaliaceae
6	Cotton	*Gossypium herbaceum*	Malvaceae

Major Horticulture Crops

Horticulture includes cultivation of fruits, vegetables, nuts, seeds, herbs, sprouts, mushrooms, algae, flowers, seaweeds and non-food crops such as grass and ornamental trees and plants. It also includes plant conservation, landscape restoration, landscape and garden design.

Horticulture

Major horticulture crops cultivated in Karur district are fruit crops like Banana & Gloriosa lily. Moringa and Banana cultivation and other prominent crops under cultivation are Tapioca, Gloriosa, Betelvine, Jasmine, Ixora, Coconut and other vegetable crops. Thanthoni, Aravakurichi, Kadavur and K. Paramathy were major vegetable growing region and Thogamalai, Krishnarayapuram, Kulithalai were major Banana growing region and Karur block was major Coconut growing region. Details of major field crops and horticulture cultivation in 1km radius is given in Table 3.32.

Table 3.32 Major Field Crops & Horticulture cultivation in 1km radius.

S. No	Common Name	Scientific Name	Family
Major Horticultural Crops			
1.	Tapioca	*Manihot esculenta*	Euphorbiaceae
2.	Gloriosa	*Gloriosa superba*	Sapotaceae
3.	Lemon	*Citrus limon*	Rutaceae
4.	Papaya	*Carica papaya*	Caricaceae
5.	banana	*Musa × paradisiaca*	Musaceae
Vegetables			
6.	Onion	*Allium cepa*	Amaryllidaceae
7.	Tapioca	*Manihot esculenta*	Spurges
8.	Brinjal	*Solanum melongena*	Nightshade
9.	Tomato	*Solanum lycopersicum*	Nightshade
10.	Moringa	*Moringa oleifera*	Moringaceae
11.	Tomato	*Solanum lycopersicum*	Nightshade

Results

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.

3.8 SOCIO ECONOMICS ENVIRONMENT

The major developmental activities in the mining and industrial sector are crucial for economic development and the creation of direct and indirect employment opportunities. These activities also fulfil society's basic and modern needs of the society, ultimately improving the quality of life through advancements in social, economic, health, education, and nutritional status within the project region, state, and country. In this manner all developmental projects have direct as well as indirect relationships with socioeconomic aspects, which also include public acceptability for developmental projects. Thus, the study of socio- economic environment component incorporating various facets related to prevailing social and cultural conditions and economic status of the mining (rough stone & gravel quarry) project region is an important part of the EIA study. The study of these parameters helps in identification, prediction and evaluation of the likely impacts on the socio-economics and parameters of human interest due to the project.

Objectives of the Study

The objectives of the socio- economic impact assessment are as follows:

a) To study the socio- economic status of the people living in the study area of the project.
b) To identify the basic needs of the nearby villages within the study area.
c) To assess the impact on socio-economic environment due to the project.
d) To provide the employment and improved living standards.
e) To analysis of impact of socio economic and Environmental Infrastructure facilities and road accessibility.

Methodology

The study employed cluster sampling to outline two zones around the proposed project site: Zone 1 (Core Zone, 0-1 km radius) and Zone 2 (Low Impact Zone, 1–5 km radius). The primary data collection was conducted through structured interviews, field observation, and focus group discussions with the local people of in Anjur Village, Pugalur Taluk of Karur District, Tamil Nadu. The secondary data were collected from the Census report 2011 and official records, covering demographics and basic services including information on population, number of households, literacy rates, sex ratios, worker details and the availability of basic services. This study covers the positive and negative impacts of the project's establishment, and provides recommendations for analysing and mitigating adverse effects. The study areas are illustrated in Figure 3.27.

Demographic Profile of Karur District

Karur District is centrally located in the state of Tamil Nadu. It lies between 10.45° and 11.45° North latitude and 77.45° and 78.07° East longitude, covering a total geographical area of

2,895.57 sq. km. The district is bounded by North: Namakkal, South: Dindigul District West: Erode District and East: Tiruchirappalli District. Karur is situated along National Highway 7 (NH7), which connects the northern and southern terminals of India. The district is geographically positioned at the centre of Tamil Nadu between Coimbatore (Manchester City) in the west, Thanjavur (Paddy Land) in the east, Salem (Steel City) in the north, and Madurai (Temple City) in the south. Its neighbouring districts are Namakkal, Dindigul, Erode, and Tiruchirappalli.

Population Characteristics

According to the Census of India 2011, the total population of Karur District was 1,064,493, comprising 528,184 males and 536,309 females. In the 2001 Census, the population was 935,686 (465,538 males and 470,148 females). This represents a population growth rate of 13.77% between 2001 and 2011, compared to a 9.54% increase recorded between 1991 and 2001. Karur District accounts for approximately 1.48% of Tamil Nadu's total population.

Literacy Rate

The average literacy rate of Karur District in 2011 was 75.60%, which is higher than the national average of 59.5%. The Male literacy is 84.54% and Female literacy is 66.86% respectively. In 2001, the literacy rates were 79.63% for males and 56.76% for females. The total number of literates in 2011 was 727,044 comprising 401,726 males and 325,318 females as compared to 566,728 literates in 2001.

Sex Ratio and Child Population

The sex ratio of Karur District in 2011 was 1,015 females per 1,000 males, slightly higher than 1,010 in 2001 and above the national average of 940. The child sex ratio (for children below 6 years) was 939 girls per 1,000 boys, compared to 930 in 2001. Children under six years of age constitute about 10% of the total population.

Workforce Composition

Karur District's economy is predominantly agrarian, with a large share of its population engaged in rural and agricultural activities. Male workers: 59% of total workforce, Rural workers: 72% of total workforce and Cultivators and agricultural labourers: 51% of total workforce. This composition highlights the district's dependence on agriculture and allied rural occupations for livelihood.

Karur District demonstrates robust demographic and socio-economic characteristics. The district records a high literacy rate, a favourable sex ratio, and balanced population growth between genders. Its economy is predominantly rural and agriculture-based, reflecting the importance of primary sector activities in local livelihoods. The district's strategic central location,

coupled with its fertile river systems and rising educational standards, provides a strong foundation for sustained socio-economic growth and development in the years to come.

Source: census2011.co.in/census/district/35-karur.html

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Profile of Study Area- Anjur Village

Anjur is a large village located in Aravakurichi Taluka of Karur district, Tamil Nadu with total 935 families residing. The Anjur village has population of 3144 of which 1553 are males while 1591 are females as per Population Census 2011. In Anjur village population of children with age 0-6 is 230 which makes up 7.32 % of total population of village. Average Sex Ratio of Anjur village is 1024 which is higher than Tamil Nadu state average of 996. Child Sex Ratio for the Anjur as per census is 1170, higher than Tamil Nadu average of 943. Anjur village has lower literacy rate compared to Tamil Nadu. In 2011, literacy rate of Anjur village was 66.33 % compared to 80.09 % of Tamil Nadu. In Anjur Male literacy stands at 78.85 % while female literacy rate was 53.99 %. As per constitution of India and Panchyati Raaj Act, Anjur village is administrated by Sarpanch (Head of Village) who is elected representative of village. Our website, don't have information about schools and hospital in Anjur village.

Table 3.33 Anjur Village Population Facts

Particulars	Total	Male	Female
Total No. of Houses	935	-	-
Population	3144	1553	1591
Child (0-6)	230	106	124
Schedule Caste	771	387	384
Schedule Tribe	0	0	0
Literacy	66.33%	78.85%	53.99%
Total Workers	2067	1120	947
Main Worker	2060	-	-
Marginal Worker	7	6	1

Source:https://www.census2011.co.in/data/village/638151-Anjur-tamil-nadu.html

Caste Factor

Schedule Caste (SC) constitutes 24.52 % of total population in Anjur village. The village Anjur currently doesn't have any Schedule Tribe (ST) population.

Work Profile

In Anjur village out of total population, 2067 were engaged in work activities. 99.66 % of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 0.34 % were involved in Marginal activity providing livelihood for less than 6 months. Of 2067 workers engaged in Main Work, 835 were cultivators (owner or co-owner) while 916 were Agricultural labourer.

The study area covers 10 Villages including Karvazhi, Ichipalayam, Monjanur (West), Murungiyampalayam, Mangalapatti, Vadivullamangalam, Vallipuram, Kollankoil (TP), Muthur (TP) and Sivagiri (TP). As Anjur is the village in which the proposed project site is located, the summary of population facts for the village is exclusively provided in Table 3.32 and for other 10 villages in Tables 3.33- 3.36.

The village presents a predominantly agrarian economy, with most residents engaged in cultivation and agricultural labour. Despite its lower literacy rate compared to the state average, the village shows a relatively strong level of male literacy. However, gender disparity in education and a low sex ratio remain key demographic challenges. The village's workforce structure underscores its dependence on agriculture and highlights the need for enhanced educational and employment opportunities to promote balanced rural development.

Demographic Structure of the Study Villages

The local people have been provided with either direct employments or indirect employment such as business, contract works and development work like roads, etc. and other welfare amenities such as medical facilities, conveyance, free education, drinking water supply etc. The number of villages and human settlements within a radius of 5km from the project site along with population, their education level etc. The demographic data presented in Table 3.34 provides a detailed overview of the population characteristics of nine villages in the study area. The parameters include the number of houses, gender-wise population, child population (0–6 years), Scheduled Caste (SC) and Scheduled Tribe (ST) composition, literacy rate, and total workers (by gender). This data helps to understand the population structure, social composition, literacy patterns, and workforce participation across the selected villages.

Nearby Company (Coir Pith & Fiber Unit)

1. High-Density Dust Screens (Engineering Control)

Action: Erect a 10-to-15-foot-high HDPE (High- Density Polyethylene) windbreak/ dust-barrier net along the lease boundary facing the coir factory.

Impact: This screen physically intercepts drifting stone dust particles at the source, preventing them from contaminating the open-air coir drying beds.

2. Mandatory Wet Drilling & Misting (Operational Control)

Action: Ban dry drilling completely. All wagon drills must use integrated water-injection kits (wet drilling), and active loading zones must feature automated water-mist cannons.

Impact: Suppresses fine particulate matter (PM10) and (PM2.5) instantly at the point of origin, stopping dust clouds from traveling toward the factory.

3. Haul Road & Truck Management (Transport Control)

Action: All aggregate-transporting trucks exiting the P1 lease must be completely covered with tarpaulin sheets. Unpaved internal roads must be sprayed with water tankers at least three times daily.

Impact: Eliminates secondary fugitive dust generated by heavy vehicle movement along the shared agricultural boundaries.

4. Thick Three-Tier Greenbelt (Biological Barrier)

Action: Plant a dense, multi- layered greenbelt within the 7.5-meter safety barrier zone facing the coir unit. Species: Use local, broad-leaved trees with high dust-retention capacities, such as Neem (*Azadirachta indica*), Punga (*Pongamia pinnata*), and Vagai (*Albizia lebbeck*).

Impact: Serves as a permanent vegetative canopy that filters fine particulate residue and dampens noise vibrations.

5. **Annual Medical Surveillance:** As an extension of the Corporate Environment Responsibility (CER) initiatives, the project proponent will sponsor annual occupational health screening

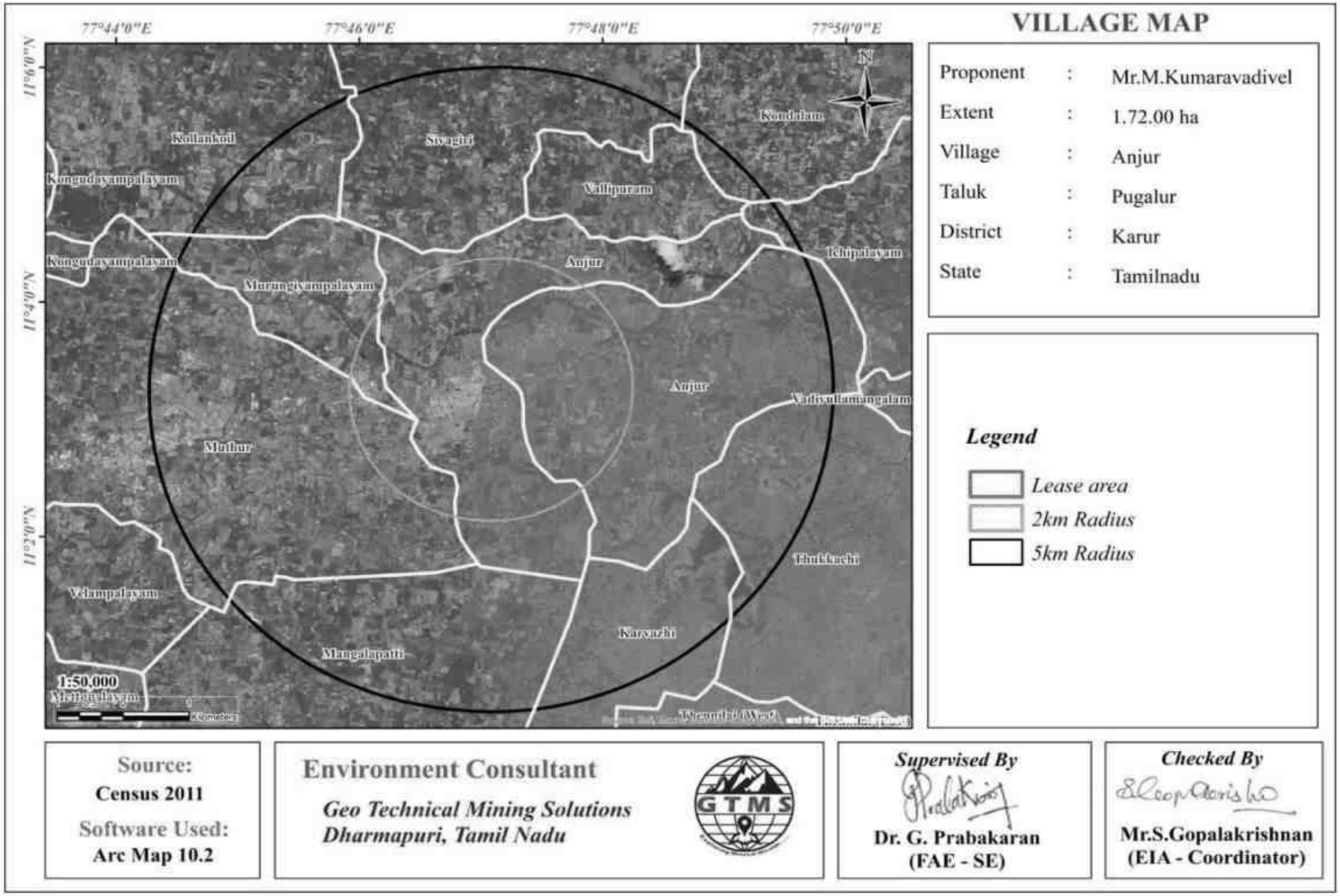


Figure 3.27 Details Village Boundaries within 5 km Radius of the Project Lease area

Table 3.34 Demographic Profile of the Study Area

Village	No of Households	Total Population Person	Total Population Male	Total Population Female	Literates Population Person	Literates Population Male	Literates Population Female	Illiterate Persons	Illiterate Male	Illiterate Female
Karvazhi	427	1319	676	643	823	508	315	496	168	328
Ichipalayam	1682	5615	2770	2845	3733	2114	1619	1882	656	1226
Monjanur (West)	451	1348	662	686	815	482	333	533	180	353
Mangalapatti	1058	3512	1734	1778	2177	1225	952	1335	509	826
Murungiyampalayam	267	826	412	414	545	308	237	281	104	177
Vadivullamangalam	218	663	325	338	397	232	165	266	93	173
Vallipuram	358	1141	563	578	744	421	323	397	142	255
Kollankoil (TP)	2833	9196	4617	4579	6098	3428	2670	3098	1189	1909
Muthur (TP)	3948	13212	6588	6624	8621	3789	4832	4591	2835	1756
Sivagiri (TP)	6796	23040	11641	11399	14535	8206	6329	8630	3413	5217

Source: *Census Reports, Tamil Nadu – 2011.*

Table 3.35 Details on Educational Facilities, Water and Drainage & Health Facilities

Village	Private Primary School (Numbers)	Govt. Vocational Training School/ ITI (Numbers)	Primary Health Centre (Numbers)	Tap Water Untreated	River/Canal	Is the Area Covered under Total Sanitation Campaign (TSC)?	Telephone (landlines)	Public Bus Service	Gravel (kutcha) Roads	Commercial Bank	Agricultural Credit Societies	Self - Help Group (SHG)	Nutritional Centres- Anganwadi Centre	Community Centre with/ without TV	Power Supply for Domestic Use
Karvazhi	0	2	1	1	2	2	1	1	1	1	1	1	1	1	1
Mangalapatti	0	2	0	1	2	1	1	1	1	2	1	1	1	1	1
Ichipalayam	0	2	1	1	2	2	1	1	1	1	2	1	1	1	1
Monjanur (West)	0	2	0	2	2	1	1	1	1	2	1	1	1	2	1
Murungiyampalayam	0	2	0	1	1	2	1	2	1	2	2	1	1	2	1
Vadivullamangalam	0	2	0	1	2	2	1	2	1	2	2	1	1	2	1
Vallipuram	0	2	0	1	2	1	1	2	2	2	2	1	1	1	1

Table 3.36 Workers' Profile of Study Area

Village	Total Worker Population Person	Total Worker Population Male	Total Worker Population Female	Main Working Population Person	Main Working Population Male	Main Working Population Female	Main Cultivator Population Person	Main Agricultural Labourers Population Person	Main Other Workers Population Person	Non-Working Population Person
Karvazhi	974	504	470	711	370	341	363	220	114	345
Mangalapatti	3334	1862	1472	3257	1841	1416	958	1788	477	2281
Ichipalayam	955	512	443	949	511	438	390	405	142	393
Monjanur (West)	2296	1237	1059	1605	921	684	470	721	376	1216
Murungiyampalayam	598	305	293	598	305	293	289	188	47	228
Vadivullamangalam	423	246	177	377	235	142	167	145	60	240
Vallipuram	758	396	362	744	390	354	338	357	43	383
Kollankoil (TP)	5430	3121	2309	1137	687	450	1137	1823	1899	3766
Muthur (TP)	1521	923	598	1303	806	206	489	346	450	1652
Sivagiri (TP)	11498	6793	4705	9219	5729	3490	273	4510	4085	11542

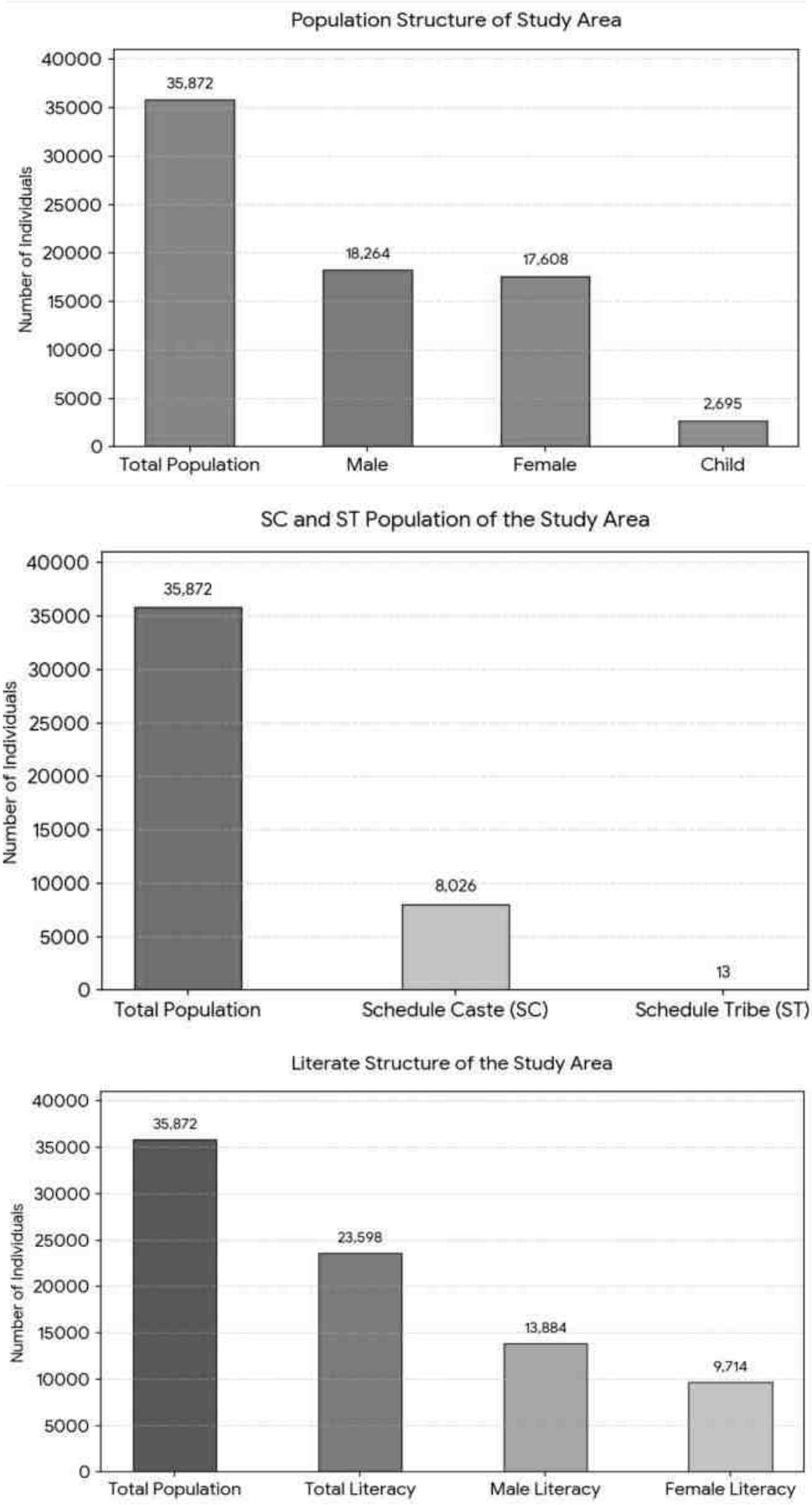


Figure 3.28 Details of the gender, social groups, and literacy rate in the study villages

Workforce Participation

Among the twelve study villages, Muthur has the largest workforce with 2,879 workers, reflecting its relatively large population and diverse economic activities. A high proportion of workers in Muthur are engaged in non-agricultural activities (2,465 other workers), indicating a shift toward semi-urbanized or diversified livelihoods. Similarly, Sivagiri (11,498 total workers) and Kollankoil (5,417 total workers) show substantial numbers of other workers, alongside cultivators and agricultural laborers, reflecting a mixed economic base. In contrast, smaller villages like Mangalapatti (3,334 workers), Monjanur (2,296 workers), and Karvazhi (2188 workers) have smaller, agriculture-dependent workforces. In these villages, a large proportion of workers are cultivators or agricultural laborers, highlighting the dominance of primary-sector employment and limited economic diversification. Medium-sized villages such as Muthur, Kollankoil, and Mangalapatti show a balanced workforce structure, with significant numbers of cultivators and agricultural laborers alongside other workers, indicating a combination of traditional farming and emerging non-agricultural occupations.

Analysis of main and marginal workers indicates that the majority of the workforce across all villages is engaged in main work, reflecting employment for six months or more. For example, Muthur has 2,879 main workers out of 2,465 total workers, Murungiyampalayam has 849 main workers out of 811 and Vadivullamangalam has 710 main workers out of 667. Even smaller villages like Muthur and Anjur maintain a majority of main workers. Marginal workers, who work less than six months, are relatively few across all villages, indicating stability in employment.

The non- working population is substantial in most villages, emphasizing a high dependency ratio. Muthur has 2,879 non-workers, Vallipuram has 368 and Vadivullamangalam has 710, reflecting the presence of children, elderly, and homemakers who rely on the working population. Smaller villages like Murungiyampalayam (849 non-workers) and Mangalapatti (111 non-workers) also have considerable non-working populations relative to their size, highlighting limited employment opportunities outside agriculture

The demographic profile reveals heterogeneity in population size, literacy, and work participation, influencing economic activity and social conditions. Larger settlements demonstrate more developed socio-economic characteristics, whereas smaller villages are primarily agrarian. Figure 3.29 further visualizes population by gender, social composition, and literacy rate across the study villages, providing insights into their livelihood patterns and quality of life.

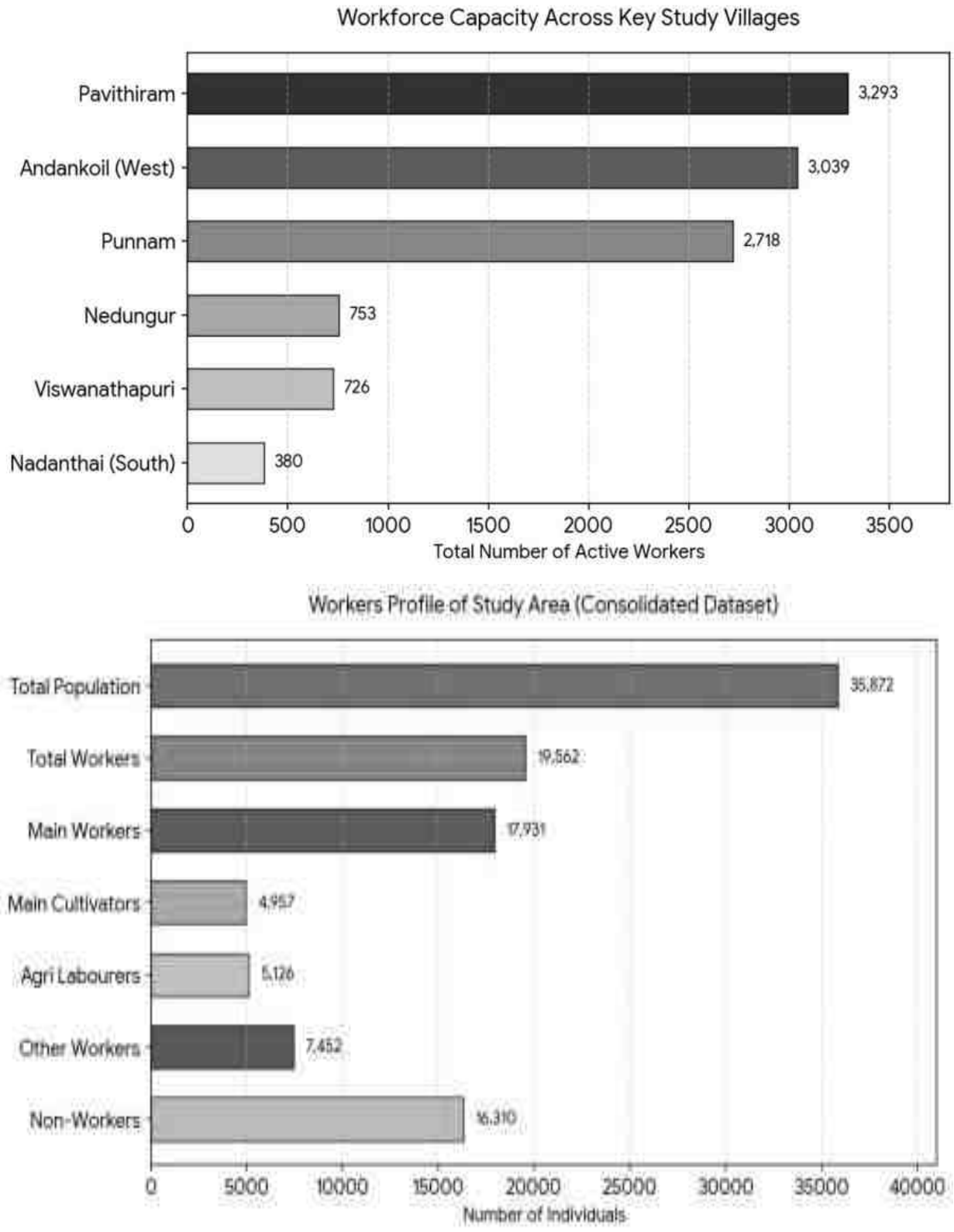


Figure 3.29 Details of Workforce in the Study Villages

Benifites of the Project

As per SEAC recommendation the project proponent should spend minimum of 5.0 lakhs to the nearby school from the proposed project site as part of CER cost. Also, the village panchayat will get direct benefit from the government through District mineral Resource fund

(DMF) for infrastructure development activities. Also, the project will provide employment opportunities directly and indirectly to the villagers as well as to people in the surrounding areas.

- Awareness and Opinion of the People About the Project, to assess public awareness and opinions regarding the proposed project, the following key observations were recorded:
- During the survey, it was observed that only residents of nearby villages were aware of the proposed project, while those in more distant villages were largely unaware.
- People in the region expressed expectations that the project would generate employment opportunities and lead to improvements in education, transportation, and sanitation facilities provided by the project authorities.

Recommendation and Suggestion

- Awareness program should be conducted to make the population aware of education and to get a better livelihood.
- Vocational training programme should be organized to make the people self - employed, particularly for women and unemployed youth.
- On the basis of qualification and skills local community may be preferred. Long term and short-term employments should be generated.
- Health care centre and ambulance facility should be provided to the population to get easy access to medical facilities. Apart from that, as these areas are prone to various diseases a hospital with modern facilities should be opened on a priority basis in a central place to provide better health facilities to the villagers around the project.
- While developing an Action Plan, it is very important to identify the population who falls under the marginalized and vulnerable groups. So that special attention can be given to these groups with special provisions while making action plans.

Summary & Conclusion

The socio-economic study in the study area gives a clear picture of its population, average household size, literacy rate and sex ratio etc. It is also found that a part of population is suffering from a 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 and in turn the social standards will improve.

Table 3.37 Enumeration of Structures from 0m- 500m Radius

Distance Range	Number of & Type Structures	Distance in m	Direction
0m - 300m	Crusher - 1	290	NW
	Shed – 2 Farm House - 2	270, 280 230, 260	East
	Coir Factory -1 Brick Kiln – 1 House- 3	180 230 289	East, SE
300m- 400m	Cow Farm House- 1 Shed- 2	305 334 364	East, NE
400m- 500m	Textile company- 1 Pillapalayam Village	430 440	East

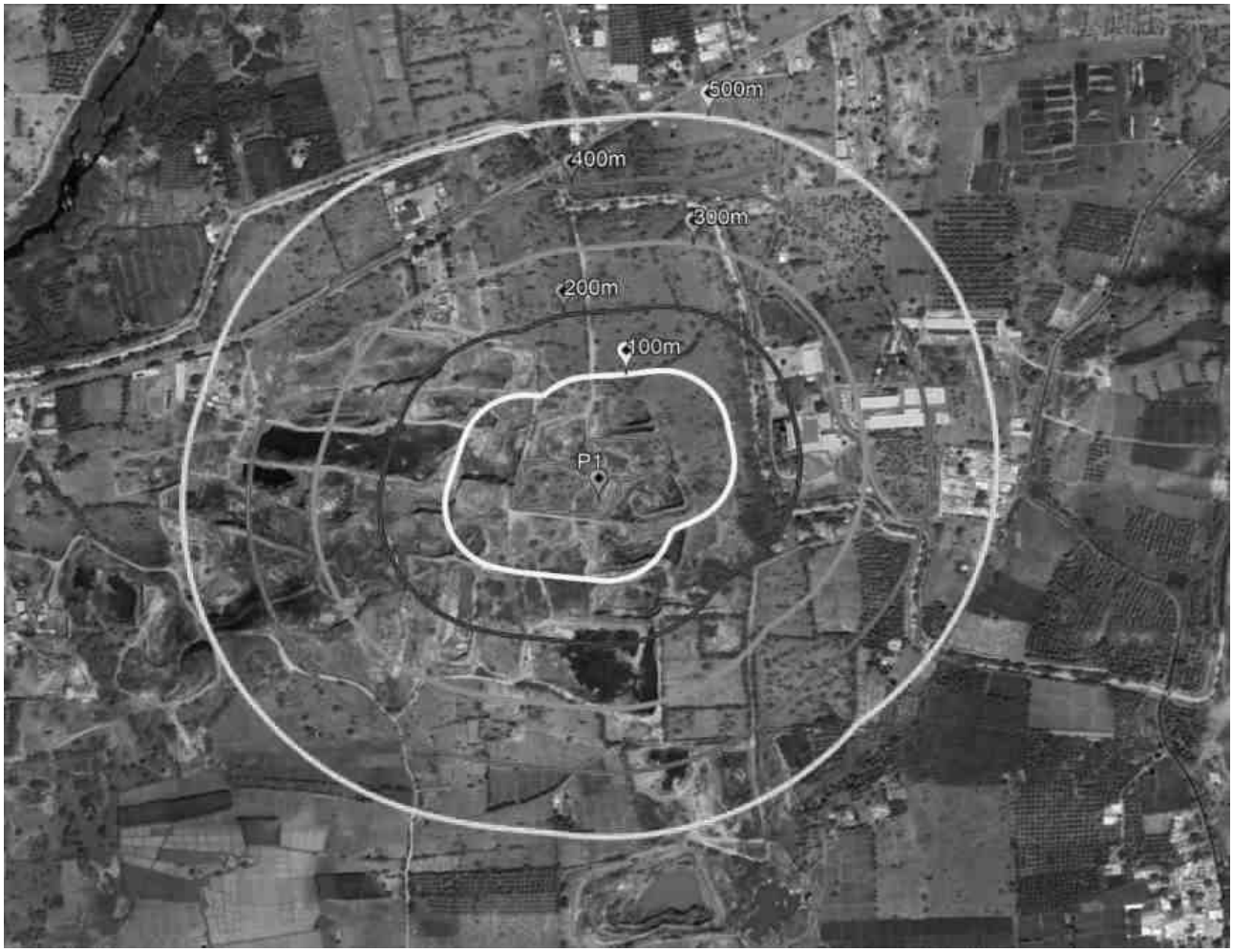


Figure 3.30 Google imagery on 100m to 500m Radius Map

3.9 TRAFFIC DENSITY

The traffic survey conducted based on the transportation route of material, the Rough Stone and gravel is proposed to be transported mainly through Village Road and Muthur – Kodumudi (SH-189) as shown in Table 3.38-3.39 and in Figure 3.31. Traffic density measurements were made continuously for 24 hours by visual observation and counting of vehicles under three categories, viz., Heavy motor vehicles, light motor vehicles and two/ three wheelers. As traffic densities on the roads are high, two skilled persons were deployed simultaneously at each station. During each shift one person on either direction for counting the traffic. At the end of each hour, fresh counting and recording was undertaken. Direction for counting the traffic. At the end of each hour, fresh counting and recording was undertaken.

Table 3.38 Traffic Survey Locations

Station Code	Road Name	Distance and Direction	Type of Road
TS1	Village Road	0.20 Km- W	Village Road
TS2	SH-189	0.57 Km- N	Muthur- Kodumudi (SH- 189)

Source: On-site monitoring by GTMS FAE & TM

Table 3.39 Existing Traffic Volume

Station code	HMV		LMV		2/3 Wheelers		Total PCU
	No	PCU	No	PCU	No	PCU	
TS1	45	135	54	54	89	45	234
TS2	104	285	60	60	96	48	393

Source: On-site monitoring by GTMS FAE & TM

* PCU conversion factor: HMV (Trucks and Bus) = 3, LMV (Car, Jeep and Auto) = 1 and 2/3 Wheelers = 0.5

Table 3.40 Rough Stone and Gravel Transportation Requirement

Transportation of Rough Stone and Gravel Per day		
Capacity of trucks	No. of Trips per day	Volume in PCU
15 tonnes	11	48

Source: Approved Mining Plan

Table 3.41 Summary of Traffic Volume

Route	Existing traffic volume in PCU	Incremental traffic due to the project	Total traffic volume	Hourly Capacity in PCU as per IRC – 1960guidelines
Village Road	234	222	456	1200
Kangayam to Kodumudi (SH-189)	393	222	415	1200

Source: On-site monitoring analysis summary by GTMS FAE & TM

o Due to these projects the existing traffic volume will not exceed the traffic limit. As per the IRC 1960 this existing village road can handle 1,200PCU in hour and Major district road can handle 1500PCU in hour. Hence there will not be any conjunction due to this proposed transportation.

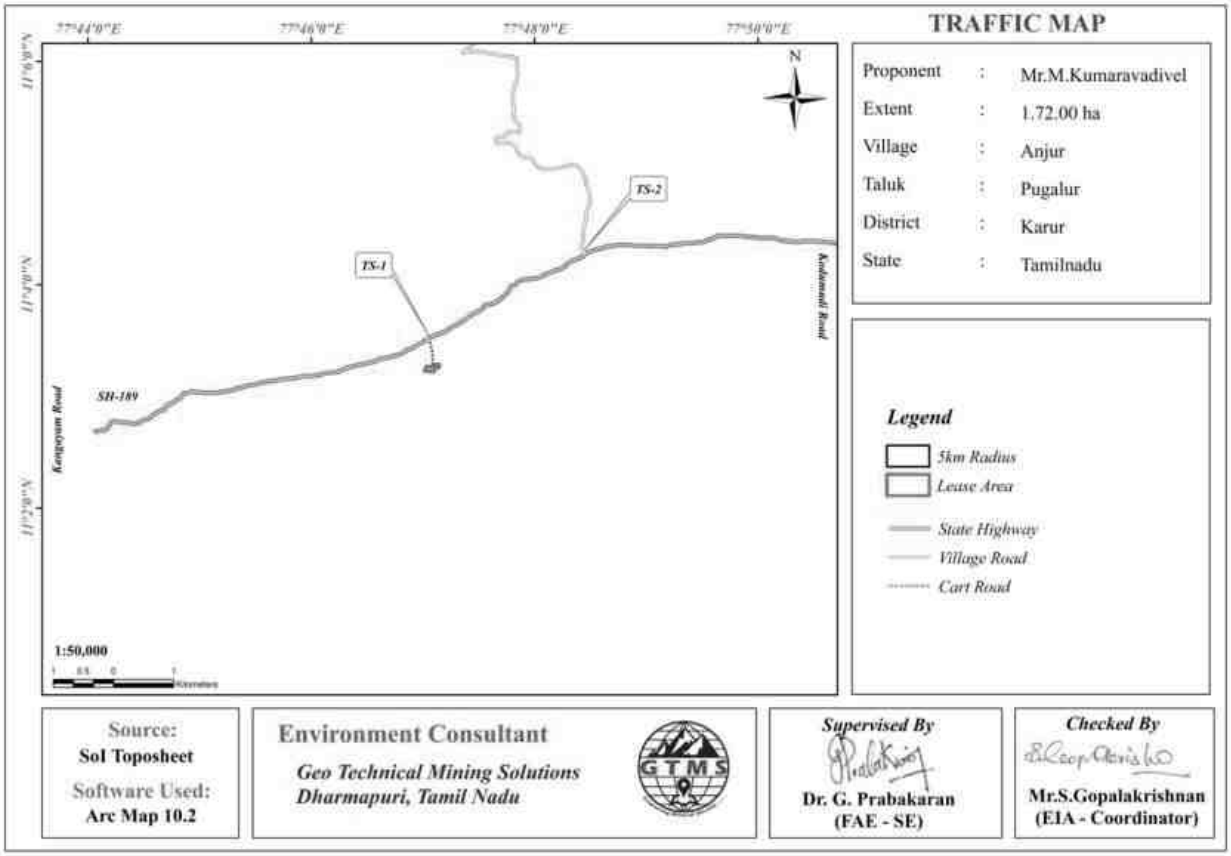


Figure 3.31 Traffic Density Maps

3.10 SITE SPECIFIC FEATURES

There are no Wildlife Sanctuaries and National Park within 10km radius. Therefore, there will be no need of acquisition/ diversion of forest land. The details related to the environmentally sensitive areas around the proposed mine lease area i.e., 10km radius and the nearby water bodies are given in the Table 3.42.

Table 3.42 Details of Environmentally Sensitive Ecological Features in the Study Area

S. No.	Sensitive Ecological Features	Name	Areal Distance in km
1	National Park / Wild life Sanctuaries	Vellode Bird Sanctuary	25.7km-NW
		None	Nil within 10 km radius
2	Reserve Forest & River	Arachalur R.F	15.3km- NW
		Thathampalayam R.F	26.34km-SE
3	Water Bodies	Noyyal River	0.96km- N
		Karvazhi Noyyal Dam	2.84km- SE
		Kaveri River	11.39km- E
		Amaravathi River	18.44km- S
4	Tiger Reserve/ Elephant Reserve/ Biosphere Reserve	None	Nil within 10 km radius
5	Densely 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	Centrally Protected Archaeological Sites	None	Nil within 10 km radius
9	Industries/ Thermal Power Plants	None	Nil within 10 km radius
Schools & Colleges			
10	Schools	1. PUES- Pillapalayam-1.06km-SE 2. P.U.P.School - Porasapalayam -1.5km-NW 3. PU.MID School-Pandilingapuram-1.81km-NE 4. PUPS Karattupalayam-2.04km-SW	
11	Colleges	1. Arulmurugan Polytechnic Collage Thennilai – 12.02km- SE	
12	Hospital	1. Government Primary Health Center -Muthur- 4.63km-W 2. Goverment Primary health centre-Karazhi – 5.0km- S	
12	Defense Installation	None	Nil within 10km radius

Source: Survey of India Toposheet

Figure 3.32 Field Study Photographs

CHAPTER IV

ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.0 GENERAL

The identification of potential environmental impacts is indeed the crucial first step in the Environmental Impact Assessment (EIA) process utilizing various techniques such as checklists, matrices and network diagrams to understand a projects effects. The matrix method used in this study provides a structured way to identify and assess the impacts ensuring the project can be implemented in an eco-friendly manner. This chapter discusses the anticipated impacts on land, soil, water, air, noise, biological and socioeconomic environments.

The proposed stone mining project involves blasting, drilling and screening operations which contribute to environmental impacts is given in Table 4.1. The project is designed to minimize these impacts by implementing mitigation measures and ensuring a marginal environmental footprint with a detailed analysis to follow in subsequent tables.

Table 4.1 Impact identification matrix.

Activities	Environmental Attributes								
	Land	**Soil**	**Water**	**Air**	**Noise**	**Ecology**	**Socio Economics**	**Aesthetics**	**OHS**
Site clearing & Site services	√	√		√		√			
Development of Greenbelt						√		√	
Operation Phase (Drilling, Blasting	√	√	√	√	√	√			√
Loading and unloading, Transportation)	√	√	√	√	√	√			√
	√	√	√	√	√	√			√
Employment and the material usage							√		
Mine closure (Removal of machineries, structures and Danger due to inadvertent entry)				√	√		√		√

√ Indicates Impact

4.1 LAND ENVIRONMENT

Anticipated Impacts

- Converting barren land of 1.72.0hectares to rough stone and gravel mining creates a significant and usually irreversible change in land use and land cover involving the

physical alteration of the land's surface, potential deforestation, loss of biodiversity, altered topography from pits and spoil dumps.

- Heavy vehicle movement causes significant problems to nearby agriculture and human habitation. These pollutants can degrade soil quality and introduce heavy metals into the environment.
- During transportation the tippers damage the bituminous roads. The primary damage is caused by the fourth power law (*The law posits that if you double an axle's load, the damage caused to the pavement increases by a factor of 2x4 or 16 times*) where pavement damage increases with the fourth power of the axle load. The immense weight of heavy payloads on an axle exerts a concentrated and repetitive stress on the road surface leading to permanent strain, premature failure and a cumulative damage.
- Rain drops hitting stone crushing waste can break apart the particles and flowing water detaches them from the surface transports and redeposits these particles especially from sloped surfaces. This a form of splash erosion followed by sheet erosion which can lead to environmental issues.

Mitigation measures

- After mining there is a huge void of 1.23.5hectares upto a depth of 30m is useful for rain water storage structure has an advantage for local farmers. The artificial pond boundary shall be fences to avoid any mishaps.
- Union ministry of road transport and highways on July 16th 2018 increased the maximum cap of axle load limit by 20 to 25 percent cross various categories to keep the limit “at par with international standards”.

Maximum Safe Axle Weight		
Sl. No	**Axle Tupe**	**Maximum safe Axle Weight**
1	Single Axle	-
1.1	Single Axle with single tyre	3.0 tonnes
1.2	Single Axle with two tyres	7.5 tonnes
1.3	Single Axle with four tyres	11.5 tonnes*
2.	**Tandem Axles (Two axles) (where the distance between two axles is less than 1.8 Mtr.)**	-
2.1	Tandem axles for rigid vehiles, trailers and semi-trailers	21 tonnes*
2.2	Tandem axles for puller tractors for hydraulic and pneumatic trailers	28.5tonnes

3.	**Tri-axles (Three axles) (where the distance between outer axles is less than 3 Mtr.)**	-
3.1	Tri-axles for rigid vehicles, trailers and semi- trailers	27 tonnes*
4	Axle Row (two axles with four tyres each) in Modular Hydraulic trailers (9 tonnes load shall be permissible for single axles)	18 tonnes
***Note:** If the vehicle is fitted with pneumatic suspension, I tonne extra Load is permitted for each axle.		

MoRTH knows that previously built Indian roads are made keeping standard axle loads. The new national and state highways along with expressways can be built by using new norms but for the existing roads the life will be reduced on average by one year.

- 6- wheel tipper generally has a maximum legal speed limit which can be up to 60km/h and speeds should be reduced for loaded conditions. The mine management should take care of the speed of vehicles i.e up to 40km/h in village roads constructed under Pradhan Mantri Gram Sadak Yojana and other district roads developed by Highways and Minor Ports Department, Government of Tamil Nadu as each time a truck passes the concentrated stress causes a small amount of permanent strain on the pavement. Over time these small strains accumulate and lead to significant fatigue and eventual failure.
- 6- Wheel tippers of not more than 9tons payload capacity covered with tarpaulin to stop the spillage and dust should use.
- Protective measures such as establish plants like grasses, cover crops and trees to form a dense layer over the dump absorbing raindrop energy and holding particles in place.

4.2 SOIL ENVIRONMENT

Anticipated Impacts

- The fertility status of the soil near by the lease area may affect due to extra dust deposition on the soil. Dust deposition from a lease area can harm soil fertility by physically blocking soil pores, reducing aeration and water infiltration, and potentially altering the soil's chemical properties. This damage to the topsoil negatively impacts plant growth by interfering with photosynthesis and nutrient uptake ultimately decreasing crop production.
- Topsoil will be scraped from the area of 1.72.0hectares in the project site will store in safety area left for 7.5meters in the western side as shown in mining plan.

Mitigation measures

- When stock piling of top soil is done the mound should not be higher than 1.2m and 3.0m.

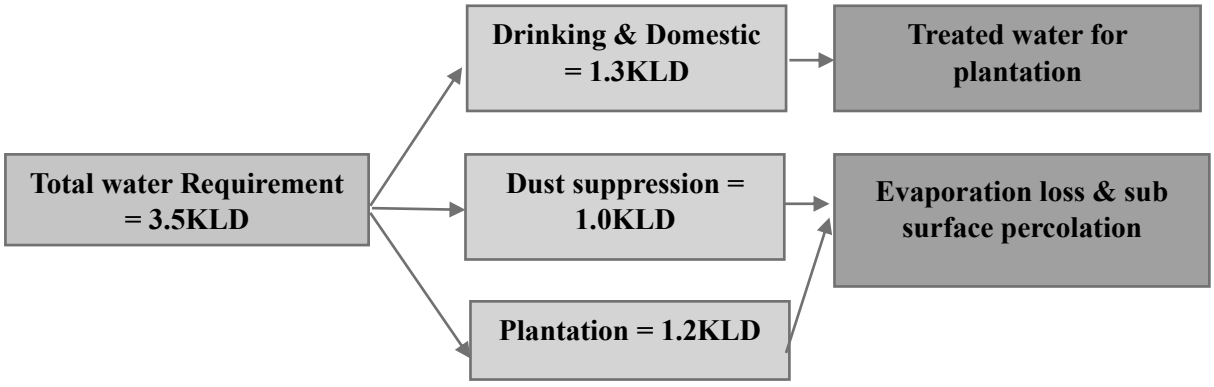
- To minimize surface runoff and erosion the topography of a graded surface should be designed to create terraces or benches that follow land contours which intercept sheet flow. Additionally, a bulldozer's tracks can be used to create a fine- scale roughened surface perpendicular to the slope and stockpiles should be constructed with a rough surface to improve drainage, reduce erosion and encourage revegetation.
- Efforts will be made to minimize the storage time to prevent nutrient loss.
- To protect the quality of stockpiled topsoil immediate re-vegetation is crucial. Temporary seeding should be done within 30 days of stockpile formation to control erosion, prevent weed growth and maintain healthy soil microbes.
- If the stockpile will not be reused within 12 months it must be stabilized with permanent vegetation to ensure long-term erosion and weed control.
- The stored topsoil will be utilized for plantations in later phases during the progressive and final closure of the mine.

4.3 WATER ENVIRONMENT

Anticipated Impacts

- 3.5KLD (3500litters per day) water requirement for drinking, domestic, dust suppression and plantation.

Water Balance Chart of the Mine



- The domestic effluents being generated during mine operation.
- Major impact of opencast mining on groundwater regime is quality deterioration. The proposed mining activities shall be carried out upto a depth of 30m from average ground level. The specific water table depth in the core and buffer zone is between 70m and 75 meters below ground level.
- The volume of rain water entering to the mine and accumulating in the quarry has been estimated on the basis of direct catchment area, maximum daily precipitation and the run-off coefficient. $(\boldsymbol{Q = A\ x\ Hx}$ đ $)\boldsymbol{cubic\ meters/day}$.

Where A- catchment area in m^2

H- Max daily precipitation in mm

đ- Run-off Co-efficient.

The run off co-efficient for mined out area is 0.01. The all-time record for maximum daily precipitation in Karur district was 359.1mm on September 30, 2024 as reported by Indian Meteorological Department (IMD). More recent rainfall records are 158.000mm on May 18, 2025 and 26.80 mm on May 19, 2025. The maximum broken area is 1.23.5hectares in the sixth year and estimation for make of water done on the quarry parameters for sixth year onwards.

Q = 1.72.0hecatres x 10000 x 0.380 x 0.80m^3.

Q = 5228m^3. Q = 522m^3.

Total accumulated water in the pit is **5228m^3**.

Additionally, 20% of water from seepage is **104m^3**.

Total water estimated for pumping requirement = **5228m^3.**

If we take the all-time record then the total water estimated for pumping = **5228m^3.**

To manage rain water runoff into quarry a 5HP diesel operated pump will be placed at the site during the monsoon.

Mitigation Measures

- The hard rock itself has very few interconnected pore spaces, limiting the amount of water it can store or transmit. Groundwater flow and storage occur primarily in secondary openings such as joints, cracks and fissures. The thickness of the weathered layer, where more significant porosity can develop, is typically limited to 1-3meters, particularly in low- lying topographic areas. The groundwater in these shallow zones is under unconfined (or water table) conditions, meaning it is directly connected to the surface and not confined by impermeable layers.
- The storm water discharge coming out of quarries and dump through a network of garland drains is expected to contain solid particles. These solid particles shall be removed by settling in the settling pond before being used for dust suppression and plantation. Hence, there shall be no change in drainage system due to this mining project in buffer zone.
- Domestic sewage from site office will be discharged in MAK Anaerobic bacteria digestion bio-septic tank. The treated water will be utilized for watering and maintaining the green belt.

- ❖ Groundwater development efforts would need to focus on the weathered and fractured zones near the surface in the buffer zone.
- ❖ Periodic (every 6 month once) analysis of ground water level and quality from the open well DW7 and bore well BW3 as shown in Figure 3.8 & 3.10 to find the change due to quarrying.
- ❖ The average annual rainfall of the project area is 850mm and the runoff coefficient factors have been taken as per guidelines of Manual on Norms and Standards for Environmental Clearances by MoEF& CC, Govt. of India.

The total annual runoff can be calculated as:

Runoff = Rainfall × Catchment Area × Runoff Coefficient

Annual Rainfall = 992mm

Total Project Area = 36000sq.m

Coefficient of Run off for Rooftop (Inclined) = 0.90

Coefficient of Run off for Rooftop (Flat) = 0.80

Coefficient of Run off for Road/Paved Area = 0.70

Coefficient of Run off for Open Area = 0.25

Coefficient of Run off for Greenbelt Area = 0.15 Rain water can effectively be collected from Maximum size of void in 10^{th} year of mining = 26245sq. m.

Road & Infrastructure = 700sq.m

Runoff from Void pit area = 26245sq.m x 0.805 m x 0.25 = 5282m^3

Runoff from Road & Infrastructure = 0.805m x 700sq. m x 0.70 = 394.45m^3

Total Runoff from Project Area = 6376.45m^3

The annual runoff generated in the project site is 6376.45m^3. By considering the loss of 20% due to evaporation, spillage and wastage the effective runoff that can be harvested inside the project area is **1275m^3.**

Daily water requirement (except drinking purpose) is 8m^3. So, with 300 working days the water requirement will be = 8m^3 X 300 = **2400m^3**

The surface runoff being generated from the project area will be channelized to rain water harvesting pond of 2m x 2m x 2m through network of drainage system 1m x 1m. The bottom of the ponds is naked and natural seepage from the bottom will recharge the ground water regime. Hence the storage pond will act as recharging structure. Even though rain water will be sufficient to fulfil the daily requirement of water but in the initial years of mining when

the mining pit is smaller in size or in the year with deficit rainfall surface water will be collected with due permission.

4.4 AIR ENVIRONMENT

Anticipated Impact

The main cause of air pollution in open-cast mining is the generation of airborne particulate matter (dust) from various mining activities including drilling, blasting, excavation, loading/ unloading, vehicle movement on haul roads and the dumps. These activities release large quantities of fugitive dust which are then carried by the wind and can contribute to respiratory health problems for nearby communities and miners. The source of pollution is given in table below.

Activities	Air pollutants
Drilling	PM_{10}, $PM_{2.5}$
Blasting	PM_{10}, $PM_{2.5}$, SOx, NOx
Loading & unloading	PM_{10}, $PM_{2.5}$
Haul road	PM_{10}, $PM_{2.5}$
Transportation	PM_{10}, $PM_{2.5}$, SOx, NOx, CO
Waste/Top soil handling	PM_{10}, $PM_{2.5}$

The air dispersion modelling study was conducted using the AERMOD Cloud remote version for assessment of incremental Ground level concentration (GLC) for the proposed production. Area source model taken into consideration taking into consideration of the conceptual quarry area and dump area. Further line source model was taken into consideration for transportation of material through haul road.

Model Setup is given in Table below

Parameter	Details
Model Name	Aermod
Model Type	Steady state Gaussian plume air dispersion model
Topography	Elevated Topography
Average Time	24 hours
Source Type	Area source
Boundary limit	5km X 5km
Surface Meteorological Data	Site specific data processed by AERMET
Receptor Height	0
Anemometer height	10m

The air pollution modelling correctly focuses on particulate matter as the key pollutant for a mining project given that dust from mining operations and transportation is the primary source of air pollution in such industries rather than SO_2 or NOx which are typically associated with

vehicular emissions. The incremental Ground Level Concentrations (GLCs) predicted are specifically for particulate matter reflecting the anticipated contribution of the proposed mining project to local air quality.

Emission Estimation

Emission resulting from different mining activities is estimated using relevant empirical formula developed by Chaulya et al., 2001 and Jyothi Prabha, Gurdeep Singh and I.N. Sinha, 2003 "Emission Factor Equations for Haul roads: The Indian Perspective", Indian Journal of Air Pollution Control Vol. VI No. I March pp 37- 43. The equations used for fugitive emission estimation have been given in Table 4.2.

Table 4.2 Empirical Formula for Emission Rate from Overall Mine

	Pollutant	Source Type	Empirical Equation	Parameters
Overall Mine	SPM	Area	$E = [u0.4a0.2\{9.7+ 0.01p+ b/(4+0.3b)\}]$	u = Wind speed(m/s). p = Mineral production (Mt/yr). b = Overburden handling (Mm^3/yr). a = Lease area(km^2). E = Emission rate(g/s).
Transportation through roads	Fugitive dust	line	$E = [\{(100-m)/m\}^{0.8} \{s/ (100-s)\}^{0.1} u^{0.3} \{2663 + 0.1 (v+fc)\} 10^{-6}]$	E = Emission Rate (g/sec/m) m = Moisture Content of the road = 10% s = Silt Content of the Road = 10% u = Wind Speed v = Average Vehicle Speed f = frequency of Vehicle movement in number per hour c = Capacity of the dumper in tons = 12 ton

The emission rate thus calculated using the empirical formula is used as one of the inputs in the AERMOD modelling. It is important to note that PM_{10} emission rate is derived from the SPM estimation in the background that PM_{10} constitutes 52% of SPM emission. The $PM_{2.5}$, PM_{10} emission results have been given in Table 4.3.

Table 4.3 Estimated Emission Rate

Activity	Pollutant	Calculated Value (g/s)	Lease Area in m^2	Calculated Value ($g/s/m^2$)
Overall Mine	$PM_{2.5}$	0.5068075	17200	5.89311E-05
Overall Mine	PM_{10}	1.013614914	17200	2.94655E-05

4.4.1 Modelling of Incremental Concentration

The post project resultant concentrations of PM_{10}, $PM_{2.5}$ is given in Tables 4.4 - 4.5.

Table 4.4 Incremental & Resultant GLC of $PM_{2.5}$

Station ID	Distance to core area (km)	PM 2.5 concentrations(µg/m³)				Comparison against air quality standard (60 µg/m3)	Magnitude of change (%)	Limit
		Direction	Baseline	Predicted	Total			
AAQ1	--	--	22.5	10	32.5	Below standard	44.4	60
AAQ2	0.62	N	18.4	3	21.4		16.3	60
AAQ3	1.81	W	18.8	0.5	19.3		2.7	60
AAQ4	2.94	S	17.0	0	17		0.0	60
AAQ5	1.87	E	20.0	1	21		5.0	60

Table 4.5 Incremental & Resultant GLC of PM_{10}

Station ID	Distance to core area (km)	PM_{10} concentrations(µg/m³)				Comparison against air quality standard (100 µg/m³)	Magnitude of change (%)	Limit
		Direction	Baseline	Predicted	Total			
AAQ1	--	--	51.2	19	70.2	Below standard	37.1	100
AAQ2	0.62	N	46.0	3	49		6.5	100
AAQ3	1.81	W	47.0	0.8	47.8		1.7	100
AAQ4	2.94	S	37.0	0	37		0.0	100
AAQ5	1.87	E	40.0	3	43		7.5	100

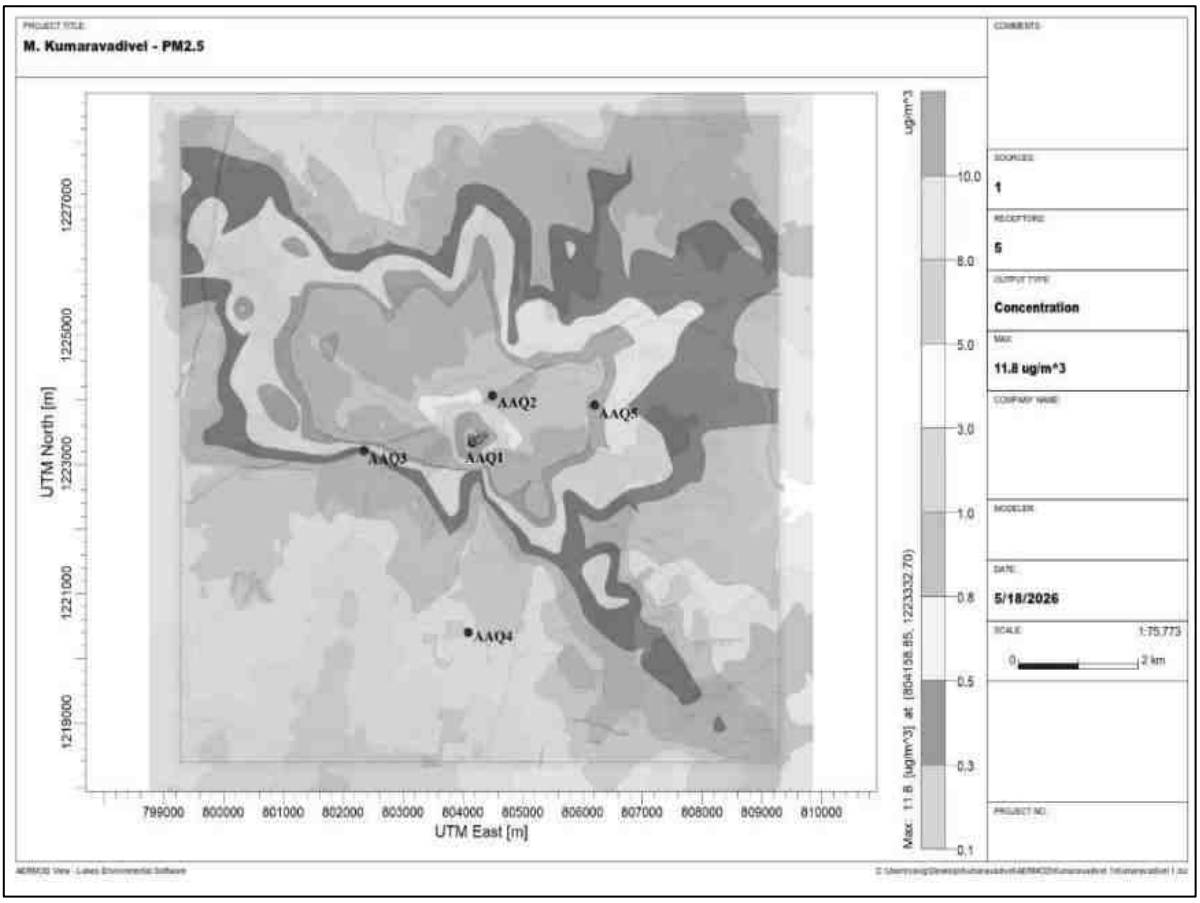


Figure 4.1 Predicted Incremental Concentration of $PM_{2.5}$

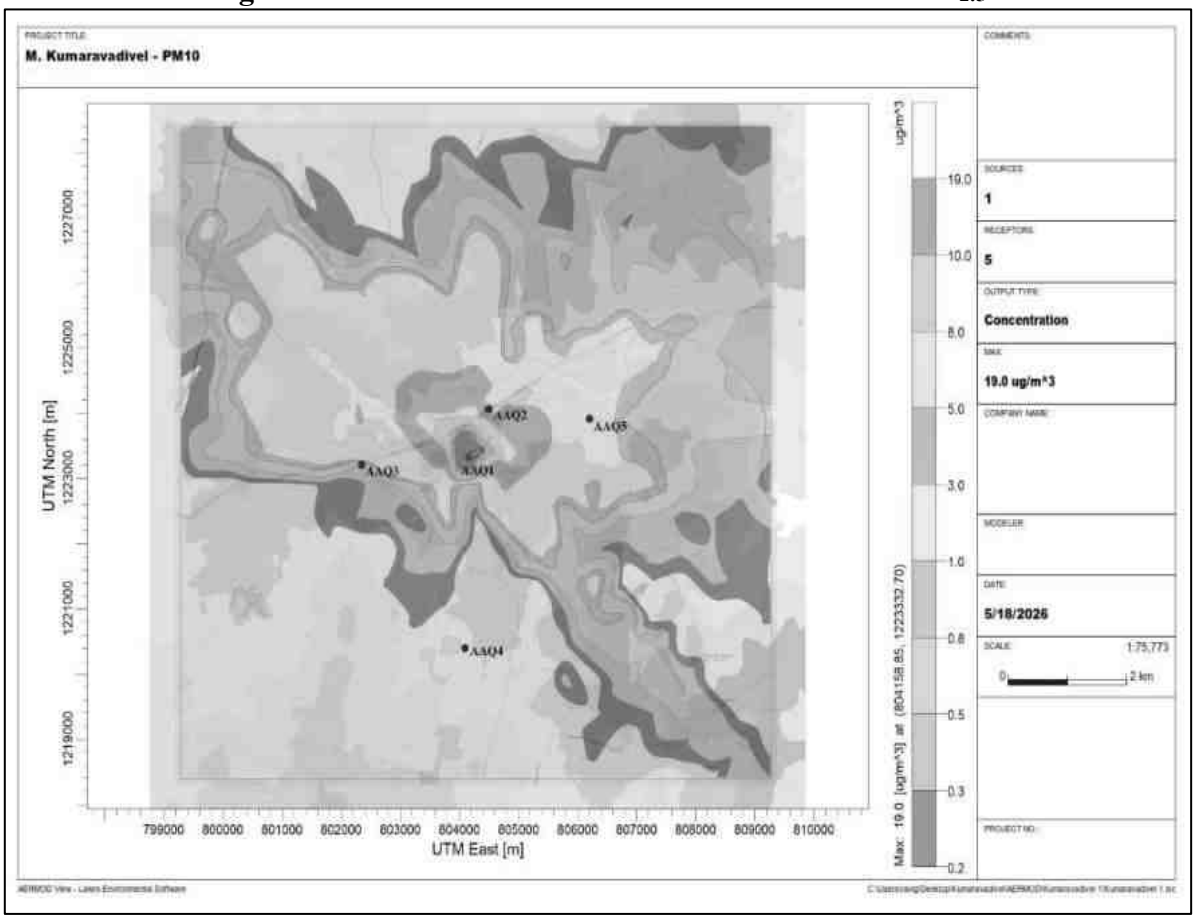
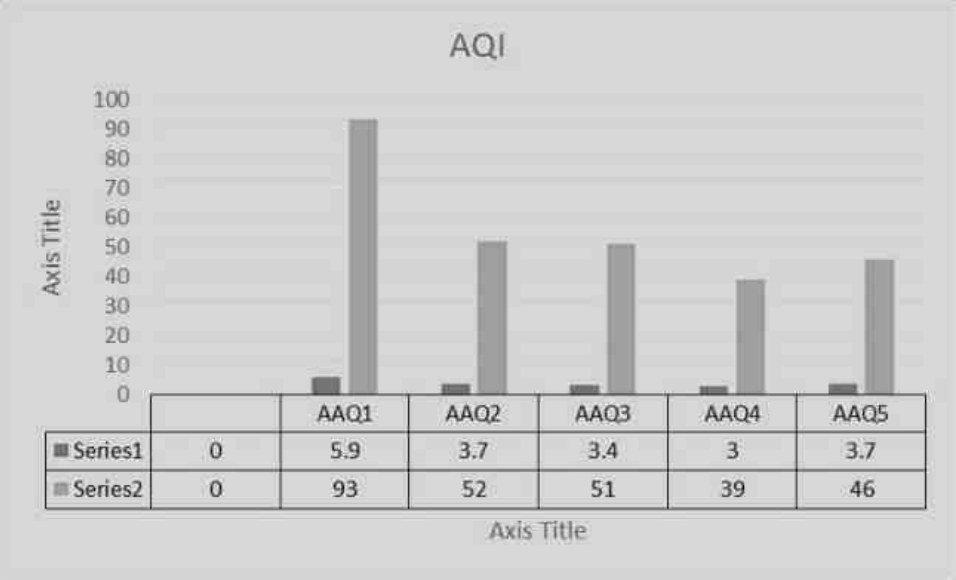


Figure 4.2 Predicted Incremental Concentration of PM_{10}

The Air Quality index for the baseline and predicted values of $PM_{2.5}$ and PM_{10} are given in table below.

Station ID	Distance to core area (km)	Direction	$PM_{2.5}$ (µg/m^3)		AQI for $PM_{2.5}$	PM_{10} (µg/m^3)		AQI for PM_{10}
			Baseline Conc.	Total (Baseline + Predicted GLC)		Baseline Conc.	Total (Baseline + Predicted GLC)	
AAQ1	--	--	22.5	32.5	5.9	51.2	70.2	93
AAQ2	0.62	N	18.4	21.4	3.7	46.0	49	52
AAQ3	1.81	W	18.8	19.3	3.4	47.0	47.8	51
AAQ4	2.94	S	17.0	17	3	37.0	37	39
AAQ5	1.87	E	20.0	21	3.7	40.0	43	46

https://www.airnow.gov/aqi/aqi-calculator-concentration/



In the present study American Meteorological Society and the United States Environmental Protection Agency Dispersion Model (AERMOD) air quality model was run for premonsoon season under maximum atmospheric temperature conditions. The AERMOD has been run for PM_{10} and $PM_{2.5}$ distribution with 24-Hr maximum concentration and concentration contours were obtained as given in Figure 4.1 and 4.2. From these Isopleths plots it is observed that the highest pollutants concentrations predicted by AERMOD was near the major source in the core area and a maximum of 59.83µg/m^3 of PM10 and 24.96µg/m^3 of $PM_{2.5}$ were found to be below the prescribed NAAQS near the source. The AQI vales of PM_{10} shows moderate and $PM_{2.5}$ shows good in all the locations. By adopting suitable mitigation measures the pollutant levels in the atmosphere can be controlled further.

Mitigation Measures

There will be transportation of rough stone from the area to the crusher which is located at a distance of about 85m within the cluster boundary. Considering average annual production of 367164 tons per annum i.e. 870 tons per day of stone there will be movement of around 82trucks per day for transportation of the stone. This will create additional traffic load to the road and also additional emission due to vehicular movement. The mitigation measures to minimize the air pollution are given in Table 4.6 below.

Table 4.6 Proposed Mitigation Measures for Air pollution

Potential Sources of air pollution	Magnitude of air pollution	Proposed Pollution Control Measure
Excavation	Emission of Particulate Matter	Provide Personal Protective Equipment's for workers
Drilling and Blasting	Emission of Particulate Matter and emission gaseous	Wet drilling and controlled blasting will adopt. Optimized blast parameters and design were given in chapter 2 should follow for blasting. Safety shelter will construct within the lease area. Provide PPEs for workers.
Loading of material on dumper	Air emission	Water sprinkler with wide angle nozzle of angle 150˚ will be selected for water sprinkling in the dust prone area.
Transportation	High Dust generation	Regular grading of haul roads will be practiced. Planting of trees all along mine haul roads outside the lease. Water sprinklers will install along the haul road. Vehicle without PUC certificate will not be allowed. Cover tarpaulin to the tipper during transportation.
Storage of Topsoil	High Dust generation	High dust generation due to wind from the topsoil storage area. This area will be installed with permanent water sprinkler. Plantation will be provided in the dump slope.

4.5 NOISE ENVIRONMENT

According to DGMS Technical Circular No. 18 of 1975 and No.5 of 1990 on "Protection of Workers against noise" it is brought to the knowledge of all concerned that Noise is emerging as an important and challenging health hazard for mine workers. Source data has been computed taking into account of all the machinery and activities used in the open cast mining process had listed in Table 4.7.

Table 4.7 Activity and Noise Produced by Machinery in open cast mines

S. No.	Machinery / activity	Distance of measurement	Noise level dB(A)	
			Idling	Fully accelerated
1.	Jack hammer	1	80	97
2.	Compressor	1	-	96
3.	Bulldozer	2	84	100
4.	Tipper	2	75	92
5.	Drill	1	85	90

The permissible noise exposure levels in Indian mines are based on OSHA standards adapted and enforced by the Indian government through the Factories Act and CPCB norms are given in Table 4.8 below.

Table 4.8 Permissible noise levels adopted by CPCB, 2000 and OSHA

Maximum Exposure Noise level Time per Working Day in hours	Noise level	
	CPCB, 2000 in dB (International Standard Organization)	OSHA code in dB (Occupational Safety and Health Act)
8	90	90
4	93	95
2	96	100
1	99	105
0.5	102	110
0.25	105	115

A noise level of 90 dB causes disruption, leading to annoyance, cognitive errors, and temporary hearing loss, while 85 dB is considered an upper comfort level with potential for cognitive decrements in tasks requiring decision-making with hearing loss possible at 300-1200 Hz frequencies in that range. Prolonged exposure to sounds at or above 85 dB can damage hearing over time. The mitigation measures to minimize the noise pollution are given in Table below.

Impact	Mitigation Measures
Noise impact due to mining activities. Noise impact due to vehicular	❖ Diesel powered machineries which are major source of noise in open cast environment will be properly maintained as per maintenance schedule to prevent undesirable noise.

movement. Auditory impact (hearing impairment resulting from excessive noise exposure)	❖ Attention shall be paid towards rigorous maintenance of silencers of diesel engines. ❖ Static diesel engines shall be housed as far as possible (not made of sheet metals or surrounded by baffles). If possible, they will be placed on vibration isolators. ❖ Drill machine operators, blasters and dumper drivers will be issued earplugs and earmuffs. Duty hours of operators of noisy machinery will be regulated to keep their noise exposure levels within limits. ❖ Provision of sound proof cabins for the workers deployed on machines producing higher level of sound like dumpers, shovels etc. ❖ 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. ❖ Greenbelt/ 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 though training and awareness. ❖ Regular medical check–up and proper training to personnel to create awareness about adverse noise level effects.

4.5.1 Ground Vibrations due to blasting

The major source of ground vibration from the quarry is blasting. The ground vibrations due to the blasting in the quarry are calculated using the empirical equation for assessment of peak particle velocity (PPV) is given below

$$\boldsymbol{V = K[R/Q^{0.5}]^{-B}}$$

where,

V = peak particle velocity (mm/s), K = site and rock factor constant (500)
Q = maximum instantaneous charge (kg)
B = constant related to the rock and site (usually 1.6),
R = distance from charge (m)

Table 4.9 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	6.53	420	0.142	19	0.02	121

Table 4.10 Predicted PPV values due to Blasting at 100-500m 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	6.53	100	1.415	19	0.12	136
		200	0.467		0.05	129
		300	0.244		0.03	124
		400	0.154		0.02	121
		500	0.108		0.02	119

The PPV results shows that the ground vibration is well below the permissible limits set by DGMS in the circular 7, 1997.

Mitigation Measures

- The blasting operations in the cluster quarries are carried out without deep hole drilling and blasting using delay detonators which reduce the ground vibrations
- Proper quantity of explosives, suitable stemming materials and appropriate delay system will be adopted to avoid overcharging and for safe blasting
- Adequate safe distance from blasting will be maintained as per DGMS guidelines
- The charge per delay will be minimized and preferably a greater number of delays will be used per blasts.
- During blasting other activities in the immediate vicinity will be temporarily stopped. Drilling parameters like depth, diameter and spacing will be properly designed to give proper blast.
- A fully trained explosives blast man (Mining Mate, Mines Foreman, 2nd Class Mines Manager/ 1st Class Mines Manager) will be appointed.
- Sufficient angular stemming material will be used to confine the explosive force and minimise environmental disturbance caused by venting / misfire.
- The detonators will be connected in a predetermined sequence to ensure that only one charge is detonated at any one time and a NONEL or similar type initiation system will be used

- The detonation delay sequence shall be designed so as to ensure that firing of the holes is in the direction of free faces so as to minimise vibration effects
- Vibration monitoring will be carried out every 6 months to check the efficacy of blasting practices.
- Secondary blasting will be totally avoided and hydraulic rock breaker will be used for breaking boulders
- Controlled blasting with proper spacing, burden, stemming and optimum charge/delay will be maintained
- The blasting will be carried out during favourable atmospheric condition and less human activity timings by using nonelectrical initiation system.

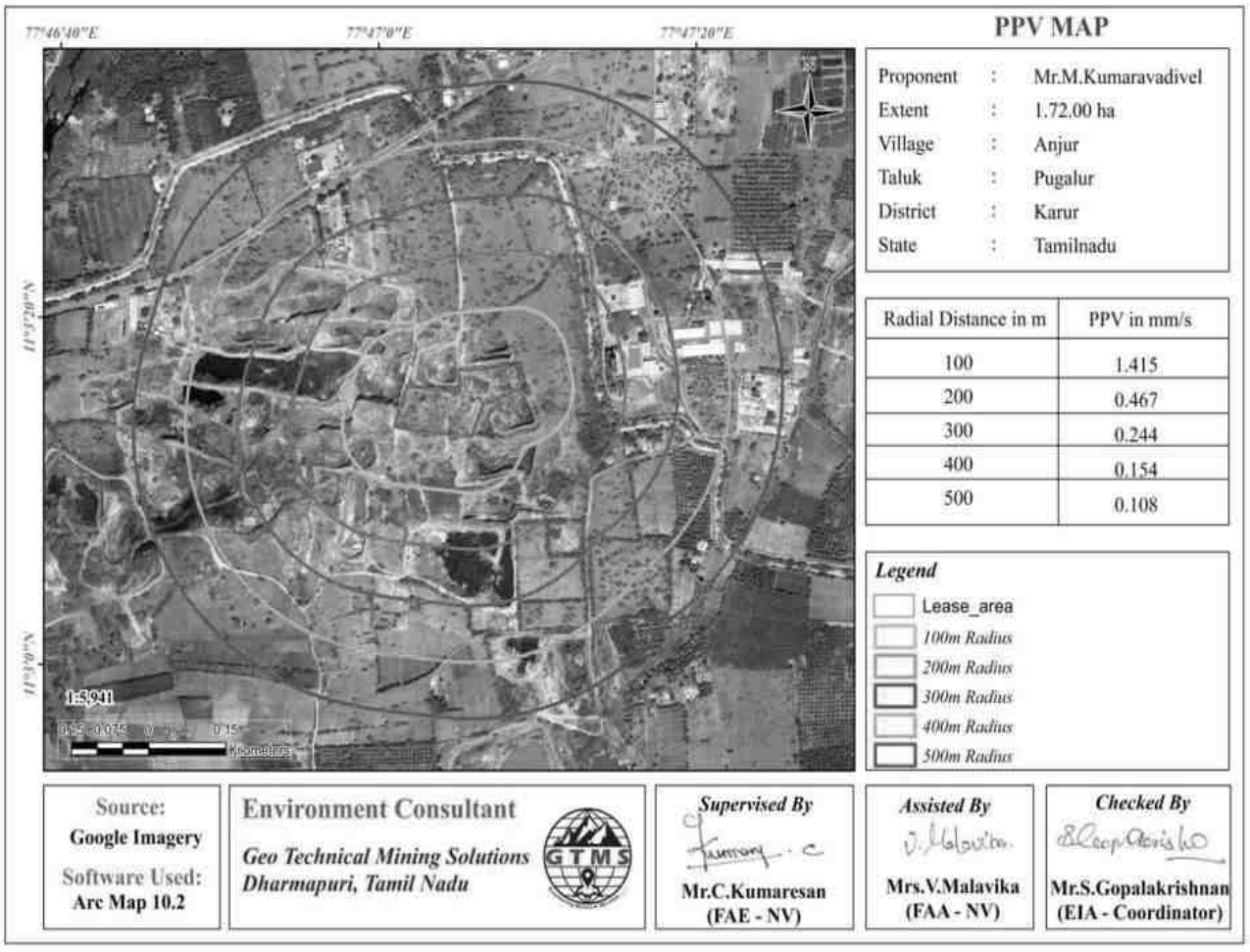


Figure 4.3 100-500m PPV Map

4.6 ECOLOGY AND BIODIVERSITY

4.6.1 *Impact on Ecology and Biodiversity*

- 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 Number of plants in the mining lease area is given in Chapter III Table 3.21 which vegetation in the lease area may be affected during mining.

- Carbon released from quarrying machineries and tippers during quarrying would be 96kg per day, 10368kg per year and 103680kg over ten years, as provided in Table 4.11.

Table 4.11 Carbon Released During Ten Years of Rough Stone and Gravel Production

	Per day	Per year	Per ten years
Fuel consumption of excavator	34	9065	45326
Fuel consumption of tipper	718	194005	970026
Total fuel consumption in Liters	752	203070	1015352
CO_2 emission in kg	2014	544228	2721143
Fuel consumption of compressor	96	10368	103680

4.6.2 *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.
- None of the plants in the lease area will be cut during operational phase of the mine. we recommend uprooting and planting of the 10 trees along the 7.5 m safety zone to prevent environmental pollution during quarrying. As the survival rate due to uprooting was only 30%, 100 seedlings will be procured at the rate of 10 seedlings per tree and planted in 7.5 m safety zone.
- Existing roads will be used and new roads will not be constructed to reduce impact on flora.
- Green belt of adequate width will develop around the project site. Dust catching species like *Alstonia scholaris, Bombax ceiba, Terminalia arjuna, Cassia fistula, Bombax ceiba, Azadirchta indica, Nyctanthes arbor-tristis, Psidium guajava, Tectona grandis* etc will be planted in green belt.
- 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 10368kg of carbon per year. Therefore, we recommend 500 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 4.14) about 2012w trees (Table 4.15) will be planted within three months from the beginning of mining. These trees, when grown up would sequester carbon of about 245155kg of the total carbon as provided in Table 4.12.

Table 4.12 CO_2 Sequestration

CO_2 sequestration in kg	182	49031	245155
Remaining CO_2 not sequestered in kg	317	85417	548560
Trees required for environmental compensation	3565		
Area required for environmental compensation in hectares	7		

Table 4.13 Recommended Species for Greenbelt Development Plan

S. No	Botanical Name of the Plant	Family Name	Common Name	Category	Dust Capturing Efficiency Features
1	*Azadirachta indica*	Meliaceae	Neem,Vembu	Tree	Well distinct thick at both the layer Well distinct in Palisade & Spongy parenchyma. Spongy parenchyma is present at lower epidermis Many vascular bundles arranged almost parallel series.
2	*Techtona grandis*	Lamiaceae	Teak	Tree	
3	*Polyalthia longifolia*	Annonaceae	Nettilingam	Tree	
4	*Albizia lebbeck*	Fabaceae	Vagai	Tree	
5	*Delonix regia*	Fabaceae	Cemmayir-konrai	Tree	
6	*Bauhinia racemose*	Fabaceae	Aathi	Tree	
7	*Cassia fistula*	Fabaceae	Sarakondrai	Tree	
8	*Aegle marmelos*	Fabaceae	Vilvam	Tree	
9	*Pongamia pinnata*	Fabaceae	Pungam	Tree	
10	*Thespesia populnea*	Malvaceae	Puvarasu	Tree	

Table 4.14 Greenbelt Development Plan

	No. of trees proposed for plantation	No. of trees expected to survive @ 80%	Area to be covered (m^2)
Plantation in the construction phase (3 months)	Number of plants inside the mine lease area		
	344	275	3096
	Number of plants outside the mine lease area		
	516	413	4644
Total	**860**	**688**	**7740**

4.6.3. *Anticipated Impact on Fauna*

- Direct impact is anticipated on fauna of core zone
- Insignificant impact is anticipated on fauna in the buffer area due to air emissions, noise, vibration, transportation, waste water discharges, and changes in land use
- Arachalur R.F- located on 15.3km-NW of the mine lease area. There is a possibility that birds will be affected by mining activities and migrate.

Mitigation Measures on Fauna

- Fencing will be constructed around the proposed mine lease area to restrict the entry of stray animals
- The workers shall be trained not to harm any wildlife near the project site
- The quarry operation using in NONAL blasting Method Technic so controlled in sound and vibration.

4.6.4 ***Impact on agriculture and horticulture crops in 1km Radius***

- Problems to agricultural and horticulture land due to dust caused by movement of heavy vehicles.
- Soil erosion and sediment deposition in the nearby water bodies due to earthworks during the rainy season.
- The fugitive dust released from the mining operations may cause effect on the agricultural and horticulture land who are directly exposed to the fugitive dust.
- Dust from the quarries is likely to affect reproductive systems in nearby agricultural and horticulture lands.
- Dust from quarries can affect plant growth and reduce vegetable yields.

4.6.5 ***Mitigation Measures on agriculture and horticulture crops.***

- The main objective of the green belt is to provide a barrier between the source of pollution and the surrounding areas. In order to compensate the loss of vegetation cover, it is suggested to carry out afforestation program mainly inside and outside of the lease area in different phases.
- A green belt will be created in 7.5m & 10m safety zone around the quarry to contain the dust from the quarry and prevent the dust from spreading to the adjacent agricultural land.
- Transportation of material will be carried out during day time and material will be covered with tarpaulin.

4.7 SOCIO ECONOMIC ENVIRONMENT

Anticipated Impact from Proposed and Existing Projects

- 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.

Common Mitigation Measures for Proposed Project

- 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

4.8 OCCUPATIONAL HEALTH AND SAFETY

Occupational health and safety hazards occur during the operational phase of mining and primarily include the following

- Respiratory hazards
- Noise
- Physical hazards
- Explosive storage and handling

4.8.1 *Respiratory Hazards*

Long-term exposure to silica dust may cause silicosis the following measures are proposed:

- Cabins of excavators and tippers will be enclosed with AC and sound proof
- Use of personal dust masks will be made compulsory

4.8.2 *Noise*

Workers are likely to get exposed to excessive noise levels during mining activities. The following measures are proposed for implementation

- No employee will be exposed to a noise level greater than 85dB(A) for a duration of more than 8 hours per day without hearing protection
- The use of hearing protection will be enforced actively when the equivalent sound level over 8 hours reaches 85dB(A) the peak sound levels reach 140dB(C) or the average maximum sound level reaches 110dB(A)

- ❖ Ear muffs provided will be capable of reducing sound levels at the ear to at least 85dB(A)
- ❖ Periodic medical hearing checks will be performed on workers exposed to high noise levels.

4.8.3 *Physical Hazards*

The following measures are proposed for control of physical hazards

- ❖ Specific personnel training on work-site safety management will be taken up;
- ❖ Natural barriers, temporary railing, or specific danger signals will be provided along rock benches or other pit areas where work is performed at heights more than 2m from ground level;
- ❖ Maintenance of yards, roads and footpaths, providing sufficient water drainage and preventing slippery surfaces with an all-weather surface, such as coarse gravel will be taken up.

4.8.4 *Occupational Health Survey*

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, and 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.

4.9 *Mine Waste Management*

No waste is anticipated from any of the proposed quarries.

4.10 *Mine Closure*

Mine closure plan is the most important environmental requirement in mining project. The mine closure plan should cover technical, environmental, social, legal and financial aspects dealing with progressive and post closure activities. The closure operation is a continuous series of activities starting from the decommissioning of the project. Therefore, progressive mine closure plan should be specifically dealt with in the mining plan and is to be reviewed along with mining plan. As progressive mine closure is a continuous series of activities, it is obvious that the proposals of scientific mining have included most of the activities to be included in the closure plan. While formulating the closure objectives for the site, it is important to consider the existing or the pre mining land use of the site and how the operation will affect this activity.

The primary aim is to ensure that the following broad objectives along with the abandonment of the mine can be successfully achieved:

- To create a productive and sustainable after-use for the site, acceptable to mine owners, regulatory agencies, and the public
- To protect public health and safety of the surrounding habitation
- To minimize environmental damage to conserve valuable attributes and aesthetics
- To overcome adverse socio-economic impacts.

4.10.1 *Mine Closure Criteria*

The criteria involved in mine closure are discussed below:

Physical Stability

All anthropogenic structures, which include mine workings, buildings, rest shelters etc., remaining after mine decommissioning should be physically stable. They should present no hazard to public health and safety as a result of failure or physical deterioration and they should continue to perform the functions for which they were designed. The design periods and factors of safety proposed should take full account of extreme events such as floods, hurricane, winds or earthquakes, etc. and other natural perpetual forces like erosion, etc.,

Chemical Stability

The solid wastes on the mine site should be chemically stable. This means that the consequences of chemical changes or conditions leading to leaching of metals, salts or organic compounds should not endanger public health and safety nor result in the deterioration of environmental attributes. If the pollutant discharges likely to cause adverse impacts is predicted in advance, appropriate mitigation measures like settling of suspended solids or passive treatment to improve water quality as well as quantity, etc., could be planned. Monitoring should demonstrate that there is no adverse effect of pollutant concentrations exceeding the statutory limits for the water, soil and air qualities in the area around the closed mine.

Biological Stability

The stability of the surrounding environment is primarily dependent upon the physical and chemical characteristics of the site, whereas the biological stability of the mine site itself is closely related to rehabilitation and final land use. Nevertheless, biological stability can significantly influence physical or chemical stability by stabilizing soil cover, prevention of erosion/ wash off, leaching, etc., A vegetation cover over the disturbed site is usually one of the main objectives of the rehabilitation programme, as vegetation cover is the best long-term method of stabilizing the site. When the major earthwork components of the rehabilitation programme have been completed, the process of establishing a stable vegetation community

begins. For re-vegetation, management of soil nutrient levels is an important consideration. Additions of nutrients are useful under three situations.

- Where the nutrient level of spread topsoil is lower than material in-situ e.g., for development of social forestry
- Where it is intended to grow plants with a higher nutrient requirement than those occurring naturally.
- Where it is desirable to get a quick growth response from the native flora during those times.

when moisture is not a limiting factor. For example, development of green barriers the Mine closure plan should be as per the approved mining plan. The mine closure is a part of approved mine plan and activities of closure shall be carried out as per the process described in mine closure plan.

CHAPTER V

ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)

5.0 General

Consideration of alternatives to a proposed project is a requirement of EIA process. During the scoping process, alternatives to a proposed project can be considered or refined, either directly or by reference to the key issues identified. A comparison of alternatives helps to determine the best method of achieving the project objectives with minimum environmental impacts or indicates the most environmentally friendly and cost-effective options.

The quarrying operation like drilling, blasting, excavation, loading & transportation are being carried out. The site has been selected based on geological investigation and exploration as below:

- Transportation facility for materials & manpower.
- Overall impact on environment and mitigation feasibility.
- Socio- economic background.

5.1 ANALYSIS OF ALTERNATIVE SITE

No alternatives are suggested as the mine site is mineral specific.

5.2 FACTORS BEHIND SELECTION OF PROPOSED TECHNOLOGY

Manual open cast mining method with secondary blasting will be applied to extract rough stone and gravel in the area. The proposed mining lease areas have following advantages:

- As the mineral deposition is homogeneous and batholith formation, opencast method of working is preferred over underground method.
- The material will be loaded with the help of excavators into tractors/tippers and transported to the need by customers.
- Semi- Skilled labours fit for quarrying operations are easily available around the nearby villages.

5.3 ALTERNATIVE TECHNOLOGY

Open cast mechanized method has been selected for this project. This technology is having least gestation period, economically viable, safest and less labour intensive. The method has inbuilt flexibility for increasing or decreasing the production as per market condition.

CHAPTER VI

ENVIRONMENTAL MONITORING PROGRAMME

6.0 GENERAL

The monitoring and evaluation of environmental parameters indicates potential changes occurring in the environment, which paves way for implementation of rectifying measures wherever required to maintain the status of the natural environment. Evaluation is also a very effective tool to judge the effectiveness or deficiency of the measures adopted and provides insight for future corrections.

The main objective of environmental monitoring is to ensure that the obtained results in respect of environmental attributes and prevailing conditions during operation stage are in conformity with the prediction during the planning stage. In case of substantial deviation from the earlier prediction of results, this forms as base data to identify the cause and suggest remedial measures. Environmental monitoring is mandatory to meet compliance of statutory provisions under the Environment (Protection) Act, 1986, relevant conditions regarding monitoring covered under EC orders issued by the SEIAA-TN as well as the conditions set forth under the order issued by Tamil Nadu Pollution Control Board while granting CTE/ CTO.

6.1 METHODOLOGY OF MONITORING MECHANISM

Implementation of EMP and periodic monitoring will be carried out by respective project proponents. A comprehensive monitoring mechanism has been devised for monitoring of impacts due to proposed project; Environmental protection measures like dust suppression, control of noise and blast vibrations, maintenance of machinery and vehicles, housekeeping in the mine premises, plantation, implementation of Environmental Management Plan and environmental clearance conditions will be monitored by the respective mine management. On the other hand, implementation of area level protection measures like green belt development, environmental quality monitoring etc., are taken up by a senior executive who reports to their Mine Management.

An Environment monitoring cell (EMC) will be constituted to monitor the implementation of EMP and other environmental protection measures in the proposed quarry. The responsibilities of this cell will be:

- Implementation of pollution control measures
- Monitoring programme implementation
- Post-plantation care
- To check the efficiency of pollution control measures taken
- Any other activity as may be related to environment

❖ Seeking expert's advice when needed.

The environmental monitoring cell will co-ordinate all monitoring programs at site and data thus generated will be regularly furnished to the State regulatory agencies as compliance status reports.

The sampling and analysis report of the monitored environmental attributes will be submitted to the Tamil Nadu Pollution Control Board (TNPCB) at a frequency of half-yearly and yearly by the proposed project proponent. The half-yearly reports are submitted to Ministry of Environment and Forest, Regional Office and SEIAA-TN as well.

The sampling and analysis of the environmental attributes will be as per the guidelines of Central Pollution Control Board (CPCB)/Ministry of Environment, Forest and Climate Change (MoEF & CC).

The Environmental Monitoring Cell will be formed for the proposed project. The structure of the cell will be as shown in Figure 6.1.

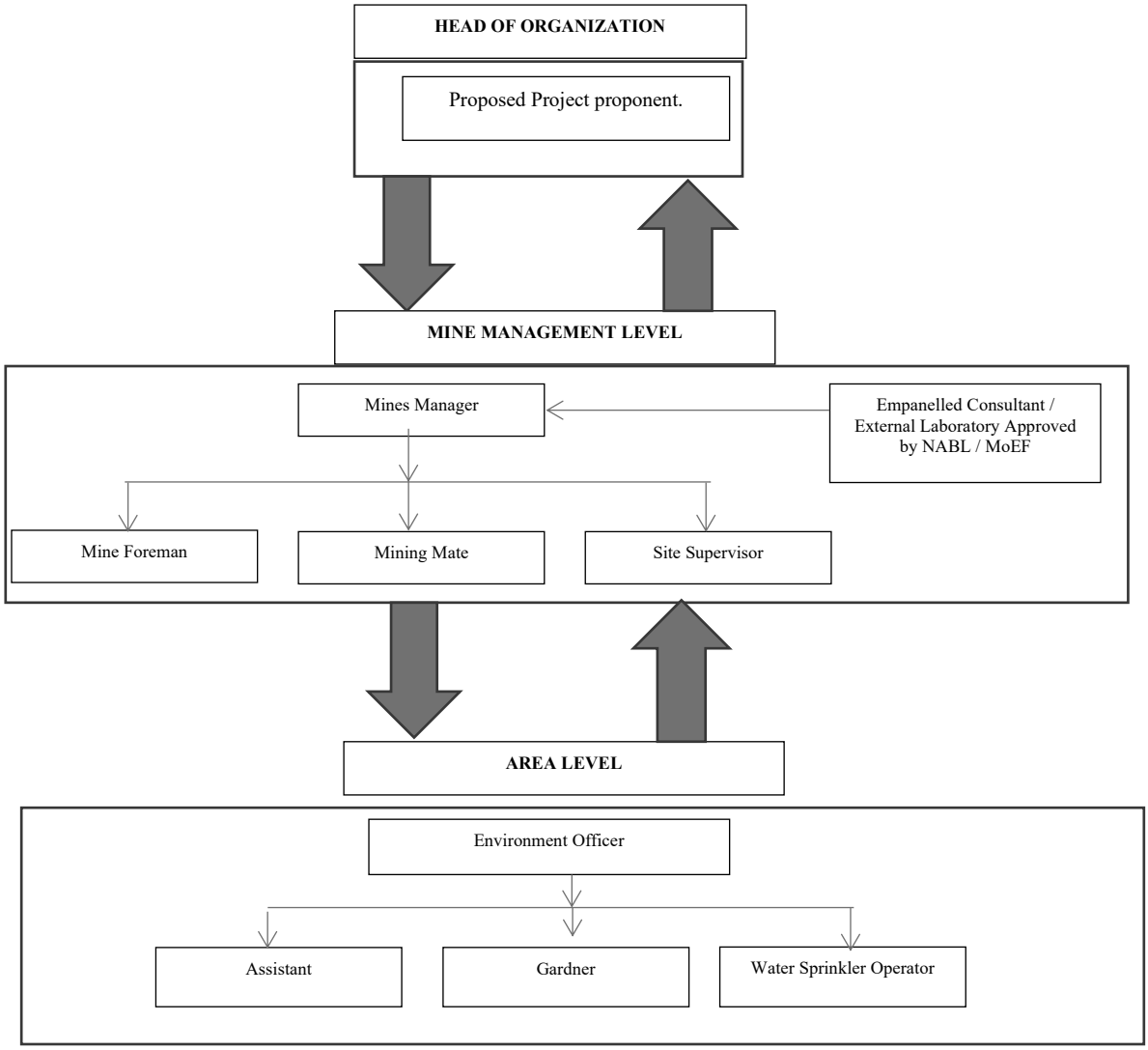


Figure 6.1 Proposed Environmental Monitoring Chart

6.2 IMPLEMENTATION SCHEDULE OF MITIGATION MEASURES

The mitigation measures proposed in chapter IV will be implemented so as to reduce the impact on the environment due to the operations of the proposed project. Implementation schedule of mitigation measures is given in Table 6.1.

Table 6.1 Implementation Schedule for Proposed Project

S. No.	Recommendations	Time Period	Schedule
1	Land Environment Control Measures	Before commissioning of the project	Immediate
2	Soil Quality Control Measures	Before commissioning of the project	Immediate
3	Water Pollution Control Measures	Before commissioning of the project and along with mining operation	Immediately and as project progress
4	Air Pollution Control Measures	Before commissioning of the project and along with mining operation	Immediately and as project progress
5	Noise Pollution Control measures	Before commissioning of the project and along with mining operation	Immediately and as project progress
6	Ecological Environment	Phase wise implementation every year along with mine operations	Immediately and as project progress

6.3 MONITORING SCHEDULE AND FREQUENCY

Monitoring shall confirm that commitments are being met. This may take the form of direct measurement and recording of quantitative information, such as amounts and concentrations of discharges, emissions and wastes, for measurement against statutory standards. Monitoring may include socio-economic interaction, through local liaison activities or even assessment of complaints.

The environmental monitoring will be conducted in the mine operations as follows:

- ❖ Air quality
- ❖ Water and wastewater quality
- ❖ Noise levels
- ❖ Soil quality and
- ❖ Greenbelt development

The details of proposed monitoring schedule have been provided in Table 6.2.

Table 6.2 Proposed Monitoring Schedule Post EC for the Proposed Quarry

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, $PM_{2.5}$, PM_{10}, SO_2 and NO_x.
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	Vibration	At the nearest habitation (in case of reporting)	–	During blasting operation	Peak particle velocity
7	Soil	2 Locations (1 Core & 1 Buffer)	–	Once in six months	Physical and chemical characteristics
8	Greenbelt	Within the project area	Daily	Monthly	Maintenance

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

6.4 BUDGETARY PROVISION FOR ENVIRONMENT MONITORING PROGRAM

The cost in respect of monitoring of environmental attributes, parameter to be monitored, sampling/monitoring locations with frequency and cost provision against each proposal is shown in Table 6.3. Monitoring work will be outsourced to external laboratory approved by NABL / MoEF.

The proposed capital cost for Environmental Monitoring Programme for **Mr. M. Kumaravadivel** is Rs. 2,85,000 for conducting Air Quality, Meteorology, Water Quality, Hydrology, Soil Quality, Noise Quality Vibration Study, Greenbelt.

Table 6.3 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 1,40,000/-
8	Greenbelt	-	Rs 10,000/-
Total		**-**	**Rs 2,85,000 /-**

Source: Field Data

6.5 REPORTING SCHEDULES OF MONITORED DATA

The monitored data on air quality, water quality, noise levels and other environmental attributes will be periodically examined by the Cluster Mine Management Coordinator and Respective Head of Organization for taking necessary corrective measures. The monitoring data will be submitted to Tamil Nadu State Pollution Control Board in the Compliance to CTO Conditions & environmental audit statements every year to MoEF & CC and Half-Yearly Compliance Monitoring Reports to MoEF & CC Regional Office and SEIAA.

Periodical reports to be submitted to:

- MoEF & CC – Half yearly status report
- TNPCB - Half yearly status report
- Department of Geology and Mining: quarterly, half yearly annual reports

Besides the Mines Manager/Agent of respective project will submit the periodical reports to:

- Director of mines safety
- Labour enforcement officer
- Controller of explosives as per the norms stipulated by the department.

CHAPTER VII

ADDITIONAL STUDIES

7.0 GENERAL

Additional studies deal with:

- Public Consultation for Proposed Project
- Risk Assessment
- Disaster Management Plan
- Cumulative Impact Study
- Plastic Waste Management

7.1 PUBLIC CONSULTATION FOR PROPOSED PROJECT

Application to the Member Secretary of the Tamil Nadu Pollution Control Board (TNPCB) to conduct Public Hearing in a systematic, time bound and transparent manner ensuring widest possible public participation at the project site or in its close proximity in the district was made and the public opinions on the proposed project will be updated in the final EIA/EMP report.

7.2 RISK ASSESSMENT FOR PROPOSED PROJECT

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 31st December, 2002. The DGMS risk assessment process is intended to identify existing and probable hazards in the work environment and all operations and assess the risk levels of those hazards in order to prioritize those that need immediate attention. Further, mechanisms responsible for these hazards are identified and their control measures, set to timetable are recorded along with pinpointed responsibilities. The whole quarry operation will be carried out under the direction of a Qualified Competent Mine Manager holding certificate of competency to manage a metalliferous mine granted by the DGMS, Dhanbad for proposed project. Factors of risks involved due to human induced activities in connection with these proposed mining & allied activities with detailed analysis of causes and control measures for the mine is given in Table 7.1.

Table 7.1 Risk Assessment & Control Measures for Proposed Project

S. No.	Risk factors	Causes of risk	Control measures
1	Accidents due to explosives and	Improper handling and	✓ All safety precautions and provisions of Mine Act, 1952, Metalliferous Mines Regulation, 1961 and Mines Rules, 1955

	heavy mining machineries.	unsafe working practice	will be strictly followed during all mining operations. ✓ Workers will be sent to the Training in the nearby Group Vocational Training Centre Entry of unauthorized persons will be prohibited. ✓ Fire-fighting and first-aid provisions in the mine office complex and mining area. ✓ Provisions of all the safety appliances such as safety boot, helmets, goggles etc. will be made available to the employees and regular check for their use. ✓ Working of quarry, as per approved plans and regularly updating the mine plans. ✓ Cleaning of mine faces on daily basis shall be daily done in order to avoid any overhang or undercut. ✓ Handling of explosives, charging and firing shall be carried out by competent persons only under the supervision of a Mine Manager. ✓ Maintenance and testing of all mining equipment as per manufacturer's guidelines.
2	Drilling	Improper and unsafe practices; Due to high pressure of compressed air, hoses may burst; Drill Rod may break;	✓ Safe operating procedure established for drilling (SOP) will be strictly followed. ✓ Only trained operators will be deployed. ✓ No drilling shall be commenced in an area where shots have been fired until the blaster/blasting foreman has made a thorough Examination of all places, ✓ Drilling shall not be carried on simultaneously on the benches at places directly one above the other. ✓ Periodical preventive maintenance and replacement of worn-out accessories in the compressor and drill equipment as per operator manual. ✓ All drills unit shall be provided with wet drilling shall be maintained in efficient working in condition. ✓ Operator shall regularly use all the personal protective equipment.

3	Blasting	Fly rock, ground vibration, Noise and dust. Improper charging, stemming & Blasting/ fining of blast holes Vibration due to movement of vehicles	✓ The maximum charge per delay and by optimum blast hole pattern, vibrations will be controlled within the permissible limit and blast can be conducted safely. ✓ SOP for Charging, Stemming & Blasting/ Firing of Blast Holes will be followed by blasting crew during initial stage of operation ✓ Shots are fired during daytime only. ✓ All holes charged on any one day shall be fired on the same day. ✓ The danger zone is and will be distinctly demarcated (by means of red flags)
4	Transportation	Potential hazards and unsafe workings contributing to accident and injuries Overloading of material While reversal & overtaking of vehicle Operator of truck leaving his cabin when it is loaded.	✓ Before commencing work, drivers personally check the truck/tipper for oil(s), fuel and water levels, tyre inflation, general cleanliness and inspect the brakes, steering system, warning devices including automatically operated audio-visual reversing alarm, rear view mirrors, side indicator lights etc., are in good condition. ✓ Not allow any unauthorized person to ride on the vehicle nor allow any unauthorized person to operate the vehicle. ✓ Concave mirrors should be kept at all corners ✓ All vehicles should be fitted with reverse horn with one spotter at every tipping point ✓ Loading according to the vehicle capacity ✓ Periodical maintenance of vehicles as per operator manual
5	Natural calamities	Unexpected happenings	✓ Escape Routes will be provided to prevent inundation of storm water ✓ Fire Extinguishers & Sand buckets
6	Failure of Mine Benches and Pit Slope	Slope geometry, Geological structure	✓ Ultimate or over all pit slope shall be below 60° and each bench height shall be 5m.

Source: Analysed and proposed by FAE & EC

7.3 DISASTER MANAGEMENT PLAN FOR PROPOSED PROJECT

Natural disasters like Earthquake, Landslides have not been recorded in the past history as the terrain is categorized under seismic zone II. The area is far away from the sea. Hence,

the disaster due to heavy floods and tsunamis are not anticipated. The Disaster Management Plan is aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this same order of priorities. The objective of the Disaster Management Plan is to make use of the combined resources of the mine and the outside services to achieve the following:

- Rescue and medical treatment of 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.

In case a disaster takes place, despite preventive actions, disaster management will have to be done in line with the descriptions below. There is an organization proposed for dealing with the emergency situations. Structure of the team has been shown in Figure 7.1.

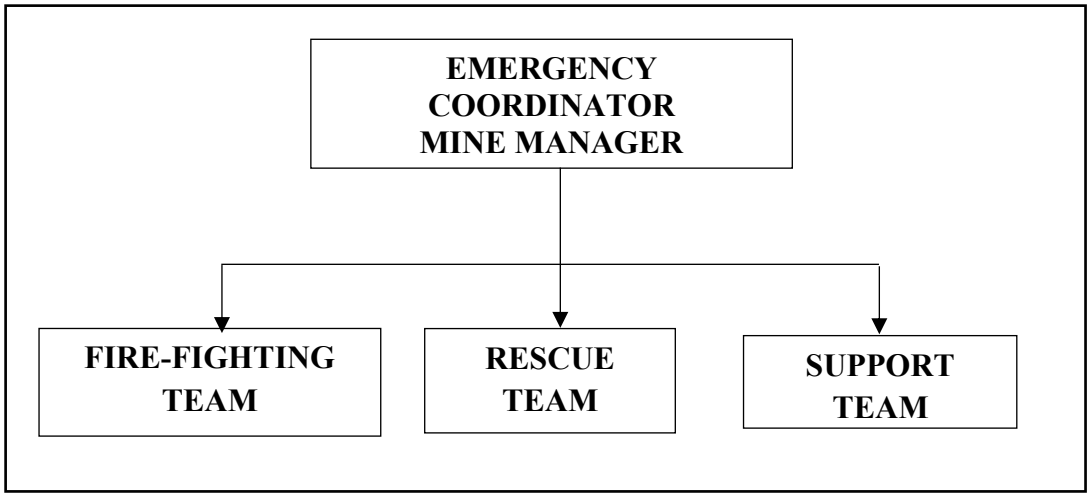


Figure 7.1 Disaster management team layout for proposed project

The emergency organization shall be headed by emergency coordinator who will be qualified competent mines manager. In his absence senior most people available at the mine shall be emergency coordinator till arrival of mines manager. There would be three teams for taking care of emergency situations – Fire-Fighting Team, Rescue Team and Support Team.

7.3.1 Emergency Control Procedure

The onset of emergency, will in all probability, commence with a major fire or explosion or collapse of wall along excavation and shall be detected by various safety devices and also by members of operational staff on duty. If located by a staff member on duty, he (as per site emergency procedure of which he is adequately briefed) will go to nearest alarm call point, break glass and trigger off the alarms. He will also try his best to inform about location

and nature of accident to the emergency control room. In accordance with work emergency procedure the following key activities will immediately take place to interpret and take control of emergency.

- On site fire crew led by a fireman will arrive at the site of incident with fire foam tenders and necessary equipment.
- Emergency security controller will commence his role from main gate office
- Incident controller shall rush to the site of emergency and with the help of rescue team and will start handling the emergency.
- Site main controller will arrive at MECR with members of his advisory and communication team and will assume absolute control of the site.
- He will receive information continuously from incident controller and give decisions and directions to:
- Incident controller
- Mine control rooms
- Emergency security controller

7.4 CUMULATIVE IMPACT STUDY

The Cumulative Impact is mainly anticipated due to drilling & blasting and excavation and transportation activities in all the projects within the cluster and major impact anticipated is on Air & Noise Environment and Ground Vibrations due to blasting. For this cumulative study, there is only one proposed project known as P1 is taken into consideration. The details of P1 have been given in Table 7.2 and E1, E2, E3 are given in the Table 7.3 - 7.5.

Table 7.2 Salient Features of the cluster Project 'P1'

Name of the Quarry	Mr. M. Kumaravadivel, Rough stone and gravel quarry			
Type of Land	Patta Land			
Extent	1.72.0 Ha			
S.F.No	775/1D, 775/1E (Part) & 807/2A (Part)			
Toposheet No	58-E/16			
Location of Project Site	11°3'13.12"N to 11°3'17.31"N 77°47'1.01"E to 77°47'8.95"E			
Highest Elevation	206m AMSL			
Proposed depth of Mining	30m (BGL)			
Description	Rough Stone		Gravel	
	m^3	Tons (m^3 * 2.75)	m^3	Tons (m^3 * 2)
Geological Resources	4,95,782	13,63,401	9,140	18,280
Mineable Reserves	1,83,357	5,04,232	5,643	11,286
Proposed production for ten years	1,83,357	5,04,232	5,643	11,286
Method of Mining	Open- Cast Mechanized mining			
Topography	Flat Terrain			
Machinery proposed	Jack Hammer		2	

	Compressor	2
	Tipper	5
	Hydraulic Excavator	2
	Rock Breaker	1
Blasting Method	The quarrying operation is proposed to carried out by open cast mining in conjunction with conventional method using jack hammer drilling and blasting for shattering effect and loosen the rough stone.	
Proposed Manpower Deployment	20Nos	
Project Cost	Rs. 78,46,000/-	
CER Cost	Rs. 5,00,000/-	
Proposed Water Requirement	3.5KLD	

Table 7.3 Salient Features of the cluster Project 'E1'

Name of the Quarry	Mr. S.Kuppusamy Rough Stone & Gravel quarry	
Type of Land	Patta Land	
Extent	4.82.7 Ha	
S.F. No	764/3,765/3,766/1,766/2,766/3A,767/1 & 767/2A	
Toposheet No	58-E/16	
Location of Project Site	11°3'2.77"N to 11°3'13.51"N 77°46'49.20"E to 77°47'0.88"E	
Highest Elevation	190 m AMSL	
Ultimate Depth of Mining	62m BGL	
Proposed reserves for five years	Rough Stone in (m^3 & Ts)	Gravel (m^3 & Ts)
	799894 & 2199709	31276 & 62552
Method of Mining	Open-Cast Semi Mechanized mining	
Topography	Flat Topography	
Machinery proposed	Jack Hammer	5
	Compressor	3
	Tipper	10
	Excavator	2
Blasting Method	The quarrying operation is proposed to carried out by open cast mining in conjunction with conventional method using jack hammer drilling and blasting for shattering effect and loosen the rough stone.	
Proposed Manpower Deployment	29 Nos	
Project Cost	Rs. 1,13,87,000/-	
CER Cost	Rs. 5,00,000/-	
Proposed Water Requirement	8.0 KLD	

Table 7.4 Salient Features of the cluster Project 'E2'

Name of the Quarry	Thiru. P. Pazhanisami, Rough Stone & Gravel quarry	
Type of Land	Patta Land	
Extent	4.47.85Ha	
S.F. No	773/2,776/3,777/1,778/1A(P) & 807/2C2	
Toposheet No	58-E/16	
Location of Project Site	11°3'03.27"N to 11°3'13.65"N 77°47'1.45"E to 77°47'10.37"E	
Highest Elevation	185m AMSL	
Ultimate Depth of Mining	50m BGL	
Proposed reserves for five years	Rough Stone in (m^3 & Ts)	Top Soil (m^3 & Ts)
	596924 & 1641541	4068 & 8136
Method of Mining	Open- Cast Semi Mechanized mining	
Topography	Flat Topography	
Machinery proposed	Jack Hammer	3
	Compressor	2
	Tipper	8
	Excavator	1
Blasting Method	The quarrying operation is proposed to carried out by open cost, using jack hammer drilling followed by manual breaking will be adopted to release the rough stone and Nonel blasting is proposed in this lease area.	
Proposed Manpower Deployment	22 Nos	
Project Cost	Rs.80,35,000/-	
CER Cost	Rs. 5,00,000/-	
Proposed Water Requirement	4.75 KLD	

Table 7.5 Salient Features of the cluster Project 'E3'

Name of the Quarry	Mr.P.Sampathkumar, Rough stone and gravel quarry	
Type of Land	Patta Land	
Extent	4.81.5Ha	
S.F.No	759/2(P),761/2(P),761/3(P),762/2,762/3,763/2 & 763/3	
Toposheet No	58- E/16	
Location of Project Site	11°3'17.44"N to 11°3'23.00"N 77°46'50.94"E to 77°47'2.32"E	
Highest Elevation	186m AMSL	
Proposed depth of Mining	52m BGL	
Description	Rough Stone in m^3 & Ts	Gravel in m^3 & Ts
Proposed production for 5 years	554542 & 1524990	2880 & 5760

Method of Mining	Open- Cast Mechanized mining	
Topography	Flat Terrain	
Machinery proposed	Jack Hammer	3
	Compressor	1
	Tipper	7
	Hydraulic Excavator	1
Blasting Method	The quarrying operation is proposed to carried out by open cast mining in conjunction with conventional method using jack hammer drilling and blasting for shattering effect and loosen the rough stone.	
Proposed Manpower Deployment	19Nos	
Project Cost	Rs. 74,96,500/-	
CER Cost	Rs. 5,00,000/-	
Proposed Water Requirement	6.0 KLD	

7.4.1 Air Environment

As the production of rough stone and gravel plays a vital role in affecting the air environment. The data on the cumulative production resulting from cluster project have been given in Tables 7.6.

Table 7.6 Cumulative Production Load of Rough Stone

Quarry	**10 Years in (m^3)**	**10 Years in Ts**	**Per Year in (m^3)**	**Per Year in Ts**	**Per Day in (m^3)**	**Per Day in Ts**	**Number of Lorry Load Per Day**
P1	183357	504232	18336	50423	68	187	11
Quarry	**5 Years in (m^3)**	**5 Years in Ts**	**Per Year in (m^3)**	**Per Year in Ts**	**Per Day in (m^3)**	**Per Day in Ts**	**Number of Lorry Load Per Day**
E1	799894	2199709	159978	439941	592	1629	98
E2	596924	1641541	119385	328308	442	1215	73
E3	554542	1524990	110908	304998	410	1129	68
Total	**2134717**	**5870472**	**408607**	**1123670**	**1512**	**4160**	**250**

Table 7.7 Cumulative Production Load of Gravel

Quarry	**Production Year m^3**	**Production Year Ts**	**Yearly Production m^3**	**Yearly Production Ts**	**Daily Production m^3**	**Daily Production Ts**	**Number of Lorry Loads Per Day**
P1	5643	11286	1881	3762	7	14	1
E1	31276	62552	10425	20850	39	79	6
E2	--	--	--	--	--	--	--
E3	2880	5760	960	1920	4	7	1
Grand Total	**39799**	**79598**	**13266**	**26532**	**50**	**100**	**8**

The cumulative study shows that the overall production of rough stone from the proposed quarry is 1512m^3 & 4160Ts per day with a capacity of 250 trips of rough stone per day and

that production of gravel from the proposed quarry is 50m^3 & 100Ts per day accounting for 8trip/day.

7.4.1.1 Cumulative Impact of Air Pollutants

The results on the cumulative impact of the cluster projects on air environment of the cluster have been provided in Table 7.8 The cumulative values resulting from the three projects for each pollutant do not exceed the permissible limits set by CPCB.

Table 7.8 Cumulative impact results from the Proposed project

Pollutants	Baseline Data (µg/m^3)	Incremental Values (µg/m^3)	Cumulative Value (µg/m^3)
		P1	
$PM_{2.5}$	19.3	11.8	**31.1**
PM_{10}	44.2	19.2	**63.4**

7.4.2 Noise Environment

Noise pollution is mainly due to operation like drilling & blasting and plying of trucks & HEMM. Cumulative Noise modelling has been carried out considering blasting and compressor operation (drilling) and transportation activities. Predictions have been carried out to compute the noise level at various distances around the different projects within the 500m radius.

Table.7.9 Cumulative impact of noise from proposed projects

Location ID	Distance (m)	Direction	Background Value (Day) dB(A)	Incremental Value dB(A)	Total Predicted dB(A)	Residential Area Standards dB(A)
Habitation Near P1	610	N	40.3	28.3	40.6	**55**
Cumulative Noise (dB (A))					**40.6**	

Source: Lab Monitoring Data

The cumulative analysis of noise due to cluster proposed projects shows that habitation will receive about 40.6dB (A) respectively. The cumulative results for all the villages in consideration do not exceed the limit set by CPCB for residential areas for day time.

Ground Vibrations

Cumulative results of ground vibrations due to mining activities in the all the cluster projects have been shown in Table 7.10.

Table 7.10 Cumulative effect of ground vibrations resulting from cluster projects

Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in mm/s
P1	6.53	410	0.148
E1	57.01	430	0.777
E2	42.55	480	0.515
E3	39.53	520	0.427
Total			**1.867**

Results from the above tables 7.10 indicate that the cumulative PPV value of each habitation is well below the peak particle velocity of 8mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997.

7.4.3 Socio Economic Environment

Socio Economic benefits of the three proposed projects were calculated and the results have been shown in Table 7.11. The cluster project will contribute Rs. 20,00,000/-towards CER fund.

Table 7.11 Socio Economic benefits from the cluster project

Location ID	Project Cost	CER Cost
P1	Rs. 78,46,000/-	Rs. 5,00,000/-
E1	Rs. 1,13,87,000/-	Rs. 5,00,000/-
E2	Rs.80,35,000/-	Rs. 5,00,000/-
E3	Rs. 74,96,500/-	Rs. 5,00,000/-
Grand Total	**Rs. 3,47,64,500/-**	**Rs. 20,00,000/-**

Table 7.12 Employment benefits from the cluster projects

Location ID	Employment
P1	20
E1	29
E2	22
E3	19
Grand Total	**90**

A total of 90 people will get employment due to the cluster project in cluster

7.4.4 Ecological Environment

Table 7.13 Greenbelt Development Benefits from cluster Projects

Code	Number of Trees proposed	Area to be covered (m^2)	No. of Trees expected to be grown @ 80% survival rate	Species recommended
P1	860	7740	688	
E1	2414	21722	1931	
E2	2239	20153	1791	
E3	2408	21668	1926	
Total	**7921**	**71283**	**6336**	

Cumulative studies show that the three proposed Projects will plant about 7921 native tree species like *Azadirachta indica*, *Albizia lebbeck*, *Delonix regia*, *Techtona grandis,* etc inside and outside the lease area. It is expected that 80 % of trees, i.e., 6336 trees will survive in this green belt development program.

7.5 PLASTIC WASTE MANAGEMENT PLAN FOR PROPOSED PROJECT

All 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.

7.5.1 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.

A detailed action plan to manage plastic waste has been provided in Table 7.14.

Table 7.14 Action Plan to Manage Plastic Waste

S. No.	Activity	Responsibility
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

Source: Proposed by FAEs and EC

CHAPTER VIII
PROJECT BENEFITS

8.0 GENERAL

The proposed project at Anjur Village aims to produce **1,83,357m^3** & **5,04,232Ts** of rough stone and **5,643m^3 & 11,286Ts** of gravel over a period of 10 years. This will enhance the socio-economic activities in the adjoining areas and will result in the following benefits:

- Increase in Employment Potential
- Improvement in Socio- Economic Welfare
- Improvement in Physical Infrastructure
- Improvement in Social infrastructure

8.1 EMPLOYMENT POTENTIAL

It is proposed to provide employment to about 20 persons for carrying out mining operations and give preference to the local people in providing employment in this cluster. In addition, there will be an opportunity for indirect employment to the form of contractual jobs, business opportunities, and service facilities etc. Because of this, the economic status of the local people will improve.

8.2 SOCIO-ECONOMIC WELFARE MEASURES PROPOSED

The impact of mining activity in the area will be more positive on the socio- economic environment in the immediate project impact area. The employment opportunities both direct and indirect will contribute to enhanced money incomes to job seekers with minimal skill sets especially among the local communities.

8.3 IMPROVEMENT IN PHYSICAL INFRASTRUCTURE

The proposed quarry project is located in Anjur Village, Pugalur Taluk, Karur District, Tamil Nadu. The area has already well-established communications roads and other facilities. The following physical infrastructure facilities will further improve due to proposed project.

- Road transport facilities
- Communications
- Medical, Educational and social benefits will be made available to the nearby civilian population in addition to the workmen employed in the mine.

8.4 IMPROVEMENT IN SOCIAL INFRASTRUCTURE

Employment is expected during civil construction period, in trade, garbage lifting, sanitation and other ancillary services, Employment in these sectors will be primarily temporary or contractual and involvement of unskilled labour will be more. A major part of the labour force will be mainly from local villagers who are expected to engage themselves both in agriculture and mining activities. This will enhance their income and lead to overall economic growth of the area.

8.5 OTHER TANGIBLE BENEFITS

The proposed mine is likely to have other tangible benefits as given below

- Indirect employment opportunities to local people in contractual works like construction of infrastructural facilities, transportation, sanitation for supply of goods and services to the mine and other community services
- Additional housing demand for rental accommodation will increase
- Cultural, recreation and aesthetic facilities will also improve
- Improvement in communication, transport, education, community development and medical facilities and overall change in employment and income opportunity
- The State Government will also benefit directly from the proposed mine, through increased revenue from royalties, cess, DMF, GST etc.,

8.6 CORPORATE SOCIAL RESPONSIBILITY

Individual project proponents will take responsibility to develop awareness among all levels of their staff about CSR activities and the integration of social processes with business processes. Those involved with the undertaking of CSR activities will be provided with adequate training and re-orientation.

Under this programme, the project proponents will take-up following programmes for social and economic development of villages within 5km of the project site. For this purpose, separate budget will be provided every year. For finalization of these schemes, proponent will interact with LSG. The schemes will be selected from the following broad areas

- Health Services
- Social Development
- Infrastructure Development
- Education & Sports
- Self-Employment
- CSR Cost Estimation

- ❖ CSR activities mainly contributing to education, health, training of women self-help groups and infrastructure etc., will be taken up in the Anjur Village. CSR budget is allocated.

8.7 CORPORATE ENVIRONMENT RESPONSIBILITY

Allocation for Corporate Environment Responsibility (CER) shall be made as per Government of India, MoEF & CC Office Memorandum F.No.22-65/2017-IA.III dated 01.05.2018. As per para 6 (II) of the office memorandum, being a green field project & capital investment is ≤ 100 crores, the proposed project shall contribute 5% of capital investment towards CER as per directions of EAC/ SEAC. However, the SEAC has suggested to allocate CER fund on the basis of the extent of the project. Therefore, Rs.5,00,000 is allocated for CER. The proposed utilization of the budget of CER activities is given in Table 8.1.

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
	Total	**Rs. 5,00,000**

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

8.8 SUMMARY OF PROJECT BENEFITS

The project would pay about **Rs. 2,06,81,766/-** to the state government through various ways, as provided in Table 8.2.

Table 8.2 Project Benefits to the State Government

Particulars	Budget for Rough Stone (Rs.)	Budget for Gravel (Rs.)
CER	5,00,000	
Seigniorage @ Rs.90/m^3 of rough stone Rs.56/m^3 of gravel	1,65,02,130	3,16,008
District Mineral Foundation Tax @ 10% of Seigniorage	16,50,213	31,601
Green Tax @ 10% of Seigniorage	16,50,213	31,601
Total	**2,03,02,556**	**3,79,210**
Grand Total	**Rs. 2,06,81,766/-**	

CHAPTER IX

ENVIRONMENTAL COST BENEFIT ANALYSIS

Not Applicable, Since Environmental Cost Benefit Analysis not recommended at the Scoping stage.

CHAPTER X

ENVIRONMENTAL MANAGEMENT PLAN

10.0 GENERAL

Environment Management Plan (EMP) aims at the preservation of ecological system by considering in- built pollution abatement facilities at the proposed site. Good practices of environmental management plan will ensure to keep all the environmental parameters of the project in respect of ambient air quality, water quality, socio economic improvement standards. Mitigation measures at the source level and an overall environment management plan at the study area are elicited so as to improve the supportive capacity of the receiving bodies. The EMP presented in this chapter discusses the administrative aspects ensuring that mitigative measures are implemented and their effectiveness monitored after approval of the EIA.

10.1 ENVIRONMENTAL POLICY

The project proponent is committed to conduct all its operations and activities in an environmentally responsible manner and to continually improve environmental performance. The Proponent will- **Mr. M. Kumaravadivel -** Rough Stone & Gravel Quarry

- Meet the requirements of all laws, acts, regulations, and standards relevant to its operations and activities.
- Implement a program to train employees in general environmental issues and individual workplace environmental responsibilities.
- Allocate necessary resources to ensure the implementation of the environmental policy.
- Ensure that an effective closure strategy is in place at all stages of project development and that progressive reclamation is undertaken as early as possible to reduce potential long-term environmental and community impacts.
- Implement monitoring programs to provide early warning of any deficiency or unanticipated performance in environmental safeguards.
- Conduct periodic reviews to verify environmental performance and to continuously strive towards improvement.

10.1.1 Description of the Administration and Technical Setup

The environment monitoring cell discussed under Chapter VI will ensure effective implementation of environment management plan and to ensure compliance of environmental statutory guidelines through mine management level of each proposed existing quarry.

The said team will be responsible for:

- Monitoring of the water/ waste water quality, air quality and solid waste generated.

- ❖ Analysis of the water and air samples collected through external laboratory.
- ❖ Implementation and monitoring of the pollution control and protective measures/ devices which shall include financial estimation, ordering, installation of air pollution control equipment, waste water treatment plant, etc.
- ❖ Co-ordination of the environment related activities within the project as well as with outside agencies.
- ❖ Collection of health statistics of the workers and population of the surrounding villages.
- ❖ Green belt development.
- ❖ Monitoring the progress of implementation of the environmental monitoring program.
- ❖ Compliance to statutory provisions, norms of State Pollution Control Board, Ministry of Environment and Forests and the conditions of the environmental clearance as well as the consents to establish and consents to operate.

10.2 Budgetary Provision for Environmental Management

Adequate budgetary provision has been made by the company for execution of Environmental Management Plan. The Table 10.1 gives overall investment on the environmental safeguards and recurring expenditure for successful monitoring and implementation of control measures.

Table 10.1 EMP Budget for Proposed Project

Attribute	Mitigation measures	Provision for Implementation	Capital Cost (Rs.)	Recurring Cost/annum (Rs.)
Air Environment	Compaction, gradation and drainage on both sides	Rental Dozer & drainage construction on haul road @ Rs. 10,000/- per hectare and yearly maintenance @ Rs. 10,000/- per hectare	17200	17200
	Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers	Fixed sprinkler installation and new water tanker cost for capital; and water sprinkling (thrice a day) cost for recurring	800000	50000

	Air quality will be regularly monitored as per norms within ML area & ambient area	Yearly compliance as per CPCB norms	0	50000
	Muffle blasting – To control fly rocks during blasting	Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0	5000
	Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit	Dust extractor @ Rs. 25,000/- per unit deployed as capital & @ Rs. 2500 per unit recurring cost for maintenance	50000	5000
	No overloading of trucks/tippers/tractors	Manual Monitoring through Security guard	0	5000
	Stone carrying trucks will be covered by tarpaulin to avoid escape of fines to the atmosphere	Monitoring if trucks will be covered by tarpaulin	0	10000
	Enforcing speed limits of 20 km/hr within ML area	Installation of Speed Governors @ Rs. 5000/- per tipper/dumper deployed	25000	0
	Regular monitoring of exhaust fumes as per RTO norms	Monitoring of Exhaust Fumes	0	6250
	Regular sweeping and maintenance of roads for at least about 200 m from quarry entrance	Provision for 2 labours @ Rs.10,000/labour (Contractual) / hectare	0	34400

	Installing wheel wash system near exit gate of quarry	Installation + Maintenance + Supervision	50000	20000
Total Air Environment			**942200**	**202850**
Noise Environment	Source of noise will be transportation vehicles, and HEMM. For this, proper maintenance will be done at regular intervals.	Provision made in Operating Cost	0	0
	Oiling & greasing of Transport vehicles and HEMM at regular interval will be done.	Provision made in Operating Cost	0	0
	Adequate silencers will be provided in all the diesel engines of vehicles.	Provision made in Operating Cost	0	0
	It will be ensured that all transportation vehicles carry a fitness certificate.	Provision made in Operating Cost	0	0
	Safety tools and implementations that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	0	0
	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Provision made in Operating Cost	0	0

	Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.	Blowing Whistle by Mining Mate / Blaster / Competent Person	0	0
	Provision for Portable blaster shed	Installation of portable blasting shelter	50000	2000
	NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 tons of blasted material	0	513400
Total Noise Environment			**50000**	**515400**
Water Environment	Water Management	Provision for garland drain @ Rs. 10,000/- per hectare with maintenance of Rs. 5,000/- per annum (2.96.5 X 10000)	17200	8600
Total Water Environment			**17200**	**8600**
Waste Management	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency (capital cost, recurring cost for collection /disposal).	25000	20000
		Installation of dust bins	5000	2000
	Bio toilets will be made available outside mine lease on the land of owner itself	Provision made in Operating Cost	0	0
Total Waste Management			**30000**	**22000**

Implementation of EC, Mining Plan & DGMS	Size 6' X 5' with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN	Fixed display board at the quarry entrance as permanent structure	10000	1000
Total Implementation of EC, Mining Plan			**10000**	**1000**
Occupational Health and Safety	Workers will be provided with Personal Protective Equipment	Provision of PPE @ Rs. 4000/- per employee with recurring based on wear and tear (say, @ Rs. 1000/- per employee)	80000	20000
	Health checkup for workers will be provisioned	IME & PME Health checkup @ Rs. 1000/- per employee	0	20000
	First aid facility will be provided	Provision of 2 Kits per Hectare @ Rs. 2000/-	0	6880
	Mine will have safety precaution signages, boards.	Provision for signages and boards made	10000	2000
	Barbed Wire Fencing to quarry area will be provisioned.	Per Hectare fencing Cost @ Rs. 2,00,000/- with Maintenance of Rs 10,000/- per annum (2.28.0hectare)	344000	17200
	No parking will be provided on the transport routes. Separate provision on the south side of the hill will be made for vehicles /HEMMs. Flaggers will be deployed for traffic management	Parking area with shelter and flags @ Rs. 50,000/- per hectare project and Rs. 10,000/- as maintenance cost	86000	17200

	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	30000	5000
	Implementation as per Mining Plan and ensure safe quarry working	Mines Manager (1st Class / 2nd Class / Mine Foreman) under regulation 34 / 34 (6) of MMR, 1961 and Mining Mate under regulation 116 of MMR,1961 @ 40,000/- for Manager & @ 25,000/- for Foreman / Mate	0	780000
Total Occupational Health and Safety			**550000**	**868280**
Development of Green Belt	Green belt development - 500 trees per hectare (200 Inside Lease Area & 3 00 Outside Lease Area)	Site clearance, preparation of land, digging of pits /trenches, soil amendments, transplantation of saplings @ 200 per plant (capital) for plantation inside the lease area and @ 30 per plant maintenance (recurring))"	68800	10320
		Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring)	154800	15480
Total Development of Green Belt			**223600**	**25800**

Mine Closure	Closure includes 10% of the amount allotted for Greenbelt development, wire fencing, and garland drainage (Rule 27 in MCDR 2017 for Cat B mines will pay 2 lakhs per hectare or minimum amount of financial assurance of 5 lakhs)		0	58480
	G.O.(Ms)No.23, Dated: 28.09.2021	Section IVA of TNMMCR 1959 (@10% of Seigniorage Fee) (Seigniorage Fee for rough stone = Rs.90)	1681814	0
TOTAL			**35.04**	**16.43**

Table 10.2 Estimation of Overall EMP Budget after Adjusting 5% Annual Inflation

Ist Year	**IInd Year**	**IIIrd Year**	**IVth Year**	**Vth Year**	**Total Recurring Cost**	**Total EMP Cost**
16.43	17.26	18.12	19.03	20.56	**213.58**	**248.62**
VIth Year	**VIIth Year**	**VIIIth Year**	**IXth Year**	**Xth Year**		
24.58	22.65	23.78	24.96	26.21		

In order to implement the environmental protection measures, an amount of **Rs.35.04lakhs** as capital cost and recurring cost as **Rs. 16.43lakhs** 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 10 years will be **Rs. 248.62lakhs** as shown in Table 10.2.

10.3 CONCLUSION

Various aspects of mining activities were considered and related impacts were evaluated. Considering all the possible ways to mitigate the environmental concerns Environmental Management Plan was prepared and fund has been allocated for the same. The EMP is dynamic, flexible and subjected to periodic review. For project where the major environmental impacts are associated, EMP will be under regular review. Senior Management responsible for the project will conduct a review of EMP and its implementation to ensure that the EMP remains effective and appropriate. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP and the project will bring the positive impact in the study area.

CHAPTER XI
SUMMARY AND CONCLUSION

11.1 INTRODUCTION

As the proposed rough stone and gravel mining project (B1) falls within the quarry cluster of 500m radius with the total extent of 15.84.05Hect, it requires submission of EIA report for grant of Environmental Clearance (EC) after conducting public hearing. The proposed project falling in S.F. No's. 775/1D, 775/1E (Part) & 807/2A (Part) over the extent of 1.72.0Hect is situated in the cluster falling in Anjur Village, Pugalur Taluk, Karur District, Tamil Nadu. The projects involved in the calculation of cluster extent are of one proposed quarry and three existing quarries.

11.2 PROJECT DESCRIPTION

The proposed project area is located between Latitudes 11°3'13.12"N to 11°3'17.31"N Longitudes from 77°47'1.01"E to 77°47'8.95"E in Anjur Village, Pugalur Taluk, Karur District, Tamil Nadu. According to the approved mining plan, about **1,83,357m^3 & 5,04,232Ts** of **rough stone** and **5,643m^3 & 11,286Ts** of **gravel** will be mined up to the depth of **30m (BGL)** in the ten years. The quarrying operation is proposed to be carried out by open cast semi- mechanized mining method involving drilling and formation of benches of the prescribed dimensions.

11.3 DESCRIPTION OF THE ENVIRONMENT

Baseline data were collected to evaluate the existing environmental condition in the core and buffer areas during **March through May 2026** as per CPCB guidelines. The data were collected by both the FAEs and NABL accredited and MoEF notified **Accuracy Analabs (OBC) Private Limited** for the environmental attributes including soil, water, noise, air and by FAEs for ecology and biodiversity, traffic, and socio-economy.

11.3.1 Land Environment

Land Use and Land Cover (LULC) map, as shown in Figure 3.4 & 3.4a was prepared using Sentinel II image for the study area of 5km radius to provide a baseline status of the study area covering 5km radius around the proposed mine site. Totally, 6 LULCs were mapped using ArcGIS software version- 10.2. The areal extent of each LULC is provided in Table 3.5 of the total cluster area, mining area covers only 81.39ha accounting for 1.00%, of which lease area of 1.72.00ha contributes only about 0.043%. Hence very least percentage of mining activities shall not have any significant impact on the land environment.

Comparative study of Land Use Land Cover (LULC) Changes within 5km Radius (2020 vs 2025) was done and significant changes in land use and land cover were observed (Table 3.5a). Crop land has decreased from 6413.95ha (78.51%) to 6413.95ha (78.51%),

indicating the decrease in agricultural activities, this change is due to the land are not suitable for agriculture and source of irrigation is uncertain. But that cultivation land is included in the fallow land whose extent have been increased. Mining activity has been increased to a little extent from 80.18 ha (0.98%) to 81.39 ha (1.00%), suggesting increased demand of building materials for various infrastructure developments. The increase in common vegetation has noticed of 2.12 ha (0.03%) in last five years due to the afforestation activities carried out by the past quarry proponents. Built-up areas also rise from 958.53 ha (11.73%) to 1205.16 ha (14.75%), pointing out the urban development due to increase in economic activity. In fact, the agricultural land has been reduced but that too included in fallow land which can be reversible during availability of irrigation factors.

Table.11.1 Comparison of LULC Statistics of the 5km Radius

S. No.	Classification	2020		2025	
		Area (ha)	Area (%)	Area (ha)	Area (%)
1	Water bodies	80.35	0.98	78.60	0.96
2	Plantation	58.89	0.72	276.98	3.39
3	Crop lands	6921.14	84.72	6143.95	78.51
4	Built-up land	958.53	11.73	1205.16	14.75
5	Mining/ Industrial area	80.18	0.98	81.39	1.00
6	Fallow land	70.31	0.86	113.31	1.39
Total		**8318.52**	**100**	**8318.52**	**100**

11.3.2 Soil Environment

The soil is nutrient-rich, well-balanced, and structurally suitable for agriculture. No corrective measures are immediately necessary, but continued monitoring and sustainable land management practices are recommended to maintain soil health.

Physical Characteristics & Chemical Characteristics

1. Soil pH and Electrical Conductivity (EC):

- **pH ranged from** 7.21 to 8.21 indicating that the soil is **neutral to slightly alkaline**, which is favourable for most crops.
- **EC** value ranged from 0.21 to 0.35 dS/m, suggesting low salt concentration and non-saline soil across the sampling area.

2. Physical Properties

- **Moisture** values ranged from 7.45 to 10.1%, which are within the typical range for loamy soils and support good root penetration and aeration.

3. Soil Fertility Status:

- **Organic matter** levels ranged from 2.49 to 3.24mg/kg by weight, classifying soils as low to moderately fertile in terms of organic matter.
- **Nitrogen (N)** content varied from 31.0 to 42.0mg/kg by mass indicating moderate nitrogen availability.
- **Potassium (K)** ranged from 50.0 to 71.0mg/kg by mass moderate fertility potential in terms of potassium.
- **Phosphorous (P)** ranged from 16.0 to 20.0mg/kg by mass moderate fertility potential in terms of Phosphorous.

4. **Base Elements and Cation Ratios:**

- **Manganese (Mg)** ranged from 3.4 to 4.5mg/kg.
- **Zinc (Zn)** ranged from 0.5 to 1.2mg/kg.

Conclusion:

The soils in the study area are generally non-saline, neutral to slightly alkaline, and moderately fertile with low contamination levels. They exhibit good permeability, porosity, and suitable textural classes for agriculture and greenbelt development. The absence of heavy metals confirms that baseline soil conditions are unpolluted and safe for reclamation and vegetation growth.

11.3.3 Water Environment

1. Ammonia, Phenolphthalein Alkalinity, Potassium, RFC, BOD, COD, Chromium, Zinc – All " Below the Limit of Quantification (BLQ)"

- These are toxic heavy metals. Their presence in groundwater is usually due to industrial effluents or natural geogenic sources (minerals in rocks).
- Since all are below detection limits, there is no sign of industrial or geogenic contamination from these toxic metals.
- This is positive from an environmental and health risk perspective.
- Interpretation: No heavy metal pollution.

2. Calcium (57.0 – 125mg/l)

- Calcium contributes to hardness of water. High calcium makes water hard but is not harmful.
- Acceptable limit is 75 mg/l, permissible up to 200 mg/l.
- Slightly above acceptable but within limits.
- Interpretation: Slightly hard water, no major concern.

3. Magnesium (17.0– 36.0mg/l)

- Also contributes to water hardness.
- BIS acceptable limit: 30mg/l (permissible up to 100 mg/l).
- Some samples exceed acceptable but are still under permissible limits.
- Interpretation: Water is moderately hard, but usable.

4. Chloride (76.0 – 155mg/l)

- High chloride affects taste and can cause corrosion in pipelines.
- Acceptable limit: 250mg/l; permissible up to 1000 mg/l.
- Your values are slightly above the acceptable limit but safe.
- Interpretation: Mild salinity – may affect taste but not health.

5. Fluoride- (BQL (0.001))

- Fluoride is beneficial in small quantities but harmful in excess (>1.5 mg/l causes fluorosis).
- All values are below the 1.0 mg/l limit.
- Interpretation: No risk of dental or skeletal fluorosis.

6. Nitrate (12.0– 27.0mg/l)

- Nitrates come from agricultural runoff or sewage.
- Safe limit is 45mg/l (to avoid blue baby syndrome in infants).
- Your values are below the limit.
- Interpretation: No significant nitrate pollution.

7. Iron (BQL (0.001))

- Iron causes staining, bad taste, and bacterial growth when >0.3 mg/l.
- Your samples are well below the limit.
- Interpretation: No iron-related issues.

8. pH (7.28 – 7.85)

- pH is 6.5–8.5 for drinking water.
- All values within this range.
- Interpretation: Neutral pH, no corrosion or scaling tendency.

9. Total Dissolved Solids (TDS) (371 – 722mg/l)

- TDS represents total minerals and salts in water.
- Acceptable limit is 500 mg/l; permissible up to 2000 mg/l.
- BW01, BW03, and BW05 exceed the acceptable but are within permissible.
- Interpretation: Slightly mineral-rich water; taste may be affected but safe to use.

10. Electrical Conductivity (EC) (585 – 1040µS/cm)

- Indicates overall ionic concentration in water.
- Higher EC = higher salinity.
- EC > 1000 µS/cm (in BW01 and BW05) suggests moderately saline water.
- Interpretation: Suitable for irrigation, but may need softening for drinking.

11. Total Alkalinity (124 – 246mg/l)

- Indicates the buffering capacity (resistance to pH change).
- Acceptable: 200 mg/l; Permissible: 600 mg/l.
- High alkalinity may indicate presence of bicarbonates/carbonates.
- Interpretation: Alkaline nature is common in groundwater. No health issue but may affect taste.

12. Total Hardness (TH) (246 – 420mg/l)

- Acceptable: 200 mg/l; Permissible: 600 mg/l.
- TH > 200 (BW03, OW01) means moderately hard water.
- Interpretation: May require softening for household use.

13. Turbidity (BQL (1.0))

- Very clear water, no suspended solids.
- Interpretation: Visually and physically very good water quality.

14. Coliform bacteria (Absent)

- Acceptable: Absent
- Normal in groundwater.
- Interpretation: No concern.

Conclusion:

The groundwater quality assessment reveals that the water is generally safe and suitable for drinking, domestic, and irrigation purposes. All tested heavy metals such as barium, boron, copper, lead, mercury, arsenic, chromium, and zinc were found to be below detection limits, indicating no industrial or geogenic contamination. Key health-related parameters including fluoride, nitrate, iron, and pH levels are well within the acceptable standards, posing no health risk. Some Physico- Chemical parameters like Calcium, Magnesium, Total Hardness, Total Dissolved Solids (TDS), Electrical Conductivity (EC), and Chloride showed slightly elevated levels in a few samples, but they remain within permissible limits prescribed by BIS standards.

11.3.4 Air Environment

As per the monitoring data, $PM_{2.5}$ ranges from 18.0µg/m^3 to 20.7µg/m^3; PM_{10} from 42.4 µg/m^3 to 46.1µg/m^3; SO_2 from 4.9µg/m^3 to 7.3µg/m^3; NO_x from 11.5µg/m^3 to 16.4g/m^3.

The concentration levels of the pollutants fall within the acceptable limits of NAAQS prescribed by CPCB.

Air quality Index

The AQI shows that the air quality of the study area falls within good category 44 causing minimal impact to human health.

11.3.5 Noise Environment

Noise level in core zone was 46.2dB (A) Leq during day time and 35.4dB(A) Leq during night time. Noise levels recorded in buffer zone during day time varied from 40.3 to 44.2dB (A) Leq and during night time from 30.1 to 36.1dB (A) Leq. Thus, the noise level for industrial and residential area meets the requirements of CPCB.

11.3.6 Biological Environment

Biological study of the ecosystem is essential to understand the impact of rough stone quarry on existing flora and fauna of the study area. Studies on various aspects of ecosystem play an important role in identifying sensitive issues for undertaking appropriate action to mitigate the impact, if any. A survey was conducted to study the flora and fauna in 10km radius by direct and indirect sightings/ data. Some of the information was gathered from the local habitants. All the collected data were classified to interpret the impact of pollution on the flora and fauna of that region. Survey of the wild plants as well as cultivated crop plants was made, and all the available information was recorded.

Flora Composition in Core Zone

The core zone presents in tree, shrubs, herbs and grasses. Taxonomically total of 18 species belonging to 9 families have been recorded from the core mining lease area. Based on habitat classification of the enumerated plants the majority of species were Herbs 9 followed by Trees 3, Shrubs 4 and Climbers 2. The result of core zone of flora studies shows that Fabaceae and Solanaceae are the main dominating species in the study area it mentioned in Table 3.24 & 3. 25. No species found as threatened category.

Flora Composition in buffer Zone

There are 144 different species identified in the buffer zone. Among the identified, floral (144) species were 50 trees, 39 herbs, 31 shrubs, 11 climbers, 5 Creepers, and 8 grasses. According to the findings of the buffer zone flora studies, the dominant species in the study area are Fabaceae, Asteraceae, and Euphorbiaceae, as shown in Table 3.26. Apart from the proposed project area, there is agricultural land. Horticulture and agricultural land are untouched. There are no Rare, Endangered, and Threatened Flora species in the mining area

and their surrounding study area. Details of flora with the scientific name were mentioned in Table 3.26. A list of floral species has been prepared based on a primary survey (site observations) and discussion with local people. The total number of different plant life forms under trees, shrubs, herbs, and climbers is shown in Table 3.26.

Fauna in Core Zone

The 25 varieties of species observed in the core zone. Among them numbers of Insects 8 (32%), Reptiles 3 (12%), Mammals 5 (20%) and Avian 9 (36%). A total of 25 species belonging to 22 families have been recorded from the core mining lease area. Number of species decreases towards the mining area this might be due the lack of vegetation. None of these species are threatened or endemic. There is no Schedule I species and eight species are under schedule IV according to Indian wild life Act 1972. A total eight species of birds were sighted in the mining lease area. There are no critically endangered, endangered, vulnerable and endemic species were observed. Details of fauna in core zone with the scientific name were mentioned in Table. 3.28.

Fauna in Buffer Zone

A total of 47 species belonging to 34 families were recorded in the buffer zone. Based on habitat classification the majority of species were Birds 18 (40%), followed by Insects 15 (31%), Reptiles 7 (15%), 4 Mammals (8%) and amphibians 3 (6%). There are 4 schedule II species and 24 schedule IV species according to Indian wild life Act 1972. There are no critically endangered, vulnerable and endemic species observed.

11.3.7 Socio Economic Environment

The proposed project will provide direct and indirect employment and improve the infrastructural facilities in that area, thus leading to the improvement of people's standard of living.

11.4 Anticipated Environmental Impacts and Mitigation Measures

11.4.1 Land Environment

Anticipated Impact

- Change in land use and land cover and topography of the mine lease area.
- Problems to human habitations due to dust and noise caused by movement of heavy vehicles.
- Soil erosion and sediment deposition in the nearby water bodies during the rainy season.
- Siltation of water course due to wash off from the exposed working area.
- Deterioration of soil quality in the surrounding area due to runoff from the project area.

- Decrease in the agricultural productivity of the surrounding land due to soil quality degradation.

Mitigation Measures

- Construction of garland drains, settling pits, and check dams to prevent runoff and siltation.
- Runoff water will be discharged into the settling tanks to reduce suspended sediment.
- loads before runoff is discharged from the quarry site.
- The vegetation will be retained at the site wherever possible.
- Weekly monitoring and daily maintenance of erosion control systems so that they perform as specified specially during rainy season.

11.4.2 Soil Environment

Anticipated Impact

- Removal of protective vegetation cover.
- Exposure of subsurface materials which are unsuitable for vegetation establishment.

Mitigation Measures

- 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.

11.4.3 Water Environment

Anticipated Impact

- Surface and ground water resources may be contaminated due to pit water discharge, domestic sewage, discharge of oil and grease bearing waste water from washing of vehicles and machineries, and washouts from surface exposure or working areas.

- As the proposed project acquires 3.5KLD of water from water vendors, it will not extract water by developing abstraction structures in the lease area. Therefore, the project will not have impact on depletion of aquifer beneath the lease area.

Mitigation Measures

- Rain water from mine pit will be treated in settling tanks before being used for dust suppression and tree plantation purposes.
- Domestic sewage from site office will be discharged in septic tank and then directed to soak pits.
- Water from the tipper wash-down facility and machinery maintenance yard will be passed through interceptor traps/oil separators prior to its reuse.
- 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.
- Periodic (every 6 month once) analysis of ground water quality of quarry pit water and ground water of nearby villages will be conducted.
- Artificial recharge structures will be established in suitable locations as part of the rainwater harvesting management program.

11.4.4 Air Environment

Anticipated Impact

Anticipated increase of the air pollutants due to quarrying activities have been predicted using AERMOD software. 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-metaled 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

11.4.5 Noise Environment

Anticipated Impact

- Mining operations generate significant noise impacting both worker health and nearby communities.
- These impacts can range from annoyance and sleep disturbance to structural damage and hearing loss. Effective management of noise is crucial to mitigate these adverse effects.

Sources of Noise in Mining:

- ***Drilling and Blasting:*** Prolonged exposure to high-intensity noise from drilling and blasting can lead to hearing loss and other auditory problems
- ***Heavy Machinery:*** Excavators, haul trucks, and other equipment used in mining operations generate substantial noise.
- ***Loading and Transportation:*** The movement and handling of materials within the mine site contribute to noise pollution.

Common Mitigation Measures

The following noise mitigation measures are proposed for control of noise:

- Optimizing blast design to minimize ground noise.
- Constructing noise barriers or enclosing noisy equipment can help reduce noise propagation.
- Proper maintenance and operation of mining equipment can help minimize noise generation.
- Usage of sharp drill bits while drilling which will help in reducing noise
- Secondary blasting will be totally avoided and hydraulic rock breaker will be used for breaking boulders
- Controlled blasting with proper spacing, burden, stemming and optimum charge/delay will be maintained
- The blasting will be carried out during favourable atmospheric condition and less human activity timings by using nonelectrical initiation system
- 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
- Greenbelt/ 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 though training and awareness
- Regular medical check–up and proper training to personnel to create awareness about adverse noise level effects

Ground Vibrations

Noise and Vibration:

- Mining operations generate significant noise and vibration impacting both worker health and nearby communities.
- These impacts can range from annoyance and sleep disturbance to structural damage and hearing loss. Effective management of noise and vibration is crucial to mitigate these adverse effects.

Sources of Noise and Vibration in Mining:

- ***Drilling and Blasting:*** A primary source of both noise and ground vibrations, with the intensity dependent on the amount of explosives, atmospheric conditions and proximity to the blast.
- Heavy Machinery: Excavators, haul trucks, and other equipment used in mining operations generate substantial noise.
- Loading and Transportation: The movement and handling of materials within the mine site contribute to noise pollution.

Common Mitigation Measures

- ❖ The blasting operations in the cluster quarries are carried out without deep hole drilling and blasting using delay detonators which reduce the ground vibrations
- ❖ Proper quantity of explosives, suitable stemming materials and appropriate delay system will be adopted to avoid overcharging and for safe blasting
- ❖ Adequate safe distance from blasting will be maintained as per DGMS guidelines
- ❖ Blasting shelter will be provided as per DGMS guidelines
- ❖ Blasting operations will be carried out only during day time
- ❖ The charge per delay will be minimized and preferably a greater number of delays will be used per blasts
- ❖ During blasting, other activities in the immediate vicinity will be temporarily stopped
- ❖ Drilling parameters like depth, diameter and spacing will be properly designed to give proper blast
- ❖ A fully trained explosives blast man (Mining Mate, Mines Foreman, 2nd Class Mines Manager/ 1st Class Mines Manager) will be appointed
- ❖ A set of shot firing rules will be drawn up and blasting shall commence outlining the detailed operating procedures that will be followed to ensure that shot firing operations on site take place without endangering the workforce or public
- ❖ Sufficient angular stemming material will be used to confine the explosive force and minimise environmental disturbance caused by venting / misfire
- ❖ The detonators will be connected in a predetermined sequence to ensure that only one charge is detonated at any one time and a NONEL or similar type initiation system will be used
- ❖ The detonation delay sequence shall be designed so as to ensure that firing of the holes is in the direction of free faces so as to minimise vibration effects.

- Appropriate blasting techniques shall be adopted in such a way that the predicted peak particle velocity shall not exceed 0.251mm/s.
- Vibration monitoring will be carried out every 6 months to check the efficacy of blasting practices.

11.4.6 Biological Environment

Anticipated Impact

- 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.
- 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. There are no trees in mine lease area.
- Carbon released from quarrying machineries and tippers during quarrying would be 96kg per day, 10368kg per year and 103680kg over ten years.

Mitigation Measures

- 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.
- None of the plants in the lease area will be cut during operational phase of the mine. we recommend uprooting and planting of the 10 trees along the 7.5m safety zone to prevent environmental pollution during quarrying. As the survival rate due to uprooting was only 30%, 100 seedlings will be procured at the rate of 10 seedlings per tree and planted in 7.5m safety zone.
- Existing roads will be used and new roads will not be constructed to reduce impact on flora.
- Green belt of adequate width will develop around the project site. Dust catching species like *Alstonia scholaris, Bombax ceiba, Terminalia arjuna, Cassia fistula, Bombax ceiba, Azadirchta indica, Nyctanthes arbor-tristis, Psidium guajava, Tectona grandis* etc will be planted in green belt.
- 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 10368kg of carbon per year. Therefore, we recommend 500 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 4.14) about 2012w trees (Table 4.15) will be planted within three months from the beginning of mining. These trees, when grown up would sequester carbon of about 245155kg of the total carbon.

11.4.7 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

11.4.8 Occupational Health

- All the persons will undergo pre-employment and periodic medical examination
- Employees will be monitored for occupational diseases by conducting medical tests: General physical tests, Audiometric tests, Full chest, X-ray, Lung function tests, Spiro metric tests, Periodic medical examination – yearly, Lung function test – yearly, those who are exposed to dust and 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.

11.5 Environment Monitoring Program

Table 11.2 Environment Monitoring Program

S. No.	Environment Attributes	Location	Monitoring		Parameters
			Duration	Frequency	
1	Air Quality	5 Locations (1 Core & 4 Buffer)	24 hours	Once in 6 months	Fugitive Dust, $PM_{2.5}$, PM_{10}, SO_2 and NO_x.
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	5 Locations (2 SW & 3 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	5 Locations (1 Core & 4 Buffer)	Hourly – 1 Day	Once in 6 months	Leq, Lmax, Lmin, Leq Day & Leq Night
6	Vibration	At the nearest habitation (in case of reporting)	–	During blasting operation	Peak particle velocity
7	Soil	5 Locations (1 Core & 4 Buffer)	–	Once in six months	Physical and chemical characteristics
8	Greenbelt	Within the project area	Daily	Monthly	Maintenance

Source: All monitoring and testing have been carried out as per the Guidelines of CPCB and MoEF & CC.

11.6 ADDITIONAL STUDIES

11.6.1 Risk Assessment

The DGMS risk assessment process is intended to identify existing and probable hazards in the work environment and all operations and assess the risk levels of those hazards in order to prioritize those that need immediate attention. The whole quarry operation will be carried out under the direction of a Qualified Competent Mine Manager holding certificate of competency to manage a metalliferous mine granted by the DGMS, Dhanbad for proposed project.

11.6.2 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.

11.6.3 Cumulative Impact Study

- The results on the cumulative impact of the three 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.
- PPV resulting from three proposed project is well below the permissible limit of Peak Particle Velocity of 5 mm/s.
- The cluster projects will allocate Rs. 20,00,000/- towards CER as recommended by SEAC
- The cluster projects will directly provide jobs to 90 local people, in addition to indirect jobs
- The cluster projects will plant 7921 about trees in and around the lease area.
- The cluster projects will add 250PCU per day to the nearby roads.

11.7 Project Benefits

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

- Direct employment to 20 local people
- 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.
- Rs. 5,00,000 will be allocated for CER

11.8 ENVIRONMENT MANAGEMENT PLAN

In order to implement the environmental protection measures, an amount of **Rs. 35.04L** as capital cost and recurring cost as **Rs. 16.43L** 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 10 years will be **Rs. 248.62** as shown in Table 10.2.

11.9 OVERALL STUDY AREA CONCLUSION

The Environmental Impact Assessment (EIA) for the proposed rough stone and gravel quarry project in Anjur Village, Pugalur Taluk, Karur District, Tamil Nadu, has comprehensively evaluated the baseline environmental conditions and projected impacts associated with quarry operations. The study concludes that the project is environmentally sustainable with appropriate mitigation and management practices in place.

The land use analysis using Sentinel- II imagery reveals that agricultural land dominates the study area, with limited urbanization and industrial activity. While minor land use changes are expected due to quarrying, these are localized and reversible.

The soil environment is assessed to be healthy and agriculturally productive, with good moisture retention, neutral to slightly alkaline pH, and moderate nutrient levels.

Surface and groundwater quality are generally good. Surface water meets all drinking and irrigation standards with minimal treatment, and groundwater is safe for consumption after mild treatment for hardness and taste. No microbial contamination was detected, and key parameters fall within permissible limits.

Air quality and noise levels are within Central Pollution Control Board (CPCB) norms, and the Air Quality Index remains causing minimal impact to human health. Quarrying impacts on air and noise can be effectively controlled through dust suppression, green belt development, and controlled blasting techniques.

The biological environment in the core zone shows limited flora and fauna due to existing quarry activity, but the buffer zone hosts a healthy diversity of species with no presence of endangered or migratory species. Green belt development and post-mining reclamation plans are proposed to enhance biodiversity and carbon sequestration.

The socio-economic environment will benefit from direct and indirect employment, infrastructure development, and improved livelihoods. The project also contributes to the local economy through taxes, royalty payments, and community development initiatives under Corporate Environmental Responsibility (CER).

Potential environmental impacts such as dust, noise, and runoff are anticipated but can be managed with the proposed Environment Management Plan (EMP). Adequate provisions have been made for water management, air pollution control, soil conservation, occupational

health, and post-mining restoration. Risk assessment and a disaster management plan have been integrated to ensure safety and emergency preparedness.

Overall, the study concludes that the proposed quarry project is technically feasible, environmentally sound, and socio-economically beneficial. With strict implementation of the mitigation measures and monitoring programs, the project can proceed without causing significant adverse impacts on the environment or local communities.

CHAPTER XII

DISCLOSURES OF CONSULTANT

The Project Proponent, **Mr. M. Kumaravadivel** has engaged **Geo Technical Mining Solutions**, a NABET accredited consultancy for carrying out the EIA study as per the ToR issued.

Address of the consultancy:

No: 1/213B Natesan Complex,
Oddapatti, Dharmapuri- 636705,
Tamil Nadu, India.
Email:info.gtmsdpi@gmail.com
Web: www.gtmsind.com
Phone: 04342 232777.

The accredited experts and associated members who were engaged in this EIA study are given below:

S. No	Name of the expert	In house/ Empanelled	Sector	Functional Area	Category
Approved Functional Area Experts & EC					
1.	S. Gopalakrishnan	EIA Coordinator (EC) In-house	1(a)(i)	HG, GEO	B
2.	G. Umamaheswaran	In-house, FAE	1(a)(i)	LU, LC	B
3.	Dr. R. Arun Balaji	In-house, FAE	1(a)(i)	AQ	B
4.	Dr. D. Kalaimurugan	In-house, FAE	1(a)(i)	SC, EB	B
5.	Dr. G. Prabhakaran	Empanelled FAE	1(a)(i)	SE	B
6.	J.N. Manikandan	Empanelled FAE	1(a)(i)	RH, SHW,	B
7.	R. Revathy	In-house, FAE	1(a)(i)	WP	B
8.	P. Venkatesh	In-house, FAE	1(a)(i)	AP	B
9.	C. Kumaresan	In-house, FAE	1(a)(i)	NV	B
Approved Functional Area Associates					
13	C. Ragul	FAA	1(a)(i)	Geo	B
14	K. Ravichandiran	FAA	1(a)(i)	LU, LC	B
15	K. Pirithivi	FAA	1(a)(i)	HG	B
16	M. Muralidharan	TM	1(a)(i)	NV	B

Abbreviations			
EC	EIA Coordinator	NV	Noise and Vibration
FAE	Functional Area Expert	SE	Socio Economics
FAA	Functional Area Associates	HG	Hydrology, ground water and water conservation
TM	Team Member	SC	Soil conservation
GEO	Geology	RH	Risk assessment and hazard management
WP	Water pollution monitoring, prevention and control	SHW	Solid and hazardous wastes
AP	Air pollution monitoring, prevention and control	MSW	Municipal Solid Wastes
LU	Land Use	ISW	Industrial Solid Wastes
AQ	Meteorology, air quality modelling, and prediction	HW	Hazardous Wastes
EB	Ecology and bio-diversity	GIS	Geographical Information System

DECLARATION BY EXPERTS CONTRIBUTING TO THE EIA & EMP

I, hereby, certify that I was a part of the EIA team in the following capacity that developed the EIA & EMP report.

Signature :

Date :

Name : S. Gopalakrishnan

Designation : EIA Coordinator

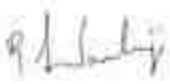
Name of the EIA Consultant Organization : Geo Technical Mining Solutions

Period of Involvement : Till date

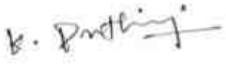
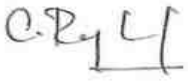
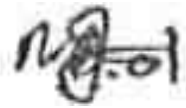
We, the FAEs and FAAs hereby declare that information furnished in this EIA/ EMP report for **Mr. M. Kumaravadivel** rough stone and gravel quarry project with the extent of 1.72.0ha situated in the cluster with the extent of 15.84.05ha in Anjur Village, Pugalur Taluk, Karur District of Tamil Nadu is true and correct to the best of our knowledge.

List of Functional Area Experts Engaged in this Project

S. No.	Functional Area	Involvement	Name of the Experts	Signature
1	AP	o Identification of different sources of air pollution due to the proposed mine activity o Prediction of air pollution and propose mitigation measures / control measures	P. Venkatesh	
2	WP	o Suggesting water treatment systems, drainage facilities o Evaluating probable impacts of effluent/waste water discharges into the receiving environment/water bodies and suggesting control measures.	R. Revathy	
3	HG	o Interpretation of ground water table and predict impact and propose mitigation measures. o Analysis and description of aquifer Characteristics	S. Gopalakrishnan	
4	GEO	o Field Survey for assessing the regional and local geology of the area. o Preparation of mineral and geological maps. o Geology and Geo morphological analysis/description and Stratigraphy/Lithology.	S. Gopalakrishnan	
5	SE	o Revision in secondary data as per Census of India, 2011. o Impact Assessment & Preventive Management Plan o Corporate Environment Responsibility.	Dr. G. Prabhakaran	
6	EB	o Collection of Baseline data of Flora and Fauna. o Identification of species labelled as Rare, Endangered and threatened as	Dr. D. Kalaimurugan	

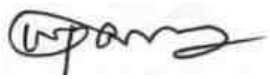
		per IUCN list. o Impact of the project on flora and fauna. o Suggesting species for greenbelt development.		
7	RH	o Identification of hazards and hazardous substances o Risks and consequences analysis o Vulnerability assessment o Preparation of Emergency Preparedness Plan o Management plan for safety.	J.N. Manikandan	
8	LU	o Construction of Land use Map o Impact of project on surrounding land use o Suggesting post closure sustainable land use and mitigative measures.	G. Umamaheswaran	
9	NV	o Identify impacts due to noise and vibrations o Suggesting appropriate mitigation measures for EMP.	C. Kumaresan	
10	AQ	o Identifying different source of emissions and propose predictions of incremental GLC using AERMOD. o Recommending mitigations measures for EMP	Dr.R. Arun Balaji	
11	SC	o Assessing the impact on soil environment and proposed mitigation measures for soil conservation	Dr. D.Kalaimurugan	
12	SHW	o Identify source of generation of non-hazardous solid waste and hazardous waste. o Suggesting measures for minimization of generation of waste and how it can be reused or recycled.	J.N. Manikandan	

List of Functional Area Associate Engaged in this Project

S.No.	Name	Functional Area	Involvement	Signature
1.	K. Pirithivi	HG	○ Site visit with FAE ○ Provide inputs & Assisting FAE for HG	
2.	C. Raghul	GEO	○ Field visits along with FAE ○ Assistance to FAE in both primary and secondary data collection	
3.	K. Ravichandiran	LU & LC	○ Field visits along with FAE Assistance to FAE in both primary and secondary data collection	
4.	M. Muralidharan	NV	○ Site visit along with FAE Assistance in report preparation. ○ Assistance to FAE in both primary and secondary data collection ○ Assistance in noise prediction modelling	

DECLARATION BY THE HEAD OF THE ACCREDITED CONSULTANT ORGANIZATION

I, **Dr. S. KARUPPANNAN,** Managing Partner, **Geo Technical Mining Solutions**, hereby, confirm that the above-mentioned functional area experts and team members prepared the EIA/ EMP report for **Mr. M. Kumaravadivel** rough stone and gravel quarry project with the extent of 1.72.0ha situated in the cluster with the extent of 15.84.05ha in Anjur Village, Pugalur Taluk, Karur District of Tamil Nadu is true and correct to the best of my knowledge.

Signature	:	
Date	:	
Name	:	**Dr. S. Karuppannan**
Designation	:	Managing Partner
Name of the EIA Consultant Organization	:	Geo Technical Mining Solutions
NABET Certificate No & Issue Date	:	NABET/EIA/23-26/RA 0319
Validity	:	Till 31.12.2026

File No: 13499
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), TAMIL NADU)
***

Dated: **27/03/2026**

To,

Thiru. M. KUMARAVADIVEL
S/o.Muthusamy, No.3/246, Velayuthampalaiyam, Anjur, Pandilingapuram, Pugalur Taluk, Karur District - 638151. TAMIL NADU.
kuamravadivelmuthusamy@gmail.com

Subject: Grant of Terms of Reference along with Public Hearing under the provision of the EIA Notification 2006-regarding.

Sir/Madam,

Sub: SEIAA, Tamil Nadu – Proposed Rough stone & Gravel Quarry over an Extent of 1.72.0 Ha at S.F.No. 775/1D, 775/1E (Part) & 807/2A (Part) of Anjur Village, Pugalur Taluk, Karur District, Tamil Nadu by Thiru. M. Kumaravadivel - under project category – "B1" and Schedule S.No. 1(a) – "Mining of Minerals"– **ToR issued along with Public Hearing**- preparation of EIA report – Regarding.
Ref: 1. Online proposal No. SIA/TN/MIN/571110/2026, Dated: 06.03.2026.
2. Minutes of the 690th meeting of SEAC held on 11.03.2026.
3. Minutes of the 984th meeting of SEIAA held on 24.03.2026.

2. The particulars of the proposal are as below:

(i) TOR Identification No.	TO26B0108TN5818271N
(ii) File No.	13499
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals,1(a) Mining of minerals
(vi) Name of Project	Anjur Village Rough Stone and Gravel Quarry
(vii) Name of Company/Organization	M KUMARAVADIVEL
(viii) Location of Project (District, State)	KARUR, TAMIL NADU
(ix) Issuing Authority	SEIAA
(x) Applicability of General Conditions	no
(xi) Applicability of Specific Conditions	no

1.In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A and B) were submitted to the SEIAA for an appraisal by the SEAC under the provision of EIA notification 2006 and its subsequent

amendments.
2.The above-mentioned proposal has been considered by SEIAA in the meeting held on 24.03.2026. The minutes of the meeting and all the Application and documents submitted [viz. Form-1 Part A, Part B] are available on PARIVESH portal which can be accessed by scanning the QR Code above.
3.The State Expert Appraisal Committee (SEAC), based on the information & clarifications provided by the project proponent and after detailed deliberations on all technical aspects recommended the proposal for grant of Terms of Reference with public hearing under the provision of EIA Notification, 2006 and as amended thereof subject to the stipulation of specific and general conditions as detailed in Annexure (2).
4.The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the SEAC hereby decided to issue the following Terms of Reference with public hearing for instant proposal of **Thiru. M. Kumaravadivel** under the provisions of EIA Notification, 2006 and as amended thereof.
5.The Ministry/SEIAA-TN reserves the right to stipulate additional conditions, if found necessary.
6.The Terms of Reference with public hearing to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.
7.This issues with the approval of the Competent Authority.
8.The TORs with public hearing prescribed shall be valid for a period of three years from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

Annexure 1

Specific Terms of Reference s for (Mining Of Minerals)

1. Seiaa Specific Conditions :

S. No	Terms of Reference
1.1	After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant **Terms of Reference (ToR) along with Public Hearing for the quantity of 1,83,357m^3 of Rough Stone & 5,643m^3 of Gravel for a depth of 30m BGL and the annual peak production shall not exceed 24,592m^3 of Rough Stone & 2,485m^3 of Gravel** as per the approved mining plan, under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal conditions & the SEIAA Specific & Standard conditions. 1. The PP shall furnish the Certified Compliance Report for the Environmental Clearance issued earlier in the name of Thiru.P.Ravi, at the time of appraisal of EIA.

2. Seiaa Standard Conditions :

S. No	Terms of Reference
2.1	**<u>Cluster Management Committee</u>** 1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry. 2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc., 3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.

S. No	Terms of Reference
	4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network. 5. The committee shall deliberate on risk & emergency management plan, fire safety & evacuation plan and sustainable development goals pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan. 6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the Environmental policy devised shall be given in detail in the EIA Report. 7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner. 8. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity. **Agriculture & Agro-Biodiversity** 9. Impact on surrounding agricultural fields around the proposed mining Area. 10. Impact on soil flora & vegetation around the project site. 11. Details of type of vegetation including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetation all along the boundary of the proposed mining area shall committed mentioned in EMP. 12. The Environmental Impact Assessment should study the agro-biodiversity, agro- forestry, horti-cultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem. 13. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services. 14. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock. **Forests** 15. The project proponent shall detailed study on impact of mining on Reserve forests and free ranging wildlife. 16. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna. 17. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection. 18. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site. **Water Environment** 19. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period. 20. Erosion Control measures. 21. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas. 22. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. 23. The project proponent shall study and furnish the details on potential fragmentation impact on natural Environment, by the activities. 24. The project proponent shall study and furnish the impact on aquatic plants and animals in water

S. No	Terms of Reference
	bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts. 25. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components. 26. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites. 27. The EIA shall include the impact of mining activity on the following: a) Hydrothermal/Geothermal effect due to destruction in the Environment. b) Bio-geochemical processes and its foot prints including Environmental stress. c) Sediment geochemistry in the surface streams. **Energy** 28. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished. **Climate Change** 29. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities. 30. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features. 31. Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood. **Mine Closure Plan** 32. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued. **EMP** 33. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs. 34. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan. **Risk Assessment** 35. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining. **Disaster Management Plan** 36. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued. **Others** 37. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc. 38. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan. 39. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the Environment. The ecological risks and impacts of plastic & microplastics on aquatic Environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.

SEAC conditions - Site specific

Major Conditions:

1. The Project Proponent (PP) shall undertake a detailed study on the potential impacts of the proposed mining activities on the coir industry located at a distance of approximately 200m from the project site. Based on the findings, suitable mitigation measures shall be proposed and incorporated in the Environmental Management Plan (EMP).

General Conditions:

1. **A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal:**
   - **(i) Copy of the agreement forming CMC.**
   - **(ii) The Organisation chart of the Committee with defining the role of the members**
   - **(iii) The 'Standard Operating Procedures' (SoP) executing the planned activities**.
2. The Geo referenced Boundary pillars to be erected on the field as per the mine rules and the evidence should be submitted along with the EIA report.
3. The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report.
4. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300m & upto 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations.
5. The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.

6. The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report.
7. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.
8. The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures.
9. The PP shall prepare a conceptual working plan accommodating the inclusion of haul road accessibility keeping the benches intact, by ensuring the slope stability of the working benches to be constructed and existing quarry wall.

   The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report

SEAC Standard conditions

1. In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following:
   (i) Original pit dimension
   (ii) Quantity achieved Vs EC Approved Quantity
   (iii) Balance Quantity as per Mineable Reserve calculated.
   (iv) Mined out Depth as on date Vs EC Permitted depth
   (v) Details of illegal/illicit mining
   (vi) Violation in the quarry during the past working.
   (vii) Quantity of material mined out outside the mine lease area
   (viii) Condition of Safety zone/benches
   (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.
2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.
3. The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with

indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.

4. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry.
5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.
6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.
7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.
8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.
9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.
10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.
11. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.

12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,
13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?
14. Quantity of minerals mined out.
    - Highest production achieved in any one year
    - Detail of approved depth of mining.
    - Actual depth of the mining achieved earlier.
    - Name of the person already mined in that leases area.
    - If EC and CTO already obtained, the copy of the same shall be submitted.
    - Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.
15. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,
17. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.
18. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.
19. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.

20. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.
21. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.
22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.
23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.
24. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
25. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.
26. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.
27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.

28. Impact on local transport infrastructure due to the Project should be indicated.
29. A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.
30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.
31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.
32. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.
33. Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner
34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
35. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
37. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.

38. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
40. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.
42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.
43. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.

STANDARD TERMS OF REFERENCE

1) Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
3) All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
4) All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ topo sheet, topographic sheet, geomorphology and geology of the area should

be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).

5) Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
6) Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
7) It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.
8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.
9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.
10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.
12) Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the

site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.

13) Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.

14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.

15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.

16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.

17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.

18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.

20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).

21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.

23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be

shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.

24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.
31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted cle arly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and

native species and the species which are tolerant to pollution.

32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.
33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
37) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.

43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.

44) Besides the above, the below mentioned general points are also to be followed:-

a) Executive Summary of the EIA/EMP Report

b) All documents to be properly referenced with index and continuous page numbering.

c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.

d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.

e) Where the documents provided are in a language other than English, an English translation should be provided.

f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.

g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.

h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and

sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

In addition to the above, the following shall be furnished:-

The Executive summary of the EIA/EMP report in about 8-10 pages should be prepared incorporating the information on following points:

1. Project name and location (Village, District, State, Industrial Estate (if applicable).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.
7. Details of village map, "A" register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be shall be submitted along with EIA report.
9. Obtain a letter /certificate from the Assistant Director of Geology and Mining standing that there is no other Minerals/resources like sand in the quarrying area within the approved depth of mining and below depth of mining and the same shall be furnished in the EIA report.
10. EIA report should strictly follow the Environmental Impact Assessment Guidance Manual for Mining of Minerals published February 2010.
11. Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
12. The EIA study report shall include the surrounding mining activity, if any.
13. Modeling study for Air, Water and noise shall be carried out in this field and incremental increase in the above study shall be substantiated with mitigation measures.
14. A study on the geological resources available shall be carried out and reported.
15. A specific study on agriculture & livelihood shall be carried out and reported.
16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of is acquisition, nearby (in 2-3 km.) water body, population,

with in 10km other industries, forest , eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)

18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies
22. Issues raised during public hearing (if applicable) and response given
23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan
26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.
31. A detailed plan on plastic waste management shall be furnished. Further, the proponent should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (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. In this connection, the project proponent has to furnish the action plan.

Besides the above, the below mentioned general points should also be followed:-

a. A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.
b. All documents may be properly referenced with index, page numbers and continuous page numbering.
c. Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.

d. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF& CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry should also be followed.

e. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India (QCI)/National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other organization/Laboratories including their status of approvals etc. In this regard circular no F. No.J -l1013/77/2004-IA-II(I) dated 2nd December, 2009, 18th March 2010, 28th May 2010, 28th June 2010, 31st December 2010 & 30th September 2011 posted on the Ministry's website http://www.moef.nic.in/ may be referred.

- After preparing the EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006) covering the above mentioned points, the proponent willtake further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.
- The final EIA report shall be submitted to the SEIAA, Tamil Nadu for obtaining Environmental Clearance.
- The TORs with public hearing prescribed shall be **valid for a period of three years** from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

Signed by
Rahul Nadh A R
Date: 27-03-2026 18:19:08
Reason: Verified and signed

From
Dr.P.Jayapal M.Sc., Ph.D.,,
Deputy Director,
Geology and Mining,
Karur.

To
Thiru.M.Kumaravadivel,
S/o.Muthusamy,
No.3/246, Velayuthapalayam,
Anjur, Pandilingapuram,
Pugalur Taluk,
Karur District.

Rc.No.870/Mines/2025, Dated: 29.01.2026

Sir,

Sub: Mines and Minerals – Minor Mineral – Karur District – Pugalur Taluk – Anjur Village - Patta land in S.F.Nos. 775/1D (0.37.00 hectares), 775/1E (Part) (1.05.00 hectares) and 807/2A(Part) (0.30.00 hectares) Over an extent of 1.72.00 hectares - Quarry lease application preferred by Thiru.M.Kumaravadivel for quarrying Rough Stone and Gravel – Mining Plan approved - requested for the details of Existing/ Proposed/Expired and Abandoned quarries situated within 500 mts radial distance - furnished – Regarding.

Ref:

1. Quarry lease Online application for quarrying Rough stone and Gravel preferred by Thiru.M.Kumaravadivel, S/o.Muthusamy, No.3/246, Velayuthapalayam, Anjur, Pandilingapuram, Pugalur Taluk, Karur District, dated: 18.08.2025.
2. Deputy Director, Geology and Mining, Karur Notice, Rc.No.870/Mines/2025, Dated:19.12.2025
3. Mining Plan submitted by Thiru.M.Kumaravadivel, letter received in this office on 07.01.2026.
4. The Deputy Director, Geology and Mining, Karur Mining Plan approved letter Rc.No.870/Mines/2025, Dated:19.01.2026
5. Thiru.M.Kumaravadivel, letter received in this office on 07.01.2026

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m. கோபாலகிருஷ்ணன்

In the reference 1st cited Thiru.M.Kumaravadivel, S/o.Muthusamy, No.3/246, Velayuthapalayam, Anjur, Pandilingapuram, Pugalur Taluk, Karur District has preferred an online application for the grant of Ten years lease to quarry Rough Stone and Gravel over an extent of 1.72.00 hectares of patta land in S.F.Nos. 775/1D (0.37.00 hectares), 775/1E (Part) (1.05.00 hectares) and 807/2A(Part) (0.30.00 hectares) of Anjur Village, Pugalur Taluk, Karur District. The Deputy Director of Geology and Mining, Karur had issued precise area memorandum to the proposed lease area vide reference 2nd cited.

Accordingly, the applicant has submitted the 3 copies of draft Mining Plan and the same was approved by the Deputy Director, Geology and Mining, Karur vide reference 4th cited.

In the reference 5th cited, the applicant has requested to the Deputy Director of Geology and Mining, Karur to provide the details of existing, proposed, expired and abandoned quarries situated within 500 meter radial distance from the subject area and the same has been furnished as follows:-

I. Existing Quarries: -

Sl No.	Name of the lessee/firm it holder	Name of the Mineral	Taluk & Village	S.F.No.	Extent (hect)	Lease Period
1.	Thiru.S.Kuppusamy, s/o. Samiyappagounder, Door No.95, Saliyangattupallam, Thottipalayam, Muthur, Kangeyam Taluk, Tiruppur	Rough Stone and Gravel	Pugalur Taluk, Anjur Village	764/3 765/3 766/1 766/2 766/3A 767/1 767/2A	4.82.70	28.08.2024 to 27.08.2029
2.	Thiru.P.Palanisamy, S/o.Periyasamy, Door No.104/107, Saliyankattupallam, Thottiyapalayam, Muthur, Kangeyam Taluk, Tiruppur	Rough Stone	Pugalur Taluk, Anjur Village	773/2 776/3 777/1 778/1A(Part) 807/2C2	4.47.85	20.06.2025 to 19.06.2030
3.	Thiru.P.Sampathkumar, S/o.Palanisamy, Door No.98 Saliyankattupallaym, Muthur, Kangeyam Taluk, Tiruppur District	Rough Stone	Pugalur Taluk, Anjur Village	759/2(P) 761/2(P) 761/3(P) 762/2 762/3 763/2 763/3	4.81.50	23.06.2025 to 22.06.2030

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II. Proposed Quarries: -

Sl No.	Name of the lessee/firm it holder	Name of the Mineral	Taluk & Village	S.F.No.	Extent (hect)	Lease Period
1.	Thiru.M.Kumaravadivel, S/o.Muthusamy, No.3/246, Velayuthapalayam, Anjur, Pandilingapuram, Pugalur Taluk, Karur	Rough Stone & Gravel	Pugalur Taluk Anjur Village	775/1D 775/1E (Part) 807/2A(Part)	1.72.00	Proposed Area

III. Lease Expired Quarries : -

Sl No.	Name of the lessee/firm it holder	Name of the	Taluk & Village	S.F.No.	Extent (hect)	Lease Period
1.	R.P. Muralidasan, S/o. Perumal Goundar, 23/B Gandhi Nagar, Namakkal.	Rough Stone	Pugalur (Erstwhile Aravakurichi) Taluk Anjur Village	775/2 775/3 807/1	1.30.5	19.09.2007 to 18.09.2012
2.	K.P.Thuraisamy, S/o.Periyasamygoundar, Thatharakkadu, Valaithottam post, Erode.	Rough Stone	Pugalur (Erstwhile Aravakurichi) Taluk Anjur Village	767/3	1.24.0	31.10.2007 to 30.10.2012
3.	Thiru.P.Ravi, S/o.Palanisamygounder, Saliyangkaddupallam, Muthur village, Kangeyam Taluk, Karur District.	Rough Stone	Pugalur (Erstwhile Aravakurichi) Taluk Anjur Village	775/1E(P) 776/3 777/1 778/1A 807/2B 807/2C2	4.40.0	21.2.2018 to 20.2.2023
4.	Thiru.P.Ravi, S/o.Palanisamygounder, Saliyangkaddupallam, Muthur village, Kangeyam Taluk, Karur District.	Rough Stone	Pugalur (Erstwhile Aravakurichi) Taluk Anjur Village	759/3 759/4 763/5 764/2 765/2	4.18.0	07.08.2017 to 06.08.2022
5.	Thiru.P.Duraisamy S/o.PeriyasamyGounder ThatharakaduThottam, Anjur Village Erode Taluk & District.	Rough Stone	Pugalur (Erstwhile Aravakurichi) Taluk Anjur Village	762/4 763/4 764/1 765/1	1.59.5	07.08.2017 to 06.08.2022

IV. Abandoned Quarries : -

Sl No.	Name of the lessee/firm it holder	Name of the Mineral	Taluk & Village	S.F.No.	Extent (hect)	Lease Period
1.	Nil					

27/01/26

Deputy Director,
Geology and Mining,
Karur.

27.1.26.

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From
Dr.P.Jayapal M.Sc., Ph.D.,
Deputy Director,
Geology and Mining,
Karur.

To
Thiru.M.Kumaravadivel,
S/o.Muthusamy,
No.3/246, Velayuthapalayam,
Anjur, Pandilingapuram,
Pugalur Taluk,
Karur District.

Rc.No.870/Mines/2025, Dated:19.01.2026

Sir,

Sub: Mines and Minerals – Minor Mineral – Karur District – Pugalur Taluk – Anjur Village - Patta land in S.F.Nos. 775/1D (0.37.00 hectares), 775/1E (Part) (1.05.00 hectares) and 807/2A(Part) (0.30.00 hectares) Over an extent of 1.72.00 hectares - Quarry lease application preferred by Thiru.M.Kumaravadivel for quarrying Rough Stone and Gravel – Land availability report received from Revenue Divisional Officer, Karur - Precise area communicated - mining plan submitted for approval – Mining Plan Approved – Regarding.

Ref:
1. Quarry lease Online application for quarrying Rough stone and Gravel preferred by Thiru.M.Kumaravadivel, S/o.Muthusamy, No.3/246, Velayuthapalayam, Anjur, Pandilingapuram, Pugalur Taluk, Karur District, dated: 18.08.2025.
2. Order of the Hon'ble Supreme Court of India in I.A.Nos.12-13/2011 in SLP (C) No.19628-19629/2009, dt: 27.02.2012.
3. Government of India, Ministry of Environment and Forest Office Memorandum, Dated:18.05.2012.
4. The Chairman, State Level Environment Impact Assessment Authority, Tamil Nadu D.O.Lr.No.SEIAA-TN/Minor Minerals/2012, Dated: 17.09.2012.
5. The Commissioner of Geology and Mining, Chennai letter Rc.No.3868/LC/2012, dt: 19.11.2012.
6. The Revenue Divisional Officer, Karur, Land availability Report vide Rc.No.A1/6783/2025, dt: 31.10.2025.

ITS

7. Deputy Director, Geology and Mining, Karur Notice Rc.No.870/Mines/2025, Dated:19.12.2025
8. Mining Plan submitted by Thiru.M.Kumaravadivel, letter received in this office on 07.01.2026.

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In the reference 1st cited Thiru.M.Kumaravadivel, S/o.Muthusamy, No.3/246, Velayuthapalayam, Anjur, Pandilingapuram, Pugalur Taluk, Karur District has preferred an online application for the grant of Ten years lease to quarry Rough Stone and Gravel over an extent of 1.72.00 hectares of patta land in S.F.Nos. 775/1D (0.37.00 hectares), 775/1E (Part) (1.05.00 hectares) and 807/2A(Part) (0.30.00 hectares) of Anjur Village, Pugalur Taluk, Karur District under Rule 19(1) of Tamil Nadu Minor Mineral Concession Rule 1959.

The Precise area has been communicated by the Deputy Director, Geology and Mining, Karur to the applicant for the period of Ten years based on the recommendation of the Revenue Divisional Officer, Karur and Assistant Geologist and Special Revenue Inspector, Geology and Mining, Karur in the reference 7th cited. In perusal to that the draft mining plan submitted by the applicant as per the Rule 41 in the reference 8th cited.

The above submitted mining plan for the grant of Rough stone and Gravel quarry lease patta land in S.F.Nos. 775/1D (0.37.00 hectares), 775/1E (Part) (1.05.00 hectares) and 807/2A(Part) (0.30.00 hectares) Over an extent of 1.72.00 hectares of Anjur Village, Pugalur Taluk, Karur District has been examined in detail.

Scrutiny remarks on the draft Mining Plan are furnished below.

a. The Rough Stone & Gravel quarry has been planned to be operated for a period of 10 years.
b. The Geological reserve in the subject area is assessed 4,95,782m³/13,63,401 MT of Rough Stone and 9,140 m³/18,280 MT of Gravel upto a depth of 30m below ground level only.
c. The Mineable reserve is estimated as 1,83,357m³/5,04,232 MT of Rough Stone and 5,643 m³/11,286 MT of Gravel upto a depth of 30m below ground level only.

M. [illegible]

d. The total quantity proposed to quarry 92,927m³/2,55,549 MT of Rough Stone for 5 years and 5,643 m³/11,286 MT of Gravel first three years only upto a depth of 30m below ground level only.

e. Machineries like compressors, jack hammers, Hydraulic excavators are proposed for quarrying operation.

f. Water table level in the area applied is between 55 m to 60 m during the year.

g. As per the Rule 111 of Metalliferrous Mining Regulations 1961, the boundary barrier zone of 7.5 meters is ear-marked as neutral zone.

h. The draft Mining plan is submitted within the prescribed time limit of 90 days from the date of receipt of the precise area communication and stipulations made in the rule 36 of the TNMMCR, 1959 are adhered.

i. The plates including Topo sketch of quarry lease applied area for 10Km Radius (1:1,00,000), Quarry lease and Surface plan (1:1,000), Topography and Geological plan & sections (1:1,000), Conceptual plan and sections (1:1000), Geological, Mineable & Year wise development & Production plan & Sections (1: 1000) and Environmental plan (1:5,000) were verified with reference to the field evidences.

As per the guidelines/ instructions issued by the Commissioner of Geology and Mining, Chennai vide letter Rc.No.3868/LC/2012, date: 19.11.2012. The mining plan submitted by the applicant is hereby approved, subject to the following conditions:

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

(II) This approval of the mining plan does not in any way imply the approval of the Government in terms or any other provisions of the Mines and Minerals (Development and Regulation) Act, 1957, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Explosives

Act, 1884 (Central Act IV of 1884) Minor Mineral Concession and Development Rules, 2010 and the Rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.

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

(IV) The approval is valid up to five years from the date of execution of lease deed and the applicant should submit scheme of mining at lease 180 days before the expiry of the mining plan period.

(V) As per the Deputy Director, Geology and Mining, Karur notice in Rc.No.870/Mines/2025, Dated.19.12.2025 the following conditions are incorporated in the Mining Plan plates.

சிறப்பு நிபந்தனைகள்:-

விண்ணப்ப புலத்திற்கு மேற்கு பகுதியில் புல எண் 775/1E-இல் அமைந்துள்ள பட்டா பாதைக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குவாரிப்பணி செய்ய வேண்டும்.

நிபந்தனைகள்:-

1. விண்ணப்ப புலத்திற்கு அருகில் உள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் மற்றும் புறம்போக்கு நிலத்திற்கு 10 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு யாதொரு சேதமுமின்றி முறையாக குவாரிப்பணி செய்ய வேண்டும்.

2. குத்தகைக்காலத்தில் கைத்துளைப்பான் கருவி கொண்டு பாறைகளை துளையிட்டும், மிதமான வெடிபொருள் பயன்படுத்தியும், பொதுமக்களுக்கோ, பொது சொத்துக்களுக்கோ சேதம் ஏற்படாத வண்ணம் குவாரிப்பணி செய்ய வேண்டும்.

3. குவாரித் தொழிலாளர்களின் பாதுகாப்பினை உறுதி செய்ய Mettaliferrous Mines, விதிகளின்படி அகலமானதும், பாதுகாப்பானதுமான Benches அமைத்து பாதுகாப்பான முறையில் குவாரிக்குள் வாகனங்கள் சென்றுவரவும் மற்றும் குவாரி தொழிலாளர்களின் பாதுகாப்பினை உறுதி செய்தும் குவாரிப்பணி செய்ய வேண்டும்.

4. குவாரி குத்தகை வழங்க ஏதுவாக துணை இயக்குநர் (சுரங்கம்) அவர்களால் ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தினையும், மாநில அளவிலான சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் (SEIAA) அனுமதி பெற்று மாவட்ட நிர்வாகத்திற்கு விண்ணப்பதாரரால் சமர்ப்பிக்கப்பட வேண்டும்.

(VI) Quarrying shall be done as per the approved Mining Plan and that the mining plan is approved without prejudice to any other law applicable to the quarry lease from time to time whether such laws are made by the Central Government, State Government or any other authority.

(VII) If anything is found to be concealed as required by the Mines Act in the contents of the Mining Plan and the proposal for rectification has not been made, the approval shall be deemed to have been withdrawn with immediate effect.

Encl: Two copies of Approved Mining Plan.

19/01/26

Deputy Director,
Geology and Mining,
Karur.

19/01/26

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MINING PLAN

FOR

ANJUR VILLAGE ROUGH STONE AND GRAVEL MINING LEASE WITH

PROGRESSIVE QUARRY CLOSURE PLAN

Patta land /Open Cast-Semi-Mechanized mining/Non- Forest/Non-Captive Use

Lease period 10 Years from the date of lease execution

(Prepared under rule 41 of Tamil Nadu Minor Mineral Concession Rules, 1959)

LOCATION OF THE LEASE AREA

STATE	:	TAMILNADU
DISTRICT	:	KARUR
TALUK	:	PUGALUR
VILLAGE	:	ANJUR
S.F. N	:	775/1D, 775/1E (Part) & 807/2A (Part)
EXTENT	:	1.72.0Hectares

ADDRESS OF THE APPLICANT

Mr.M.Kumaravadivel,

S/o. Muthusamy

No.3/246, Velayuthampalaiyam,

Anjur, Pandilingapuram,

Pugalur Taluk,

Karur District.

this Mining Plan is aproved subject to the conditions/stipulations indicated in the Mining Plan approval Letter No: 870/mines/2025 Dated: 19.01.2026

PREPARED BY

P.VELLAIYAN, M.Sc., M.Phil.,

Qualified Person

D.No.6-106-B, Athirampatti Village,

Amaragundhi Panchayat & Post,

Omalur Taluk,

Salem District-636 503.

Mob: +91 7010076626, 9751256465

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துணை இயக்குநர் அலுவலகம் 135 புதுச்சேரி மற்றும் காரைக்கால்

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M. [illegible]

ANNEXURES

Sl. No.	Description	Annexure No.
1.	Copy of Precise Area Communication letter	I
2.	Copy of previous Lease Details a) Environmental Clearance b) Proceedings letter c) Lease Deed Agreement	II
3.	Copy of **FMB** (Field Measurement book)	III
4.	Copy of combine Sketch	IV
5.	Copy of "A" Register	V
6.	Copy of Patta, Adangal	VI
7.	Copy of Consent Document	VII
8.	Photo copy of the lease area	VIII
9.	Copy of ID Proof of the authorized signatory	IX
10.	Copy of Qualified Person Certificate	X

LIST OF PLATES

Sl. No.	Description	Plate No.	Scale
1	Key Map	I	Not to scale
2	Location Plan	I-A	Not to scale
3	Toposheet Map	I-B	1:1,00,000
4	Satellite Imagery Map	I-C	1: 5,000
5	Environmental Plan	I-D	1: 5,000
6	Mine Lease Plan	II	1:1000
7	Surface & Geological Plan	III	Plan 1:1000
8	Geological Sections	IIIA	**Sections** Hor 1:1000 Ver 1:500
9	Conceptual Plan	IV	Plan 1:1000
10	Conceptual Sections	IVA	**Sections** Hor 1:1000 Ver 1:500
11	Mine Layout Plan and Land Use Pattern	V	Plan 1:1000
12	First Five Year wise Development & Production Plan	VI	Plan 1:1000
13	First Five Year wise Development & Production Sections	VIA	**Sections** Hor 1:1000 Ver 1:500
14	Second Five Year wise Development & Production Plan	VIB	Plan 1:1000
15	Second Five Year wise Development & Production Sections	VIC	**Sections** Hor 1:1000 Ver 1:500

Mr.M.Kumaravadivel,
S/o. Muthusamy
No.3/246, Velayuthampalaiyam,
Anjur, Pandilingapuram,
Pugalur Taluk,
Karur District.

CONSENT LETTER FROM THE APPLICANT

The Mining Plan in respect of rough stone and gravel quarry lease in patta land at S.F.No's: 775/1D, 775/1E (Part) & 807/2A(Part) over an extent of 1.72.0hectares of Anjur Village, Pugalur Taluk, Karur District, Tamil Nadu State has been prepared by

P.VELLAIYAN, M.Sc., M.Phil., (Qualified Person)

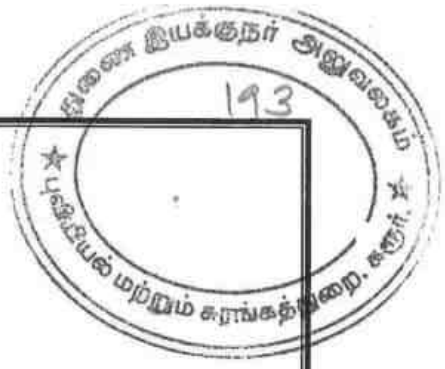
I request **"The Deputy Director"**, Department of Geology and Mining, Karur District to make further correspondence regarding modifications of the Mining Plan with the said Qualified Person on this following address,

P.VELLAIYAN, M.Sc., M.Phil.,
Qualified Person
D.No.6-106-B, Athirampatti Village,
Amaragundhi Panchayat & Post,
Omalur Taluk,
Salem District-636 503.
Mob: +91 7010076626, 9751256465

I hereby undertake that all modifications so made in the Mining Plan by the Qualified Person may be deemed to have been made with my knowledge and consent and shall be acceptable to me and binding on me in all respects.

Place: Karur, TN.
Date: 20/12/2025

Signature of the applicant
(M.Kumaravadivel)



Mr.M.Kumaravadivel,
S/o. Muthusamy
No.3/246, Velayuthampalaiyam,
Anjur, Pandilingapuram,
Pugalur Taluk,
Karur District.

DECLARATION

The Mining Plan in respect of rough stone and gravel quarry lease in Patta land at S.F.No's: 775/1D, 775/1E (Part) & 807/2A (Part) over an extent of 1.72.0hectares of Anjur Village, Pugalur Taluk, Karur District, Tamil Nadu State have been prepared with my consultation and I have understood the contents and agree to implement the same in accordance with the Mining Laws.

Place: Karur, TN.
Date: 29/12/2025

Signature of the applicant
(M.Kumaravadivel)

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P.VELLAIYAN, M.Sc., M.Phil.,
Qualified Person
D.No.6-106-B, Athirampatti Village,
Amaragundhi Panchayat & Post,
Omalur Taluk,
Salem District-636 503.
Mob: +91 7010076626, 9751256465

CERTIFICATE

This is to certify that, the provisions of 19(1), 20 & 33 Tamil Nadu Minor Minerals Concession Rules, 1959 have been observed in the Mining Plan for the grant of rough stone and gravel quarry lease in S.F.No's: 775/1D, 775/1E (Part) & 807/2A (Part) over an extent of 1.72.0hectares of Anjur Village, Pugalur Taluk, Karur District, Tamil Nadu State granted to **Mr.M.Kumaravadivel,** Karur District.

Wherever specific permission / exemptions / relaxations or approvals are required, the applicant will approach the concerned authorities of State and Central governments for granting such permissions etc.

Place: Salem, TN
Date: 24/12/2025

Signature of the Qualified Person

P. VELLAIYAN, M.Sc, M.Phil.,
Qualified Person
D.No. 6-106-B, Athirampatti (Vill),
Amaragundhi Panchayat & Post,
Omalur Taluk, Salem District - 636503

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P.VELLAIYAN, M.Sc., M.Phil.,
Qualified Person
D.No.6-106-B, Athirampatti Village,
Amaragundhi Panchayat & Post,
Omalur Taluk,
Salem District-636 503.
Mob: +91 7010076626, 9751256465

CERTIFICATE

I certify that, in preparation of Mining Plan for rough stone and gravel quarry lease in S.F.No's: 775/1D, 775/1E (Part) & 807/2A (Part), over an extent of 1.72.0hectares of Anjur Village, Pugalur Taluk, Karur District, Tamil Nadu State prepared to **Mr.M.Kumaravadivel** Karur District, covers all the provisions of Mines Act, Rules, and Regulations etc., made there under and whenever specific permission are required, the applicant will approach the Director General of Mines Safety, Chennai. The standards prescribed by DGMS in respect of Mines Health will be strictly implemented.

Place: Salem, TN
Date: 24/12/2025

Signature of the Qualified Person

P. VELLAIYAN, M.Sc, M.Phil.,
Qualified Person
D.No. 6-106-B, Athirampatti (Vill),
Amaragundhi Panchayat & Post,
Omalur Taluk, Salem District - 636 503.

MINING PLAN

FOR

ANJUR VILLAGE ROUGH STONE AND GRAVEL MINING LEASE WITH PROGRESSIVE QUARRY CLOSURE PLAN

Patta land / Open cast-Semi-Mechanized Mining / Non-forest / Non-Captive Use

Lease period 10 Years from the date of lease execution

(Prepared under rule 41 of Tamil Nadu Minor Mineral Concession Rules, 1959)

INTRODUCTORY NOTES:

a) **Introduction:**

The Mining plan with progressive quarry closure plan is prepared for **Mr.M.Kumaravadivel** S/o. Muthusamy No.3/246, Velayuthampalaiyam, Anjur, Pandilingapuram, Pugalur Taluk, Karur District and Tamilnadu State and filed with online application for new proposals has submitted to the Deputy Director, Department of Geology and Mining (DDG & M), Karur dated 18.08.2025 had requested to grant the quarry lease for rough stone and gravel in S.F.No's. 775/1D, 775/1E (Part) & 807/2A(Part)– Patta land - over an extent of 1.72.0 hectares –Anjur Village, Pugalur Taluk – Karur District, Tamil Nadu State.

b) **The Precise area communication letter:** The Deputy Director, Department of Geology and mining, Karur has directed to the applicant **Mr.M.Kumaravadivel** through his precise area communication letter vide **Roc.No.870/Mines/2025 Dated 19.12.2025,** for quarrying lease rough stone and gravel at Tamil Nadu State, Karur District, Pugalur Taluk, Anjur Village in S.F.No: 775/1D, 775/1E (Part) & 807/2A(Part) over an extent of 1.72.0hectares has recommended as following conditions for a period of Ten (10) years under Rule 19(1), 20 & 22 Tamil Nadu Minor Mineral concession rules, 1959.

Special Contitions:-

i. Quarrying should be carried out by leaving a safety distance of 10 meter from the patta road located in S.F.No.775/1E to the west of the applied lease area.

General Contitions:-

i. Excavation should be carried out properly without any damage leaving a safety distance of 7.5 meters and 10 meter to the nearby patta land and government lands.

The Mining Plan is approved subject to the conditions/stipulations indicated in the Mining Plan approved vide Letter No: 870/mines/2025 Dated: 19.12.2025

ii. During the lease period, quarrying work must be carried out in a manner that does not cause damage to the public or public property, using a hand-held drill and moderate explosives.

iii. To ensure the safety of quarry workers, Mettaliferous Mines must set up wide and safe benches in accordance with the rules to allow vehicles to enter and exit the quarry safely and to carry out quarry work while ensuring the safety of quarry workers.

iv. The applicant must submit the mining plan approved by the Deputy Director (Mining) to the District Administration for granting quarry lease, after obtaining the approval of the State Environmental Impact Assessment Authority (SEIAA).

c) **The Previous lease particulars:** The proposed lease area was previously granted to quarrying of rough stone in favour of **Mr.B.R.Muthusamy** by the District Collector, Karur Rc.No.B/266/G&M/2008 Dated 07.01.2009 in S.F.No's: 775/1E & 807/2B, Aravakurichi Taluk, Anjur village, over an extent of 1.63.0Hect for a period of 5 years. The lease was executed from 30.01.2009 to 29.01.2014.

The proposed lease area was previously granted to quarrying of rough stone in favour of **Mr.P.Ravi** by the District Collector, Karur Rc.No.554/Mines/2016 Dated 21.02.2018 in S.F.No's: 775/1E (Part), 776/3, 777/1, 778/1A (Part), 807/2B & 807/2C2 Aravakurichi Taluk, Anjur village, over an extent of 4.40.0Hect for a period of 5 years. The applicant got Environmental Clearance **Lr.No.DEIAA-DIA/TN/MIN/6352/2017-KRR Ec.No.52/2017/Mines, Dated:16.02.2018**. The lease was executed from 21.02.2018 to 20.02.2023.

There is an existing pit was noticed with an average pit dimensions a given under the table and the existing pit marked in the surface and geological plan (Ref Plate No's: III)

Pit	Area (m^2)	Depth in (m)	Volume (m^3)
I	725	2	1450

d) **Preparation and Submission of Mining Plan:** The Mining Plan with progressive quarry closure plan has been prepared under rule 41 and submitted under rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 for mining lease as per conditions mentioned in the precise area communication letter **Roc.No.870/Mines/2025 Dated 19.12.2025.**

e) **Geological resources and Mineable reserves:** Geological resource of estimated as **504922m^3 / 1381681MT** including the resources of safety zone, gravel etc. Of

which, rough stone resources of about **495782m³ / 1363401MT** and gravel is **9140m³ / 18280MT**. The total mineable reserve is estimated to be **189000m³ / 515518MT** by deducting the reserve safety zone, block in benches from the total Geological resources. of which, rough stone is about **183357m³ / 504232MT** and gravel is **5643m³ / 11286MT** up to a depth of 30m below ground level (Refer Plate No. IIIA & IVA).

d) **Proposed Production Schedule:** Total proposed production of rough stone is **92927m³ / 255549MT** and gravel is **5643m³ / 11286MT** up to a depth of 30m below ground level for first five years plan period (Refer Plate No.VI & VIA) and **90430m³/ 248683MT** will be proposed for the period of second five years up to a depth of 25m below ground level. (Refer Plate No. VIB & VIC).

e) **Environmental Sensitivity of the proposed lease area: -**

i). Interstate boundary: There is no interstate boundary around 10Km radius periphery of proposed lease area.

ii). Wildlife Sanctuaries any: There are no notified wildlife sanctuaries within the radius of 10km from the project site under the wildlife (Protection) Act, 1972.

iii). Forest (conservation) Act, 1980: No forest land granted for quarrying and there is no reserve forest around 60m radius.

iv). CRZ Notification, 2019: There is no Sea coastal zone found within radius of 10km and this project site doesn't attract CRZ Notification, 2019.

h) **Environmental measures to be adopted during the ongoing activity period,**

a. Usage of sharp drill bits while drilling which will help in reducing noise.
b. Secondary blasting will be totally avoided and hydraulic rock breaker will be used for breaking boulders.
c. Controlled blasting with proper spacing, burden, stemming and optimum charge/delay will be maintained.
d. Green Belt/Plantation will be developed around the project area and along the haul roads. The plantation minimizes propagation of noise.
e. Water will be sprinkled on haul roads twice a day to avoid dust generation during transportation.
f. Transportation of material will be carried out during day time and material will be covered with tarpaulin.
g. The speed of tippers plying on the haul road will be limited below 20 km/hr to avoid generation of dust.
h. And any other conditions as stipulated by the concerned authorities should be followed to protect the environment.

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1.0 GENERAL:

a.	Name of the Applicant	:	**Mr.M.Kumaravadivel,**
	Applicant address	:	S/o. Muthusamy No.3/246, Velayuthampalaiyam, Anjur, Pandilingapuram, Pugalur Taluk, Karur District.
	District	:	Karur
	State	:	Tamilnadu
	Pin code	:	....
	Phone	:	
	Fax	:	Nil
	Gram	:	Nil
	Telex	:	Nil
	E-mail	:	.....
b.	Status of the Applicant		
	Private individual	:	Private individual
	Cooperative Association	:	---
	Private company	:	---
	Public Company	:	---
	Public Sector Undertaking	:	---
	Joint Sector Undertaking	:	---
	Other (pl. specify)	:	---
c.	Mineral(s) Which are occurring in the area and which the applicant intends to mine	:	Rough Stone and Gravel Quarry Lease
d.	Period for which the mining lease granted /renewed/ proposed to be applied	:	The precise area has been communicated to the applicant for quarrying period of Ten (10) years.
e.	Name of the QP preparing the Mining Plan	:	**P.VELLAIYAN, M.Sc., M.Phil.,** Qualified Person
	Address	:	D.No.6-106-B, Athirampatti Village, Amaragundhi Panchayat & Post, Omalur Taluk, Salem District-636 503.
	Phone	:	+91 7010076626, 9751256465
	Fax	:	Nil
	e-mail	:	pvellaiyangp@gmail.com
	Telex	:	Nil
f.	Reference No. and date of consent letter from the state government	:	The precise area communication letter issued by the Deputy Director, Department Geology and Mining, Karur vide **Roc.No.870Mines/2025 Dated 19.12.2025**

2.0 LOCATION AND ACCESSIBILITY:

a.	Details of the Area:	:	Refer Plate No: IA & IB
	District & State	:	Karur, Tamil Nadu
	Taluk	:	Pugalur
	Village	:	Anjur

Khasra No./ Plot No./ Block Range/ Felling Series etc.:

Survey No	Sub Division	Total Extent in Hect	Patta No.	Village and Name of the Land Owner	Mine lease Applied S.F.No.	Mine lease Applied area out of total area in hect.
775	1D	0.37.0	2378	Mrs.Rajalakshmi W/o.Kumaravadivel	775/1D	0.37.0
775	1E	1.12.5	1625	Mr.Muthusamy S/o Ramasamy Gounder	775/1E (Part)	1.05.0
807	2A	0.35.0	2378	Mrs.Rajalakshmi W/o.Kumaravadivel	807/2A (Part)	0.30.0
Total Extent		**1.84.5**		**Applied lease area extent**		**1.72.0**

Lease area (hectares)	:	1.72.0 Hectares
Whether the area is recorded to be in forest (please specify whether protected, reserved, etc)	:	The proposed lease area is recorded as patta land. (Ref.Anne.No's:V)
Ownership / Occupancy	:	This is a patta land S.F.No. 775/1D & 807/2A(Part) is registered on the name of Mrs.Rajalakshmi W/o.Kumaravadivel, as patta No.2378, S.F.No.775/1E(Part) is registered on the name of Mr.Muthusamy S/o.Ramasamy Gounder as patta No.1625.
Existence of Public Road / Railway line if any nearby and approximate distance	:	✓ Exploited quarry materials will be transported through the cart road is situated on the north side of the lease area. ✓ There is NH-381A road is situated about 4.8km radius away on the west side of the lease area. ✓ There is SH-189 road is situated about 0.4km radius away on the north side of the lease area.

			✓ There is no railway line is situated around 5km radius from the lease area.
	Toposheet No. with latitude and longitude	:	Toposheet No. **58 E/16** Latitude: From 11°3'13.12"N to 11°3'17.31"N Longitude: From 77°47'1.01"E to 77°47'8.95"E

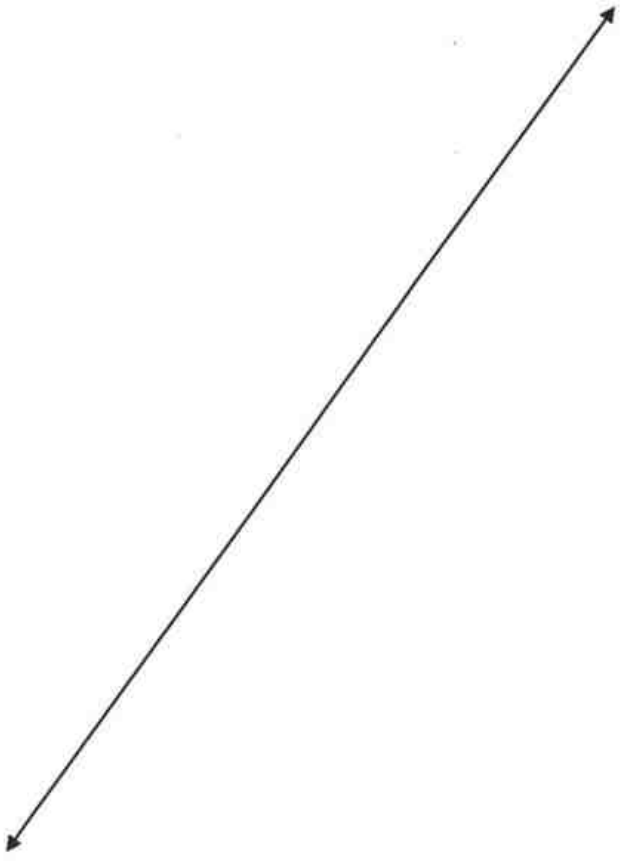
Geo-Coordinates of the lease boundary:

PILLAR ID	LATITUDE	LONGITUDE
1	11° 3'17.31"N	77°47'8.65"E
2	11° 3'15.93"N	77°47'8.95"E
3	11° 3'15.06"N	77°47'7.01"E
4	11° 3'15.04"N	77°47'6.61"E
5	11° 3'13.12"N	77°47'5.84"E
6	11° 3'13.53"N	77°47'1.92"E
7	11° 3'13.72"N	77°47'1.01"E
8	11° 3'16.06"N	77°47'1.78"E
9	11° 3'15.71"N	77°47'4.94"E
10	11° 3'15.75"N	77°47'5.11"E
11	11° 3'16.99"N	77°47'5.02"E
12	11° 3'17.11"N	77°47'6.90"E

	Land use pattern (Forest, Agricultural, Grazing, Barren etc.)	:	It is an barren and Ryotwari land.
b.	***Attach a general location and vicinity map showing area boundaries and existing and proposed access routs. It is preferred that the area to be marked on a survey of India topographical map or a cadastral map or forest map as the case may be. However if none of these are available, the area should be shown on an accurate sketch map on scale of 1 : 5000.***	:	Refer plate no-IA & IB

i) INFRASTRUCTURE AND COMMUNICATION:

S.No	Description	Place	Distance	Direction
a.	Nearest post office	Muthur	5.0Km	West
b.	Nearest police station	Muthur	5.10km	West
c.	Nearest fire station	Vengampudur	9.8km	East
d.	Nearest medical facility	Kodumudi	11.2km	East
e.	Nearest school	Muthur	4.1km	West
f.	Nearest railway station	Kodumudi	11.3km	East
g.	Nearest port facility	Thoothukudi	251.0km	South
h.	Nearest airport	Coimbatore	81.0km	West
i.	Nearest DSP office	Kangeyam	25.0km	West
j.	Nearest villages	Velayudampalaiyam	0.8km	North
		Anjur	1.8km	East
		Pillapalaiyam	1.0km	South
		Tottipalaiyam	1.7km	West



M. Alagan Giri

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PART – A

3.0 GEOLOGY AND MINERAL RESERVES:

(a) Briefly describe the topography and general geology and local/mine geology of the mineral deposit including drainage pattern:

(i)	Topography	:	The proposed lease area is flat topography. The maximum elevation (206m) was observed north of the site. The slope is towards southern side and falls in Toposheet no. **58 E/16**
(ii)	**General Geology of the District:** The Karur district forms part of the Archean complex of peninsular gneiss. The general rock types of this area are Biotite gneiss. Karur District is blessed with good reserves of crystalline limestone known as "Palayam belt" in Varavanai, Thennilai, Gudalur etc., villages in Kulithalai Taluk and the occurrences of good quality of pegmatite veins constituting with glassy quartz and potash feldspar in lensoid patches in Nagampalli and Pungambadi areas in Aravakurichi Taluk. The major mineral such as limestone, quartz and feldspar are exploited in Karur district and utilized in the mineral-based industries. The Granite gneiss rocks are found to occur in K.Paramathi, Athur, Thennilai, Punnam, Godanthur South, Munnur, Punnam, Anjur villages in Karur and Aravakurichi Taluk are exploited to produce building materials and road metal (Jelly) and over burden soil appear as gray to reddish in colour called as gravel. The commercially known "Coloumbo Zubrana" the unique type in the Multi coloured granite / Granite gneiss category is occurring in Thogamalai, Naganur and Kazhugur Villages in Kulithalai Taluk. These rock type belong to minor mineral category. The arrangement of alternate layers of felsic and mafic minerals in linear pattern and exhibits wavy pattern in the rock and giving very good structure for the rock type. The well-developed gneissic pattern with linear arrangement, the rock type have attracted the granite market and found to be suitable for the exploitation of granite blocks. But in this area the banded gneissic rock has many fractures and foliation in it. So, this is not viable for dimensional stone. **Order of superposition of the proposed lease area,**		

Age	Group	Rock Formation
Recent to Sub recent	----	Top Soil (1-2m Thick)
Proterozoic	Acid Intrusive	Pink medium grained granite/ Granite gneiss.
Archean	Charnockite Group	Pyroxene Granulite, Charnockite (acid to intermediate)/ Crystalline limestone / Quartzite

(iii) Local / Mine Geology of The Mineral Deposit:

Topography of the proposed lease area:

The applied lease area exhibits an flat topography and the maximum elevation 206m was observed north side of the site. The rocks exhibits layered, medium to coarse grained hornblende biotite, orthopyroxene charnockite gneiss.

The Gravel is obtained the average of 0-1.0m and a rough stone starts from 1.0m to 30m (R.L.206-176m) from the surface level. The Surface plan showing elevation, contour, accessibility road and Geological map was prepared the proposed lease area.

Mode of origin:

The Charnockite series originally was assumed to have developed by the fractional crystallization of silicate magma. Subsequent studies have shown, however, that many, if not all, of the rocks are metamorphic, formed by recrystallization at high pressures and moderately high temperatures.

Physiography of the rocks:

General characteristics of the rocks of this series has recorded that the rocks are in general bluish gray or darkish in colour and extremely fresh in appearance with an even grained granular structure.

Chemical composition of rocks:

The compositional characteristics of coexisting orthopyroxene, garnet and biotite have established several petrographic varieties within the Charnockites–Enderbites such as the granulite's and gneisses. Plagioclase feldspars, alkali feldspars and quartz are the salic minerals present in this series of rocks.

Order of superposition of the proposed lease area,

Age	Group	Rock Formation
Recent to Sub recent	----	Gravel
Archaean	Charnockite Group	Charnockites.

(iv)	Drainage Pattern	:	There is no major river found within 50m radius. The drainage in the area is sub-dendritic in nature.

(b)	***The topographic plan of the lease area prepared on a scale of 1 :1000 or 1 : 2000 with contour interval of 3 to 10m depending upon the topography of the area should be taken as the base plan for preparation of geological plan. The details of exploration already carried out including evidences of mineral existence should be shown on the geological plan:***		
	a. Present status:	:	The QP examined the surface features during survey. It is a fresh quarry lease.
	b. Surface Plan	:	Surface plan showing elevation contour and accessibility road was prepared at the scale of 1: 1000, as shown in Plate No. III.
(c)	Geological sections should be prepared at suitable intervals on a scale of 1: 1000 / 1: 2000:	:	Longitudinal and transverse geological cross sections were prepared at the horizontal scale of 1: 1000 and at the vertical scale of 1:500, as shown in Plate No. IIIA
(d)	***Broadly indicate the Yearwise future programme of exploration, taking into consideration the future production programme planned in next five years as in table below:-*** No future programmed proposed in this area. Its massive homogeneous parent rock. Hence exploration proposal is not required to this mining project.		

(e) Indicate geological and recoverable reserves and grade, duly supported by standard method of estimation and calculations along with required sections (giving split up of various categories i.e. proved, probable, possible). Indicate cut-off grade. Availability of resources should also be indicated for the entire leasehold.

The geological resources were computed by cross section method with respect to the boundaries of the lease area. In this method, the lease area was divided into two longitudinal and two transverse section to calculate the volume of material up to the depth of 30m below ground level for ten years plan period. (Refer Plate No. III & IIIA). The two longitudinal and two transverse cross section were assigned XY-AB & X1Y1-CD as respectively. Using the cross-sectional method, total reserve is estimated to be **504922m^3 / 1381681MT** including the resources of safety zone, and gravel, etc. Of which, rough stone resources of about **495782m^3 / 1363401MT** and gravel is **9140m^3 / 18280MT.**

GEOLOGICAL RESOURCES										
Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume In M^3	Rough Stone in M^3	Gravel in M^3	Bulk Density	Rough Stone in (MT)	Gravel in (MT)
XY-AB	I	110	44	1	4840	.....	4840	2	.....	9680
	Outcrop	25	20	1	500	500		2.75	1375	.....
	I	135	64	1	8640	8640	.....	2.75	23760	.....
	I	149	77	3	34419	34419	.....	2.75	94652	.....
	II	149	77	5	57365	57365	.....	2.75	157753.8	.....
	III	149	77	5	57365	57365	.....	2.75	157753.8	.....
	IV	149	77	5	57365	57365	.....	2.75	157753.8	.....
	V	149	77	5	57365	57365	.....	2.75	157753.8	.....
	VI	149	77	5	57365	57365	.....	2.75	157753.8	.....
TOTAL					**335224**	**330384**	**4840**		**908556**	**9680**
X1Y1-CD	I	100	43	1	4300	.....	4300	2	.....	8600
	Outcrop	14	7	1	98	98	.....	2.75	270	.....
	I	114	50	4	22800	22800	.....	2.75	62700	.....
	II	114	50	5	28500	28500	.....	2.75	78375	.....
	III	114	50	5	28500	28500	.....	2.75	78375	.....
	IV	114	50	5	28500	28500	.....	2.75	78375	.....
	V	114	50	5	28500	28500	.....	2.75	78375	.....
	VI	114	50	5	28500	28500	.....	2.75	78375	.....
TOTAL					**169698**	**165398**	**4300**	.....	**454845**	**8600**
GRAND TOTAL					**504922**	**495782**	**9140**	.....	**1363401**	**18280**

(f) Indicate mineable reserves by slice plan / level plan method, as applicable, as per the proposed mining parameters: -

The total mineable reserve is estimated to be **189000m³ / 515518MT** by deducting the reserve safety zone, block in benches from the total Geological resources up to a depth of 30m below ground level. Of which, rough stone is about **183357m³ / 504232MT** and gravel is **5643m³ / 11286MT**. The commercially viable rough stone has been prepared on 1: 1000 scale and sections are prepared in a scale of 1:1000 in horizontal axis and 1:500 as vertical axis (Refer plate no's. IV & IVA).

MINEABLE RESERVES										
Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume In M^3	Rough Stone in M^3	Gravel in M^3	Bulk Density	Rough Stone in (MT)	Gravel in (MT)
XY-AB	I	92	29	1	2668	.....	2668	2	.....	5336
	Outcrop	25	20	1	500	500		2.75	1375	.....
	I	118	50	1	5900	5900	.....	2.75	16225	.....
	I	132	62	3	24552	24552	.....	2.75	67518	.....
	II	122	52	5	31720	31720	.....	2.75	87230	.....
	III	112	42	5	23520	23520	.....	2.75	64680	.....
	IV	102	32	5	16320	16320	.....	2.75	44880	.....

	V	92	22	5	10120	10120	.....	2.75	27830	.....
	VI	82	12	5	4920	4920	.....	2.75	13530	.....
TOTAL					**120220**	**117552**	**2668**		**323268**	**5336**
X1Y1-CD	I	85	35	1	2975	.....	2975	2	.....	5950
	Outcrop	14	7	1	98	98	.....	2.75	270	.....
	I	99	42	4	16632	16632	.....	2.75	45738	.....
	II	89	37	5	16465	16465	.....	2.75	45278	.....
	III	79	32	5	12640	12640	.....	2.75	34760	.....
	IV	69	27	5	9315	9315	.....	2.75	25616	.....
	V	59	22	5	6490	6490	.....	2.75	17848	.....
	VI	49	17	5	4165	4165	.....	2.75	11454	.....
TOTAL					**68780**	**65805**	**2975**	.....	**180964**	**5950**
GRAND TOTAL					**189000**	**183357**	**5643**	.....	**504232**	**11286**

4.0 MINING:

a)	Briefly describe the existing / proposed method for developing / working the deposit with all design parameters. (Note: In case of pocket deposits, sequence of development/working may be indicated on the same plan)	:	The mining operation is open-cast, semi-mechanized method are adopted and on single shift basis only. Under the regulation 106 of the Metalliferous Mines Regulations, 1961 in all open cast workings in hard rock, the benches and sides should be properly benched and sloped. The bench height should not exceed 6m and the bench width should not less than the bench height. The slope of the benches should not exceed 45° from horizontal.

b) ***Indicate quantum of development and tonnage and grade of production expected pit wise as in table below.***

Total proposed production for first five years period of rough stone is about **92927m³ / 255549MT** and gravel is **5643m³ / 11286MT** up to a depth of 30m below ground level for first five years plan period (Refer Plate No.VI & VIA) and **90430m³/ 248683MT** will be proposed for the period of second five years up to a depth of 30m below ground level.(Refer Plate No's. VIB & VIC).

Year	Pit No.(s)	Topsoil/ Overburden (m^3)	ROM (m^3)	Saleable rough stone (m^3) @ 100%	Saleable rough stone (MT) @ 100%	Saleable Gravel (m^3)	Saleable Gravel (MT)
I	I	...	16863	14378	39539	2485	4970
II	I	...	18742	16512	45408	2230	4460

III	I	...	25520	24592	67628	928	1856
IV	I	...	19450	19450	53488	...	...
V	I	...	17995	17995	49486	...	...
Total		...	**98570**	**92927**	**255549**	**5643**	**11286**
VI	I	...	17420	17420	47905	...	...
VII	I	...	18480	18480	50820	...	...
VIII	I	...	18195	18195	50037	...	...
IX	I	...	18480	18480	50820	...	...
X	I	...	17855	17855	49101	...	...
Total	---	...	**90430**	**90430**	**248683**	**...**	**...**

c)	***Composite plans and Year wise sections (In case of 'A' class mines):***	:	Not applicable. It is a "B" class quarry lease

FIRST FIVE -YEARWISE PRODUCTION RESERVES

Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume In M^3	Rough Stone in M^3	Gravel in M^3	Bulk Density	Rough Stone in (MT)	Gravel in (MT)
I-Year	X1Y1-CD	I	71	35	1	2485	.....	2485	2	.....	4970
		Outcrop	14	7	1	98	98	.....	2.75	269	.....
		I	85	42	4	14280	14280	.....	2.75	39270	.....
TOTAL						**16863**	**14378**	**2485**	**.....**	**39539**	**4970**
II-Year	X1Y1-CD	I	14	35	1	490	.....	490	2	.....	980
		I	14	42	4	2352	2352	.....	2.75	6468	.....
	XY-AB	I	60	29	1	1740	.....	1740	2	.....	3480
		I	60	50	1	3000	3000	.....	2.75	8250	.....
		I	60	62	3	11160	11160	.....	2.75	30690	.....
TOTAL						**18742**	**16512**	**2230**	**.....**	**45408**	**4460**
III-Year	XY-AB	I	32	29	1	928	.....	928	2	.....	1856
		Outcrop	25	20	1	500	500		2.75	1375	.....
		I	58	50	1	2900	2900	.....	2.75	7975	.....
		I	72	62	3	13392	13392	.....	2.75	36828	.....
		II	30	52	5	7800	7800	.....	2.75	21450	.....
TOTAL						**25520**	**24592**	**928**	**.....**	**67628**	**1856**
IV-Year	XY-AB	II	25	52	5	6500	6500	.....	2.75	17875	.....
	XIYI-CD	II	70	37	5	12950	12950	.....	2.75	35613	.....
TOTAL						**19450**	**19450**	**0**		**53488**	**0**
V-Year	XIYI-CD	II	19	37	5	3515	3515	.....	2.75	9666	.....
		III	42	32	5	6720	6720	.....	2.75	18480	.....
		IV	32	27	5	4320	4320	.....	2.75	11880	.....
		V	22	22	5	2420	2420	.....	2.75	6655	.....
		VI	12	17	5	1020	1020	.....	2.75	2805	.....
TOTAL						**17995**	**17995**	**0**	**.....**	**49486**	**0**
GRAND TOTAL						**98570**	**92927**	**5643**	**.....**	**255549**	**11286**

SECOND FIVE -YEARWISE PRODUCTION RESERVES											
Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume In M^3	Rough Stone in M^3	Gravel in M^3	Bulk Density	Rough Stone in (MT)	Gravel in (MT)
VI-Year	XY-AB	II	67	52	5	17420	17420	.....	2.75	47905	.....
TOTAL						**17420**	**17420**	**0**	**.....**	**47905**	**0**
VII-Year	XY-AB	III	88	42	5	18480	18480	.....	2.75	50820	.....
TOTAL						**18480**	**18480**	**0**	**.....**	**50820**	**0**
VIII-Year	XY-AB	III	24	42	5	5040	5040	.....	2.75	13860	.....
	XIYI-CD	III	37	32	5	5920	5920	.....	2.75	16280	.....
		IV	37	27	5	4995	4995	.....	2.75	13737	.....
	XY-AB	IV	14	32	5	2240	2240	.....	2.75	6160	.....
TOTAL						**18195**	**18195**	**0**	**.....**	**50037**	**0**
IX-Year	XY-AB	IV	88	32	5	14080	14080	.....	2.75	38720	.....
	XIYI-CD	V	40	22	5	4400	4400	.....	2.75	12100	.....
TOTAL						**18480**	**18480**	**0**		**50820**	**0**
X-Year	XY-AB	V	52	22	5	5720	5720	.....	2.75	15730	.....
	XIYI-CD	V	37	22	5	4070	4070	.....	2.75	11193	.....
		VI	37	17	5	3145	3145	.....	2.75	8648	.....
	XY-AB	VI	82	12	5	4920	4920	.....	2.75	13530	.....
TOTAL						**17855**	**17855**	**0**	**.....**	**49101**	**0**
GRAND TOTAL						**90430**	**90430**	**0**	**.....**	**248683**	**0**

d)	Attach supporting composite plan and section showing pit layouts, dumps, stacks of sub-grade mineral, if any, etc.	:	Composite plan not prepared in this proposed lease area

e) ***Indicate proposed rate of production when the mine is fully developed and the expected life of the mine and the year from which effected:***

At this rate of production, the expected life of quarry is calculated as given below:

Rough stone:

Production reserves of rough stone (First Five Years) = **92927m³ / 255549MT**

Production reserves of rough stone (Second Five Years) = **90430m³/ 248683MT**

Gravel:

Mineable reserves of gravel = **5643m³ / 11286MT**

f) ***Attach a note furnishing a conceptual mining plan for the entire lease period (for "B" category mines) and upto the life of the mine (for "A" category mines)***

	based on the geological, mining and environments considerations:		
i)	Time frame of completion of mineral exploration program in leasehold area: Give broad description identified potential areas to be covered in the given time frame:	:	Considering the indefinite depth persistence of the rough stone deposit is proved beyond the workable limits about up to a depth of 30m below ground level (R.L.206m to 176m) from the petrogenetic character of the charnockite rock as well as from the actual mining practice in the area and with the current trend of rough stone production the quarry may sustain for 10 years.

ii) Whether ultimate pit limit has been determined and demarcated on surface and geological plan :-

The ultimate pit limit has been determined and demarcated in the conceptual plan

SECTION XY-AB					
Bench	**Period**	**Overburden/ Mineral**	**L (m)**	**W (m)**	**D (m)**
I	Ten years Period	Gravel	92	29	1
Outcrop		Rough stone	25	20	1
I			118	50	1
I			132	62	3
II			122	52	5
III			112	42	5
IV			102	32	5
V			92	22	5
VI			82	12	5
Total Depth					**30**
SECTION X1Y1-CD					
Bench	**Period**	**Overburden/ Mineral**	**L (m)**	**W (m)**	**D (m)**
I	Ten years Period	Gravel	85	35	1
Outcrop		Rough stone	14	7	1
I			99	42	4
II			89	37	5
III			79	32	5
IV			69	27	5
V			59	22	5
VI			49	17	5
Total Depth					**30**

iii)	Whether the site for disposal of waste rock or an un-saleable material have/ has been examined for adequacy	:	The recovery of rough stone in this quarry is 100%. There is no waste rock will be proposed in this lease area.

	of land and suitability of long term use in the event of continuation of mining activity: -		
iv)	Whether back filling of pits after recovery of mineral up to techno -economically feasible depth envisaged. If so, describe the broad features of the proposal: -	:	As the depth of persistence of the deposit may likely to continue for further depth, it is proposed not to backfilled the quarry pit.
v)	Whether post mining land use envisaged: -	:	At the end of mining activities over the quarry pit may be utilized for storage of rain water and may be converted in to dumping yards for solid waste by adopting suitable technologies.
g)	Open cast mining		
i)	Describe briefly giving salient features of the mode of working (Mechanized, Semi-Mechanized, manual)	:	It is a fresh quarry lease. The mining operation is opencast, semi-mechanized methods are adopted and on single shift basis only. Under the regulation 106 of the Metalliferous Mines Regulations, 1961 in all opencast workings in hard rock, the benches and sides should be properly benched and sloped. The bench height should not exceed 6m and the bench width should not less than the bench height. The slope of the benches should not exceed 45° from horizontal.
ii)	Describe briefly the layout of mine workings, the layout of faces and sites for disposal of overburden/waste. A reference to the plans enclosed under 4(b) and 4(d) will suffice		The rough stone is proposed to quarry at 5m bench height & width conventional opencast semi mechanized quarrying operation using shot hole drilling with the help of tractor mounted compressor attached with jack hammers, smooth blasting and waste and are removal using Hydraulic excavator and loaded directly to the tippers and transported to the needy customer.

இணை இயக்குநர் அலுவலகம் ★ சுரங்கங்கள் மற்றும் சுரங்கத்துறை, கரூர்.

			Bench height = 5mts. Bench width = 5mts.
	a. Details of Topsoil/ Overburden		There is no topsoil will be removed.
	b. Rough Stone waste and side burden waste:-		The recovery of rough stone in this quarry is 100%. There is no rough stone waste or side burden will be removed.
H	Underground Mining		Not applicable

i) ***Extent of mechanization:***

Describe briefly including the calculation for adequacy and type of machinery and equipment proposed to be used in different mining operations.

(1) Drilling Machines:

Drilling of shot holes will be carried out using tractor mounted compressor and jack hammer. Details of drilling equipment's are given below.

Type	Nos	Dia of hole (mm)	Size / Capacity	Make	Motive power	H.P.
Jack Hammer	2	32 mm	Hand held	--	Diesel	--
Compressor	2	---	Air	--	Diesel	--

(2) Loading Equipment:

Type	Nos	Size / Capacity	Make	Motive power	H.P.
Hydraulic Excavator	2	2.9-4.5m^3	--	Diesel	--

(3) Haulage and Transport Equipment

(a) Haulage within the mining leasehold:

Type	Nos	Size / Capacity	Make	Motive power	H.P.
Tipper	5	--	--	Diesel	--

Whether the dumpers are fitted with exhaust conditioner should be indicated:

The dumpers not used in this quarry area, hence it's a small B category mine.

b)	Transport from mine head to the destination		Tipper will be used for transport rough stone from the mine head to needy customer.
c)	Describe briefly the transport system (please specify)		Hydraulic excavator and tippers utilized for internal transport sizeable rough stone lumps and deliver to the customer's area.

M. Balamurugan

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	i) Ore transported by: own trucks / hired trucks		Hired trucks for initially production purposes
	ii) Main destination to which ore is transported (giving to and from distance)		The excavated stone materials road metal will be supplied to the consumers like road laying, earth filling, building construction, etc

a) Details of hauling / transport equipment:

Type	Nos	Size / Capacity	Make	Motive power	H.P.
--	--	--	--	--	--

4) **(4). Miscellaneous:**

Describe briefly any allied operations and machineries related to the mining of the deposit not covered earlier.

	(A) Operations		The mining operation is open-cast, semi-mechanized methods are adopted and on single shift basis only.
	(B) Machineries deployed		Machineries like Tractor mounted compressor attached with Jack hammers is proposed to drilling and blasting. Hydraulic Excavators and tipper combination are adapted.

5 **BLASTING:**

a) Broad blasting parameters like charge per hole, blasting pattern, charge per delay, maximum number of holes blasted in a round, manner and sequence of firing, etc.

Blasting pattern:

The quarrying operation is proposed to carried by open cast mining in conjunction with conventional method using jack hammer drilling and blasting for shattering effect and loosen the rough stone.

Rough stone production for 10 years = **183357m^3 / 504232MT**

BLAST DESIGN	
Blasthole Diameter (D) in mm	32
Burden (B) in m	1.2
Spacing (S) in m	1.38
Subdrill in m	0.5
Charge length (C) in m	0.70
Stemming	0.5

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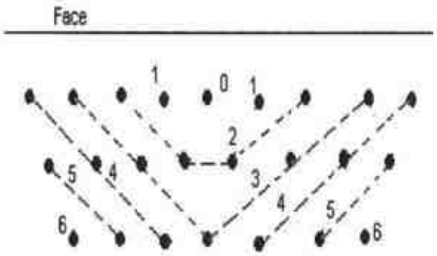
Hole Length (L) in m	1.2
Bench Height (BH) in m	2.5
Mass of explosive/hole in g	437.5
Stemming material size in mm	3.2
Burden stiffness ratio	2.08
Blast volume/hole in m^3	4.14
Production of rough stone/day in m^3	65
Number of blast holes/day	16
Number of blast round/day	2
Blasthole pattern	Staggered
Mass of explosive /day in kg	**6.92**
Powder factor in kg/m^3	0.11
Loading density	0.63
Type of explosives	Slurry
Diameter of packaging in mm	25
Initiation system	NONEL

Note: If>2kg of explosives per day use for blasting if proponent get the permission from the DGMS



Stagged method of mining

b) Type of explosives used / to be used:

Following explosives are recommended for efficient blasting with safe practice.

Small dia. 25mm slurry explosives are proposed to be used for shattering and heaving effect for removal and winning of rough stone. No deep hole drilling or primary blasting is proposed.

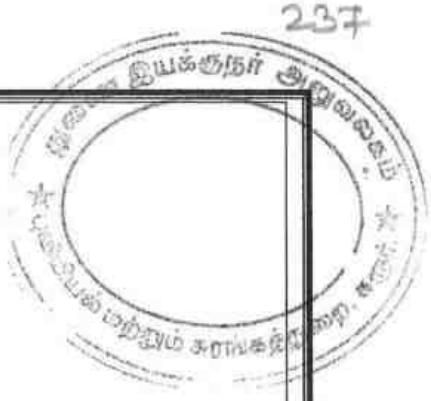
c) Measures proposed to minimize ground vibration due to blasting:

The control blasting measures is being adopted for minimizing ground vibration and fly rock.

Shallow depths jack hammer drilling and blasting is proposed to be carried out with minimum use of explosive mainly to give hearing effect in rough stone for easy excavation and to control fly rock.

Delay detonators:

Delay blasting permits to divide the shot to smaller charges, which are detonated in a predetermined millisecond sequence at specific time intervals. The



major advantages of delay blasting are:

- ❖ Reduction of ground vibration
- ❖ Reduction in air blast
- ❖ Reduction in over break
- ❖ Improved fragmentation
- ❖ Better control of fly rock

Blasting program for the production per day

No of holes	:	16holes
Yield	:	$65m^3$
Total explosive required	:	6.92kg-Slurry explosives
Charge per hole	:	0.5kg
Blasting at day time only	:	12.0p.m-1.0p.m

c)	Powder factor in ore and overburden / waste / development heading / stope	:	Powder factor is proposed as 0.11kg per hole of explosives
d)	Whether secondary blasting is needed, if so describe it briefly		There is no secondary blasting involved.
e)	Storage of explosives (like capacity and type of explosive magazine)		1. The applicant is advised to engage an authorized explosive agency to carry out blasting. 2. First Aid Box will be keeping ready at all the time. 3. Necessary precautionary announcement will be carried out before the blasting operation.
6.	***MINE DRAINAGE:***		
a)	Likely depth of water table based on observations from nearby wells and water bodies	:	The ground water table is reported as of 60m in summer and 55m in rainy season from the general ground level observed in the adjacent bore well.
b)	Workings expected to be _____ m. above / reach below water table by the year _____.	:	Ultimate mining depth is 30m below ground level. Now, the present Mining lease shall be proposed above the water table and hence, quarrying may not affect the ground water.

c)	Quantity and quality of water likely to be encountered, the pumping arrangements and places where the mine water is finally proposed to be discharged	:	The ground water may not rise immediately in this type of mining. However, the rain water percolation and collection of water from the seepage shall be less than 300 L pm and it shall be pumped out periodically by a stand by diesel powered Centrifugal pump motivated with 7.5 H.P. Motor. The quality of water is potable and it is not contaminated with any hazardous things.
7.	***STACKING OF MINERAL REJECTS AND DISPOSAL OF WASTE:***		
a).	Indicate briefly the nature and quantity of top soil, overburden / waste and mineral rejects likely to be generated during the years: No other wastes are removed during years.		
b).	Land chosen for disposal of waste with proposed justification	:	There is no topsoil will be removed.
c).	Attach a note indicating the manner of disposal and configuration, sequence of buildup of dumps along with the proposals for the stacking of sub-grade ore, to be indicated Year wise.	:	The recovery of rough stone in this quarry is 100%. If rough stone may be unsold will be keep within the lease boundary.
8.	***USE OF MINERAL:***		
a).	Describe briefly the end-use of the mineral (sale to intermediary parties, captive consumption, export, industrial use)	:	The excavated stone materials will be supplied to the consumers like stone pillar, sized stone, etc. For instance, aggregates are mostly used for building, roads and footpaths., etc
b).	Indicate physical and chemical specifications stipulated by buyers	:	Basically, the materials produced at this quarry are rough stone (charnockite) and gravel the same are used for building materials and road metal. So, there is no chemical specifications are specified. Only

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			physical specifications are involved.
c).	Give details in case blending of different grades of ores is being practiced or is to be practiced at the mine to meet specifications stipulated by buyers.	:	Not blending process is involved, after blasting the rough stone and gravel will be directly loaded to the needy customer.
9.	***OTHERS***		
	Describe briefly the following a) Site services	:	Infrastructure required for such mines like office, stores, canteen, first aid station, shelter latrine and bath rooms have been provided as per the Metalliferous Mines Regulations, 1961 as a welfare amenity for our quarry laborers.

b) Employment potential:

As per Mines safety under the provisions of Metalliferous Mines Rules, 1961 under the Mines Act, 1952, whenever the workers are employed more than 10, it is preferred to have a qualified Mining Mate to keep all the production workers directly under his control and supervision.

The following man power is proposed for quarrying stone material during the ten years period the same manpower will be utilize for this mining plan period to achieve the proposed production and to comply the provisions of as per the MMR, 1961 norms.

1.	Highly Skilled	Mines Manager	1No.
		Mine Engineer	1No.
		Mine Geologist	1No
		Blaster	1No
2.	Unskilled	Musdoor / Labours	16 No's
		Total =	**20 No's**

10	**MINERAL PROCESSING/BENEFICIATIONS:**		
(a)	If processing / beneficiations of the ore or minerals mined is planned to be conducted on site or adjacent to the extraction area, briefly describe the nature of the processing /beneficiation. This	:	Excavated rough stone minerals directly will be used by the applicant for required size ½, ¾ and 1½ inches Jelly which are mainly used in road and building construction purpose. The recovery of rough stone in this quarry is 100%.

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	should indicate size and grade of feed material and concentrate (finished marketable product), recovery rate.		
(b)	Explain the disposal method for tailings or waste from the processing plant (quantity and quality of tailings proposed to be discharged, size and capacity of tailing pond, toxic effect of such tailings, if any, with process adopted to neutralize any such effect before their disposal and dealing of excess water from the tailing dam).	:	No water shall be used for quarrying or any other processing except drinking water to be drawn from public sources. Some stagnation of rain water in the pit shall be used for drilling and spraying haul roads. Therefore, need for tailing dam doesn't arise. But tailing control of rain water flow during rainy season has to be done by decanting the SPM in a pit before passing the water in to natural system.
(c)	A flow sheet or schematic diagram of the processing procedure should be attached.	:	Not applicable.
(d)	Specify quantity and type of chemicals to be used in the processing plant.	:	Not applicable
(e)	Specify quantity and type of chemicals to be stored on site / plant.	:	Not applicable
(f)	Indicate quantity (cu.m. per day) of water required for mining and processing and sources of supply of water. Disposal of water and of recycling.	:	Drinking is 0.3KLD, utilized water is 1.0KLD, Dust suppression is 1.0KLD and Green Belt is 1.2KLD. Minimum quantity of water 3.5KLD per day. It is proposed to make an authorized water vendors for drinking water, dust suppression. The workers utilized water will be used for green belt development. The sewage water to a tune of 1.0KLD generated from the mine office toilet and mine labour toilet will be diverted to the septic tank followed by soak pit.

PART – B

11.0 ENVIRONMENTAL MANAGEMENT PLAN:

a) **Attach a note on the status of Baseline information with regard to the Following :**

11.1 Fresh lease land use pattern indicating the area already degraded due to quarrying /pitting, dumping, roads, processing plant, workshop, township etc in a tabular form. The present land use pattern is given as below.

Sl. No.	Land Use	Present area (Hect.)
1.	Area under Mining	Nil
2	Infrastructure	Nil
3	Roads	Nil
4	Unutilized	1.72.0
5	Green belt	Nil
6	Settling Tank & Drainage	Nil
	Grand Total	**1.72.0**

11.2	Water Regime	:	Water table in this area is noticed at a depth of 60m in summer and 55m in rainy season from the general ground level and presently the quarrying of rough stone is ultimate up to a depth of 30m below ground level. Hence, it will not affect the ground water depletion of this area. It is proposed to make an authorized water vendors for drinking water, dust suppression. The workers utilized water will be used for green belt development.
11.3	Flora and Fauna	:	There is no major flora observed in this area and except bushes, shrubs, no other valuable trees are noticed in the lease area. Further, neither flora of botanical interest nor fauna of zoological interest is noticed in this area.
11.4	Quality of air, ambient noise level and water	:	Air or dust expected to be generated from drilling process, hauling roads, places of excavation etc.., will be suppressed by periodical wetting of land by water spraying. Quarrying of rough stone will be carried out by drilling and blasting by using low power explosives, and hence, noise will be very

சுற்றுச்சூழல் இயக்குநர் அலுவலகம் புதுச்சேரி மாசுக்கட்டுப்பாடு மற்றும் சுற்றுச்சூழல் துறை, கரூர்.

			minimum. However, periodical noise level monitoring will be carried out every six months around the quarry site.
11.5	Climatic conditions: The district receives the rain under the influence of both southwest and northeast monsoons. The Northeast monsoon chiefly contributes to the rainfall in the district. Most of the precipitation occurs in the form of cyclonic storms caused due to the depressions in Bay of Bengal. The Southwest monsoon rainfall is highly erratic and summer rains are negligible. The average annual rainfall over the district varies from about 620mm to 745mm. Rainfall: The annual rainfall normal (1970-2000) of Karur district is 742mm. 4 Projections of rainfall over Karur for the periods 2010-2040 (2020s), 2040-2070 (2050s) and 2070-2100 (2080s) with reference to the baseline (1970-2000) indicate a general decrease of 4.0%, 3.0% and 11.0% respectively.		
11.6	Human Settlement: The nearest villages are found in the buffer zone with population as per 2011 census.		

S.No	Village	Distance in Kms	Direction	Population
1	Velayudampalaiyam	0.8km	North	758
2	Anjur	1.8km	East	3144
3	Pillapalaiyam	1.0km	South	4671
4	Tottipalaiyam	1.7km	West	633

11.7	Public buildings, places of worship and monuments	:	No infrastructure like residential building, are found within radius of 300m. The places of special interest like archeological smonuments, Sanctuaries, etc., are found around 10km radius.
11.8	Attach plans showing the locations of sampling stations	:	The proposed Ambient air quality, Water quality Ambient noise level and vibration are periodically tested for every season (6 months once) around 5km radius as per the guidance of MoEF and EIA Notification 2006 and also covering DGMS norms.

சுற்றுச்சூழல் இயக்குநர் அலுவலகம்
சுற்றுச்சூழல் மற்றும் காடுகள் அமைச்சகம், இந்திய அரசு

11.9	Does area (partly or fully) fall under notified area under Water (Prevention & Control of Pollution), Act, 1974	:	The proposed area not fall under notified area under Water (Prevention & Control of Pollution), Act, 1974

b) Attach an Environmental Impact Assessment Statement describing the impact of Mining and beneficiation on environment on the following over the next five years (and upto conceptual plan period for 'A' category mines)

i) ***Land area indicating the area likely to be degraded due to quarrying / pitting, dumping, roads, workshop, processing plant, township etc:***

Due to quarrying and exploitation of the rough stone, there will impact in the form i.e. change in the ground profile, pits, and dumps. The details of the land use pattern, during the ensuing plan period and till lease period is shown in the tabular form:

Sl. No.	Land Use	Area in use during the quarrying period (Hect.)
1	Area under Mining	1.23.5
2	Infrastructure	0.02.0
3	Roads	0.05.0
4	Green Belt	0.35.5
5	Un-Utilized Area	Nil
6	Drainage & Settling Tank	0.06.0
	Grand Total	**1.72.0**

ii).	Air Quality		Air or dust expected to be generated from drilling process, hauling roads, places of excavation etc.., will be suppressed by periodical wetting of land by water spraying.
iii).	Water quality		A water sample from the open/bore wells was tested to NABL approved lab to assess hardness, Salinity, colour, Specific gravity, etc.
iv).	Noise levels		Quarrying of rough stone and gravel will be carried out by drilling and blasting by using low power explosives, and hence, noise will be very minimum. However, periodical noise level monitoring will be carried out every six months around the quarry site.
v).	Vibration levels (due to blasting)		No deep hole blasting envisaged. Small dia shot holes are used for breaking boulders. The maximum peak particles velocity shall be

			rercoded using mini seismograph devises as per the guidance of MoEF and EIA Notification 2006 and also covering DGMS norms.
vi).	Water regime		No major river or any odai track are found around 50m radius.
vii).	Socio-economics		1. To provide Employment opportunities of the nearby villagers. 2. For the cultural development of the nearby villagers.
viii).	Historical monuments etc.		There are no historical monuments, etc found around 300m radius.

c) Attach an Environmental Management Plan (supported by appropriate plans and sections) defining the time bound action proposed to be taken with sequence & timing in the following areas (or diagrams should be used):

i).	Temporary storage and utilization of topsoil	:	No separate of topsoil will be removed.
ii).	Yearwise proposal for reclamation of land affected by abandoned quarries and other mining activities during ten years (and upto conceptual plan period for 'A' category mines) clarifying the extent of back filling and re-contouring and / or alternative use of unfilled / partially filled excavations / road sides / slopes and mine. In case abandoned quarries/ pits are proposed to be used as reservoir, their size, water holding capacity and proposal for utilization of such water be given.	:	The ultimate mining is proposed to an average depth of 30m below ground level from the below ground level has been envisaged as workable depth for safe & economic mining during the lease period. The mined-out area will be fenced on top of working bench with S1 fencing. No immediate proposals for closure of pit as the rough stone persist still at deeper level.
iii).	***Programme of afforestation, Yearwise for the initial ten years (and upto conceptual plan period for 'A' category mines) indicating the number of plants with name of species to be afforested under different areas in hectares.*** **Green Belt Development:** Safety barrier, nearby school area and Nearest Panchayat approach Roads has been identified to be utilized for Greenbelt appropriate native species of		

Neem, Pungan and other regional trees will be planted in a phased manner as described below :

Year	Place	Area in Sq.m	No.of Plants	Rate of survival	Rate	Amount in Rs
First	Lease Boundary	3550	400	80%	@100 Rs Per sapling	40,000/-
Second	Approach road and Nearby Village Road	--	500	80%		50,000/-
Third	Schools	--	400	80%		40,000/-
					Total	**1,30,000/-**

iv).	Stabilization and vegetation of dumps along with waste dump management Year wise for the ten years (and upto conceptual plan period for 'A' category mines).	:	No waste or rejects shall be proposed.
v).	Measures to control erosion / sedimentation of water courses.	:	Not applicable. There is no major dumps are stabilize in this quarry area.
vi).	Treatment and disposal of water from mine.	:	It will not be harmful and it does not require any treatment before discharging into the natural courses.
vii).	Measures for minimizing adverse effects on water regime.	:	There is no water to be pumped out will be very pure and portable and therefore, it will not affect any water regime surrounding the quarry.
viii).	Protective measures for ground vibrations / air blast caused by blasting,	:	It is a small "B" category open cast, semi mechanized mining and no heavy machinery shall be used. The only smooth blasting is proposed, therefore no change for ground vibration or noise from the quarry.
ix).	Measures for protecting historical monuments and for rehabilitation of human settlements likely to be disturbed due to mining activity.	:	No historical monuments and for rehabilitation of human settlements doesn't to be disturbed during mining activity.
x).	Socioeconomic benefits arising out of mining.	:	The nearest villages are will get employment benefits.

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d). Monitoring schedules for different environmental components after the commencement of mining and other related activities. (for 'A' category mines only)

Not applicable. It is B category quarry

12.0 PROGRESSIVE QUARRY CLOSURE PLAN:

12.1	Steps proposed for phased restoration, reclamation of already mined out area.	:	Proposed mining is proposed to depth of 30m below ground level. The mined-out area will be fenced on top of working bench with S1 fencing to arrest the entry of cattle's and public in to the quarry site.
12.2	Measures to be under taken on mine closure as per Act & Rules	:	Measures will be taken as per the Acts and Rules. The quarried pit will be fenced by Barbed wire fencing. Green belt development at the rate of 400 trees will be proposed in the quarry area. No immediate proposals for closure of pit as the rough stone persist still at deeper level.
12.3	Mitigation measures to be undertaken for safety and restoration/ reclamation of the already mined out area	:	The quarry lease is a fresh mining lease, no mitigation measures observed.
12.4	Mine closure activity	:	The mining plan is proposed to depth of 30m below ground level has been envisaged as workable depth for safe & economic mining during the lease period. The mined-out area will be fenced on top of open cast working with S1 fencing. No immediate proposals for closure of pit as the rough stone persist still at deeper level.
12.5	Safety and security	:	Safety measures implement to the prevent access to surface opening excavations will be taken as Metalliferous mine regulations, 1961, it is a small open cast mining method

			adopted. Safety provisions like helmet, goggles, safety shoes, Dust mask, Ear muffs etc have to be provided as per the circulars and amendments made for Mine labours under the guidance of DGMS being a mechanized operation.
12.6	Disaster management and Risk Assessment	:	Open cast mining method is adopted in this quarry. If the benches are made with proposed height and with no risk will be there. Even then if any minor or major accident happens the quarry staffs having First aid facilities with first aid box with all necessary medicine and stretches etc., to give first aid treatment at the site and will arrange immediately the vehicle to reach nearest hospital, if any disaster happens the lessee is capable to meet such eventualities. At the time of any accident during mining activity, proposal of first aid facility at quarry and one vehicle always ready at quarry site.
12.7	Care and maintenance during temporary discontinuance	:	A board of discontinuance will be changed on the main entrance of the working place. One watch man will be kept on the quarry area for security purposes also look after the survival of the plants.
12.8	Economic repercussions of closure of quarry and man power entrenchments	:	During the ten years mining period the employment potential will be generated, general financial status and socio-economic conditions of approx. 20 labors will be improved.

12.9 Proposed Financial Estimate / Budget for (EMP) Environment Management:

A	**Fixed Asset Cost**:		
	1. Land Cost(G-Value)	:	Rs. 9,46,000/-
	2. Labour Shed		Rs. 1,00,000/-
	3. Sanitary Facility	:	Rs. 1,00,000/-
	4. Fencing	:	Rs. 2,80,000/-
	5. Other expenses (Security guard, dust bin, etc)	:	Rs. 4,00,000/-
	Total	:	**Rs. 18,26,000/-**
B	**B. Machinery cost**	:	**Rs. 30,00,000/-** (Hire Basis)
C	**Total Expenditure of EMP cost** (for ten years)		
	1. Drinking Water Facility	:	Rs. 1,00,000/-
	2. Sanitary facility & Maintenance	:	Rs. 1,50,000/-
	3. Permanent water sprinkler	:	Rs. 1,50,000/-
	4. Afforestation and its maintenance	:	Rs. 1,30,000/-
	5. Safety Kits	:	Rs. 1,00,000/-
	6. Provision of tyre washing facility	:	Rs. 1,50,000/-
	7. Blasting materials with blast mat cost	:	Rs. 15,00,000/-
	8. Drainage & Settling Tank (0.06.0Hect or 600Sq.m x 400)		Rs. 2,40,000/-
	9. Environment monitoring	:	Rs. 5,00,000/-
	Total	:	**Rs. 30,20,000/-**
D	**Total Project Cost (A+B+C)**	:	**Rs. 78,46,000/-**

13.0 FINANCIAL ASSURANCE:

Not applicable, it is a small "B" rough stone and gravel quarry.

14.0 CERTIFICATES:

All required certificates are enclosed.

15.0 PLAN AND SECTIONS, ETC:

Plan and Sections are submitted along with mining plan.

16.0 ANY OTHER DETAILS INTEND TO FURNISH BY THE APPLICANT

(i) Care and precautionary measures will be taken for the safety of workers as per Rules and Acts.

(ii) The applicant will endeavor every attempt to quarry the rough stone economically without any wastage and to improve the environment and ecology.

(iii) The Mining Plan is prepared by incorporating the conditions stipulated in the precise area communication issued by the Deputy Director, Department of Geology and Mining, Karur vide letter **Roc.No.870/Mines/2025 Dated 19.11.2025.**

(iv) Total proposed production for first five yeras period of rough stone is about **92927m^3 / 255549MT** and gravel is **5643m^3 / 11286MT** up to a depth of 30m below ground level for first five years plan period (Refer Plate No.VI & VIA) and **90430m^3/ 248683MT** will be proposed for the period of second five years up to a depth of 30m below ground level.(Refer Plate No's. VIB & VIC).

17.0 CSR Expenditure:

CSR (Corporate Social responsibility) shall provide by the applicant @ 2.0% of average net profit of the company for the last three financial years to the nearby village on the Ministry has notified the amendments in section 135 of the Act as well in the CSR Rules on 22nd January 2021 as circular no. CSR-05/01/2021-CSR-MCA dated 25th August 2021.

Place: Salem, TN

Date: 24/12/2025

Signature of the Qualified Person

P. VELLAIYAN, M.Sc, M.Phil.,
Qualified Person
D.No. 6-106-B, Athirampatti (Vill),
Amaragundhi Panchayat & Post,
Omalur Taluk, Salem District - 636503.

This Mining Plan is approved basedon Incorporation of the particulars specified in clause 7 (iv) of the Commissioner of Geology and Mining Chennai Lr No 3868 / IC / 2012 dt 19-11-2012 and Draft Minor Mineral Conservation & Development Rules 2010

19/01/26

Deputy Director of Geology and Mining
Karur District

19/01/26

This Mining Plan is approved subject to the conditions/stipulations indicated in the Mining Plan approval Letter No: 870/mines/2025 Dated: 19.01.2026

ந.க.எண்.870/கனிமம்/2025

மாவட்ட ஆட்சியர் அலுவலகம்,
புவியியல் மற்றும் சுரங்கத்துறை,
கரூர்.

நாள்: 19.12.2025.

குறிப்பாணை

பொருள்: **கனிமங்களும் குவாரிகளும்** - கரூர் மாவட்டம், புகளூர் வட்டம், அஞ்சூர் கிராமம், பட்டா புல எண்கள் 775/1D (0.37.00), 775/1E (Part) (1.05.00) மற்றும் 807/2A (Part) (0.30.00) ஆகியவற்றின் மொத்தம் 1.72.00 ஹெக்டேர்ஸ் பரப்பில் **திரு.M.குமாரவடிவேல் த/பெ.முத்துசாமி** என்பவர் விண்ணப்பம் செய்தது - வருவாய் கோட்டாட்சியர் நிலயிருப்பு அறிக்கை வரப்பெற்றது - உதவி புவியியலாளர் புலத்தணிக்கை மேற்கொண்டு அறிக்கை சமர்ப்பித்தது - தகுதியான நிலப்பரப்பாக கருதி ஏற்பளிக்கப்பட்ட சுரங்க திட்டம் மற்றும் மாநில சுற்றுச்சூழல் தாக்கல் மதிப்பீட்டு ஆணைய இசைவினை பெற்று சமர்பிக்கக் கோருதல் - தொடர்பாக.

பார்வை:

1. திரு.M.குமாரவடிவேல், த/பெ.முத்துசாமி, க.எண். 3/246, வேலாயுதம்பாளையம், அஞ்சூர், பாண்டிலிங்கபுரம் புகளூர் வட்டம் கரூர் மாவட்டம் என்பவர் குவாரி குத்தகை உரிமம் வழங்கக் கோரும் இணையவழி விண்ணப்பம் நாள்: 18.08.2025.
2. இதே எண்ணிட்ட இவ்வலுவலக கடிதம் எண் ந.க.எண் 870/கனிமம்/2025 நாள்: 18.08.2025.
3. வருவாய் கோட்டாட்சியர், கரூர் அவர்களின் நில இருப்பு அறிக்கை ந.க.எண். அ1/6783/2025, நாள் : 31.10.2025
4. திரு.M.குமாரவடிவேல், என்பவரின் கடித நாள் 14.11.2025
5. உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை கரூர் என்பவரது புலத்தணிக்கை அறிக்கை நாள்: 19.11.2025.
6. அரசாணை (பல்வகை) எண். 169, தொழில் (எம்.எம்.சி-1) துறை நாள்: 04.08.2020 இணைத்து வரப்பெற்றுள்ளது. (தமிழ்நாடு அரசிதழ் சிறப்பு வெளியீடு எண். 315 நாள்: 04.08.2020).
7. அரசாணை (பல்வகை) எண். 37 இயற்கை வளங்கள் (எம்.எம்.சி.1) துறை நாள் 22.04.2025

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கரூர் மாவட்டம், புகளூர் வட்டம், அஞ்சூர் கிராமம், பட்டா புல எண்கள் 775/1D (0.37.00), 775/1E (Part) (1.05.00) மற்றும் 807/2A (Part) (0.30.00) ஆகியவற்றின் மொத்தம் 1.72.00 ஹெக்டேர்ஸ் பரப்பு நிலத்திலிருந்து ஐந்து ஆண்டுகளுக்கு சாதாரண கற்கள் மற்றும் கிராவல் வெட்டியெடுக்க க.எண். 3/246, வேலாயுதம்பாளையம், அஞ்சூர், பாண்டிலிங்கபுரம் புகளூர் வட்டம் கரூர் மாவட்டம், என்ற முகவரியில் இருக்கும் **திரு.M.குமாரவடிவேல்**

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த/பெ.முத்துசாமி, என்பவர் பார்வை 1-இல் கண்டுள்ளவாறு இணைய வழியில் விண்ணப்பம் செய்துள்ளார்.

மேற்படி விண்ணப்பம் தொடர்பாக, பார்வை 3-இல் வருவாய் கோட்டாட்சியர், கரூர் அவர்கள் புலத்தணிக்கை மேற்கொண்டு கரூர் மாவட்டம், புகளூர் வட்டம், அஞ்சூர் கிராமம், பட்டா புல எண்கள் 775/1D (0.37.00), 775/1E (Part) (1.05.00) மற்றும் 807/2A (Part) (0.30.00) ஆகியவற்றின் மொத்தம் 1.72.00 ஹெக்டேர்ஸில் மட்டும் **திரு.M.குமாரவடிவேல் த/பெ.முத்துசாமி** என்பவருக்கு ஐந்து ஆண்டுகளுக்கு சாதாரண கற்கள் மற்றும் கிராவல் குவாரி உரிமம் வழங்க அனுமதி வழங்கலாம் என பரிந்துரை செய்துள்ளார்.

இந்நிலையில் பார்வை-4இல் கண்டுள்ளவாறு விண்ணப்பதாரர் குமாரவடிவேல் என்பவர் மேற்படி கரூர் மாவட்டம், புகளூர் வட்டம், அஞ்சூர் கிராமம், பட்டா புல எண்கள் 775/1D (0.37.00), 775/1E (Part) (1.05.00) மற்றும் 807/2A (Part) (0.30.00) ஆகியவற்றின் மொத்தம் 1.72.00 ஹெக்டேர்ஸில் 5 வருட காலத்திற்கு இணையவழியில் குவாரி குத்தகை உரிமம் கோரி விண்ணப்பம் செய்திருந்ததாகவும் அரசாணை எண். 37, நாள்: 22.04.2025-இன்படி ஏற்கனவே குவாரி குத்தகை உரிமம் வழங்கப்பட்ட புலங்களில் மீண்டும் குவாரி குத்தகை உரிமம் வழங்கும் போது 5 வருட காலத்திலிருந்து 10 வருடங்கலாக கால நீட்டிப்பு செய்யப்பட்டுள்ளதை தெரிந்து கொண்டதாகவும் எனவே, தான் குவாரி குத்தகை உரிமம் கோரி சமர்ப்பித்திருந்த விண்ணப்பத்தினை 5 வருடங்களிலிருந்து 10 வருட காலத்திற்கு நீட்டித்து வழங்குமாறு கோரியுள்ளார்.

மேற்படி விண்ணப்பம் தொடர்பாக, பார்வை-5 இல் கண்டவாறு உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை, கரூர் மற்றும் தனிவருவாய் ஆய்வாளர் (கனிமம்) கரூர் ஆகியோர்கள் புலத்தணிக்கை மேற்கொண்டு கரூர் மாவட்டம், புகளூர் வட்டம், அஞ்சூர் கிராமம், பட்டா புல எண்கள் 775/1D (0.37.00), 775/1E (Part) (1.05.00) மற்றும் 807/2A (Part) (0.30.00) ஆகியவற்றின் மொத்தம் 1.72.00 ஹெக்டேர்ஸில் மட்டும் தமிழ்நாடு சிறுகனிம சலுகை விதிகள்1959 விதி எண். 19(1), 20, 33 மற்றும் அரசாணை (பல்வகை) எண். 37 இயற்கை வளங்கள் (எம்.எம்.சி.1) துறை நாள் 22.04.2025-இன்படி **திரு.M.குமாரவடிவேல் த/பெ.முத்துசாமி** என்பவருக்கு பத்து ஆண்டுகளுக்கு சாதாரண கற்கள் மற்றும் கிராவல் குவாரி உரிமம் வழங்க கீழ்கண்ட நிபந்தனைகளுக்குட்பட்டு அனுமதி வழங்கலாம் என பரிந்துரை செய்துள்ளார்.

M. திருவருள்

சிறப்பு நிபந்தனைகள்:-

1) விண்ணப்ப புலத்திற்கு மேற்கு பகுதியில் புல எண் 775/1E-இல் அமைந்துள்ள பட்டா பாதைக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குவாரி பணி செய்ய வேண்டும்.

எனவே, வருவாய் கோட்டாட்சியர், கரூர் மற்றும் உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை, கரூர் ஆகியோர்களின் பரிந்துரைகள் மற்றும் நிபந்தனைகளின் அடிப்படையில் கரூர் மாவட்டம், புகளூர் வட்டம், அஞ்சூர் கிராமம், பட்டா புல எண்கள் 775/1D (0.37.00), 775/1E (Part) (1.05.00) மற்றும் 807/2A (Part) (0.30.00) ஆகியவற்றின் மொத்தம் 1.72.00 ஹெக்டேர்ஸில் 1959-ம் வருட தமிழ்நாடு சிறு கனிமச்சலுகை விதிகளில் விதி எண்கள்.19-(1), 20, 33 மற்றும் அரசாணை (பல்வகை) எண். 37 இயற்கை வளங்கள் (எம்.எம்.சி.1) துறை நாள் 22.04.2025-இன்படியும் மேலும் கீழ்கண்ட நிபந்தனைகளுக்கு உட்பட்டு பத்து வருட காலத்திற்கு **திரு.M.குமாரவடிவேல் த/பெ.முத்துசாமி,** என்பவருக்கு சாதாரண கற்கள் மற்றும் முதல் மூன்று ஆண்டுகளுக்கு கிராவல் குவாரி உரிமம் வழங்குவதற்குரிய தகுதியான நிலப்பரப்பாக கருதப்படுகிறது.

சிறப்பு நிபந்தனைகள்:-

1) விண்ணப்ப புலத்திற்கு மேற்கு பகுதியில் புல எண் 775/1E-இல் அமைந்துள்ள பட்டா பாதைக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குவாரி பணி செய்ய வேண்டும்.

நிபந்தனைகள்:-

1. விண்ணப்ப புலத்திற்கு அருகில் உள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் மற்றும் புறம்போக்கு நிலத்திற்கு 10 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு யாதொரு சேதமுமின்றி முறையாக குவாரிப்பணி செய்ய வேண்டும்.

2. குத்தகைக்காலத்தில் கைத்துளைப்பான் கருவி கொண்டு பாறைகளை துளையிட்டும், மிதமான வெடிபொருள் பயன்படுத்தியும், பொதுமக்களுக்கோ, பொது சொத்துக்களுக்கோ யாதொரு சேதமுமின்றி விதிமுறைகளின்படி குவாரிப்பணி செய்ய வேண்டும்.

3. குவாரித் தொழிலாளர்களின் பாதுகாப்பினை உறுதி செய்ய Mettaliferrous Mines, விதிகளின்படி அகலமானதும், பாதுகாப்பானதுமான Benches அமைத்து பாதுகாப்பான முறையில் குவாரிக்குள் வாகனங்கள் சென்றுவரவும் மற்றும் குவாரி தொழிலாளர்களின் பாதுகாப்பினை உறுதி செய்தும் குவாரிப்பணி செய்ய வேண்டும்.

4. குவாரி குத்தகை வழங்க ஏதுவாக துணை இயக்குநர் (சுரங்கம்) அவர்களால் ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தினையும், மாநில அளவிலான சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் (SEIAA) அனுமதி பெற்று மாவட்ட நிர்வாகத்திற்கு விண்ணப்பதாரரால் சமர்ப்பிக்கப்பட வேண்டும்.

மேலும், தமிழ்நாடு சிறு கனிம சலுகை விதிகள்-1959 விதி எண்.41-இன்படி குவாரிப்பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்க திட்டத்தினை 90 தினங்களுக்குள் சமர்ப்பிக்குமாறு **திரு.M.குமாரவடிவேல் த/பெ.முத்துசாமி,** என்பவர் கேட்டுக்கொள்ளப்படுகிறார். மேலும் ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தின் தொடர்ச்சியாக 1959-ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள், விதி எண்.42-இன்படி சுற்றுச்சூழல் தாக்கல் மதிப்பீட்டு ஆணையத்தின் இசைவினைப் பெற்று சமர்பிக்கும் பட்சத்தில் மட்டுமே குவாரி உரிமம் வழங்கப்படும் என இதன் மூலம் தெரிவிக்கப்படுகிறது.

19/12/25

துணை இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
கரூர்.

பெறுநர்:-

திரு.M.குமாரவடிவேல்,
த/பெ/முத்துசாமி, க.எண். 3/246,
வேலாயுதம்பாளையம், அஞ்சூர்,
பாண்டிலிங்கபுரம்,
புகளூர் வட்டம், கரூர் மாவட்டம்.

19.12.25

நகல்:-

1. மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையம், சென்னை.
2. இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கிண்டி, சென்னை.

M. திருவடிவேல்

ANNEXURE-11-1
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THIRU.G.GOVINDARAJ, I.A.S.,
CHAIRMAN/
DISTRICT COLLECTOR.

Karur District Environment Impact
Assessment Authority,
Room No.302,Collectorate,
Karur.

ENVIRONMENTAL CLEARANCE

Lr.No:DEIAA-DIA/TN/MIN/6352/2017-KRR Ec.No.52/2017/Mines, Dated: .02.2018

To,

Thiru.P.Ravi
S/o.Palanisamy Gounder,
Saliyankattupallam,
Muthur Village,
Kangeyam Taluk,
Tiruppur District.

Sir,

Sub: DEIAA - Proposed - **Roughstone and Gravel** - quarry at S.F.No. 775/1E (P), 776/3, 777/1, 778/1A (P), 807/2B & 807/2C2 of Anjur Village - Aravakurichi Taluk - Karur District by **Thiru.P.Ravi** - Environmental Clearance - Reg.

Ref:
1. Your Application for Environment Clearance, Date of online application submitted to DEIAA, Dated: 20.06.2017 and the date of receipt of application 18.07.2017.
2. Minutes of the DEAC meeting No.5 held on date. 12.02.2018.
3. Minutes of the DEIAA meeting No.5held on date. 16 .02.2018.

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Details of Minor mineral Activity:-

This has reference to your application first cited. The proposal is for obtaining Environmental Clearance for mining / quarrying of category 'B2' minor minerals based on the particulars furnished in your application as shown below:

1	Name of Project Proponent and address	:	Thiru.P.Ravi S/o.Palanisamy Gounder, Saliyankattupallam, Muthur Village, Kangeyam Taluk, Tiruppur District.
2.	Location of the Proposed Activity	:	
	Survey Number	:	775/1E (P), 776/3, 777/1, 778/1A (P), 807/2B & 807/2C2
	Latitude and Longitude	:	11°03'01.49" N to 11°03'15.72" N 77°47'04.70" E to 77°47'10.20" E
	Village	:	Anjur
	Taluk	:	Aravakurichi
	District	:	Karur

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3.	**Proposed Activity**			
	i.	Minor mineral	:	Rough stone and Gravel
	ii.	Mining Lease Area	:	4.40.0hects
	iii.	Approved quantity	:	Roughstone= 235359 M^3 Gravel = 14742 M^3
	iv.	Depth of quarrying	:	22 m below ground level including a depth of 12m already quarries partially.
	v.	Type of quarrying	:	Open cast, Semi-mechanized
	vi.	Category (B1/B2)	:	"B2" category.
	vii.	Precise Area Communication	:	District Collector, Karur Memo Rc.No.554/Mines/2016, dated:18.12.2016.
	viii.	Mining Plan approval	:	Assistant Director, Geology and Mining, Karur letter Rc.No.554/Mines/2016, dated:15.03.2017.
	ix.	Quarrying lease period	:	5 Years.
4.	Whether Project area attracts any general conditions specified in the EIA notification, 2006 as amended:		:	Not attracted. Affidavit furnished.
5.	Man Power requirement per day		:	11 Nos.
6.	**Utilities**			
	i.	Source of Water	:	Water vendors / Existing borehole
	ii.	Water requirement" 1. Drinking & domestic purposes (in KLD) 2. Dust suppression & Green Belt (in KLD) 3. Afforestation	:	 0.3 KLD 0.3 KLD 0.4 KLD
	iii.	Power requirement a. Domestic purpose b. Industrial purpose	: :	Fuel is used for operating machineries and vehicles during quarrying process and electricity will be used only for mines office.
7.	**Cost**			
	i.	Project Cost	:	Rs.6,40,000/-
	ii.	EMP Cost	:	Rs.7,10,000/-

8.	Public Consultation:-	:	Not required as per O.M. dated 24.12.2013 of MoEF, GOI
9.	Date of Appraisal by DEAC: Agenda No.	: :	12.02.2018. 5th Meeting -2
10.	**Date of review / discussion by DEIAA and the Remarks:-** The proposal was placed before the DEIAA in its DEIAA meeting No.5 held on 16.02.2018 and the Authority after careful consideration, decided to grant Environmental Clearance to the said project Mining of "Roughstone and Gravel" subject to the terms and conditions stipulated under the provisions of Environment Impact Assessment Notification, 2006 as amended.		
11.	**Validity:** This Environmental Clearance is granted to Mining of "Roughstone and Gravel" for the production quantity of Roughstone= 235359 M^3 and Gravel = 14742 M^3 of weathered Gravel for the period of "five years" from the date of execution of the mining lease period.		

Conditions to be Complied before commencing mining operations:-

1. The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing the public that
   I. The project has been accorded Environmental Clearance.
   II. Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.
   III. Environmental Clearance may also be seen on the website of the DEIAA.
   IV. The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the DEIAA.
2. The applicant has to obtain land use classification as industrial use before issue / renewal of mining lease.
3. NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.
4. The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.
5. A copy of the Environment Clearance letter shall be sent by the proponent to the concerned Panchayat, Town Panchayat / Panchayat union/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the proponent and also kept at the site, for the general public to see.
6. Quarry lease area should be demarcated on the ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar shall be erected before commencement of quarrying.
7. The proponent shall ensure that First Aid Box is available at site.
8. The excavation activity shall not alter the natural drainage pattern of the area.
9. The excavated pit shall be restored by the project proponent for useful purposes.
10. The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.

11. The quarrying operation shall be restricted between 7AM and 5 PM.
12. The proponent shall take necessary measures to ensure that there shall not be any adverse impacts due to quarrying operation on the nearby human habitations, by way of pollution to the environment.
13. A minimum distance of 15 mts. from any civil structure shall be kept from the periphery of any excavation area.
14. Depth of quarrying shall be 2m above the ground water table /approved depth of mining whichever is lesser to be considered as a safe guard against Environmental Contamination and over exploitation of resources.
15. The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.
16. Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.
17. Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
18. The explosives shall be stored at site as per the conditions stipulated in the permits issued by the licensing Authority.
19. Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.
20. A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.
21. The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF, GoI on 16.11.2009.
22. The following measures are to be implemented to reduce Air Pollution during transportation of mineral]
    i. Roads shall be graded to mitigate the dust emission.
    ii. Water shall be sprinkled at regular interval on the main road and other service roads to suppress dust
23. The following measures are to be implemented to reduce Noise Pollution
    i. Proper and regular maintenance of vehicles and other equipment
    ii. Limiting time exposure of workers to excessive noise
    iii. The workers employed shall be provided with protection equipment and earmuffs etc
    iv. Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.
24. Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoE&F, GoI to control noise to the prescribed levels.
25. Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWB. Suitable measures should be taken for rainwater harvesting.
26. Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.
27. Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.

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28. The following measures are to be adopted to control erosion of dumps:-
    i. Retention/ toe walls shall be provided at the foot of the dumps.
    ii. Worked out slopes are to be stabilized by planting appropriate shrub/ grass species on the slopes.
29. Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous Wastes (Management, Handling, and trans boundary movement) Rules, 2008 and its amendments thereof to the recyclers authorized by TNPCB.
30. Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
31. Rain water harvesting to collect and utilize the entire water falling in land area should be provided.
32. Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the lease area and only the overflow after allowing settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season.
33. The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, if it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out. District Collector/mining officer shall ensure this.
34. No tree-felling shall be done in the leased area, except only with the permission from competent Authority.
35. To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic Institution.
36. It shall be ensured that the total extent of nearby quarries(existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 25 hectares within the mining lease period of this application.
37. It shall be ensured that there is no habitation is located within 300 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 500m radius from the periphery of the quarry site.
38. Ground water quality monitoring should be conducted once in 3 Months.
39. Transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village road.
40. Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI.
41. Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI.
42. Bunds to be provided at the boundary of the project site.
43. The project proponent shall undertake plantation/afforestation work by planting the native species on all side of the lease area at the rate of 400/Ha. Suitable tall tree saplings should be planted on the bunds and other suitable areas in and around the work place and progress report shall be submitted once in 3 months.
44. At least 10 Neem trees should be planted around the boundary of the quarry site.

R. Elangovan

45. Floor of excavated pit to be levelled and sides to be sloped with gentle slope (except for granite quarries) in the mine closure phase.
46. The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity.
47. The Project Proponent shall provide solar lighting system to the nearby villages.
48. The Project Proponent shall comply with the mining and other relevant rules and regulations where ever applicable.
49. Rainwater shall be pumped out Via Settling Tank only.
50. Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.
51. As per MoEF&CC, GoI, Office Memorandum dated 30.03.2015, prior clearance from Forestry & Wild Life angle including clearance from standing committee of the National Board for Wild life as applicable shall be obtained before starting the quarrying operation, if the project site is located within 10KM from National Park and Sanctuaries.
52. The quarrying activity shall be stopped if the entire quantity indicated in the Mining plan is quarried even before the expiry of the quarry lease period and the same shall be monitored by the District Authorities.
53. Safety equipments to be provided to all the employees.
54. Safety distance of 50m has to be provided in case of railway, reservoir, canal/odai.
55. The Deputy Superintendent of Police, Revenue Divisional Officer, and the Tahsildar concerned shall ensure that the proponent has engaged the blaster with valid Blasting license/certificate obtained from the competent authority before execution of mining lease.
56. The proponent shall furnish the Baseline data covering the Air, Water, Noise and land environment quality for the proposed quarry site before execution of mining lease.
57. The proponent shall erect the pillars in accordance with the Rules for depicting GPS details in the earmarked boundary of the quarry site to monitor electronically before execution of mining lease.
58. The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh lease before commencing mining operation.
59. The proponent has to display the name board at the quarry site showing the details of Proponent, lease period, extent, etc., with respect to the existing activity before execution of mining.
60. Heavy earth machinery equipments if utilized, after getting approval from the competent authority.
61. Blasting shall be carried out after announcing to the public through adequate public address system to avoid any accident.
62. Proper sanitation measures, first aid kit and protected drinking water should be provided to the labourers.
63. The Environmental norms shall be monitored by the District Environmental Engineer, Tamil Nadu Pollution Control Board, Karur.
64. Periodical medical examination of the quarry workers should be carried out by a registered medical practitioner and the report should be filed in the quarry office in a separate file and copy should be sent to the Deputy Director, Health Services, Karur.
65. Artificial recharge structure should be constructed nearby the lease area to harvest the rain water.

General Conditions:

1) EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.
2) The Proponent shall obtain the Consent for Establishment from the TNPC Board before commencing the activity.

M. இளங்கோவன்

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3) No change in mining technology and scope of working should be made without prior approval of the DEIAA, Karur District, Tamil Nadu.
4) No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.
5) Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
6) Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.
7) A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.
8) Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
9) Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
10) Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
11) All Personnel shall be provided with protective respiratory devices including safety shoes, Masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
12) Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.
13) Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.
14) The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.
15) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its Regional Office located at Chennai.
16) The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
17) This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance.
18) The DEIAA, Karur District may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.
19) The DEIAA, Karur District may cancel the environmental clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this environmental clearance, if it is found or if it comes to the knowledge of this DEIAA, Karur District that the project proponent has deliberately concealed and/or submitted

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false or misleading information or inadequate data for obtaining the environmental clearance.

20) Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.

21) The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, draft Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957,National Commission for protection of Child Right Rules,2006 and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.

22) Any other conditions stipulated by other Statutory/Government authorities shall be complied.

23) Any appeal against this environmental clearance shall lie with the Hon'ble National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

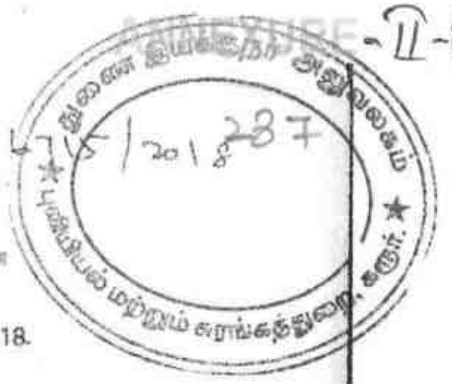
CHAIRMAN,
DEIAA,
KARUR.
16.2.18

Copy to:-

1. The Secretary, Ministry of Mines, Government of India , ShastriBhawan, New Delhi
2. The Principal Secretary, Environment and Forest Department, Government of Tamil Nadu, Tamil Nadu.
3. The Principal Secretary to Government, Industries Department, Government of Tamil Nadu, Tamil Nadu.
4. The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 34, HEPC Building 1st& 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai-34.
5. The Chairman, Central Pollution Control Board, PariveshBhawan, CBD-Cum-Office Complex East Arjun Nagar, New Delhi 110 032.
6. The Chairman Tamil Nadu Pollution Control Board, 76 Mount Salai (Cuindy, Chennai-32)
7. The Chairman, SEIAA, Panagal Building, Chennai.
8. The Commissioner of Geology and Mining, Guindy, Chennai-32
9. E1 Division, Ministry of Environment and Forests ParyavaranBhawan, New Delhi.
10. Spare.

ANNEXURE-II-B

TP/1319/715/2018/287



கரூர் மாவட்ட ஆட்சியர் அவர்களின் செயல்முறை ஆணை
முன்னிலை:- திரு.கு.கோவிந்தராஜ், இ.ஆ.ப.,

ந.க.எண்.554/ கனிமம் / 2016 நாள்: 21.02.2018.

பொருள்: கனிமங்களும் குவாரிகளும் - கரூர் மாவட்டம் - அரவக்குறிச்சி வட்டம் - அஞ்சூர் கிராமம்- புல எண்கள். 775/1E (பகுதி) (0.31.0 ஹெக்டேர்), 776/3 (0.36.5 ஹெக்டேர்), 777/1 (1.07.5 ஹெக்டேர்), 778/1A (பகுதி) (1.82.0 ஹெக்டேர்), 807/2B (0.50.5 ஹெக்டேர்) மற்றும் 807/2C2 (0.32.5 ஹெக்டேர்) ஆகியவற்றில் மொத்தம் 4.40.0 ஹெக்டேர் பரப்பில் பட்டா புலங்கள் - சாதாரண கற்கள்/கிராவல் வெட்டி எடுக்க 5 ஆண்டுகளுக்கு குவாரி குத்தகை உரிமம் - திரு.ப.ரவி என்பவருக்கு வழங்கி உத்தரவிடப்படுகிறது.

பார்வை:

1. திரு.ப.ரவி, த/பெ.பழனிசாமி கவுண்டர், சாலியங்காட்டுபள்ளம், முத்தூர் கிராமம், காங்கேயம் வட்டம், திருப்பூர் மாவட்டம் என்பவரின் மனு நாள்:10.6.2016.
2. இவ்வலுவலக இதே எண்ணிட்ட கடிதம் நாள்:10.6.2016 கரூர் வருவாய் கோட்டாட்சியருக்கு முகவரியிட்டது
3. கரூர், வருவாய் கோட்டாட்சியர் அவர்களின் அறிக்கை ந.க.அ1/1540/2016, நாள்:26.08.2016.
4. கரூர் புவியியல் மற்றும் சுரங்கத்துறை உதவி இயக்குநர் இடப்பார்வை அறிக்கை நாள்:30.11.2016.
5. இவ்வலுவலக இதே எண்ணிட்ட குறிப்பாணை நாள்.18.12.2016.
6. உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கரூர் அவர்களின் ஏற்பளிக்கப்பட்ட சுரங்கத் திட்டம் நாள்: 15.03.2017.
7. மாவட்ட சுற்றுச் சூழல் தாக்க மதிப்பீட்டு ஆணையம், கரூர் ஒப்புதல் ஆணை எண். DEIAA-DIA/TN/MIN/6352/2017-KRR Ec NO.52/2017/Mines, நாள்: 16.02.2018.

உத்தரவு:-

கரூர் மாவட்டம், அரவக்குறிச்சி வட்டம், அஞ்சூர் கிராமம், பட்டா புல எண்கள்.775/1E (பகுதி) (0.31.0 ஹெக்டேர்), 776/3 (0.36.5 ஹெக்டேர்), 777/1 (1.07.5 ஹெக்டேர்), 778/1A (1.82.0 ஹெக்டேர்), 807/2B (0.50.5 ஹெக்டேர்) மற்றும் 807/2C2 (0.32.5 ஹெக்டேர்) ஆகியவற்றில் மொத்தம் 4.40.0 ஹெக்டேர் பரப்பில் சாதாரண கற்கள் / கிராவல் ஐந்து ஆண்டுகளுக்கு வெட்டியெடுக்க திரு.ப.ரவி, த/பெ.பழனிசாமி கவுண்டர்,

சாலியங்காட்டுபுள்ளம், முத்தூர் கிராமம், காங்கேயம் வட்டம், திருப்பூர் மாவட்டம் என்பவருக்கு ஐந்து ஆண்டுகளுக்கு குவாரி குத்தகை உரிமம் கோரி பார்வை-1ல் காணும் மனு செய்துள்ளார்.

2. மனுதாரர் சாதாரண கற்கள் வெட்டி எடுக்க உரிமம் கோரிய புலத்தை தணிக்கை செய்து அறிக்கை அளிக்கும்படி பார்வை-2ல் கண்ட கடிதத்தின் வாயிலாக கரூர், வருவாய் கோட்டாட்சியரிடம் அறிக்கை கோரப்பட்டது.

3. மனுதாரர் உரிய படிவத்தில் மனு செய்திருப்பதுடன், விண்ணப்பக் கட்டணம் மற்றும் அடிப்படை செலவினங்களுக்காக ரூ.1500/-ஐ சலான் எண்.7, நாள்:09.6.2016-ல் தாந்தோணி பாரத மாநில வங்கியில் செலுத்தியுள்ளார். மேலும், மனுதாரர் செலுத்த வேண்டிய வருவான வரி மற்றும் கனிம வரி எதுவும் நிலுவையில் இல்லை என்பதற்கான சான்றுறுதி ஆவணம் மற்றும் கிராம கணக்கு நகல்களையும் சமர்ப்பித்துள்ளார்.

4. மனுதாரர் சாதாரண கற்கள் வெட்டி எடுக்க உரிமம் கோரிய பிரஸ்தாப புலத்தை கரூர், வருவாய் கோட்டாட்சியர் மற்றும் உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கரூர் ஆகியோர் இடப்பார்வை செய்து அறிக்கை சமர்ப்பித்துள்ளனர்.

5. பார்வை 3ல் கண்ட கரூர், வருவாய் கோட்டாட்சியர் அவர்களின் அறிக்கையில், அரவக்குறிச்சி வட்டம், அஞ்சூர் கிராமம், புல எண்கள்.773/2 (0.60.0 ஹெக்டேர்), 775/1E (0.31.0 ஹெக்டேர்), 776/3 (0.36.5 ஹெக்டேர்), 777/1 (1.07.5 ஹெக்டேர்), 778/1A (பகுதி) (1.82.0 ஹெக்டேர்), 807/2B (0.50.0 ஹெக்டேர்) மற்றும் 807/2C2 (0.32.5 ஹெக்டேர்) ஆக மொத்த விஸ்தீரணம் ஹெக்டேர் 5.00.0 ஏர்ஸ் பட்டா பூமியிலிருந்து சாதாரண கற்கள் மற்றும் கிராவல் வெட்டி எடுக்க குத்தகை உரிமம் கோரி வரப்பெற்ற மனு தொடர்பாக புலத்தணிக்கை செய்யப்பட்டது எனவும், உரிமம் கோரும் அஞ்சூர் கிராமம் புல எண்கள்.773/2 (0.60.0 ஹெக்டேர்) மற்றும் 778/1A (1.82.0 ஹெக்டேர்) நிலமானது மனுதாரரான பழனியப்பகவுண்டர் மகன் திரு.இரவி என்பவர் பெயரில் பட்டா எண்.1600ல் தனிப்பட்டாவாகவும், புல எண்கள்.775/1E (0.31.0 ஹெக்டேர்) மற்றும் 807/2B (0.50.0 ஹெக்டேர்) நிலமானது ராமசாமிகவுண்டர் மகன் திரு.முத்துசாமி என்பவர் பெயரில் பட்டா எண்.1625ல் தனிப்பட்டாவாகவும், புல எண்கள்.776/3 (0.36.5 ஹெக்டேர்), 807/2C2 (0.32.5 ஹெக்டேர்) மற்றும் 777/1 (1.07.5 ஹெக்டேர்) ஆகிய நிலமானது சாமியப்பகவுண்டர் மகன் திரு.குப்புசாமி

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என்பவர் பெயரில் பட்டா எண்.1602 மற்றும் 1582ல் தனிப்பட்டாவாகவும் தாக்கல் செய்துள்ளது எனவும், மேற்கண்ட நிலங்களில் கல்குவாரி அமைக்க புல எண்கள்.775/1E (0.31.0 ஹெக்டேர்) மற்றும் 807/2B (0.50.0 ஹெக்டேர்) ஆகியவற்றின் பட்டாதாரராக திரு.முத்துசாமி மற்றும் புல எண்கள்.776/3 (0.36.5 ஹெக்டேர்), 807/2C2 (0.32.5 ஹெக்டேர்) மற்றும் 777/1 (1.07.5 ஹெக்டேர்) ஆகியவற்றின் பட்டாதாரராக திரு.குப்புசாமி ஆகியோர் திரு.இரவி, த/பெ.பழனியப்பகவுண்டர் என்பவருக்கு குத்தகை உரிமம் வழங்க சம்மதக்கடிதம் அளித்துள்ளனர் எனவும், திரு.இரவி, த/பெ.பழனியப்பகவுண்டர் என்பவருக்கு மேற்படி நிலங்களில் ஸ்தல பாத்யதை உள்ளது எனவும், மேற்படி இடத்தில் கல்குவாரி செய்ய பொது மக்களிடமிருந்து ஆட்சேபனை ஏதும் உள்ளதா என்பது குறித்து "ஏ1" விளம்பரம் செய்யப்பட்டு ஆட்சேபனை இல்லையென ஒப்புதல் பெறப்பட்டுள்ளது எனவும், உரிமம் கோரும் கல்குவாரி செய்யப்படும் புல எண்களுக்கு எல்லைகள் வரையறுக்கப்பட்டு எல்லைக் கற்கள் நடப்பட்டுள்ளது எனவும், குவாரி செய்ய உரிமம் கோரும் புல எண்கள்.773/2 (0.60.0 ஹெக்டேர்), 775/1E (0.31.0 ஹெக்டேர்), 776/3 (0.36.5 ஹெக்டேர்), 777/1 (1.07.5 ஹெக்டேர்), 778/1A (1.82.0 ஹெக்டேர்), 807/2B (0.50.0 ஹெக்டேர்) மற்றும் 807/2C2 (0.32.5 ஹெக்டேர்) ஆக மொத்தத் விஸ்தீரணம் ஹெக்டேர் 5.00.0 ஏர்ஸ் நிலத்திலிருந்து 300 மீட்டர் தூரத்தில் உயர், தாழ்வழுத்த மின்கம்பிகள் செல்லவில்லை எனவும், நத்தம் அங்கீகரிக்கப்பட்ட குடியிருப்புகள் ஏதுமில்லை எனவும், கோவில், மதுதி, சர்ச், மருத்துவமனை, மயானம் மற்றும் நீர்நிலைகள் ஏதுமில்லை எனவும், இந்த குவாரியினுடைய நீளம் மற்றும் அகலம் அளவிடு செய்யப்பட்டு வரைபடத்தில் குறிக்கப்பட்டுள்ளது எனவும், குவாரி செய்யப்படவுள்ள புலத்தில் புறம்போக்கு இடங்கள் ஏதுமில்லை என தெரிவித்து அரவக்குறிச்சி வட்டம், அஞ்சூர் கிராமம், புல எண்கள்.773/2 (0.60.0 ஹெக்டேர்), 775/1E (0.31.0 ஹெக்டேர்), 776/3 (0.36.5 ஹெக்டேர்), 777/1 (1.07.5 ஹெக்டேர்), 778/1A (1.82.0 ஹெக்டேர்), 807/2B (0.50.0 ஹெக்டேர்) மற்றும் 807/2C2 (0.32.5 ஹெக்டேர்) ஆக மொத்தம் விஸ்தீரணம் ஹெக்டேர் 5.00.0 ஏர்ஸ் பட்டா பூமியிலிருந்து அருகில் உள்ள விவசாய நிலங்களுக்கு கல்குவாரி செய்வதனால் பாதிப்பு ஏதும் இல்லாமல் குவாரி செய்யப்பட வேண்டும் என்ற நிபந்தனையுடன் சாதாரண கற்கள் மற்றும் கிராவல் வெட்டி எடுக்க

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திரு.இரவி, த/பெ.பழனியப்பகவுண்டர் என்பவருக்கு அனுமதி வழங்க பரிந்துரை செய்துள்ளார்.

6. பார்வை-4ல் காணும் கடிதத்தில் மேற்படி விண்ணப்பதாரர் அரவக்குறிச்சி வட்டம், அஞ்சூர் கிராமம், புல எண்கள்.773/2 (0.60.0 ஹெக்டேர்), 775/1E, (0.31.0 ஹெக்டேர்), 776/3 (0.36.5 ஹெக்டேர்), 777/1 (1.07.5 ஹெக்டேர்), 778/1A (1.82.0 ஹெக்டேர்), 807/2B (0.50.5 ஹெக்டேர்) மற்றும் 807/2A2 (0.32.5 ஹெக்டேர்) ஆகியவற்றில் மொத்தம் 5.00.0 ஹெக்டேர் பரப்பில் சாதாரண கற்கள் ஐந்து ஆண்டுகளுக்கு வெட்டி எடுக்க கரூர் மாவட்ட ஆட்சித்தலைவர் அவர்களிடம் 10.6.2016 அன்று விண்ணப்பம் செய்திருந்ததாகவும், தற்பொழுது மேற்படி விண்ணப்ப புல எண்களில் புல எண்.773/2 (0.60.0 ஹெக்டேர்) பரப்பில் தரம் வாய்ந்த கற்கள் இல்லாததால் அதை தவிர்த்து மீதமுள்ள புல எண்களில் மொத்த பரப்பு 4.40.0 ஹெக்டேர் பரப்பில் மட்டும் சாதாரண கல் / கிராவல் குவாரி குத்தகை உரிமம் வழங்குமாறு தெரிவித்துள்ளார்.

7. பார்வை-5ல் கண்ட கரூர், புவியியல் மற்றும் சுரங்கத்துறை, உதவி இயக்குநரின் இடப்பார்வை அறிக்கையில், அரவக்குறிச்சி வட்டம், அஞ்சூர் கிராமம், விண்ணப்ப புல எண்கள்.773/2 மற்றும் 778/1A ஆகியவை பட்டா எண்.1600ன்படி விண்ணப்பதாரர் பெயரில் தனி பட்டாவாகவும், புல எண்கள்.775/1E மற்றும் 807/2B ஆகியவை பட்டா எண்.1625ன்படி முத்துசாமி என்பவர் பெயரில் தனிப்பட்டாவாகவும், புல எண்கள்.776/3, 807/2C2 மற்றும் 777/1 ஆகியவை பட்டா எண்கள்.1602 மற்றும் 1582ன்படி குப்புசாமி என்பவர் பெயரி தனிப்பட்டாவாகவும் தாக்கலாகியுள்ளது எனவும், மேற்படி பட்டாதாரர்கள் முத்துசாமி மற்றும் குப்புசாமி ஆகியோர் விண்ணப்பதாரருக்கு மேற்படி புல எண்களில் சாதாரண கற்கள் உடைக்க சம்மத கடிதம் அளித்துள்ளார் எனவும், விண்ணப்ப புலங்களில் அரசு அனுமதி பெற்று சாதாரண கற்கள் உடைக்க விண்ணப்பதாரர் திருபிரவி என்பவர் உரிமை பெற்றவராகிறார் எனவும், விண்ணப்ப புலம் சமசீரற்று உள்ளது எனவும், விண்ணப்ப புலத்தில் ஏற்கனவே கல்லுடைக்கப்பட்ட பகுதி சமச்சீரற்றும், கல்லுடைக்கப்படாத பகுதி சமதளமாகவும் காணப்படுகிறது எனவும், கல்லுடைக்கப்படாத பகுதியில் சுமார் 1 முதல் 2 மீட்டர் ஆழம் வரை மேற்பரப்பு கனிம் காணப்படுகிறது எனவும், அதற்கு கீழ் உள்ள சார்னோகைட் பாறையிலிருந்து அரவை கல்லி, சோலிங் போன்றவை உற்பத்தி செய்யலாம் எனவும், மேற்படி விண்ணப்ப

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புலங்களில் புல எண்கள்.773/2, 776/3, 777/1, 778/1A மற்றும் 807/2C2 ஆகியவற்றில் 4.83.5 ஹெக்டேர் பரப்பில் சாதாரண கற்கள் உடைக்க விண்ணப்பதாரருக்கு கரூர், மாவட்ட ஆட்சித்தலைவர் அவர்களின் செயல்முறை ஆணைகள் நக.எண்.பி/167/புமக/2008, நாள்.04.6.2008ன்படி அனுமதி வழங்கப்பட்டு 05.6.2013ல் உரிம காலம் முடிவடைந்துவிட்டது எனவும், மேலும் விண்ணப்ப புல எண்கள்.775/1E மற்றும் 807/2B ஆகியவற்றில் மொத்தம் 1.63.0 ஹெக்டேர் பரப்பில் திரு.பி.ஆர்.முத்துசாமி என்பவருக்கு கரூர், மாவட்ட ஆட்சித்தலைவர் அவர்களின் செயல்முறை ஆணைகள் நக.எண்.பி/266/புமக/2008, நாள்.07.01.2009ன்படி அனுமதி வழங்கப்பட்டு 20.01.2014ல் உரிம காலம் முடிவடைந்துவிட்டது எனவும், அனுமதி வழங்கப்பட்ட புலங்களில் சுமார் 12 மீட்டர் ஆழம் கற்கள் வெட்டி எடுக்கப்பட்டுள்ளது எனவும், 300 மீட்டர் சுற்றளவில் அங்கீகரிக்கப்பட்ட குடியிருப்பு வீடுகளோ/வீட்டு மனைகளோ இல்லை எனவும், மேலும் 50 மீட்டர் சுற்றளவில் நிலையான அமைப்புகள் ஏதுமில்லை எனவும், விண்ணப்ப புலத்திற்கு அருகில் உள்ள புல எண்.778/1Aன் தெற்கு பகுதியில் வாய்க்கால் (778/2) அமைந்துள்ளது எனவும், இவற்றை தவிர 50 மீட்டர் சுற்றளவில் நிலையான அமைப்புகள் ஏதுமில்லை எனவும், விண்ணப்ப புல எண்களுக்கு கீழ்கண்டவாறு நான்கெல்லைகள் அமைந்துள்ளன எனவும்,

புல எண்கள்.	வடக்கு	கிழக்கு	தெற்கு	மேற்கு
775/1E (P)	775/1D	807/2B	776/1	775/1E (P)
807/2B	807/2A	808/1	807/2C1	775/1E
807/2C2	807/2C1	808/1, 806	777/1, 777/2	776/1
776/3	776/1	777/1	773/2, 778/1A1	776/2
777/1	807/2C2	777/2	778/1A1	776/1, 776/2
778/1A1	777/1	778/1B	778/2-Vaikkal 771 and 770/1A	773/2, 772/1

விண்ணப்ப புலத்திலிருந்து 500 மீட்டர் சுற்றவில் அமைந்துள்ள குவாரிகளின் விபரங்கள் குறித்து உதவி இயக்குனர் (புவியியல்) பின்வருமாறு தெரிவித்துள்ளார்.

SUB REGISTRAR'S OFFICE DOCUMENT No 629 Book 1 Year 2018 CHINNALAPURAM

நிலை இயக்குநர் அலுவலகம்
அம் மற்றும் சுரங்கத்துறை, சென்

வ. எண்	குத்தகைதாரர் பெயர்	கிராமம்	புல எண்கள்.	பரப்பு ஹெக்டேரில்	மாவட்ட ஆட்சித்தலைவரின் செயல்முறை ஆணை எண்.	குத்தகை காலம்
1	திரு.சா.பழனிசாமி, க/பெ.சாமியப்ப கவுண்டர், சாலியங்காட்டு பள்ளம், ஊடையம் கிராமம், காங்கேயம் வட்டம், திருப்பூர் மாவட்டம்	அரவக்குறிச்சி வட்டம் அஞ்சூர் கிராமம்	761/2 762/2 மற்றும் 763/2	2.89.0	நக.எண்.174/ கனிமம்/2012, நாள்.06.5.2015	06.5.2015 to 05.5.2020
2	திருமதி.எஸ்.விஜயா, க/பெ.சுந்தரம், தாதராக்காடு, பொரசப்பாளையம், அஞ்சூர், ஈரோடு வட்டம் & மாவட்டம்		759/2 761/3 762/3 மற்றும் 763/3	2.75.0	நக.எண்.243/ கனிமம்/2012, நாள்.06.5.15	06.5.2015 முதல் 05.5.2020
3	திரு.பி.ரவி, த/பெ.கே.ஆர்.பழனிசாமி, சின்னகாங்கேயம்பாளையம், மங்களப்பட்டி அஞ்சல், காங்கேயம் வட்டம், திருப்பூர் மாவட்டம்.		759/3 759/4 763/5 764/2 மற்றும் 765/2	4.18.0	விண்ணப்ப புலம்	
4	திரு.பி.ரவி, த/பெ.கே.ஆர்.பழனிசாமி, சின்னகாங்கேயம்பாளையம், மங்களப்பட்டி அஞ்சல், காங்கேயம் வட்டம், திருப்பூர் மாவட்டம்.		773/2 775/1E 776/3 777/1 778/1A 807/2B 807/2C2	4.40.0	Proposed Area	
Total				14.22.0		

என தெரிவித்து அரவக்குறிச்சி வட்டம், அஞ்சூர் கிராமம், புல எண்கள். 775/1E (பகுதி) (0.31.0 ஹெக்டேர்), 776/3 (0.36.5 ஹெக்டேர்), 777/1 (1.07.5 ஹெக்டேர்), 778/1A (பகுதி) (1.82.0 ஹெக்டேர்), 807/2B (0.50.5 ஹெக்டேர்) மற்றும் 807/2C2 (0.32.5 ஹெக்டேர்) ஆகியவற்றில் மொத்தம் 4.40.0 ஹெக்டேர் பரப்பில் சாதாரண கற்கள் / கிராவல் வெட்டி எடுக்க திரு.பிரவி, த/பெபழனிசாமி கவுண்டர் என்பவருக்கு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959ன் விதி எண். 19 (1), 20 மற்றும் 33-ன் கீழ் 5 ஆண்டுகளுக்கு கல் குவாரி குத்தகை உரிமம் கீழ்காணும் நிபந்தனைகளுக்குட்பட்டு வழங்கலாம் என பரிந்துரை செய்துள்ளார்.

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விண்ணப்ப புலங்களுக்கு அருகிலுள்ள பட்டா புலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குவாரிபணி செய்ய வேண்டும்.

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2) விண்ணப்ப புலத்திற்கு தெற்கே புல எண்.778/2-இல் உள்ள வாய்க்காலுக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குவாரி பணி செய்ய வேண்டும்.

3) விண்ணப்ப புலங்களில் சாதாரண கற்கள் வெட்டி எடுப்பது தொடர்பாக அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம் (Approved Mining Plan) மற்றும்

4) மாநில அளவிலான சுற்றுச் சூழல் தாக்க மற்றும் மதிப்பீட்டு ஆணையத்தின் சுற்று சூழல் ஒப்புதல் (Environment Clearance) பெற்று சமர்ப்பிக்க வேண்டும்.

8. இவ்வலுவலகத்தில் பராமரிக்கப்படும் ஆவணங்களின் அடிப்படையில் மனுதாரர் செலுத்த வேண்டிய கனிம வரி ஏதும் நிலுவையில் இல்லை என கண்டறியப்பட்டது.

8. இந்நிலையில் மேற்கண்ட அலுவலர்களின் பரிந்துரையின் அடிப்படையில் மனுதாரர் விண்ணப்பித்துள்ள புலங்கள் குத்தகை வழங்கத்தக்க பரப்பாக தீர்மானிக்கப்பட்டு ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டம் மற்றும் சுற்றுச்சூழல் ஆணைய முன் அனுமதி பெற்று சமர்ப்பிக்கும்படி பார்வை-5ல் காணும் கடிதத்தின்படி மனுதாரருக்கு அறிவுறுத்தப்பட்டது.

09. உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கரூர் அவர்களால் 15.03.2017 அன்று ஏற்பளிக்கப்பட்ட சுரங்கத் திட்டத்தை மனுதாரர் பார்வை-6ல் கண்டவாறு சமர்ப்பித்துள்ளார். மேற்படி சுரங்கத் திட்டத்தில் வரும் ஐந்தாண்டு குத்தகை காலத்தில் சாதாரண கற்கள் 235359 M^3 கிராவல் 14742 M^3 கன மீட்டர் வெட்டி எடுத்துக் கொள்வதாக தெரிவிக்கப்பட்டுள்ளது.

10. பார்வை 7-ல் கண்ட கரூர் மாவட்ட சுற்றுப்புற சூழ்நிலை செயல் விளைவு மதிப்பீட்டு குழு, உறுப்பினர் செயலர் அவர்கள் கடிதத்தில் பொது நிபந்தனை எண்.2-ல் கண்டவாறு குவாரிப்பணி ஆரம்பிப்பதற்கு முன்பாக தமிழ்நாடு மாசுக்கட்டுப்பாட்டு வாரியத்தின் ஒப்புதல் பெற வேண்டும் என்ற சிறப்பு நிபந்தனை உட்பட வேறுபல சிறப்பு நிபந்தனைகளுடன் மனுதாரருக்கு குவாரி குத்தகை உரிமம் வழங்கலாம் என பரிந்துரை செய்துள்ளார்.

இவ்வலுவலகத்தில் பராமரிக்கப்படும் ஆவணங்களின் அடிப்படையில் மனுதாரர் செலுத்த வேண்டிய கனிம வரி ஏதும் நிலுவையில் இல்லை.

மேற்கண்ட அலுவலர்களின் பரிந்துரை மற்றும் சிறுகனிம சலுகை விதிகளின் பேரில், மனுதாரருக்கு குவாரி குத்தகை உரிமம் வழங்க ஒப்புதல் தெரிவிக்கப்பட்டதன் பேரில், மனுதாரர் விதிகளின்டி காப்புத்தொகையாக ரூ.10000/-ஐ பாரத மாநில வங்கி, தாந்தோணி சலான் எண்.73, நாள்:20.02.2018-ன்படி செலுத்தி அசல் சலானையும், 1959-ம் வருட

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தமிழ்நாடு சிறுகனிம சலுகை விதிகளின் பின் இணைப்பு V கண்டுள்ள படிவத்தில் உரிய முத்திரைத்தாளில் குத்தகை ஒப்பந்தப் பத்திரம் தயார் செய்து அளித்துள்ளார்.

எனவே, திரு.ப.ரவி, த/பெ.பழனிசாமி கவுண்டர், சாலியங்காட்டுபுள்ளம், முத்தனூர் கிராமம், காங்கேயம் வட்டம், திருப்பூர் மாவட்டம் என்பவருக்கு கரூர் மாவட்டம், அரவக்குறிச்சி வட்டம், அஞ்சூர் கிராமம், பட்டா புல எண்கள்.775/1E (பகுதி) (0.31.0 ஹெக்டேர்), 776/3 (0.36.5 ஹெக்டேர்), 777/1 (1.07.5 ஹெக்டேர்), 778/1A (1.82.0 ஹெக்டேர்), 807/2B (0.50.5 ஹெக்டேர்) மற்றும் 807/2C2 (0.32.5 ஹெக்டேர்) ஆகியவற்றில் மொத்தம் 4.40.0 ஹெக்டேர் பரப்பில் சாதாரண கற்கள் / கிராவல் ஐந்து ஆண்டுகளுக்கு வெட்டியெடுக்க குத்தகை ஒப்பந்தப் பத்திரம் நிறைவேற்றிய நாளில் இருந்து ஐந்து ஆண்டுகளுக்கு 1959-ம் ஆண்டு, தமிழ்நாடு சிறுகனிம சலுகை விதி 19 (1), 20 மற்றும் 33-ன்படி குத்தகை ஒப்பந்தப் பத்திரத்தில் கண்டுள்ள நிபந்தனைகள் மாவட்ட சுற்றுச் சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் நிபந்தனைகள் மற்றும் 1959ம் வருட தமிழ்நாடு சிறுகனிம சலுகை விதிகளின் பேரிலும் குவாரி குத்தகை உரிமம் வழங்கி ஆணையிடப்படுகிறது.

நிபந்தனைகள்:-

1. குத்தகை புலத்தினை அடுத்துள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் இடைவெளி அளித்து குவாரிப்பணி புரிய வேண்டும்.
2. பொதுமக்களுக்கோ, பொது சொத்துக்களுக்கோ யாதொரு சேதமும் இன்றி பாதுகாப்பான முறையில் குவாரிப்பணி செய்ய வேண்டும்.
3. பொதுமக்களின் நலன் கருதி பாதுகாப்பான முறையில் குறைந்த அழுத்தமுள்ள வெடிபொருட்கள் பயன்படுத்தியும், கைத்துளைப்பான் கருவி கொண்டு துளையிட்டும், தொழிலாளர்களின் பாதுகாப்பினை உறுதி செய்ய பாதுகாப்பானதும், அகலமான Benches அமைத்து குவாரிப்பணி செய்ய வேண்டும்

மாவட்ட சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் பரிந்துரை கடிதம் DEIAA-DIA/TN/MIN/6352/2017-KRR/Ec.NO.52/2017/Mines, நாள்.16.02.2018-ல் காணும் சிறப்பு நிபந்தனைகளை முறையாக கடைபிடித்து குவாரிப்பணி செய்வதுடன், பொது நிபந்தனை 2ல் கண்டவாறு குவாரிப் பணி ஆரம்பிப்பதற்கு முன்பாக தமிழ்நாடு மாசுக்கட்டுப்பாட்டு வாரியத்தின் தடையின்மை சான்று பெற்று அதில் குறிப்பிடப்பட்டுள்ள சிறப்பு நிபந்தனைகளையும் முறையாக கடைபிடித்து அதன் பின்னரே குவாரிப்பணி துவங்க வேண்டும். மாசுக்கட்டுப்பாட்டு வாரிய தடையின்மை சான்றினை குறித்த காலங்களில் புதுப்பிக்க வேண்டும்.

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5. குத்தகைதாரர் தனக்கு அளிக்கப்பட்ட குத்தகை பரப்பின் எல்லைகளை தெளிவாக காட்டும் வகையில் கல் நட்டு வண்ணம் இட்டு குத்தகை காலம் முழுமைக்கும் பராமரிக்க வேண்டும்.

6. குத்தகைதாரர் குவாரியின் அருகே குத்தகைதாரர் பெயர், கிராமத்தின் பெயர், வட்டத்தின் பெயர், புல எண். பரப்பு, குத்தகை ஆணை எண். குத்தகை காலம், கனிமத்தின் பெயர், போன்ற விபரங்கள் குறிக்கப்பட்ட தகவல் பலகையை தமது சொந்த செலவில் வைத்து நன்கு பராமரிக்க வேண்டும்.

7. குவாரிக்கு சென்றுவரும் பாதை வசதிகள் குத்தகைதாரர்கள் அவர் தம் சொந்த பொறுப்பிலேயே அமைத்துக் கொள்ள வேண்டும்.

8. குத்தகை வழங்கப்பட்ட பாறையில் குண்டுக்கல், ஜல்லி, அரளை கல், வேலிக்கற்கள், போன்ற சிறுகனிமங்கள் உடைத்தெடுக்க மட்டுமே அனுமதியுண்டு. வெளிநாடுகளுக்கு ஏற்றுமதியாகும் மெருகூட்டும் கனவடிவ கற்கள் வெட்டி எடுக்கக் கூடாது.

9. குவாரியிலிருந்து கொண்டு செல்லப்படும் மேற்கண்ட வகை கற்களுக்கு 1959ம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் பின் இணைப்பு 2ல் கண்டுள்ளவாறு உரிமவரி செலுத்த வேண்டும். அரசு அவ்வப்போது அறிவிக்கும் உரிமவரி மாற்றங்களுக்கு ஏற்ப எவ்வித ஆட்சேபனை இன்றி செலுத்துதல் வேண்டும்.

10. குத்தகை அனுமதி வழங்கப்பட்ட நிலத்திலிருந்து கொண்டு செல்லப்பட்ட கற்களுக்கு முறையான கணக்குகளும், குழிவாயில் பதிவேடும் முறையாக பராமரித்தல் வேண்டும். அவற்றை சம்பந்தப்பட்ட அலுவலர்கள் தணிக்கைக்கு ஆஜர்படுத்த கோரினால் தவறாது சமர்ப்பிக்க வேண்டும்.

11. உதவி இயக்குநர் (புவியியல் மற்றும் சுரங்கத்துறை)-ன் அலுவலக முத்திரை, கையொப்ப முத்திரையுடன் கூடிய உரிய அனுப்புகைச் சீட்டை வாகனங்களுக்கு கொடுக்கப்படும் போது அனுப்புகைச் சீட்டில் வாகன எண். தேதி, புறப்படும் நேரம், செலுத்துமிடம் ஆகியவற்றை முறையாகக் குறிப்பிட்டு கையொப்பம் இட்ட பின்னரே, குத்தகைதாரரோ அல்லது அவரது அனுமதி பெற்ற நபரோ கொடுக்க வேண்டும். மேற்கண்டவாறு குறிப்பிடுவதில் ஏதேனும் தவறுகள் இருந்தாலோ, கலங்கள் பூர்த்தி செய்யப்படாமல் இருந்தாலோ முறையற்ற வகையில் கனிமம் எடுத்துச் செல்வதாகக் கருதப்பட்டு, வாகனத்தை கைப்பற்றி அபராதம் விதிப்பதோடு, அதற்கு குத்தகைதாரரை பொறுப்பாக்கி கனிம விதிகளின் படி மேல் நடவடிக்கை எடுக்கப்படும்.

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12. இந்த ஆணையில் குத்தகை அனுமதி வழங்கப்பட்ட புலத்தை முழுமையாகவோ பகுதியாகவோ எவருக்கும் உள் குத்தகைக்கு விடுவதோ அல்லது [illegible] செய்வதோ கூடாது.

13. குத்தகைதாரர் ஒவ்வொரு நாளும் குவாரியில் இருந்து எவ்வளவு சிறுகனிமங்கள் எடுக்கப்பட்டது என்பதையும் எந்த அளவு கனிமங்கள் லாரி/ வண்டி மூலம் வெளியே அனுப்பப்பட்டது என்ற விபரத்தையும் காட்டும் பதிவேட்டினைப் பராமரித்து வரவேண்டும்.

14. குத்தகைதாரர், தமக்கு குத்தகை வழங்கப்பட்ட பகுதிக்கு அருகில் உள்ள பட்டா நிலத்திற்கு எவ்வித இடையூறும் இல்லாமல் குவாரிப் பணி செய்யப்பட வேண்டும்.

15. வண்டிப்பாதை மற்றும் நடைபாதைகளில் இருந்து 10 மீட்டர் தூரம் தள்ளி குவாரி செய்ய வேண்டும். ரோடுகள், புகைவண்டிப்பாதை, பொதுப்பணித்துறை, வாய்க்கால், பொதுமக்கள் உபயோகத்திற்கான பகுதிகள், மின்சாரம் மற்றும் தொலைபேசி கம்பி செல்லும் பகுதிகள், வழிபாட்டு இடங்கள் மற்றும் பழங்கால சின்னங்கள் உள்ள பகுதிகள் ஆகியவற்றில் இருந்து 50 மீட்டர் பாதுகாப்பு தூரம் விட்டு குவாரி செய்ய வேண்டும்.

16. குத்தகைக்கு விடப்பட்டுள்ள விஸ்தீரணத்தில் மட்டுமே குத்தகைதாரர் குவாரி செய்ய வேண்டும். அதற்கான கூடுதலான விஸ்தீரணத்தில் குவாரி செய்வது தெரியவந்தால் அபராத நடவடிக்கை மேற்கொள்வதுடன் குத்தகை இரத்து செய்ய நடவடிக்கை எடுக்கப்படும்.

17. குத்தகை நிபந்தனை மீறப்பட்டால் குத்தகை இரத்து செய்யவோ, செய்யப்பட்ட தவறுதலுக்கு அபராத நடவடிக்கை எடுத்து தண்டம் விதிக்கவோ அல்லது கிரிமினல் வழக்குத் தொடுக்க மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு. குத்தகை ரத்து செய்யப்பட்டால் காப்புத் தொகை உட்பட அனைத்து தொகைகளும் அரசுக்கு ஆதாயமாக்கப்படும்.

18. குத்தகைதாரர் தமிழ்நாடு சிறுவகைக்கனிம சலுகை விதிகள் 1959ல் கண்டுள்ள விதிகளுக்கும் மற்றும் அரசு அவ்வப்போது அறிவிக்கும் சட்டதிட்டங்களுக்கும் உட்பட்டு குவாரிப்பணிகள் செய்ய வேண்டும்.

19. குவாரி குத்தகை உரிமம் காலாவதியான பின்பு எக்காரணத்தை முன்னிட்டும் மீண்டும் புதுப்பிக்கவோ அல்லது கால நீட்டிப்போ செய்து தரப்பட மாட்டாது.

20. வெடிபொருள் சட்டம் 1884ல் தெரிவிக்கப்பட்ட சரத்துக்கள்படி குறைந்த அளவு வெடிபொருளை உபயோகித்து கற்கள் வெளியே சிதறாமலும், சத்தம் அதிகம் ஏற்படாமலும், பொதுமக்களுக்கும், கால்நடைகளுக்கும், எவ்வித பாதிப்பும் இன்றியும் கல்குவாரி பணி செய்யப்பட வேண்டும்.

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21. வெடிபொருள்கள் அரசு உரிமம் பெற்ற விற்பனைதாரிடம் மட்டுமே வாங்கி வெடிப்பதற்கு உரிமம் / அங்கீகாரம் பெற்ற வெடிப்பாளர்களை (Blaster / Mines mate) கொண்டு கல் குவாரியில் வெடி வைக்க வேண்டும்.

22. குழந்தை தொழிலாளர்கள் எவரையும் வேலைக்கு அமர்த்துதல் கூடாது.

சிறப்பு நிபந்தனைகள் -

1) விண்ணப்ப புலத்திற்கு தெற்கே புல எண்.778/2-இல் உள்ள வாய்க்காலுக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குவாரி பணி செய்ய வேண்டும்.

மேற்குறிப்பிட்ட நிபந்தனைகள், மற்றும் கனிம சட்ட விதிகளை மீறியுள்ளது. உறுதிபடும் தருணத்தில் விதிமுறைகளுக்கு உட்பட்டு குத்தகை இரத்து செய்ய நடவடிக்கை எடுக்கப்படும். மேற்கண்ட நிபந்தனைகள் ஒப்பந்தப் பத்திரத்தில் கண்டுள்ள நிபந்தனைகள், மாவட்ட சுற்றுச் சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் நிபந்தனைகள் மற்றும் 1959-ம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் ஆகியவற்றின் அடிப்படையில் குத்தகைதாரர் குவாரிப் பணி புரிய வேண்டும்.

(ஒம்)/- கு.கோவிந்தராஜ்,
மாவட்ட ஆட்சித்தலைவர்,
கரூர்

// உண்மை நகல் / உத்தரவுப்படி //

மாவட்ட ஆட்சித்தலைவருக்காக
கரூர்

23-2-18

பெறுநர்

திரு.பரவி,
த/பெ.பழனிசாமி கவுண்டர்,
சாலியங்காட்டுபள்ளம்,
முத்தூர் கிராமம்,
காங்கேயம் வட்டம்,
திருப்பூர் மாவட்டம்.

நகல்:-

1. வருவாய் கோட்டாட்சியர் - கரூர்
2. வருவாய் வட்டாட்சியர் - அரவக்குறிச்சி
3. மாவட்ட சுற்று சூழல் பொறியாளர், மாசு கட்டுப்பாட்டு வாரியம், கரூர்.
4. கிராம நிர்வாக அலுவலர், அஞ்சூர் (வட்டாட்சியர் மூலமாக)
5. செயல் அலுவலர், அஞ்சூர் கிராம ஊராட்சி.

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CHINNADHARAPURAM

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ANNEXURE II-C

தமிழ்நாடு தமிலநாடு TAMILNADU ₹25

B 014753

1621
P.J.S 20.2.18

M.K.POORNACHANDAR
STAMP VENDOR
L.No:5/2011, KARUR-5

APPENDIX – V
(See Rule 19 (1) and 33)
(Collr.Ref. No.554/ Mines / 2016)

FORM OF JOINT AGREEMENT FOR QUARRYING AND CARRYING AWAY MINOR MINERALS BY LESSEE IN RYOTWARI LANDS IN WHICH THE MINERALS BELONG TO GOVERNMENT

THIS AGREEMENT MADE the 21st day of February-2018 between **(1).Thiru.P.Ravi, S/o.Palanisamy Gounder, 109, Chinna Kangayam Palayam, Magalapatti, Muthur, Erode District, (2). Thiru.R.Muthusamy Gounder, S/o. Ramusamy, Karataskattu puthur, Aravakurichi Taluk, Karur District (3).Thiru.Kuppusamy, S/o.Samiapp Gounder, Chaligkattupallam, Oodayam Village, Kangayam Taluk, Thiruppur District**(hereinafter referred to as **"the registered holder"** which expression shall where the context so admits, include their heirs, executors, administrators legal representatives and assigns) of the first part and **Thiru.P.Ravi, S/o.Palanisamy Gounder, 109, Chinna Kangayam Palayam, Magalapatti, Muthur, Erode District,** (hereinafter referred to as **"the Register holder/lessee"** which expression shall where the context so admits shall include his heirs, executors, administrators, legal representatives and assigns) of the second part and the Governor of

P.R

2 P.R 5.3.2018

REGISTERED HOLDER

SUB-REGISTRAR'S OFFICE
DOCUMENT No. 629 / 18
KANGAYAM

REGISTERED HOLDER / LESSE

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DISTRICT COLLECTOR
KARUR

TP/1319615/2018 311

भारतीय गैर न्यायिक INDIA NON JUDICIAL

भारत

रु. 25000 पच्चीस हजार रूपये

Rs. 25000 TWENTY FIVE THOUSAND RUPEES

INDIA

தமிழ்நாடு तमिलनाडु TAMILNADU ₹2500

B 914754

P.J.S 1622

M.K.POORNACHANDAR
STAMP VENDOR
L.No:5/2011, KARUR-5

Tamil Nadu (hereinafter referred to as the Government which expression shall where the context so admits shall include also his successors in office and assigns) of the third part.

WHEREAS, the registered holders holds the lands described in the schedule hereto and intended to lease out to the lessee of the said lands for the purpose of quarrying Rough Stone/Gravel in the said lands and to deposit mining waste in the said lands and has lodged with the Collector the lease and accurate map or sketch of the said lands.

AND WHEREAS, the lessee or tenant of the registered holders have made application to the Collector of District of Karur (herein after referred to as "the Collector)" seeking grant of quarrying lease for quarrying Rough Stone/Gravel in the said lands and to deposit mining waste in the said lands and has lodged with the Collector an accurate map or sketch of the said lands.

AND WHEREAS, the Collector acting for and on behalf of the Government has granted a quarrying lease to the lessee or tenant of the registered holders and allowed them to commence quarrying operations for Rough Stone/Gravel in the said land to deposit mining waste thereon by lessee or tenant of the registered holders.

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DISTRICT COLLECTOR KARUR

REGISTERED HOLDER

REGISTERED HOLDER/LESSEE

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भारतीय गैर न्यायिक INDIA NON JUDICIAL

भारत

रु. 25000 पच्चीस हजार रुपये

Rs. 25000 TWENTY FIVE THOUSAND RUPEES

INDIA

தமிழ்நாடு तमिलनाडु TAMILNADU ₹25000

B 914755

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20.2.18

M.K.POORNACHANDAR
STAMP VENDOR
L.No: 5/2011, KARUR-5

AND WHEREAS, the Collector is prepared to allow the said lessee to commence mining operations and to deposit mining waste in or on the said lands described in the schedule for a term of **five years period from 21.02.2018 To 20.02.2023** upon the registered holders and the lessees entering into the agreement herein contained.

AND WHEREAS, the tenant of registered holder has deposited with the Collector, the sum of **Rs.10,000/- Chalan No73Dated: 02.2.2018 State Bank of India, Thanthoni** as security for the due performance of the covenants, agreements and provisos or damage which may be incurred by the Government by reason of any of the said lands described in the schedule hereto being rendered unfit for cultivation by the mining operations therein or by the deposit of mining waste thereon by either the registered holders or the lessees.

AND WHEREAS, the lessee has at the request of the registered holders and in consideration of such approval by the Collector of the mining operations as herein before recited agreed to join in these presents for the purpose of entering into covenants, agreements and provisos hereinafter contained as surety for the registered holders.

I. NOW THESE PRESENTS WITNESS and registered holders and the lessee do hereby jointly and severally and each of them doth individually hereby covenants and agree with the Government as follows:-

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DISTRICT COLLECTOR KARUR.

REGISTERED HOLDER

REGISTERED HOLDER/LESSE

PB

भारतीय गैर न्यायिक INDIA NON JUDICIAL
भारत
रु. 25000 पच्चीस हजार रूपये
Rs. 25000 TWENTY FIVE THOUSAND RUPEES
INDIA
தமிழ்நாடு तमिलनाडु TAMILNADU
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M.K.POORNACHANDAR
STAMP VENDOR
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01. To carry on mining operations during the said term in a proper and workman like manner and to deposit mining waste on the lands described in the schedule hereto and to answer and to account at all reasonable times to Government for all acts and defaults committed by any servants, agents or workmen employed by the registered holders or lessee in carrying on such operations or in making such deposits.

02. To pay into Treasury/State Bank of India at Karur to the credit of the Government in addition to the land assessment for the time being payable in respect of the said lands seigniorage on the minerals mined at the rates prescribed by the Government from time to time.

03. To abide by the rules prescribed by the Government from time to time regarding quarrying of minor minerals.

04. To keep correct accounts in such form as the Collector shall from time to time require and direct showing the quantities and other particulars of all minerals obtained by the registered holders or the lessees from the said lands and also the number or persons employed in carrying on the said mining operations therein and prepare and maintain from time to time when so directed by the said Collector complete and correct plans of all mines and working in the said lands and to allow any officer thereunto authorized by

SUB REGISTRAR'S OFFICE KARUR 629 18 39

DISTRICT COLLECTOR, KARUR

REGISTERED HOLDER

REGISTERED HOLDER (LESSE)

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भारतीय गैर न्यायिक INDIA NON JUDICIAL

भारत

रु. 25000 पच्चीस हजार रुपये

Rs. 25000 TWENTY FIVE THOUSAND RUPEES

INDIA

தமிழ்நாடு तमिलनाडु TAMILNADU ₹25000

B 914692

M.K.POORNACHANDAR
STAMP VENDOR
L.No:5/2011, KARUR-5

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20.2.18

the (Director of Geology and Mining), Tamil Nadu, from time to time and at all times to examine such accounts and any such plans and to supply and furnish when so required all such information and returns all or any of the matters aforesaid as the Government may from time to time required and direct.

05. To allow any officer authorized by the (Director of Geology and Mining), Tamil Nadu in that behalf from time to time and at all times to enter upon any part of the said lands where mining operations may be carried on for the purpose or inspecting the same.

06. To Forthwith send to the Collector a report of any accident which may occur at or in the said land and also of the discovery therein of any minerals other than Rough Stone/Gravel.

07. Not to claim any remission of assessment in respect of any of the said lands which shall be rendered unfit for surface cultivation by the carrying on of any mining operations or by the deposit of mining waste unless thirty times of the assessment thereon has been deducted under provisos 2 hereunder.

II. PROVIDED ALWAYS and it is hereby further agreed by and between the parties as follows:

01. That it shall be lawful for the registered holders or lessees as the case may be at any time to cease mining operations under these provided the registered holders or lessees

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DISTRICT COLLECTOR KARUR

REGISTERED HOLDER

REGISTERED HOLDER / LESSEE

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தமிழ்நாடு தமிலனாடு TAMILNADU

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M.K.POORNACHANDAR
STAMP VENDOR
L.No:5/2011, KARUR-5

shall pay the Government or the Collector the land assessment, cess and seigniorage payable by the registered holders or the lessee under these present unto to the end of the year in which the registered holders or the lessee shall cease such mining operations and shall restore the said lands fence or fill in the abandoned pits and excavations therein if required by the Collector as next hereinafter provided and upon, the registered holders or the lessee so doing these presents shall cease and determine.

02 That in case the registered holders shall relinquish the whole or part of the said lands in case of the expiry or sooner determination of this agreement then and in any such case, the registered holders in the case of relinquishment and the registered holders and the lessees in other cases shall restore said lands or the area relinquished or so much thereof as the Collector shall required to be restored to a state fit for cultivation and shall securely and permanently fence or fill in all abandoned pits and excavation therein as the Collector shall require to be fenced or filled in and incase.

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REGISTERED HOLDER

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भारतीय गैर न्यायिक INDIA NON JUDICIAL

भारत

रु.5000 Rs.5000

पाँच हज़ार रुपये FIVE THOUSAND RUPEES

INDIA

தமிழ்நாடு தமிலநாடு TAMILNADU

M 789754

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20.2.18

M.K.POORNACHANDAR
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the registered holders or the lessees shall fail, or neglect any such lands with the registered holders or the lessees be required to restore to a state fit for cultivation or to so fence or fill in any such abandoned pit or excavation which the registered holders or the lessees shall be required to so fence or fill them and in any such case it shall be lawful for the Collector to so restore any such lands or as the case may be so fence or fill in any pit excavation at the expense of the registered holders lessees and to apply and said sum of Rs. 10000/- so deposited in or towards the cost of so doing and to deduct from amount of the said deposit and retain on behalf of the Government a sum equal to thirty times the assessment of the said lands which shall have been rendered unfit for cultivation. If however the amount of deposit is not sufficient to cover the cost of such restoration or fencing or filling as the case may be or to meet thirty times the assessment of the area rendered uncultivated, it shall be lawful for the Government to recover the balance by resort to Civil court.

03 That all land assessment, cesses and seignior age payable under these presents shall be recoverable under the provisions of the Tamil Nadu Revenue Recovery Act, 1864

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REGISTERED HOLDER / LESSI

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or any subsisting statutory modification thereof, as if the same were arrear of land revenue.

04. That in the event of any breach of the registered holders of any of the conditions of these presents it shall be lawful for the Government to levy enhanced seignior age subject to the maximum of five times the normal rate or for the Collector to give notice in writing to the registered holders of his intention to cancel these presents whereupon the same shall stand cancelled but without prejudice to any rights which the Government may have against the registered holders in respect of any antecedent claim or breach of covenant or condition.

05. That any notice to be given to registered holders may be addressed to their last know place of abode and where notice has been so addressed it shall be deemed to have been duly served for the purpose of these presents.

06. Should any question or dispute arise regarding an agreement executed in pursuance of these rules or any matter or thing connected therewith or the powers of the registered holders there under, the amount or payment of the seigniorage fee or area assessment made payable thereby, the matter in issue

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KARUR.

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தமிழ்நாடு தமிழ்நாடு TAMILNADU

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shall be decided by the Director of Geology and Mining. In case the registered holders/lessees are not satisfied with decision of the Director of Geology & Mining, the matter shall be referred to the State Government.

07. The registered holder shall abide by the conditions laid down in the Payment of Wages Act, 1936 (Central Act IV of 1936), the Mines Act, 1952 (Central Act XXXV of 1952) and the Explosives Act, 1884 (Central Act IV of 1884) and the rules made there under.

நிபந்தனைகள்:-

1. குத்தகை நிலத்தினை அடுத்துள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் இடைவெளி அளித்து சுவாரிப்பணி புரிய வேண்டும்.
2. பொதுமக்களுக்கோ, பொது சொத்துக்களுக்கோ யாதொரு சேதமும் இன்றி பாதுகாப்பான முறையில் சுவாரிப்பணி செய்ய வேண்டும்.
3. பொதுமக்களின் நலன் கருதி பாதுகாப்பான முறையில் குறைந்த அழுத்தமுள்ள வெடிபொருட்கள் பயன்படுத்தியும், கைத்தளைப்பான் கருவி கொண்டு துளையிட்டும், தொழிலாளர்களின் பாதுகாப்பினை உறுதி செய்து பாதுகாப்பானதும், அகலமான Benches அமைத்து சுவாரிப்பணி செய்ய வேண்டும்.

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4. மாவட்ட சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் பரிந்துரை கடிதம் DEIAA-DIA/TN/MIN/7279/2017-KRR.EC.No.63/2017 நாள் :14.10.2017-ல் கண்ட சிறப்பு நிபந்தனைகளை முறையாக கடைபிடித்து குவாரிப்பணி செய்வதுடன், பொது நிபந்தனை 2ல் கண்டவாறு குவாரிப் பணி ஆரம்பிப்பதற்கு முன்பாக தமிழ்நாடு மாசுக்கட்டுப்பாட்டு வாரியத்தின் தடையின்மை சான்று பெற்று அதன் பின்னரே குவாரிப்பணி துவங்க வேண்டும். மாசுக்கட்டுப்பாட்டு வாரிய தடையின்மை சான்றினை குறித்த காலங்களில் புதுப்பிக்க வேண்டும்.

5. குத்தகைதாரர் தனக்கு அளிக்கப்பட்ட குத்தகை பகுதியின் எல்லைகளை தெளிவாக காட்டும் வகையில் கல் நட்டு வண்ணம் இட்டு குத்தகை காலம் முழுமைக்கும் பராமரிக்க வேண்டும்.

6. குத்தகைதாரர் குவாரியின் அருகே குத்தகைதாரர் பெயர், கிராமத்தின் பெயர், வட்டத்தின் பெயர், புல எண், பரப்பு, குத்தகை ஆணை எண், குத்தகை காலம், கனிமத்தின் பெயர், போன்ற விபரங்கள் குறிக்கப்பட்ட தகவல் பலகையை தமது சொந்த செலவில் வைத்து நன்கு பராமரிக்க வேண்டும்.

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7. குவாரிக்கு சென்றுவரும் பாதை வசதிகள் குத்தகைதாரர்கள் அவர் தம் சொந்த பொறுப்பிலேயே அமைத்துக் கொள்ள வேண்டும்.

8. குத்தகை வழங்கப்பட்ட பாறையில் குண்டுக்கல், ஜல்லி, அரவை கல், வேலிக்கற்கள், போன்ற சிறுகனிமங்கள் உடைத்தெடுக்க மட்டுமே அனுமதியுண்டு. வெளிநாடுகளுக்கு ஏற்றுமதியாகும் பொருட்டும் கனவடிவ கற்கள் வெட்டி எடுக்கக் கூடாது.

9. குவாரியிலிருந்து கொண்டு செல்லப்படும் மேற்கண்ட வகை கற்களுக்கு 1959ம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் பின் இணைப்பு 2ல் கண்டுள்ளவாறு உரிமவரி செலுத்த வேண்டும். அதை அவ்வப்போது அறிவிக்கும் உரிமவரி மாற்றங்களுக்கு ஏற்ப எவ்வித ஆட்சேபனையும் இன்றி செலுத்துதல் வேண்டும்.

10. குத்தகை அனுமதி வழங்கப்பட்ட நிலத்திலிருந்து கொண்டு செல்லப்பட்ட கற்களுக்கு முறையான கணக்குகளும், குழிவாயில் பதிவேடும் முறையாக பராமரித்தல் வேண்டும். அவற்றை சம்பந்தப்பட்ட அலுவலர்கள் தனிக்கைக்கு ஆஜர்படுத்த கோரினால் தவறாது சமர்ப்பிக்க வேண்டும்.

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11. துணை இயக்குநர் (புவியியல் மற்றும் சுரங்கத்துறை)-ன் அலுவலக முத்திரை, கையொப்ப முத்திரையுடன் கூடிய உரிய அனுப்புகைச் சீட்டை வாகனங்களுக்கு கொடுக்கப்படும் போது அனுப்புகைச் சீட்டில் வாகன எண், தேதி, புறப்படும் நேரம், செலுத்துமிடம் ஆகியவற்றை முறையாகக் குறிப்பிட்டு கையொப்பம் இட்ட பின்னரே, குத்தகைதாரரோ அல்லது அவரது அனுமதி பெற்ற நபரோ கொடுக்க வேண்டும். மேற்கண்டவாறு குறிப்பிடுவதில் ஏதேனும் தவறுகள் இருந்தாலோ, கலங்கள் பூர்த்தி செய்யப்படாமல் இருந்தாலோ முறையற்ற வகையில் கனிமம் எடுத்துச் செல்வதாகக் கருதப்பட்டு வாகனத்தை கைப்பற்றி அபராதம் விதிப்பதோடு, அதற்கு குத்தகைதாரரை பொறுப்பாக்கி கனிம விதிகளின் படி மேல் நடவடிக்கை எடுக்கப்படும்.

12. இந்த ஆணையில் குத்தகை அனுமதி வழங்கப்பட்ட பரப்பை முழுமையாகவோ, பகுதியாகவோ எவருக்கும் உள் குத்தகைக்கு விடுவதோ அல்லது கிரையம் செய்வதோ கூடாது.

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13. குத்தகைதாரர் ஒவ்வொரு நாளும் குவாரியில் இருந்து எவ்வளவு சிறுகனிமங்கள் எடுக்கப்பட்டது என்பதையும் எந்த அளவு கனிமங்கள் லாரி/ வண்டி மூலம் வெளியே அனுப்பப்பட்டது என்ற விபரத்தையும் காட்டும் பதிவேட்டினைப் பராமரித்து வரவேண்டும்.
14. குத்தகைதாரர், தமக்கு குத்தகை வழங்கப்பட்ட பகுதிக்கு அருகில் உள்ள பட்டா நிலத்திற்கு எவ்வித இடையூறும் இல்லாமல் குவாரிப் பணி செய்யப்பட வேண்டும்.
15. வண்டிப்பாதை மற்றும் நடைபாதைகளில் இருந்து 10 மீட்டர் தூரம் தள்ளி குவாரி செய்ய வேண்டும். ரோடுகள், புகைவண்டிப்பாதை, பொதுப்பணித்துறை, வாய்க்கால், பொதுமக்கள் உபயோகத்திற்கான பகுதிகள், மின்சாரம் மற்றும் தொலைபேசி கம்பி செல்லும் பகுதிகள், வழிபாட்டு இடங்கள் மற்றும் பழங்கால சின்னங்கள் உள்ள பகுதிகள் ஆகியவற்றில் இருந்து 50 மீட்டர் பாதுகாப்பு தூரம் விட்டு குவாரி செய்ய வேண்டும்.
16. குத்தகைக்கு விடப்பட்டுள்ள விஸ்தீரணத்தில் மட்டுமே குத்தகைதாரர் குவாரி செய்ய வேண்டும். அதற்கான கூடுதலான விஸ்தீரணத்தில் குவாரி செய்வது தெரியவந்தால் அபராத நடவடிக்கை மேற்கொள்வதுடன் குத்தகை இரத்து செய்ய நடவடிக்கை எடுக்கப்படும்.
17. குத்தகை நிபந்தனை மீறப்பட்டால் குத்தகை இரத்து செய்யவோ, செய்யப்பட்ட தவறுதலுக்கு அபராத நடவடிக்கை எடுத்து தண்டம் விதிக்கவோ அல்லது கிரிமினல் வழக்குத் தொடுக்க மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு. குத்தகை ரத்து செய்யப்பட்டால் காப்புத் தொகை உட்பட அனைத்து தொகைகளும் அரசுக்கு ஜப்தாயமாக்கப்படும்.
18. குத்தகைதாரர் தமிழ்நாடு சிறுவகைக்கனிம சலுகை விதிகள் 1959ல் கண்டுள்ள விதிகளுக்கும் மற்றும் அரசு அவ்வப்போது அறிவிக்கும் சட்டதிட்டங்களுக்கும் உட்பட்டு குவாரிப்பணிகள் செய்ய வேண்டும்.
19. குவாரி குத்தகை உரிமம் காலாவதியான பின்பு எக்காரணத்தை முன்னிட்டும், மீண்டும் புதுப்பிக்கவோ அல்லது கால நீட்டிப்போ செய்து தரப்பட மாட்டாது.
20. வெடிபொருள் சட்டம் 1884ல் தெரிவிக்கப்பட்ட சரத்துக்கள்படி குறைந்த அளவு வெடிபொருளை உபயோகித்து கற்கள் வெளியே சிதறாமலும், சத்தம் அதிகம் ஏற்படாமலும், பொதுமக்களுக்கும், கால்நடைகளுக்கும், எவ்வித பாதிப்பும் இன்றியும் கல்குவாரி பணி செய்யப்பட வேண்டும்.
21. வெடிபொருள்கள் அரசு உரிமம் பெற்ற விற்பனைதாரிடம் மட்டுமே பெற்று வெடிப்பதற்கு உரிமம் / அங்கீகாரம் பெற்ற வெடிப்பாளர்களை (Blaster / Mines mate) கொண்டு கல் குவாரியில் வெடி வைக்க வேண்டும்.
22. சுழந்தை தொழிலாளர்கள் எவரையும் வேலைக்கு அமர்த்துதல் கூடாது.
23. Any other conditions stipulated by other Statutory / Government authorities shall be complied.
24. If any illicit quarrying is found in the area in 775/1E (Part) (0.31.0 hects), 776/3 (0.36.5 hects), 777/1 (1.07.5 hects), 778/1A (1.82.0 hects), 807/2B (0.50.5 hects) and 807/2C2 (0.32.5 hects) of Anjur village, AravakurichiTaluk, Karur District before the date of execution of lease deed this lease deed is liable to be cancelled and criminal action will be initiated.

சிறப்பு நிபந்தனை:-

1. விண்ணப்ப புலத்திற்கு தெற்கே புல எண்.778/2-இல் உள்ள வாய்க்காலுக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குவாரி பணி செய்ய வேண்டும்.

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மேற்கூறிப்பிட்ட நிபந்தனைகள், சிறப்பு நிபந்தனைகள் மற்றும் கனிம சட்டம் விதிகளின் மீறியுள்ளது உறுதிபடும் தருணத்தில் விதிமுறைகளுக்கு உட்பட்டு குத்தகை இரத்து செய்ய நடவடிக்கை எடுக்கப்படும். மேற்கண்ட நிபந்தனைகள் ஒப்பந்தப் பத்திரத்தில் கண்டுள்ள நிபந்தனைகள் மாவட்ட கற்றுச் சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் நிபந்தனைகள் மற்றும் 1959-ம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் ஆகியவற்றின் அடிப்படையில் குத்தகைதாரர் குவாரிப் பணி புரிய வேண்டும்.

As per Approved Mining Plan, the total production of Rough stone/Gravel for five years lease period is rough stone 235359 cubic meter and Gravel 14742 cubic meter. Hence, based on the approved Mining Plan, for the purpose of calculating stamp duty the anticipated seigniorage fee is **Rs. 13886181 + 486486 (Rough Stone + Gravel) = 1,43,72,667/- (Rupees One crore Forty Three Lakhs Seventy Two Thousand Six Hundred and Sixty Seven only)** for the entire lease period of 5 years.

THE SCHEDULE

1. Name of the District : Karur
2. Name of the Taluk : Aravakurichi
3. Name of the Village : Anjur
4. Name of the Sub Registration District : Grade -I Chinnatharapuram
5. Lease Period : 5 years (21.02.2018 to 20.2.2023)

Survey Number	Total Extent Hects	Area Assessment Rs	BOUNDARIES			
			North By SF No	East by SF No	South by SF No	West by SF No.
775/1E(P)	0.31.0	Rs.3300/- (Rs.150/- per hects, per year)	775/1D	807/2B	776/1	775/1E(P)
776/3	0.36.5		776/1	777/1	773/2,778/1A1	776/2
777/1	1.07.5		807/2C2	777/2	778/1A1	776/1,776/2
778/1A (Part)	1.82.0		777/1	778-1B	778/2-Vaikkal 777 and 770/1A-Patta	773/2,772/1
807/2B	0.50.5		807/2A	808/1	807/2C1	775/1E
807/2C2	0.32.5		807/2C1	808/1,806	777/1,777/2	776/1
Total	4.40.0					

REGISTERED HOLDER

REGISTERED HOLDER / LESS

16/12

DISTRICT COLLECTOR
KARUR.

337
153

TP/13196715/2018

IN WITNESS **Thiru.P.Ravi, S/o.Palanisamy Gounder, 109, Chinna Kangayam Palayam, Magalapatti, Muthur, Erode District, (2). Thiru.R.Muthusamy Gounder, S/o. Ramasamy, Karataskattu puthur, Aravakurichi Taluk, Karur District (3).Thiru.Kuppusamy, S/o.Samiapp Gounder, Chaligkattupallam, Oodayam Village, Kangayam Taluk, Thiruppur District, 'the registered holder'** and **Thiru.P.Ravi, S/o.Palanisamy Gounder, 109, Chinna Kangayam Palayam, Magalapatti, Muthur, Erode District the Register holder/lessee"** and **Thiru.G.Govindaraj I.A.S., District Collector, Karur** acting for and on behalf of and by the order and direction of the Governor of Tamil Nadu have hereunto set their hands.

17/18

DISTRICT COLLECTOR,
KARUR.

REGISTERED HOLDER

REGISTERED HOLDER/LESSEE

Signed by the above named
In the presence of

1.

2.

Signed by the above named
In the presence of

1.

DEPUTY DIRECTOR,
GEOLOGY AND MINING,
KARUR.

2.

288

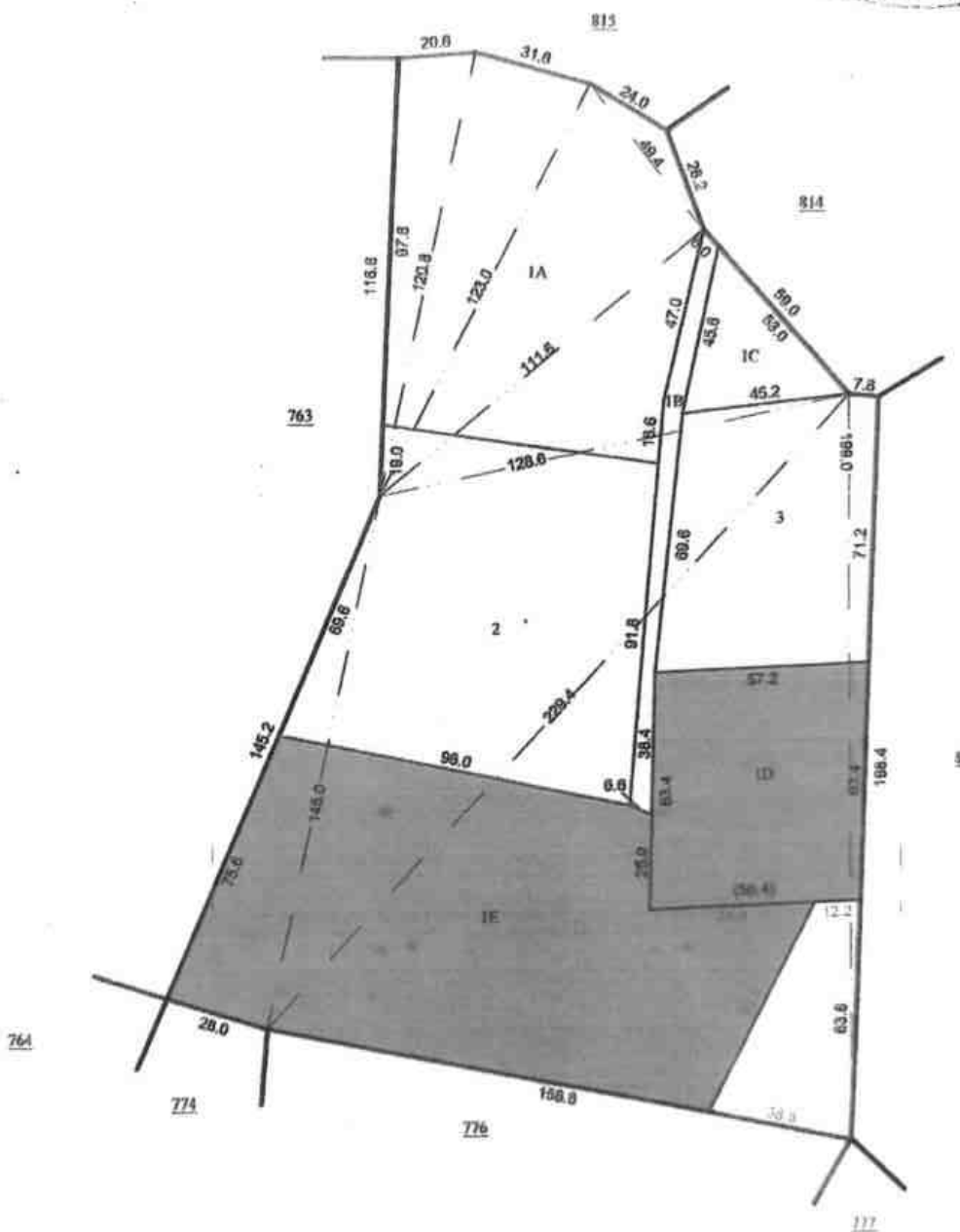
339
ANNEXURE - III

மாவட்டம் : கரூர்

வட்டம் : புகழூர்

புல எண் : 775

பரப்பு : மொத்தம் 3.00.58.8



ஏனைய உரிமம் கோரும் பகுதியில் கல் வெட்டி எடுக்கப்பட்ட புஞ்சை 775/1D தொகு. 0.37.0 - 0.91 ½ செண்ட்

ஏனைய உரிமம் கோரும் பகுதியில் கல் வெட்டி எடுக்கப்பட்ட புஞ்சை 775/1E புஞ்சை தொகு. 1.05.0 - 2.59 ½ செண்ட்

LEASE APPLIED AREA

241

மாவட்டம் : கரூர்

கிராமம் :

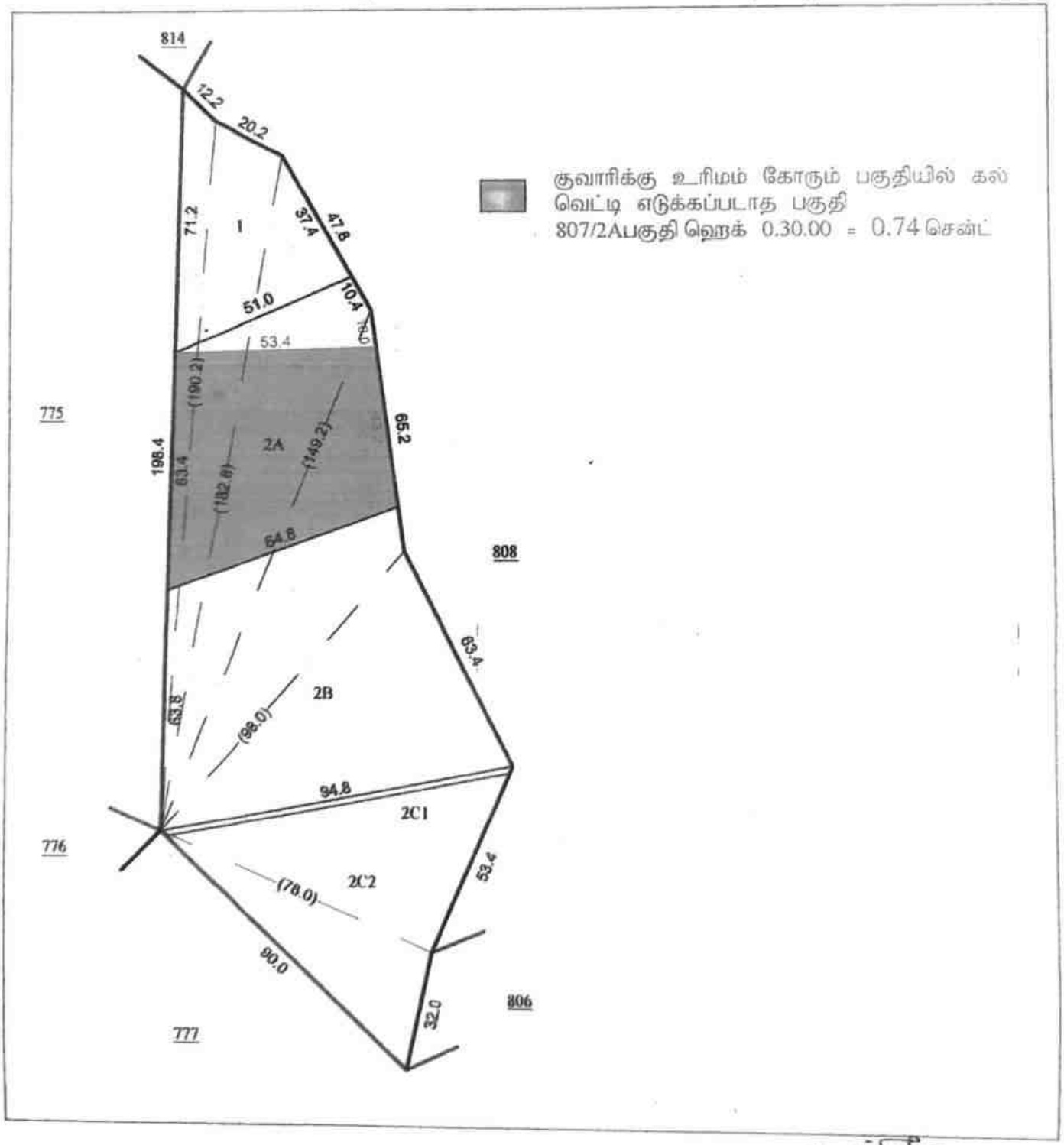
எண் :

பெயர் : அஞ்சூர்

வட்டம் : புகழூர்

புல எண் : 807

பரப்பு : ஹெக்டேர் 1. ஏர் 37.0



துணை இயக்குநர் அலுவலகம் புவியியல் மற்றும் சுரங்கத்துறை, கரூர்.

உதவி இயக்குநர்
சுரங்கங்கள் மேலாய்வு

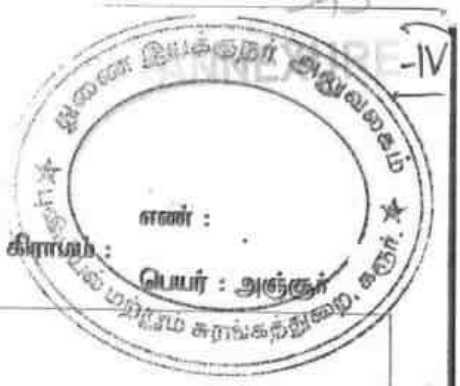
343

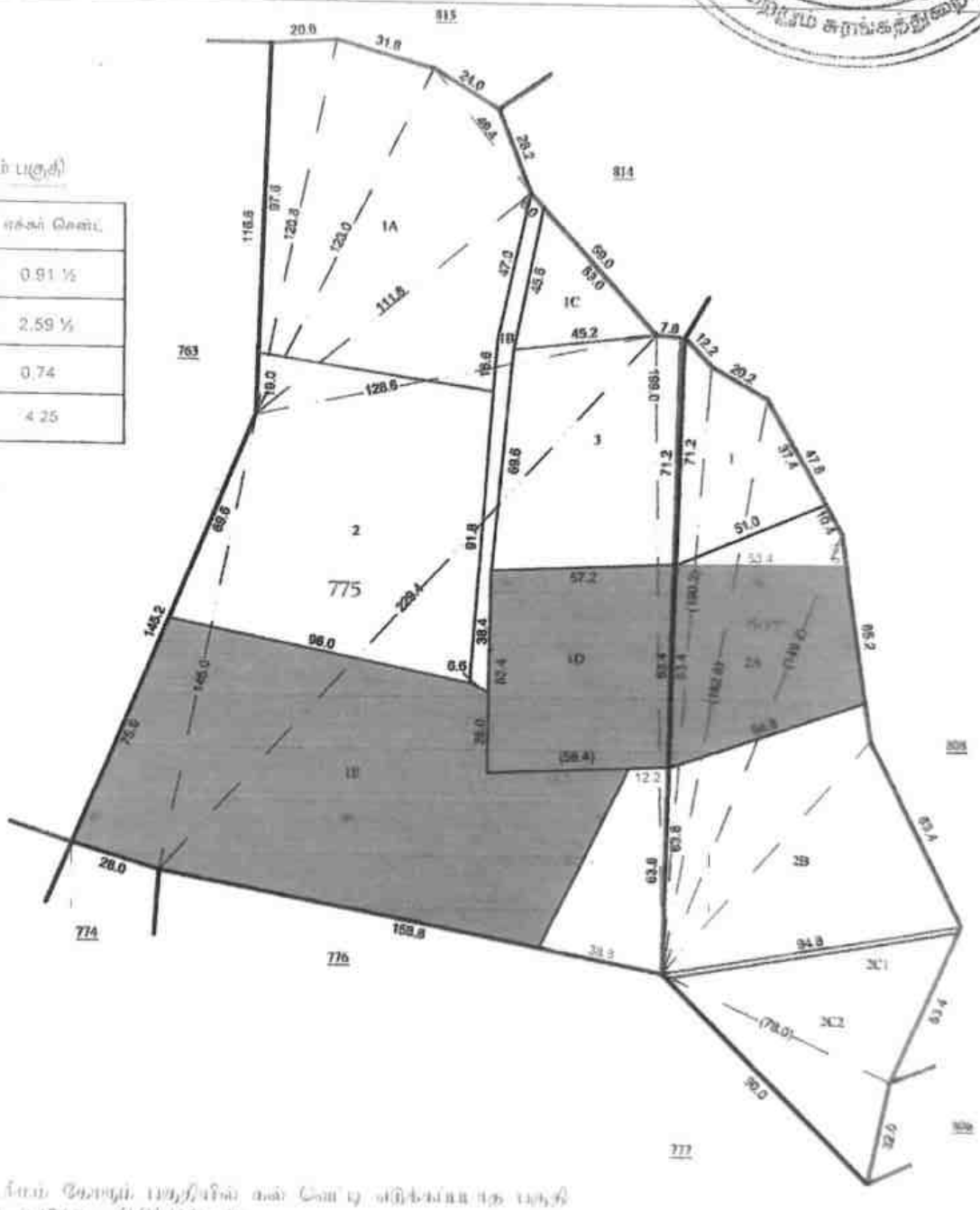
ANNEXURE -IV

மாவட்டம் : கரூர்

வட்டம் : புகழூர்

புல எண் : 775, 807





சுவாதீனம் உரிமம் கோரும் பகுதி

புல எண்	ஹெக்டர்	ஏக்கர் சென்ட்
775/1D	0.37.00	0.91 ½
775/1E Part	1.05.00	2.59 ½
807/2A	0.30.00	0.74
மொத்தம்	1.72.00	4.25

சுவாதீனம் உரிமம் கோரும் பகுதியில் கல் வெட்டி விவரங்கள் எழுதி
775/1D பகுதி ஹெக்டர் 0.37.00 0.91 ½ ஏக்கர்

சுவாதீனம் உரிமம் கோரும் பகுதியில் கல் வெட்டி விவரங்கள் எழுதி
775/1E பகுதி ஹெக்டர் 1.05.00 2.59 ½ ஏக்கர்

சுவாதீனம் உரிமம் கோரும் பகுதியில் கல் வெட்டி விவரங்கள் எழுதி
807/2A பகுதி ஹெக்டர் 0.30.00 0.74 ஏக்கர்

வி. முருகேசன்
வருவாய் அலுவலர்
மாவட்ட அலுவலர்

LEASE APPLIED AREA

M. இராஜசேகரன்

1						7	8	9	10	11	12
							ரூ. பை.	ஹெ.ஏர்ஸ்.	ரூ. பை.		
770	2B	770-2B	ர	ப	...	8-5	7	1 09	2 32.5	2 53	316 இளவர் து பர்மேல்வி காப்பாளர் நகப்பனார் K. துரைசாமி கவுண்டர்.
									4 36.0	4 74	
771	...	771	ர	ப	...	8-5	7	1 09	0 16.5	0 18	1065 செ. ராமசாமி நாடார் மற்றும் நான்கு பேர்களும். *
772	1	772-பா	ர	ப	...	8-5	7	1 09	0 17.5	0 20	603 செ. ராமசாமி நாடார்.
	2	-பா	ர	ப	...	8-5	7	1 09	0 08.0	0 09	64 மு. கருப்பண கவுண்டர்.
	3	-பா	ர	ப	...	8-5	7	1 09	0 11.5	0 13	523 மு. முத்துசாமி கவுண்டர்.
	4	-பா	ர	ப	...	8-5	7	1 09	0 00.5	0 06	223 மா. சேமலை யப்ப கவுண்டர்.
									0 37.5	0 48	
773	...	773	ர	ப	...	8-5	7	1 09	1 63.0	1 77	633 உ. வெங்கிட சுப்பிரமணிய அய்யர்.
774	...	774	ர	ப	...	8-5	7	1 09	0 45.5	0 49	633 உ. வெங்கிட சுப்பிரமணிய அய்யர்.
775	...	775	ர	ப	...	8-5	7	1 09	3 58.5	3 90	854 ந. முத்தப்ப கவுண்டர் (1). ந. பழனியப்ப கவுண்டர் (2).
776	...	776	ர	ப	...	8-5	7	1 09	1 62.5	1 77	633 உ. வெங்கிட சுப்பிரமணிய அய்யர்.
777	1	777-பா	ர	ப	...	8-6	7	1 09	1 07.5	1 17	633 உ. வெங்கிட சுப்பிரமணிய அய்யர்.
	2	-பா	ர	ப	...	8-5	7	1 09	1 04.0	1 13	215 க. சின்னான்.
									2 11.5	2 30	
778	1	778-1	ர	ப	...	8-5	7	1 09	3 41.5	8 81	1067 க. துரைசாமி கவுண்டர் மற்றும் ஐந்து பேர்களும். *

Scanned with OKEN Scanner

1	2	3	4	5	6	7	8	9	10	11	12
							ரூ. பை.	ஹெ.ஏர்ஸ்	ரூ. பை.		
304	3B	804-3 பா	ர	பு	...	8-5	7	1 09	1 82·5	1 99	193 சு. சாமியப்ப கவுண்டர்.
									4 31·5	4 62	
305	...	805	அ	புற	...	...	...	...	0 67·5	...	... நடைபாதை.
5	...	806	அ	புற	...	.	...	...	0 57·5	...	... வண்டிப்பாதை.
307	...	807	ர	பு		8-5	7	1 09	1 37·5	1 50	860 உ. வெங்கிட சுப்ரமணிய அய்யர் (1). ரா. கருப் பணக் கவுண்டர் (2).
308	1	808-1	ர	பு	...	8-5	7	1 09	3 48·5	3 45	633 உ. வெங்கிட சுப்பிரமணிய அய்யர்.
	2	-2	அ	புற	...	...	...	...	0 17·5	...	... பொதுப் பணித்துறை வாய்க்கால்.
									3 66·0	3 45	
309	...	809	ர	பு	...	8-5	7	1 09	1 12·0	1 22	41 சு. சுப்பாயி அம்மாள் (1). சா. சிவன் மலை கவுண்டர் (2).
310	1	810-பா	ர	பு	...	8-5	7	1 09	0 68·0	0 74	216 சா. சிவன் மலைக் கவுண்டர்.
	2	-பா	ர	பு	...	8-5	7	1 09	0 22·0	0 24	246 சு. சுப்பாயி அம்மாள்.
									0 90·0	0 98	
311	1	811-1	ர	பு	...	8-2	4	2 77	0 21·0	0 58	861 நா. ராமசாமி கவுண்டர் (1). கி. குப்புசாமி கவுண்டர் (2).
	2	-2	அ	புற	...	...	...	...	1 31·0	...	... பொதுப் பணித்துறை வாய்க்கால்.
	3	-3	ர	பு	...	8-3	4	2 77	2 29·0	6 34	861 நா. ராமசாமி கவுண்டர் (1). கி. குப்புசாமி கவுண்டர் (2).
									36 81·0	6 92	

12 ஏக்கர் 350

N. சுப்பன்

கிராம நிர்வாக அலுவலர்

1. அல்லூர் கிராமம்

கிருஷ்ணகிரி வட்டம், சேலம் மாவட்டம்.

8

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ர. இராஜகோபால்

துணை இயக்குநர் அலுவலகம் புவியியல் மற்றும் சுரங்கத்துறை, கரூர்.

அ-பதிவேடு விவரங்கள் - ஊரகம்

மாவட்டம் : கரூர்

வட்டம் : புகழூர்

கிராமம் : அஞ்சூர்

1. புல எண்	**775**	9. மண் வயனமும் ரகமும்	**8 - 5**
2. உட்பிரிவு எண்	**1D**	10. மண் தரம்	**7**
3. பழைய புல உட்பிரிவு எண்	-	11. தீர்வை (ரூ - ஹெ)	**1.09**
4. பகுதி	-	12. பரப்பு (ஹெக்டேர் - ஏர்)	**0 - 37.00**
5. அரசு / ரயத்துவாரி	**ரயத்துவாரி**	13. மொத்த தீர்வை (ரூ - பை)	**0.40**
6. நிலத்தின் வகை	**புஞ்சை**	14. பட்டா எண்	**2378**
7. பாசன ஆதாரம்	-	15. குறிப்பு	-
8. இரு போகமா	-	16. பெயர்	**1.ராஜலட்சுமி**

குறிப்பு:

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **14/07/001/775/1D/70150** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

m. இளையராஜா

அ-பதிவேடு விவரங்கள் - ஊரகம்

மாவட்டம் : கரூர்

வட்டம் : புகழூர்

கிராமம் : அஞ்சூர்

1. புல எண்	**775**	9. மண் வயனமும் ரகமும்	**8 - 5**
2. உட்பிரிவு எண்	**1E**	10. மண் தரம்	**7**
3. பழைய புல உட்பிரிவு எண்	-	11. தீர்வை (ரூ - ஹெ)	**1.09**
4. பகுதி	-	12. பரப்பு (ஹெக்டேர் - ஏர்)	**1 - 12.50**
5. அரசு / ரயத்துவாரி	**ரயத்துவாரி**	13. மொத்த தீர்வை (ரூ - பை)	**1.23**
6. நிலத்தின் வகை	**புஞ்சை**	14. பட்டா எண்	**1625**
7. பாசன ஆதாரம்	-	15. குறிப்பு	-
8. இரு போகமா	-	16. பெயர்	**1.முத்துச்சாமி**

குறிப்பு:

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **14/07/001/775/1E/70124** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

அ-பதிவேடு விவரங்கள் - ஊரகம்

மாவட்டம் : கரூர்

வட்டம் : புகழூர்

கிராமம் : அஞ்சூர்

1. புல எண்	**807**	9. மண் வயனமும் ரகமும்	**8 - 5**
2. உட்பிரிவு எண்	**2A**	10. மண் தரம்	**7**
3. பழைய புல உட்பிரிவு எண்		11. தீர்வை (ரூ - ஹெ)	**1.09**
4. பகுதி	**P**	12. பரப்பு (ஹெக்டேர் - ஏர்)	**0 - 35.00**
5. அரசு / ரயத்துவாரி	**ரயத்துவாரி**	13. மொத்த தீர்வை (ரூ - பை)	**0.38**
6. நிலத்தின் வகை	**புஞ்சை**	14. பட்டா எண்	**2378**
7. பாசன ஆதாரம்	**-**	15. குறிப்பு	**-**
8. இரு போகமா	**1**	16. பெயர்	**1.ராஜலட்சுமி**

குறிப்பு:

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **14/07/001/807/2A/80150** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

ANNEXURE-VI

தமிழ்நாடு அரசு

வருவாய் மற்றும் பேரிடர் மேலாண்மைத் துறை

நில உரிமை விபரங்கள் : இ. எண் 10(1) பிரிவு

மாவட்டம் : கரூர் வட்டம் : புகழூர்

வருவாய் கிராமம் : அஞ்சூர் பட்டா எண் : 2378

உரிமையாளர்கள் பெயர்

1. குமரவடிவேல் மனைவி ராஜலட்சுமி

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
775	1D	0 - 37.00	0.40	--	--	--	--	2023/0103/14/257299-- ------ Digitally signed:RAMESH K Zonal Deputy Tahsildar 11/04/2023 01:07:44:PM
807	2A	0 - 35.00	0.38	--	--	--	--	2023/0103/14/257299-- ------ Digitally signed:RAMESH K Zonal Deputy Tahsildar 11/04/2023 01:07:44:PM
		0 - 72.00	0.78					

குறிப்பு :

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **14/07/001/02378/20150** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 25-11-2024 அன்று 10:18:46 AM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின்2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

357

தமிழ்நாடு அரசு

வருவாய் மற்றும் பேரிடர் மேலாண்மைத் துறை

நில உரிமை விபரங்கள் : இ. எண் 10(1) பிரிவு

மாவட்டம் : கரூர் வட்டம் : புகழூர்

வருவாய் கிராமம் : அஞ்சூர் பட்டா எண் : 1625

உரிமையாளர்கள் பெயர்

1. ராமசாமி கவுண்டர் மகன் முத்துச்சாமி

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
775	1E	1 - 12.50	1.23	--	--	--	--	R134/09--- ------ Digitally signed:Rajasekaran M Tahsildar 11/06/2019 05:41:27:PM
807	2B	0 - 50.50	0.55	--	--	--	--	---- ------ Digitally signed:Rajasekaran M Tahsildar 11/06/2019 05:41:27:PM
		1 - 63.00	1.78					

குறிப்பு :

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **14/07/001/01625/10124** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 25-11-2024 அன்று 10:17:00 AM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின்2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

கிராமக் கணக்கு

1432 – ஆம் பசலியில் கடூர் மாவட்டம் புகடூர் வட்டம் அஞ்சூர்

நில அளவை எண். (1)	உட்பிரிவு எண். (2)	பரப்பு (3)	தீர்வை. (4)	ஒரு போகம் அல்லது இரு போகம். (5)	கைப்பற்று தாருடைய பெயரும் என்னும் அல்லது அனுபோக தாருடைய பெயர். (6)	சாகுபடி பாளரின் பெயர். (7)	முதல் போகம்.				
						நிலத்தில் எந்த பகுதி யாரது சாகுபடியாகில் பயிரிடப்பட்டுள்ளதோ.	எந்த மாதத்தில் பயிர் செய்யப்பட்டது அறுவடை மாதத்தில் அறுவடை செய்யப்பட்டது. (8)	பயிரின் பெயர். (9)	பயிராக / அறுவடையான பரப்பு. (10)	உண்மையான பாய்ச்சல் ஆதாரம். (11)	விளைச்சல் அளவு விழுக்காடு. (12)
775	1E	2.12.5	1.23	1625	முத்துச்சாமி						
775	1D	2.37.0	0.40	2338	ராஜலட்சுமி						
775	3	2.37.0	0.40	1778	அப்புசாமி						
807	1	0.18.0	0.20	1778	— ஸ —						
807	2A	0.35.0	0.38	2338	ராஜலட்சுமி						
807	2B	0.20.5	0.55	1625	முத்துச்சாமி						

/ சென்னை 3600 /

M. [illegible] 1923
கிராம நாயகம் அலுவலர்
அஞ்சூர் கிராமம்
[illegible] வருவாய் வட்டம்

எண் 2

கிராமத்தில் வருடவாரி புலவாரி கைப்பற்று சாகுபடி அடங்கல் கணக்கு

இரண்டாம் போகம்.							
எந்த மாதத்தில் பயிர் செய்யப்பட்டது எந்த மாதத்தில் அறுவடை செய்யப்பட்டது. (13)	பயிரின் பெயர். (14)	பயிராக / அறுவடையான பரப்பு. (15)	உண்மையான பாய்ச்சல் ஆதாரம். (16)	விளைச்சல் அளவு விழுக்காடு. (17)	கிராம அலுவலரின் குறிப்புரை :- (1) புலன்களின் பகுதிகளில் பயிரிடப்பட்ட விவரங்கள் அடங்கல் அ-ல்லில். (2) கைப்பற்றில் இல்லாத புன்செய் சாகுபடியும் (3) முன்னது மாதத்தில் பயிரிடப்பட்டவை உதவியின்றி பயிரிடுவதற்கு ஏற்று பதியாகியுள்ள வருக்கு பிறகாது மாறுகளில் நீர் பாய்ச்சப்பட்ட விவரங்கள். (18)	உள்ள நிலத்தின் தன்மை மற்றும் பயிர்ச் விவரங்கள் ஒவ்வொரு நில அலகு எண் அல்லது அதன் பகுதியில். (அ) வளம், (ஆ) பயனற்ற பயிர் செய்ய இயலாத நிலம், (இ) விவசாயம் மற்றும் இதர காரியங்களுக்கு பயன் படுத்தும் படும் நிலம், (ஈ) பயிரிடத்தக்க தரிசு (உ) நிலையான பூ தகவல்களும் மற்றும் இதர பேச்சல் நிலங்களும். (ஊ) விதைக்கப்பட்ட இதர பயிர்கள் சேர்க்கப்படாத பரவலைப் பயிர்களும் தோப்புகளும், (எ) நடப்பட்ட தரிசுகள் (ஏ) இதர தரிசு நிலங்கள். (19அ)	(19ஆ)

தமிழ்நாடு அரசு

ANNEXURE -VII

20.01.24 ரூ. 20/-

தமிழ்நாடு தமிலனாடு TAMIL NADU 21AC 408830

R. முத்துசாமி

உபைதஸ் தகோட்டம்

K. MOHAN, S.V.S.No.21/110
R.DIS.No. 3184/A2/08
KARUR WEST.

சம்மதக்கடிதம்

ஈரோடு மாவட்டம், வாழைத்தோட்டம், ராமநாதபுரம் கரட்டாங்காட்டுபுதூர், கதவு எண்.96 என்ற முகவரியில் வசிக்கும் ராமசாமி அவர்கள் குமாரர் R.முத்துசாமி ஆகிய நான் எழுதிக்கொடுக்கும் உறுதிமொழி பத்திரம் என்னவென்றால், கரூர் மாவட்டம், புகளூர் வட்டம், அஞ்சூர் கிராமம், புல எண்கள்.775/1Eல் 1.12.50, சர்வே எண்.807/2Bல் 0.50.50ல் மொத்த பரப்பு 1.63.00 ஹெக்டேர் ஆகும் இதில் 775/1E(P)ல் 0.38.50, 807/2Bல் 0.50.50ல் 0.89.00 ஹெக்டேர் நிலப்பரப்பில் மட்டும் கரூர் மாவட்டம், புகளூர் வட்டம், பாண்டிலிங்கபுரம், அஞ்சூர், வேலாயுதம்பாளையம், கதவு எண்.3/246 என்ற முகவரியில் வசிக்கும் முத்துசாமி அவர்கள் குமாரர் M.குமரவடிவேல் அவர்கள் சாதாரண கற்கள்/ கிராவல் வெட்டியெடுக்க அரசு அனுமதி பெற்று கல்குவாரி பணி செய்வதற்கு எங்களுக்கு எவ்வித ஆட்சேபணையும் இல்லை என உறுதி அளிக்கிறேன். கல்குவாரி குத்தகை உரிமம் வழங்க என்னுடைய முழு சம்மதத்தை தெரிவித்துக் கொள்கிறேன்.

பிரமாணதாரர்.

P.R.முத்துசாமி

K. KANMANI, B.A.B.L.,
Advocate & Notary Public
Govt of India Regd No 6877/08
Pudur. Andan Kovil Post
KARUR - 639 008. T.N.
Cell: 99944 45789

NOTARY
K. KANMANI
Karur District
Regd No. 6877/08
NOTARIAL
NOTARIAL
GOVT. OF INDIA

M. இளையகுமார்

363

20.01.24 ₹.20/-

தமிழ்நாடு तमिलनाडु TAMIL NADU 21AC 408828

K. ராஜலட்சுமி
பாண்டிலிங்கபுரம்

K. MOHAN, S.V.S.No.21/0
R. DIS.No. 3184/A2/08
KARUR WEST.

சம்மதக்கடிதம்

கரூர் மாவட்டம், புகளூர் வட்டம், பாண்டிலிங்கபுரம், அஞ்சூர், வேலாயுதம்பாளையம், கதவு எண்.3/246 என்ற முகவரியில் வசிக்கும் குமரவடிவேல் அவர்கள் மனைவி K.ராஜலட்சுமி ஆகிய நான் எழுதிக்கொடுக்கும் உறுதிமொழி பத்திரம் என்னவென்றால், .கரூர் மாவட்டம், புகளூர் வட்டம், அஞ்சூர் கிராமம், புல எண்கள்.775/1Dல் 0.37.00, 807/2Aல் 0.35.00ல் மொத்த பரப்பு 0.72.00 ஹெக்டேர் நிலப்பரப்பில் கரூர் மாவட்டம், புகளூர் வட்டம், பாண்டிலிங்கபுரம், அஞ்சூர், வேலாயுதம்பாளையம், கதவு எண்.3/246 என்ற முகவரியில் வசிக்கும் முத்துசாமி அவர்கள் குமாரர் M.குமரவடிவேல் அவர்கள் சாதாரண கற்கள்/ கிராவல் வெட்டியெடுக்க அரசு அனுமதி பெற்று கல்குவாரி பணி செய்வதற்கு எங்களுக்கு எவ்வித ஆட்சேபணையும் இல்லை என உறுதி அளிக்கிறேன். கல்குவாரி குத்தகை உரிமம் வழங்க என்னுடைய முழு சம்மதத்தை தெரிவித்துக் கொள்கிறேன்.

பிரமாணதாரர்.

K. KANMANI, B.A.B.L.,
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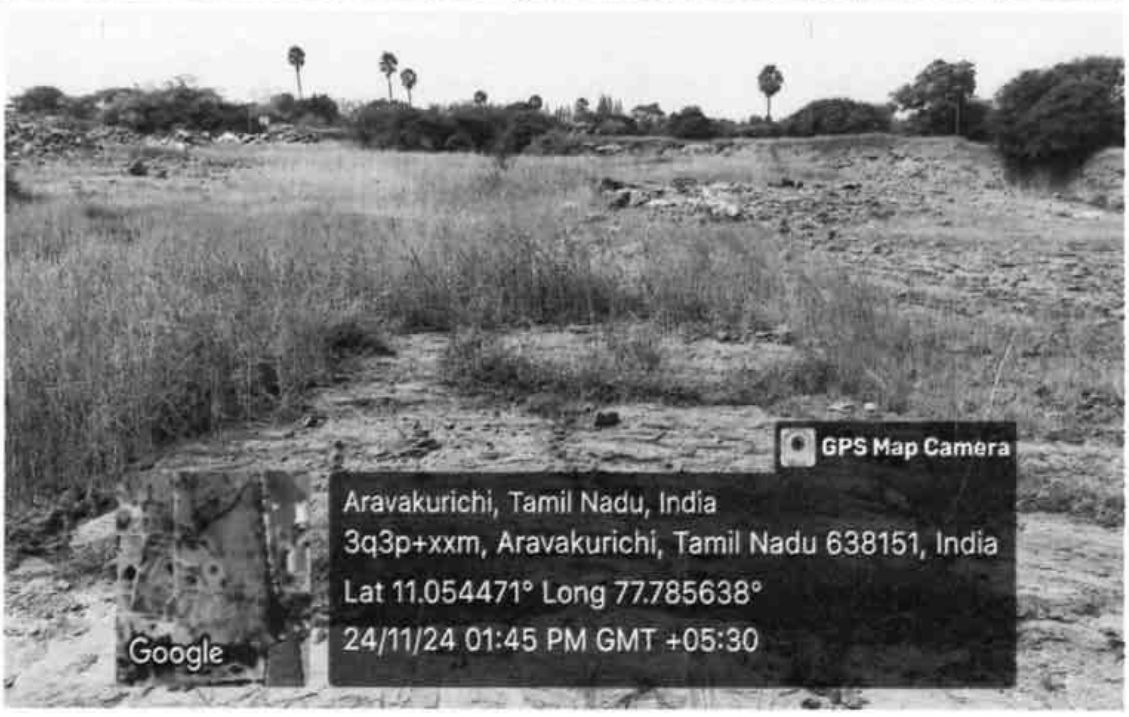
Pudur, Andankovil Post
KARUR - 639 008. T.N.
Cell: 99944 45789

PHOTOCOPY OF THE APPLIED LEASE AREA

Site photos in respect of Rough stone and gravel quarry lease in S.F.No: 775/1D, 775/1E(Part) & 807/2A(Part)- Patta Land - over an extent of 1.72.00 Hectares– Anjur Village– Pugalur Taluk – Karur District, Tamil Nadu State in belongs to **Mr.Kumaravadivel**



-IX

இந்திய அரசாங்கம்
Unique Identification Authority of India
Government of India

பதிவு அடையாளம் / Enrollment No.: 2007/99957/00200

To
குமரவடிவேல் முத்துசாமி
Kumaravadivel Muthusamy
S/O: Muthusamy
3/246 PANDILINGAPURAM
VELAUTHAMPALAIYAM
Anjur
Pondilingapuram
Aravakurichi Karur
Tamil Nadu 638151
9442260339

02/12/2013
83764853

MN837648532FT

உங்கள் ஆதார் எண் / Your Aadhaar No. :

5298 5491 6719

ஆதார் - சாதாரண மனிதனின் அதிகாரம்

இந்திய அரசாங்கம்
Government of India

குமரவடிவேல் முத்துசாமி
Kumaravadivel Muthusamy
பிறந்த நாள் / DOB : 15/06/1971
ஆண்பால் / Male

5298 5491 6719

ஆதார் - சாதாரண மனிதனின் அதிகாரம்

Government of India

தகவல்

- ஆதார் அடையாளத்திற்கான சான்று குடியுரிமைக்கு அல்ல .
- அடையாள சான்றை இணையதளம் மூலம் உறுதிப்படுத்திக் கொள்ளவும் .

INFORMATION

- Aadhaar is proof of identity, not of citizenship .
- To establish identity, authenticate online .

- ஆதார் நாடு முழுவதிலும் செல்லுபடியாகும் .
- வருங்காலத்தில் அரசு மற்றும் அரசு சாரா சேவைகளை பயன்படுத்திக் கொள்ள ஆதார் உதவிகரமாக இருக்கும் .
- Aadhaar is valid throughout the country .
- Aadhaar will be helpful in availing Government and Non-Government services in future .

ஆதார்

Unique Identification Authority of India

முகவரி:
S/O: முத்துசாமி, 3/246,
பாண்டிலிங்கபுரம்,
வேலாயுதம்பாளையம், அஞ்சூர்,
பாண்டிலிங்கபுரம்பி கரூர்,
அரவக்குறிச்சி, தமிழ் நாடு,
638151

Address:
S/O: Muthusamy, 3/246,
PANDILINGAPURAM,
VELAUTHAMPALAIYAM, Anjur,
Pondilingapuram , Karur,
Aravakurichi, Tamil Nadu, 638151

5298 5491 6719

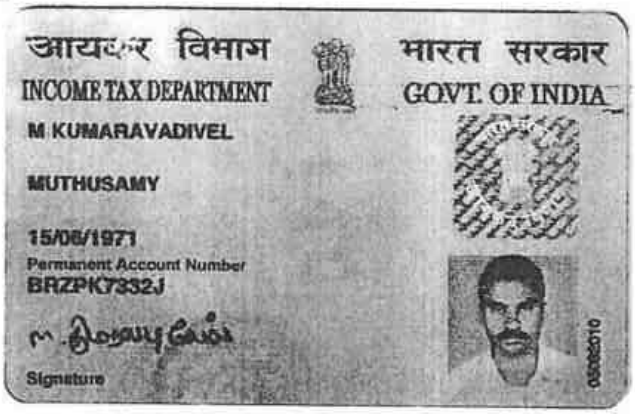
1947
1800 300 1947

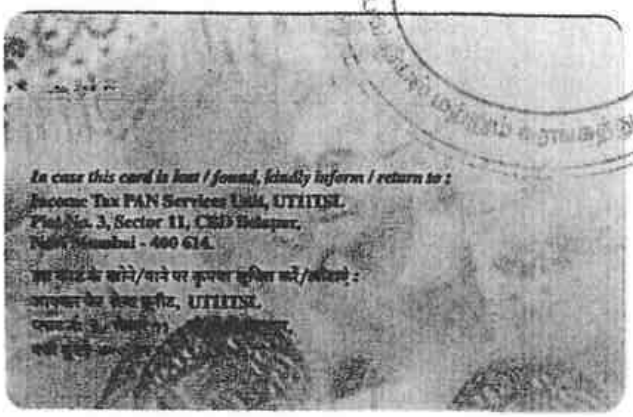
help@uidai.gov.in

www.uidai.gov.in

M. இளவரசன்

369





M. குமரவடிவேல்

ANNEXURE 371

Reg. No : M16GEO104
College Code : 514

No.2KN 0134

பெரியார் பல்கலைக்கழகம்
PERIYAR UNIVERSITY

அறிவியல் புலம்
FACULTY OF SCIENCE

பெரியார் பல்கலைக்கழகம் ஜூலை 2017 ஆம் ஆண்டு நடத்திய

பயன்பாட்டுப்புவியமைப்பியல் தேர்வில்

P வெள்ளையன்

முதல் வகுப்பில் உயர் தகமையுடன் O தரத்தில் தேர்ச்சி பெற்றுத் தகுதியடைந்திருப்பதாக

உரிய தேர்வாளர்கள் சான்றளித்ததை ஏற்று ஆய்வியல் நிறைஞர் என்னும்

பட்டத்தினை அவருக்கு பல்கலைக்கழக இலச்சினையுடன் பெரியார் பல்கலைக்கழக ஆட்சிக்குழு

வழங்குகின்றது

The Syndicate of the **PERIYAR UNIVERSITY** hereby makes known that

VELLAIYAN P has been

admitted to the Degree of **MASTER OF PHILOSOPHY**

having been certified by duly appointed Examiners to be qualified to receive the same in

APPLIED GEOLOGY

and was placed in **FIRST CLASS EXEMPLARY WITH O GRADE**

at the Examination held in **JULY 2017** by Periyar University.

Given under the Seal of the University

Dated : 20-03-2018
Salem - 636011,
Tamil Nadu, India.

Controller of Examinations I/c Registrar Vice-Chancellor

Scanned with ACE Scanner

375

Cell: 9885799345
E-mail -ellammangranites@gmail.com

M/s ELLAMMAN GRANITES

PLOT NO 1,ROOM NO 10, BANKERS COLONY,SRIKAKULAM ANDHRA PRADESH-532001

Ref. No.- EG/EC/2022/02

Date – 02.11.2022

EXPERIENCE CERTIFICATE

This is to certify that **Mr.P.Vellaiyan** Geologist worked in M/s Ellamman Granites as Mines Manager in Sy.No.71, Mukhalingapuram Village, Tekkali Mandal, Srikakulam District, Andhra Pradesh State from **20.07.2017** to **31.10.2022.** During his working period he carried out Boundary demarcation survey using DGPS, Reserve Estimation, direct and co-ordinate the production activities, Ensure Mine Safety and Surface plan prepared. We found him a sincere, honest, hardworking, dedicated employee with a professional attitude and very good job knowledge. He is amiable in nature and character is well.

We wish him every success in life.

For ELLAMMAN GRANITES

R. Polla Rao

Proprietor

(Signature with date and official Seal)

(Signature of Employee)

M. Bhagavan Rao

Cell: 9885799345
E-mail -ellammangranites@gmail.com

M/s ELLAMMAN GRANITES

PLOT NO 1,ROOM NO 10, BANKERS COLONY,SRIKAKULAM ANDHRA PRADESH-532001

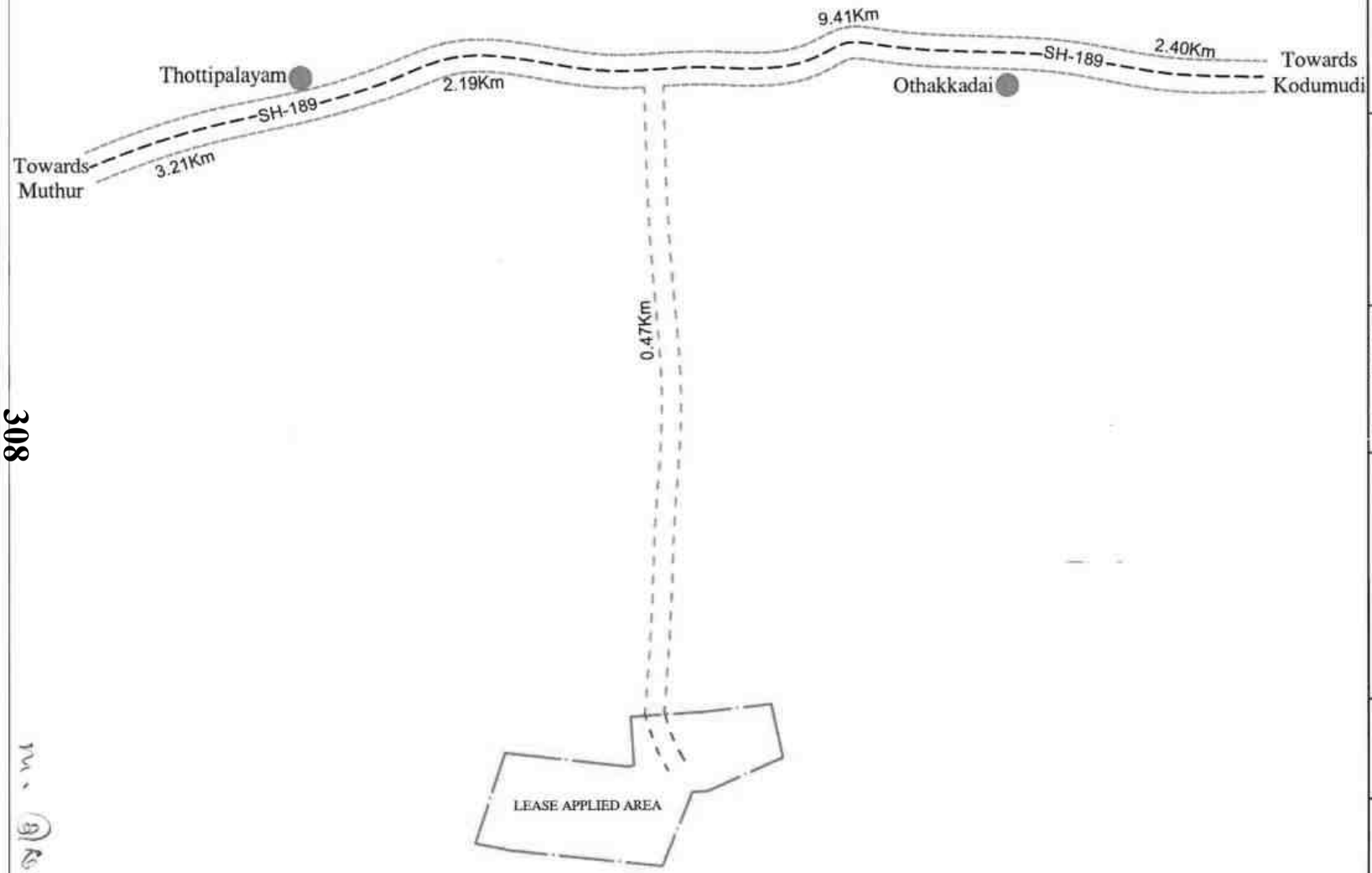
S.No	Nature of Practical Experience	Place of Work	Period of Experience		Total Working Experience		
			From	To	Year	Month	Days
1	Worked as Geologist and it Boundary demarcation survey using DGPS, Reserve Estimation, direct and co-ordinate the production activities, Ensure Mine Safety and Surface plan prepared.	Open Cast Mines and Office	20.07.2017	31.10.2022	5	3	11

For ELLAMMAN GRANITES

Proprietor

(Signature with date and official Seal)

(Signature of Employee)



308

N

PLATE No-I

APPLICANT:
Mr.M.KUMARAVADIVEL,
S/o. MUTHUSAMY
No.3/246, VELAYUTHAMPALAIYAM,
ANJUR, PANDILINGAPURAM,
PUGALUR TALUK,
KARUR DISTRICT.

LEASE AREA:

S.F.No	: 775/1D,775/1E(Part) & 807/2A(Part)
EXTENT	: 1.72.0Hects
VILLAGE	: ANJUR
TALUK	: PUGALUR
DISTRICT	: KARUR

INDEX

MINE LEASE AREA

APPROACH ROAD

CART ROAD

SH-189 ROAD

KEY MAP

Not to Scale

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

P.VELLAIYAN,M.Sc.,M.Phil.,
QUALIFIED PERSON

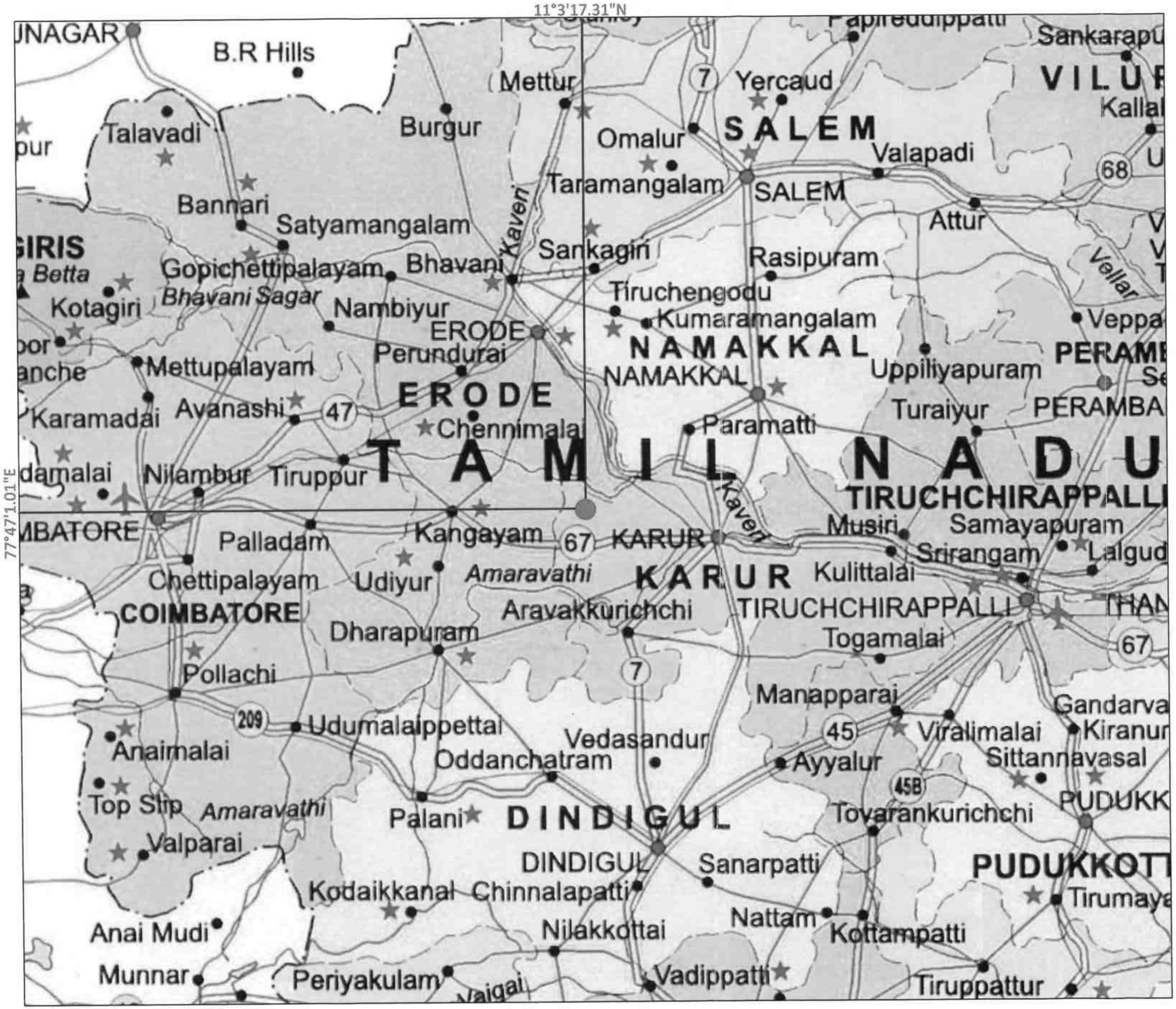


PLATE No-IA

APPLICANT:
Mr.M.KUMARAVADIVEL,
S/o. MUTHUSAMY
No.3/246, VELAYUTHAMPALAIYAM,
ANJUR, PANDILINGAPURAM,
PUGALUR TALUK,
KARUR DISTRICT.

LEASE AREA:

S.F.No	: 775/1D,775/1E(Part) & 807/2A(Part)
EXTENT	: 1.72.0Hects
VILLAGE	: ANJUR
TALUK	: PUGALUR
DISTRICT	: KARUR

INDEX

MINE LEASE AREA :

LATITUDE : 11°3'13.12"N *to* 11°3'17.31"N

LONGITUDE : 77°47'1.01"E to 77°47'8.95"E

LOCATION PLAN
NOT TO SCALE

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

P.VELLAIYAN,M.Sc.,M.Phil.,
QUALIFIED PERSON

11°3'17.31"N

77°47'1.01"E

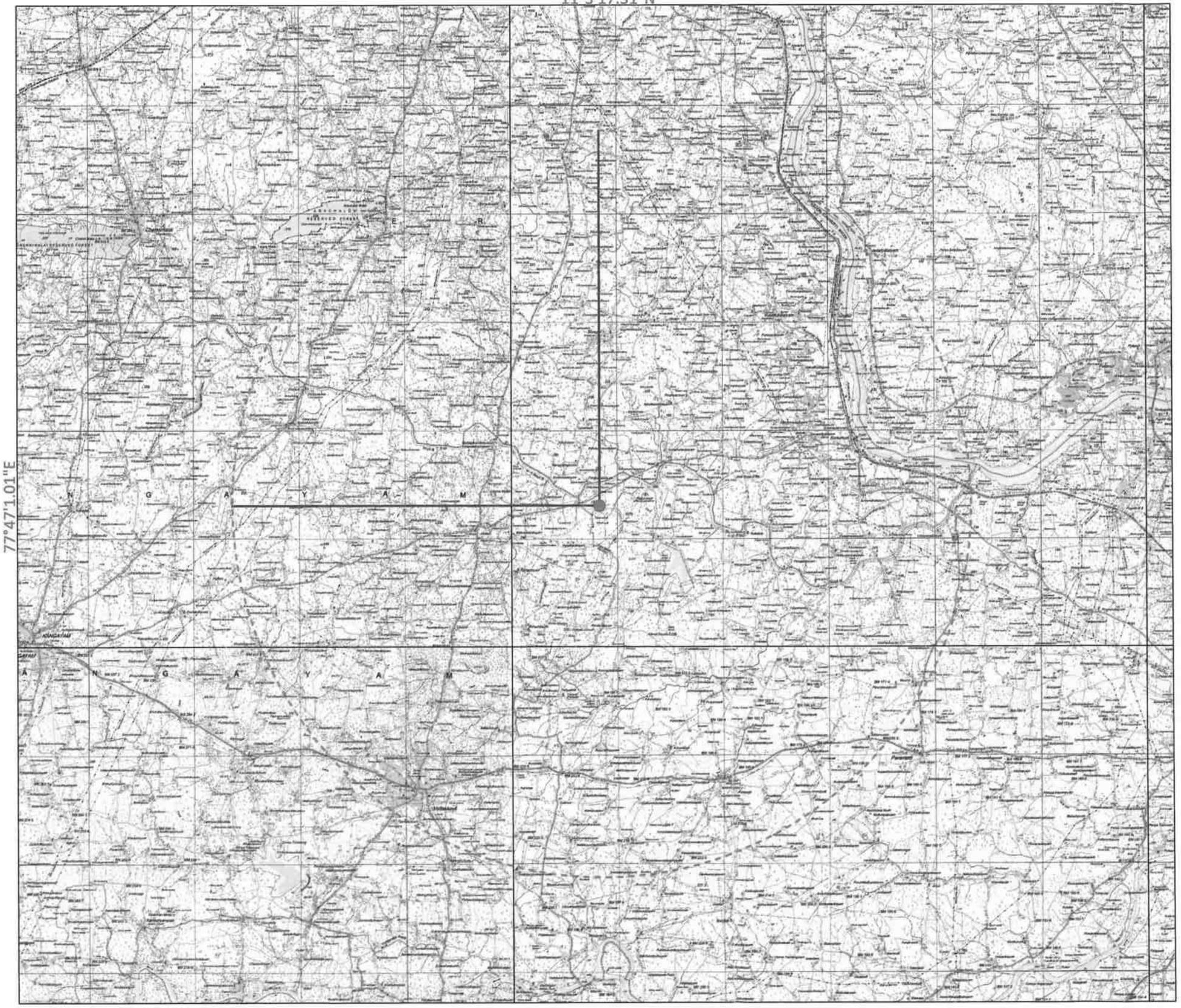


PLATE No-IB

APPLICANT:
Mr.M.KUMARAVADIVEL,
S/o. MUTHUSAMY
No.3/246, VELAYUTHAMPALAIYAM,
ANJUR, PANDILINGAPURAM,
PUGALUR TALUK,
KARUR DISTRICT.

LEASE AREA:

S.F.No	: 775/1D,775/1E(Part) & 807/2A(Part)
EXTENT	: 1.72.0Hects
VILLAGE	: ANJUR
TALUK	: PUGALUR
DISTRICT	: KARUR

TOPO SHEET No : 58-E/16

LATITUDE : 11°3'13.12"N *to* 11°3'17.31"N

LONGITUDE : 77°47'1.01"E to 77°47'8.95"E

MINE LEASE AREA

10KM RADIUS

CONVENTIONAL SYMBOLS

TOPOSHEET MAP
SCALE– 1:1,00,000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE.

P.VELLAIYAN,M.Sc.,M.Phil.,
QUALIFIED PERSON

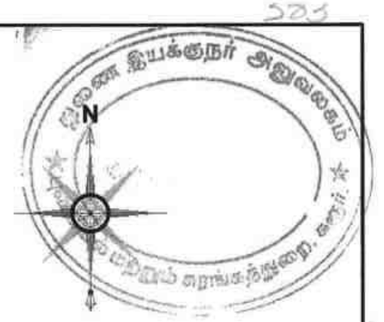


PLATE No-IC

APPLICANT:
Mr.M.KUMARAVADIVEL,
S/o. MUTHUSAMY
No.3/246, VELAYUTHAMPALAIYAM,
ANJUR, PANDILINGAPURAM,
PUGALUR TALUK,
KARUR DISTRICT.

LEASE AREA:

S.F.No	: 775/1D,775/1E(Part) & 807/2A(Part)
EXTENT	: 1.72.0Hects
VILLAGE	: ANJUR
TALUK	: PUGALUR
DISTRICT	: KARUR

INDEX

- MINE LEASE BOUNDARY
- APPROACH ROAD
- CART ROAD
- VILLAGE ROAD
- 100m RADIUS
- 200m RADIUS
- 300m RADIUS
- 400m RADIUS
- 500m RADIUS
- EXISTING PIT

LATITUDE : 11°3'13.12"N *to* 11°3'17.31"N

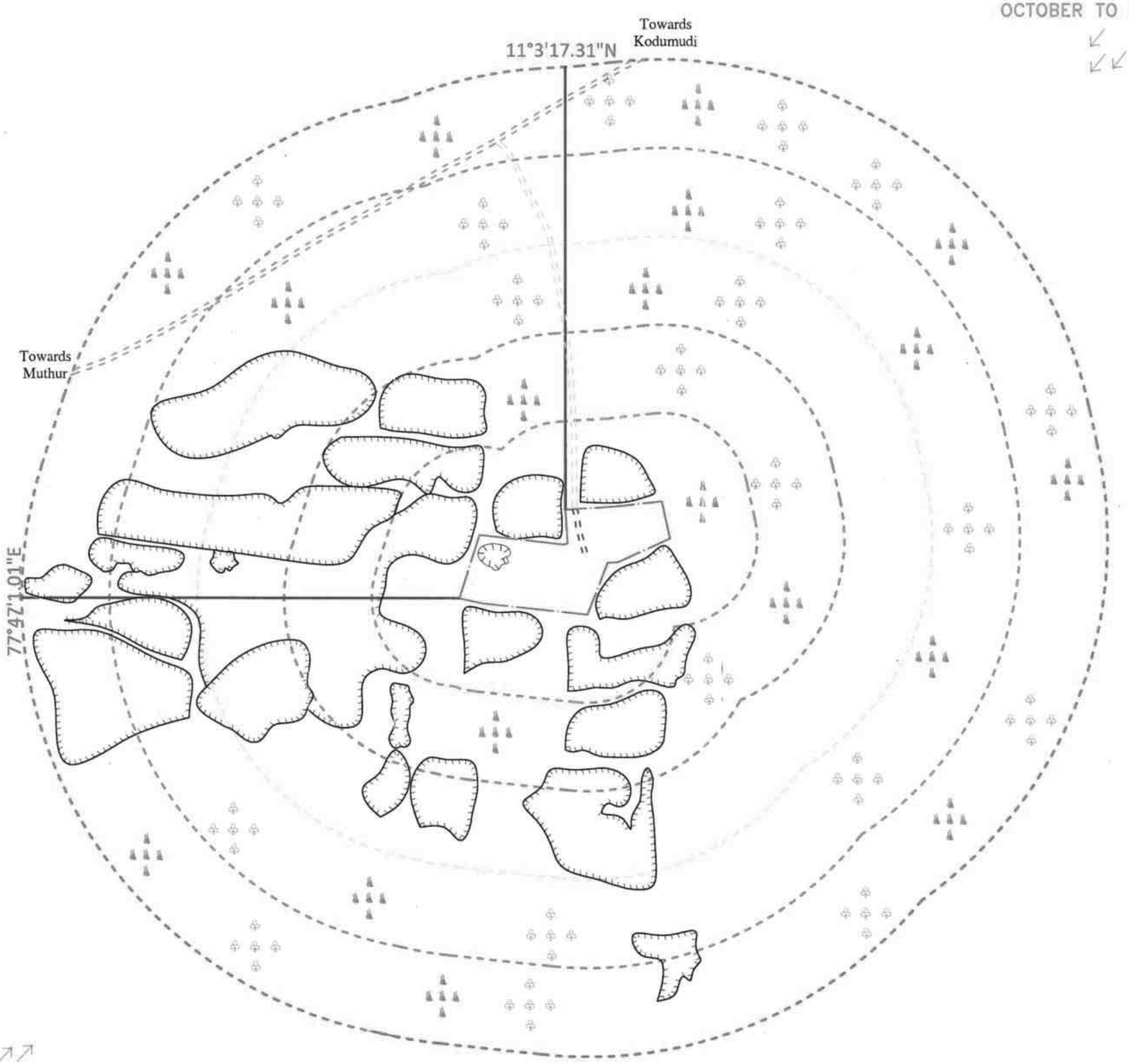
LONGITUDE : 77°47'1.01"E to 77°47'8.95"E

SATELLITE IMAGERY MAP
SCALE– 1:5000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

P.VELLAIYAN,M.Sc.,M.Phil.,
QUALIFIED PERSON



385

N

PLATE No-ID

APPLICANT:
Mr.M.KUMARAVADIVEL,
S/o. MUTHUSAMY
No.3/246, VELAYUTHAMPALAIYAM,
ANJUR, PANDILINGAPURAM,
PUGALUR TALUK,
KARUR DISTRICT.

LEASE AREA:

S.F.No	: 775/1D,775/1E(Part) & 807/2A(Part)
EXTENT	: 1.72.0Hects
VILLAGE	: ANJUR
TALUK	: PUGALUR
DISTRICT	: KARUR

INDEX

- MINE LEASE BOUNDARY
- APPROACH ROAD
- CART ROAD
- VILLAGE ROAD
- 100m RADIUS
- 200m RADIUS
- 300m RADIUS
- 400m RADIUS
- 500m RADIUS
- EXISTING PIT
- SHRUBS & TREES
- HABITATION

LATITUDE : 11°3'13.12"N *to* 11°3'17.31"N

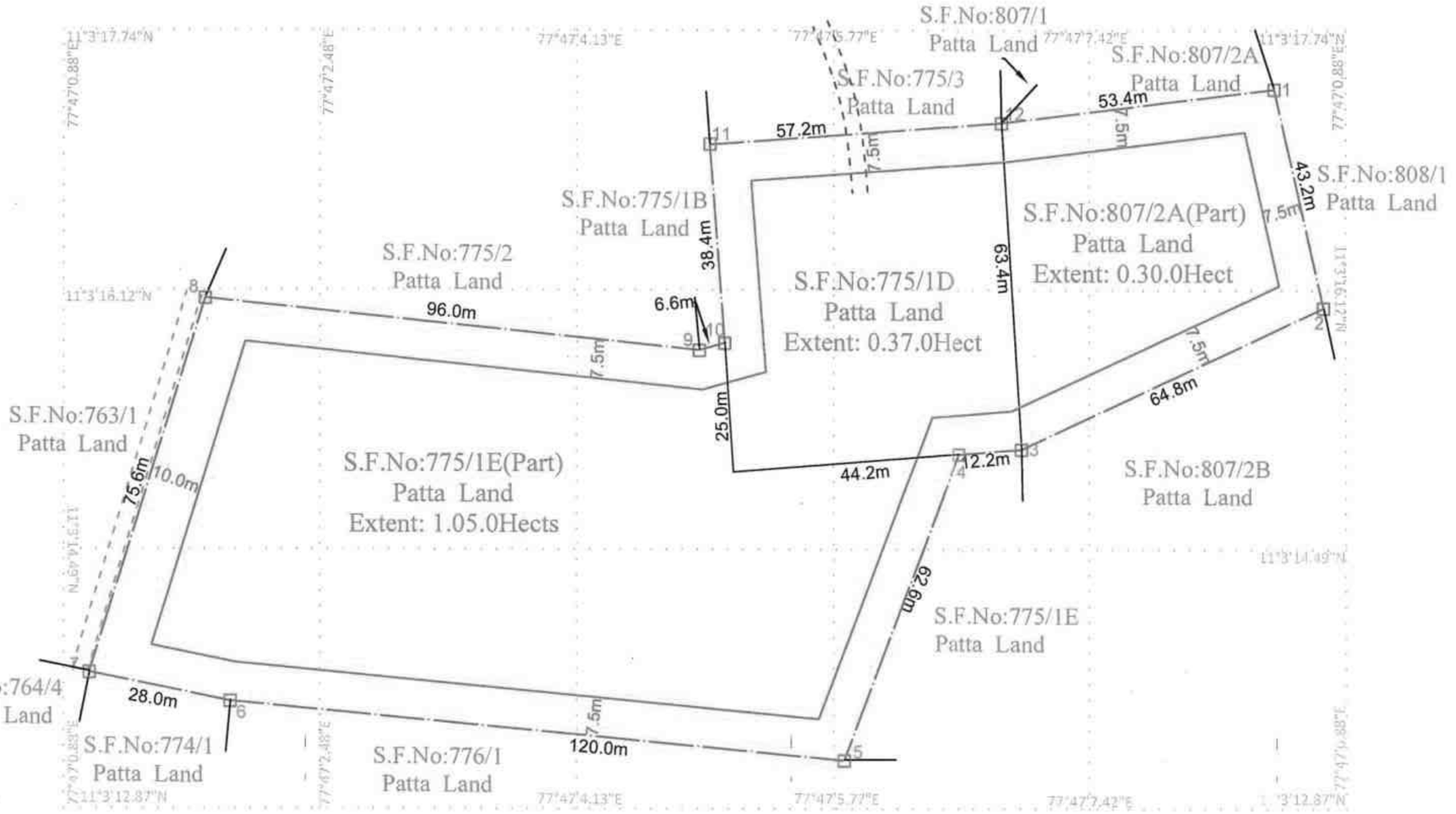
LONGITUDE : 77°47'1.01"E to 77°47'8.95"E

ENVIRONMETNAL PLAN
SCALE– 1:5000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

P.VELLAIYAN,M.Sc.,M.Phil.,
QUALIFIED PERSON



PILLAR ID	LATITUDE	LONGITUDE
1	11° 3'17.31"N	77°47'8.65"E
2	11° 3'15.93"N	77°47'8.95"E
3	11° 3'15.06"N	77°47'7.01"E
4	11° 3'15.04"N	77°47'6.61"E
5	11° 3'13.12"N	77°47'5.84"E
6	11° 3'13.53"N	77°47'1.92"E
7	11° 3'13.72"N	77°47'1.01"E
8	11° 3'16.06"N	77°47'1.78"E
9	11° 3'15.71"N	77°47'4.94"E
10	11° 3'15.75"N	77°47'5.11"E
11	11° 3'16.99"N	77°47'5.02"E
12	11° 3'17.11"N	77°47'6.90"E

387

N

PLATE No- II

APPLICANT:
Mr.M.KUMARAVADIVEL,
S/o. MUTHUSAMY
No.3/246, VELAYUTHAMPALAIYAM,
ANJUR, PANDILINGAPURAM,
PUGALUR TALUK,
KARUR DISTRICT.

LEASE AREA:
S.F.No : 775/1D,775/1E(Part) & 807/2A(Part)
EXTENT : 1.72.0Hects
VILLAGE : ANJUR
TALUK : PUGALUR
DISTRICT : KARUR

INDEX

MINE LEASE BOUNDARY

SAFETY DISTANCE

APPROACH ROAD

CART ROAD

BOUNDARY PILLAR STONES □1 □2

MINE LEASE PLAN
SCALE 1 : 1000

Prepared By:

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P.VELLAIYAN,M.Sc.,M.Phil.,
QUALIFIED PERSON

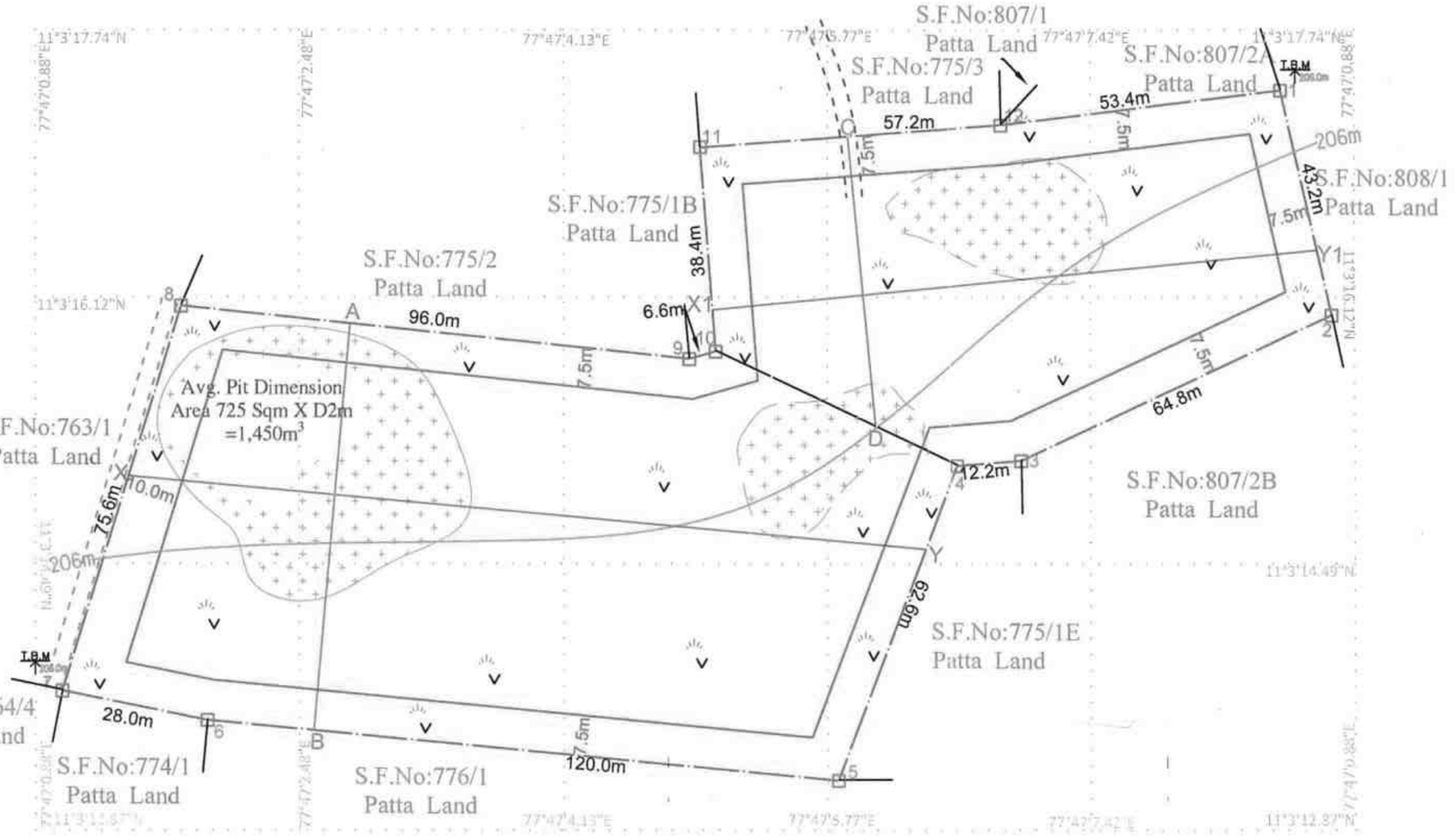


PLATE No-III

APPLICANT:
Mr.M.KUMARAVADIVEL,
S/o. MUTHUSAMY
No.3/246, VELAYUTHAMPALAIYAM,
ANJUR, PANDILINGAPURAM,
PUGALUR TALUK,
KARUR DISTRICT.

LEASE AREA:

S.F.No	: 775/1D,775/1E(Part) & 807/2A(Part)
EXTENT	: 1.72.0Hects
VILLAGE	: ANJUR
TALUK	: PUGALUR
DISTRICT	: KARUR

INDEX

- MINE LEASE BOUNDARY
- SAFETY DISTANCE
- APPROACH ROAD
- CART ROAD
- BOUNDARY PILLAR STONES □1 □2
- TEMPORARY BENCH MARK T.B.M
- CONTOUR LINES 206m
- OUTCROP
- SHRUBS
- GRAVEL

SURFACE & GEOLOGICAL PLAN

PLAN SCALE 1: 1000

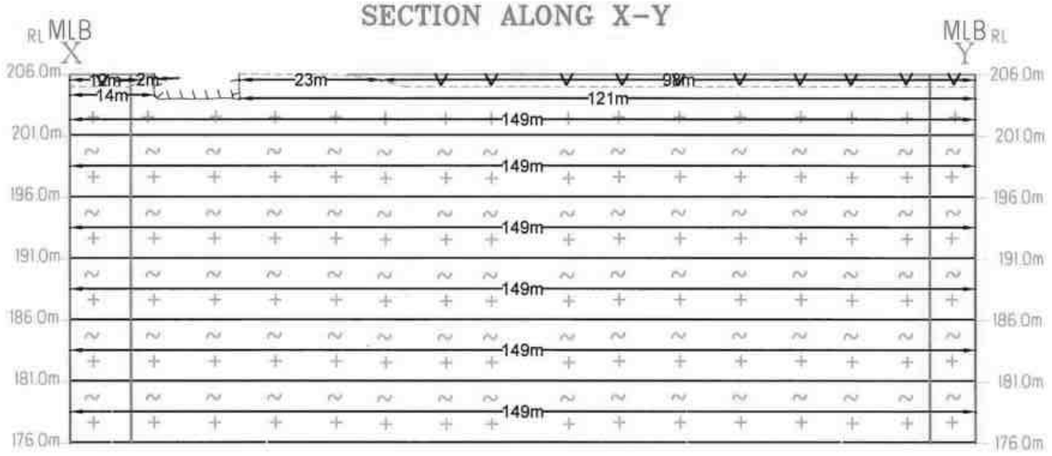
Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

P.VELLAIYAN,M.Sc.,M.Phil.,
QUALIFIED PERSON

391

SECTION ALONG X-Y



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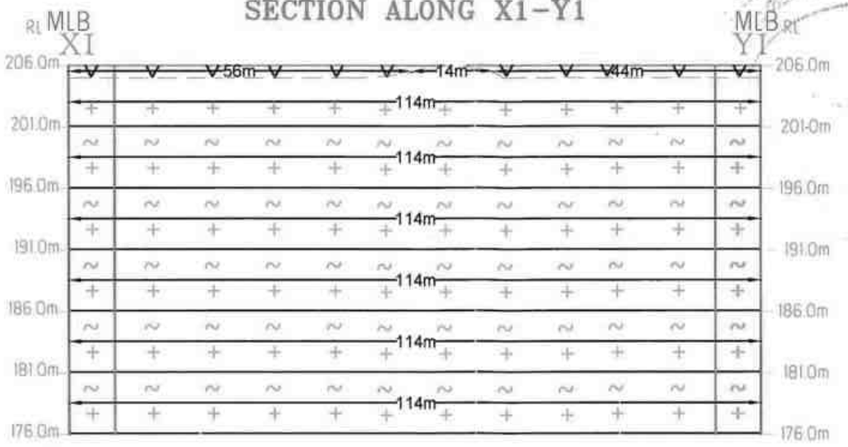

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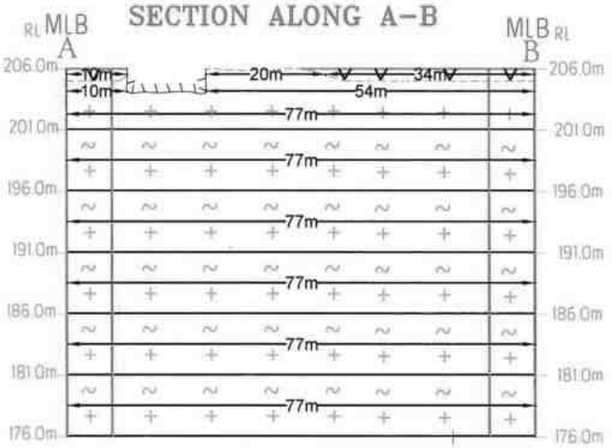
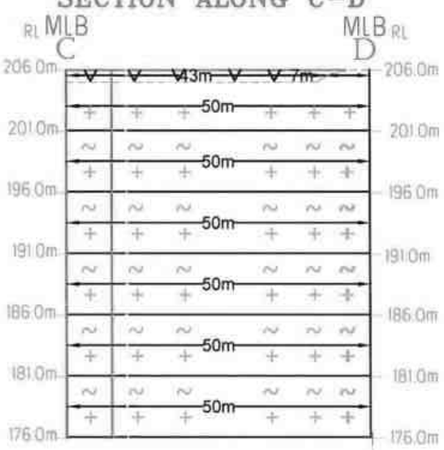


SECTION ALONG C-D



GEOLOGICAL RESOURCES

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume In M^3	Rough Stone in M^3	Gravel in M^3	Bulk Density	Rough Stone in (MT)	Gravel in (MT)
XY-AB	I	110	44	1	4840	.....	4840	2	.....	9680
	Outcrop	25	20	1	500	500		2.75	1375	.....
	I	135	64	1	8640	8640	.....	2.75	23760	.....
	I	149	77	3	34419	34419	.....	2.75	94652	.....
	II	149	77	5	57365	57365	.....	2.75	157753.8	.....
	III	149	77	5	57365	57365	.....	2.75	157753.8	.....
	IV	149	77	5	57365	57365	.....	2.75	157753.8	.....
	V	149	77	5	57365	57365	.....	2.75	157753.8	.....
	VI	149	77	5	57365	57365	.....	2.75	157753.8	.....
TOTAL					**335224**	**330384**	**4840**		**908556**	**9680**
X1Y1-CD	I	100	43	1	4300	.....	4300	2	.....	8600
	Outcrop	14	7	1	98	98	.....	2.75	270	.....
	I	114	50	4	22800	22800	.....	2.75	62700	.....
	II	114	50	5	28500	28500	.....	2.75	78375	.....
	III	114	50	5	28500	28500	.....	2.75	78375	.....
	IV	114	50	5	28500	28500	.....	2.75	78375	.....
	V	114	50	5	28500	28500	.....	2.75	78375	.....
	VI	114	50	5	28500	28500	.....	2.75	78375	.....
TOTAL					**169698**	**165398**	**4300**	.....	**454845**	**8600**
GRAND TOTAL					**504922**	**495782**	**9140**	.....	**1363401**	**18280**

PLATE No-IIIA

APPLICANT:
Mr.M.KUMARAVADIVEL,
S/o. MUTHUSAMY
No.3/246, VELAYUTHAMPALAIYAM,
ANJUR, PANDILINGAPURAM,
PUGALUR TALUK,
KARUR DISTRICT.

LEASE AREA:

S.F.No	: 775/1D,775/1E(Part) & 807/2A(Part)
EXTENT	: 1.72.0Hects
VILLAGE	: ANJUR
TALUK	: PUGALUR
DISTRICT	: KARUR

INDEX

MINE LEASE AREA

SAFETY BOUNDARY

GRAVEL

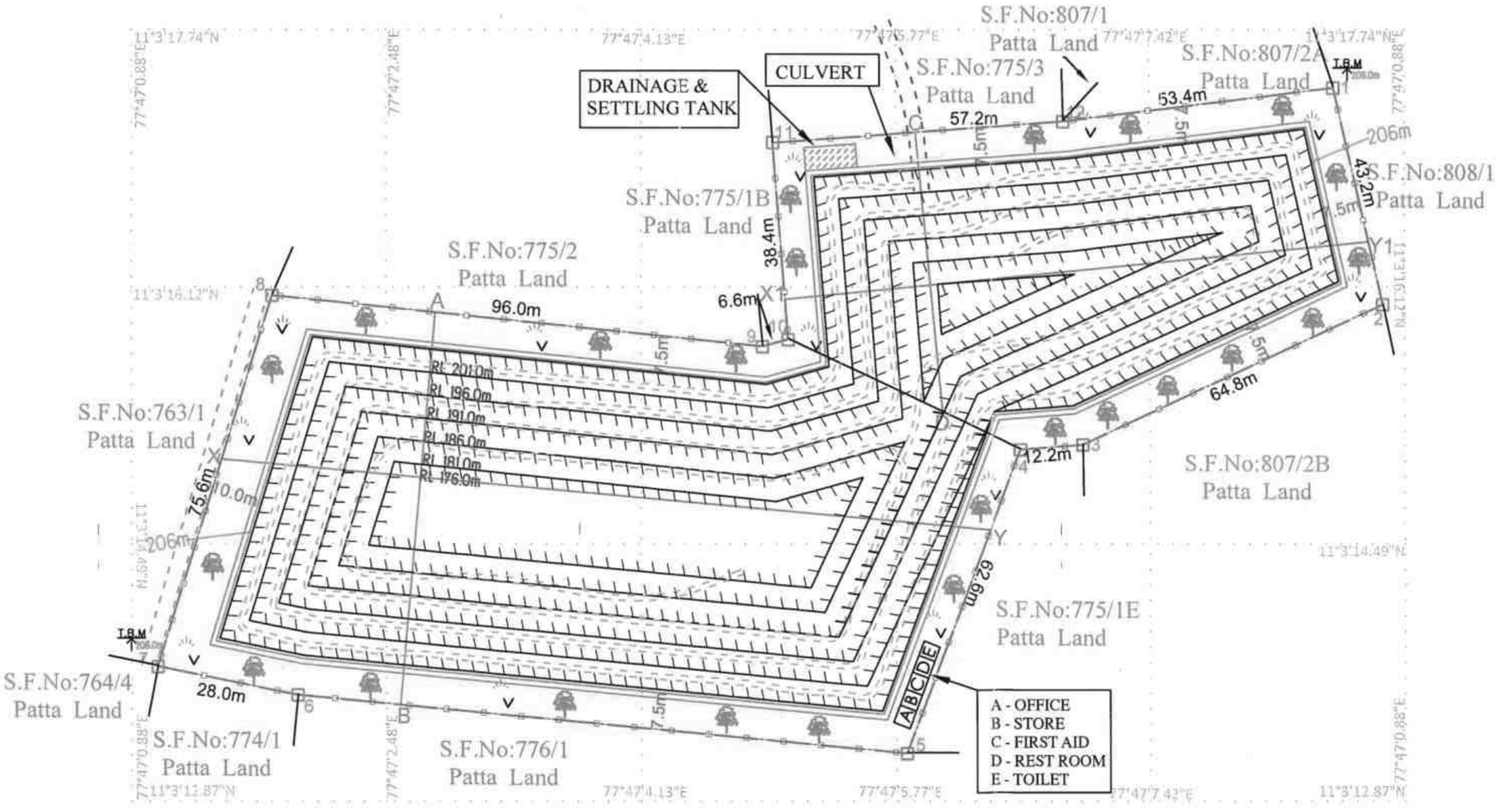
ROUGH STONE

GEOLOGICAL SECTIONS
SECTION HOR 1 : 1000 & VER 1: 500

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

P.VELLAIYAN,M.Sc.,M.Phil.,
QUALIFIED PERSON



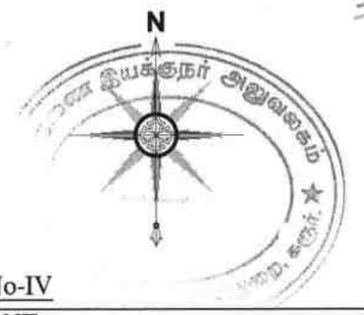


PLATE No-IV

APPLICANT:
Mr.M.KUMARAVADIVEL,
S/o. MUTHUSAMY
No.3/246, VELAYUTHAMPALAIYAM,
ANJUR, PANDILINGAPURAM,
PUGALUR TALUK,
KARUR DISTRICT.

LEASE AREA:

S.F.No	: 775/1D,775/1E(Part) & 807/2A(Part)
EXTENT	: 1.72.0Hects
VILLAGE	: ANJUR
TALUK	: PUGALUR
DISTRICT	: KARUR

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- MINE LEASE BOUNDARY
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- BOUNDARY PILLAR STONES
- TEMPORARY BENCH MARK
- CONTOUR LINES
- SHRUBS
- GRAVEL
- ULTIMATE BENCH
- DRAINAGE & SETTLING TANK
- FENCING

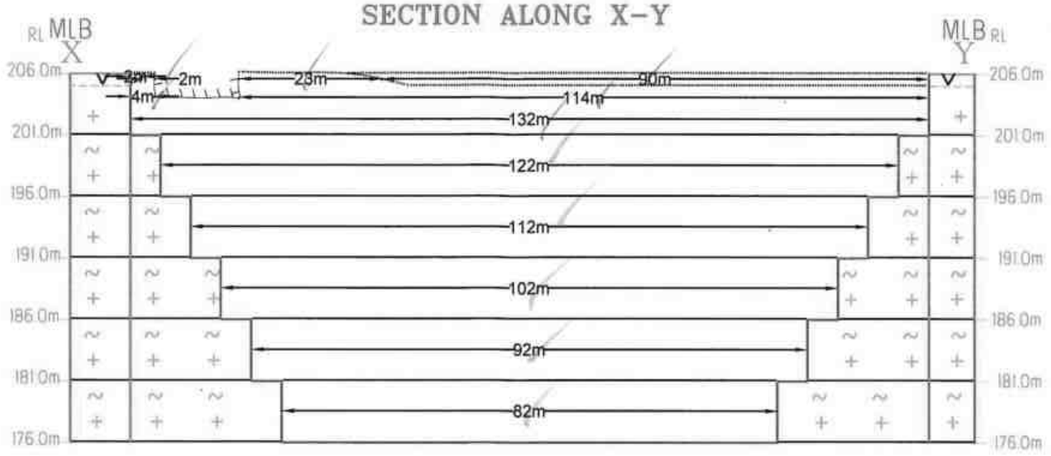
CONCEPTUAL PLAN
PLAN SCALE 1: 1000

Prepared By:

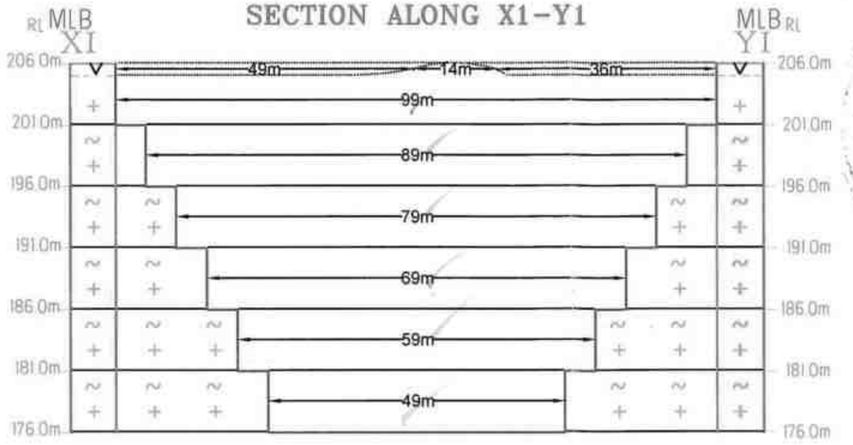
I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

P.VELLAIYAN,M.Sc.,M.Phil.,
QUALIFIED PERSON

SECTION ALONG X-Y



SECTION ALONG X1-Y1



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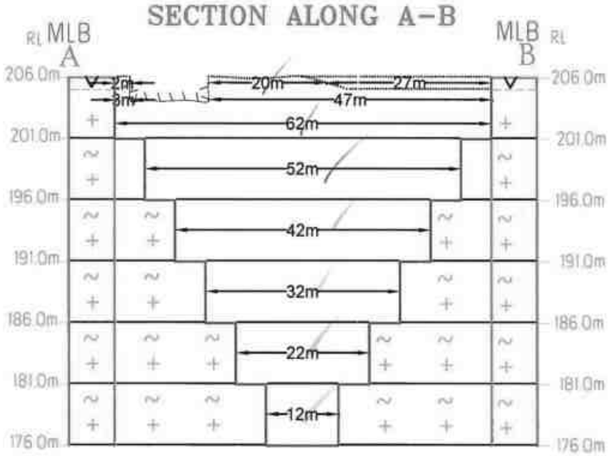
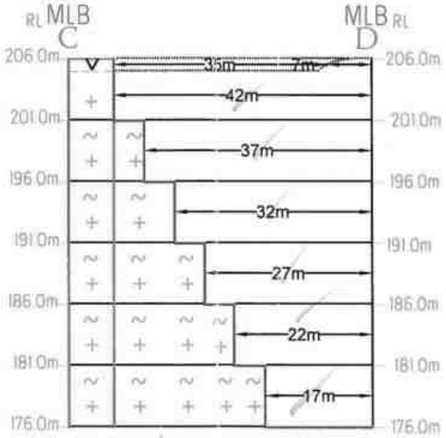


SECTION ALONG C-D



MINEABLE RESERVES

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume In M^3	Rough Stone in M^3	Gravel in M^3	Bulk Density	Rough Stone in (MT)	Gravel in (MT)
XY-AB	I	92	29	1	2668	.....	2668	2	.....	5336
	Outcrop	25	20	1	500	500		2.75	1375	.....
	I	118	50	1	5900	5900	.....	2.75	16225	.....
	I	132	62	3	24552	24552	.....	2.75	67518	.....
	II	122	52	5	31720	31720	.....	2.75	87230	.....
	III	112	42	5	23520	23520	.....	2.75	64680	.....
	IV	102	32	5	16320	16320	.....	2.75	44880	.....
	V	92	22	5	10120	10120	.....	2.75	27830	.....
	VI	82	12	5	4920	4920	.....	2.75	13530	.....
TOTAL					**120220**	**117552**	**2668**		**323268**	**5336**
X1Y1-CD	I	85	35	1	2975	.....	2975	2	.....	5950
	Outcrop	14	7	1	98	98	.....	2.75	270	.....
	I	99	42	4	16632	16632	.....	2.75	45738	.....
	II	89	37	5	16465	16465	.....	2.75	45278	.....
	III	79	32	5	12640	12640	.....	2.75	34760	.....
	IV	69	27	5	9315	9315	.....	2.75	25616	.....
	V	59	22	5	6490	6490	.....	2.75	17848	.....
	VI	49	17	5	4165	4165	.....	2.75	11454	.....
TOTAL					**68780**	**65805**	**2975**	.....	**180964**	**5950**
GRAND TOTAL					**189000**	**183357**	**5643**	.....	**504232**	**11286**

PLATE No-IVA

APPLICANT:
Mr.M.KUMARAVADIVEL,
S/o. MUTHUSAMY
No.3/246, VELAYUTHAMPALAIYAM,
ANJUR, PANDILINGAPURAM,
PUGALUR TALUK,
KARUR DISTRICT.

LEASE AREA:

S.F.No	: 775/1D,775/1E(Part) & 807/2A(Part)
EXTENT	: 1.72.0Hects
VILLAGE	: ANJUR
TALUK	: PUGALUR
DISTRICT	: KARUR

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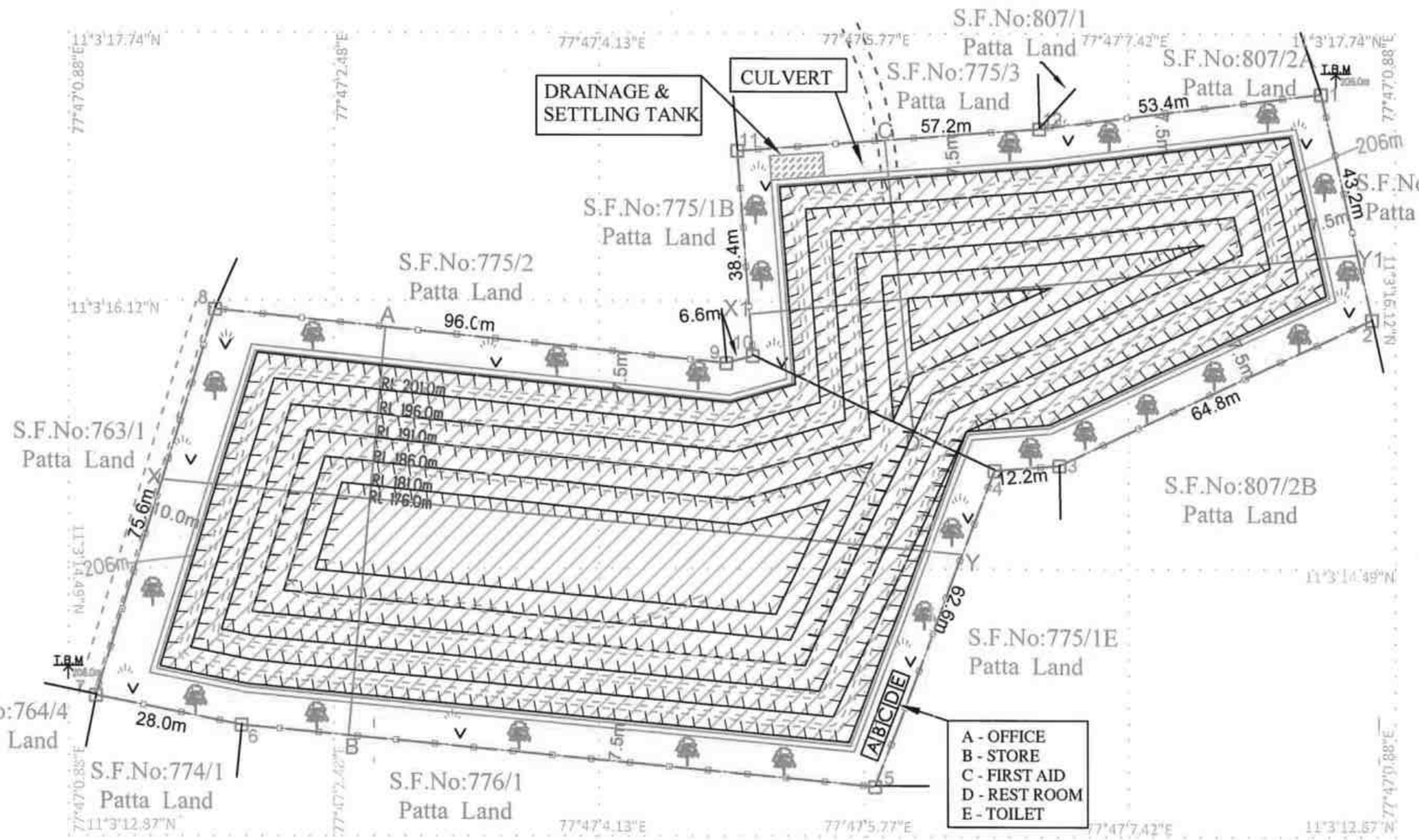
- SAFETY BOUNDARY
- GRAVEL
- ROUGH STONE
- ULTIMATE BENCH
- PROPOSED BENCH

CONCEPTUAL SECTIONS
SECTION HOR 1 : 1000 & VER 1: 500

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

P.VELLAIYAN,M.Sc.,M.Phil.,
QUALIFIED PERSON



Proposed area to be Planted

MINE LAYOUT LAND USE PATTERN

DESCRIPTION	PRESENT AREA (Hect)	AREA IN USE DURING THE QUARRYING PERIOD(Hect)	COLOR CODE
AREA UNDER QUARRYING	NIL	1.23.50	
INFRASTRUCTURE	NIL	0.02.0	ABCDE
ROADS	NIL	0.05.0	
UN-UTILIZED AREA	1.72.0	NIL	
GREEN BELT	NIL	0.35.5	
DRAINAGE & SETTLING TANK	NIL	0.06.0	
GRAND TOTAL	1.72.0	1.72.0	

PLATE No-V

APPLICANT:
Mr.M.KUMARAVADIVEL,
S/o. MUTHUSAMY
No.3/246, VELAYUTHAMPALAIYAM,
ANJUR, PANDILINGAPURAM,
PUGALUR TALUK,
KARUR DISTRICT.

LEASE AREA:

S.F.No	: 775/1D,775/1E(Part) & 807/2A(Part)
EXTENT	: 1.72.0Hects
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TALUK	: PUGALUR
DISTRICT	: KARUR

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- SHRUBS
- GRAVEL
- PROPOSED BENCH
- DRAINAGE & SETTLING TANK
- FENCING

MINE LAYOUT PLAN AND LAND USE PATTERN
PLAN SCALE 1 : 1000

Prepared By:

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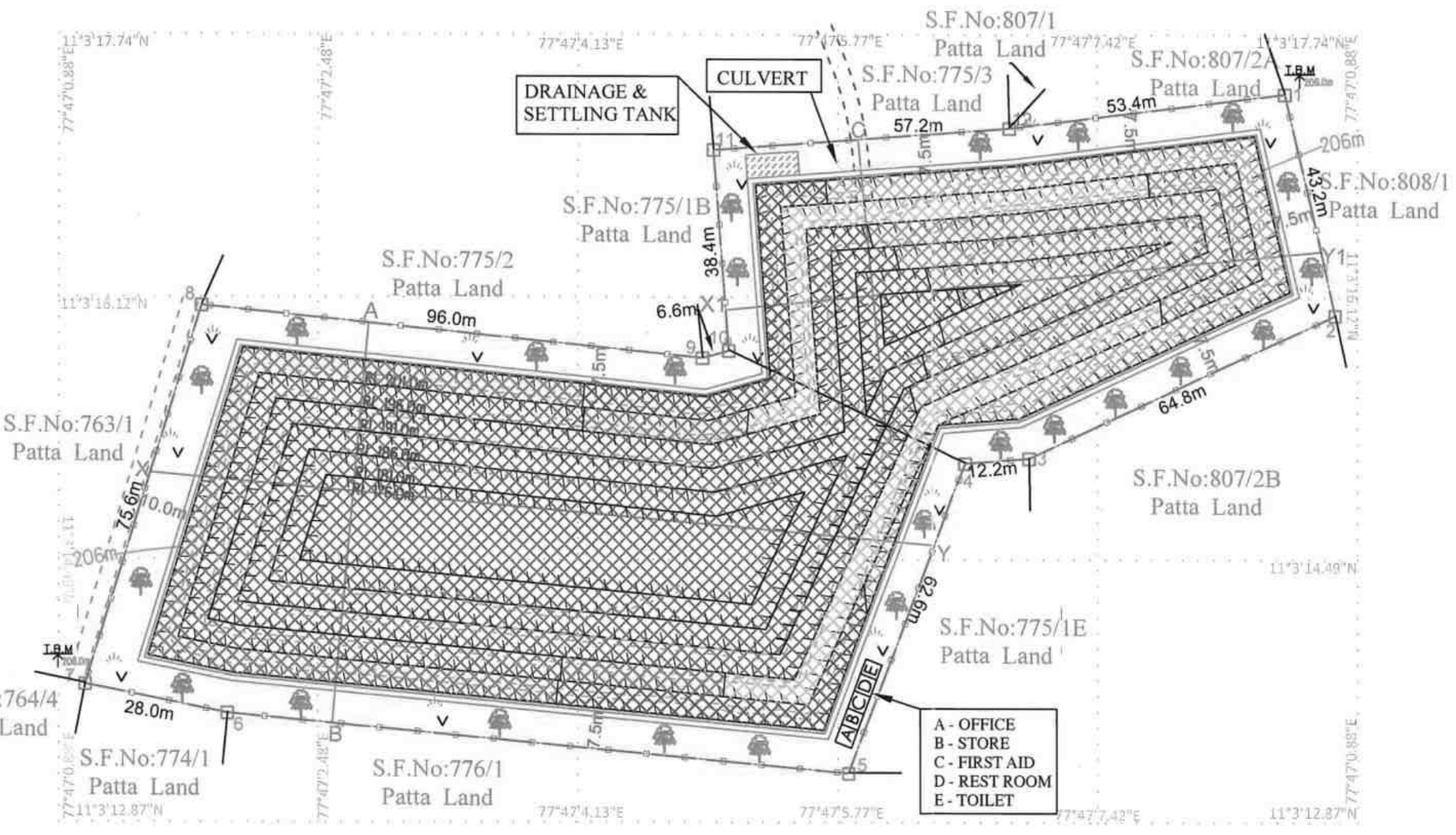

Proposed area to be Planted

I - Year Proposed area to be Quarried	
II - Year Proposed area to be Quarried	
III - Year Proposed area to be Quarried	
IV - Year Proposed area to be Quarried	
V - Year Proposed area to be Quarried	
Second Five Year area to be Quarried	

PLATE No-VI

APPLICANT:
Mr.M.KUMARAVADIVEL,
S/o. MUTHUSAMY
No.3/246, VELAYUTHAMPALAIYAM,
ANJUR, PANDILINGAPURAM,
PUGALUR TALUK,
KARUR DISTRICT.

LEASE AREA:

S.F.No	: 775/1D,775/1E(Part) & 807/2A(Part)
EXTENT	: 1.72.0Hects
VILLAGE	: ANJUR
TALUK	: PUGALUR
DISTRICT	: KARUR

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- GRAVEL
- PROPOSED BENCH
- DRAINAGE & SETTLING TANK
- FENCING

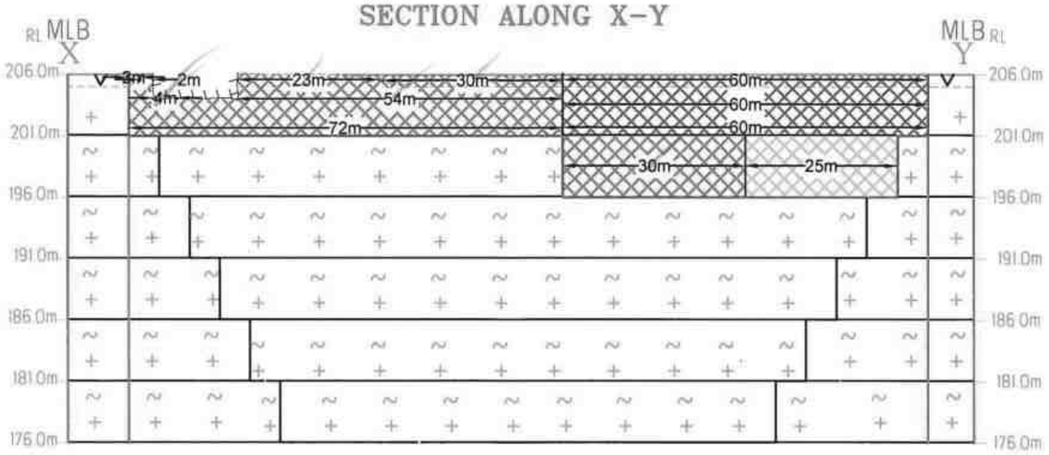
FIRST FIVE YEARWISE DEVELOPMENT & PRODUCTION PLAN
PLAN SCALE 1: 1000

Prepared By:

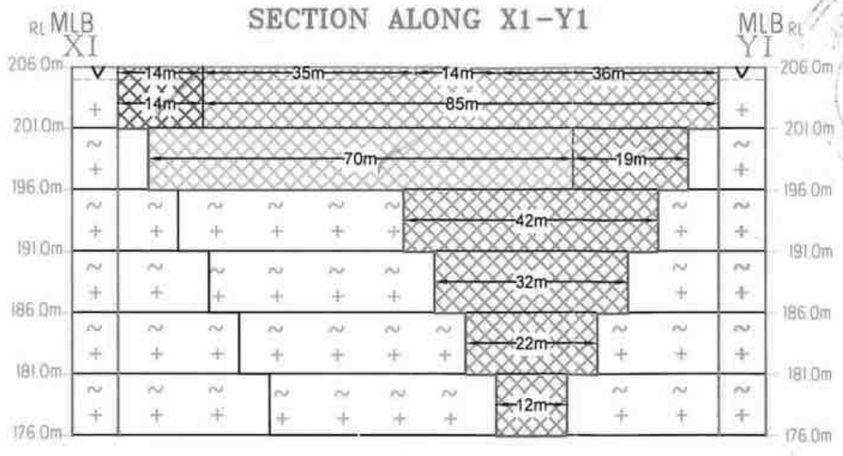
I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

P.VELLAIYAN,M.Sc.,M.Phil.,
QUALIFIED PERSON

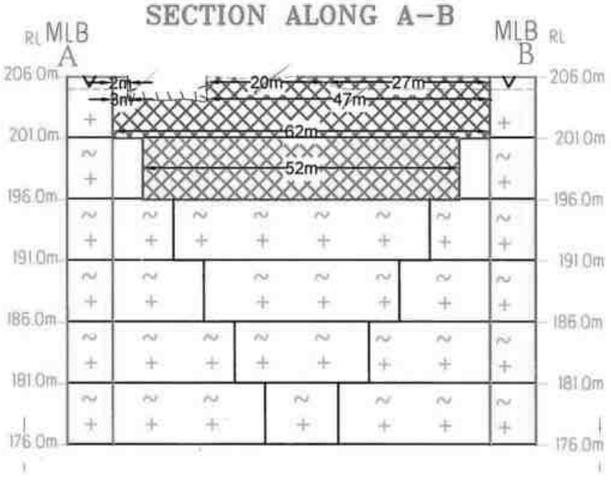
SECTION ALONG X-Y



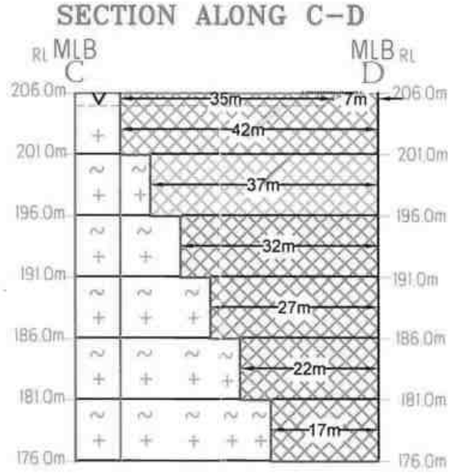
SECTION ALONG X1-Y1



SECTION ALONG A-B



SECTION ALONG C-D



I - Year Proposed area to be Quarried
II - Year Proposed area to be Quarried
III - Year Proposed area to be Quarried
IV - Year Proposed area to be Quarried
V - Year Proposed area to be Quarried

FIRST FIVE -YEARWISE PRODUCTION RESERVES

Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume In M^3	Rough Stone in M^3	Gravel in M^3	Bulk Density	Rough Stone in (MT)	Gravel in (MT)
I-Year	X1Y1-CD	I	71	35	1	2485	.....	2485	2	.....	4970
		Outcrop	14	7	1	98	98	.....	2.75	269	.....
		I	85	42	4	14280	14280	.....	2.75	39270	.....
TOTAL						**16863**	**14378**	**2485**	**.....**	**39539**	**4970**
II-Year	X1Y1-CD	I	14	35	1	490	.....	490	2	.....	980
		I	14	42	4	2352	2352	.....	2.75	6468	.....
	XY-AB	I	60	29	1	1740	.....	1740	2	.....	3480
		I	60	50	1	3000	3000	.....	2.75	8250	.....
		I	60	62	3	11160	11160	.....	2.75	30690	.....
TOTAL						**18742**	**16512**	**2230**	**.....**	**45408**	**4460**
III-Year	XY-AB	I	32	29	1	928	.....	928	2	.....	1856
		Outcrop	25	20	1	500	500		2.75	1375	.....
		I	58	50	1	2900	2900	.....	2.75	7975	.....
		I	72	62	3	13392	13392	.....	2.75	36828	.....
		II	30	52	5	7800	7800	.....	2.75	21450	.....
TOTAL						**25520**	**24592**	**928**	**.....**	**67628**	**1856**
IV-Year	XY-AB	II	25	52	5	6500	6500	.....	2.75	17875	.....
	XIYI-CD	II	70	37	5	12950	12950	.....	2.75	35613	.....
TOTAL						**19450**	**19450**	**0**		**53488**	**0**
V-Year	XIYI-CD	II	19	37	5	3515	3515	.....	2.75	9666	.....
		III	42	32	5	6720	6720	.....	2.75	18480	.....
		IV	32	27	5	4320	4320	.....	2.75	11880	.....
		V	22	22	5	2420	2420	.....	2.75	6655	.....
		VI	12	17	5	1020	1020	.....	2.75	2805	.....
TOTAL						**17995**	**17995**	**0**	**.....**	**49486**	**0**
GRAND TOTAL						**98570**	**92927**	**5643**	**.....**	**255549**	**11286**

PLATE No-VIA

APPLICANT:
Mr.M.KUMARAVADIVEL,
S/o. MUTHUSAMY
No.3/246, VELAYUTHAMPALAIYAM,
ANJUR, PANDILINGAPURAM,
PUGALUR TALUK,
KARUR DISTRICT.

LEASE AREA:

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FIRST FIVE YEARWISE DEVELOPMENT & PRODUCTION SECTIONS
SECTION HOR 1 : 1000 & VER 1: 500

Prepared By:

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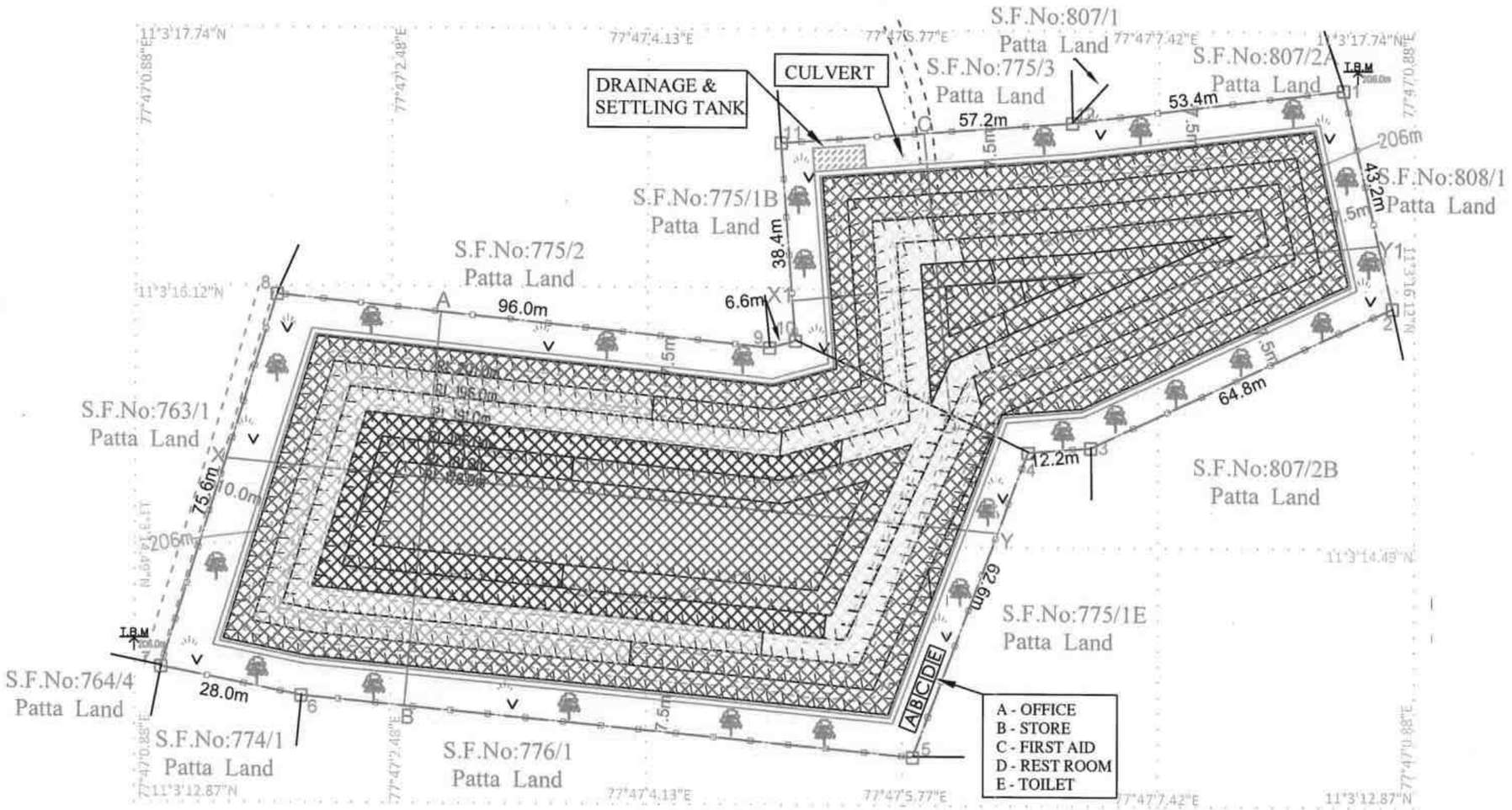
QUALIFIED PERSON



Proposed area to be Planted
First Five Year area to be Quarried
VI - Year Proposed area to be Quarried
VII - Year Proposed area to be Quarried
VIII - Year Proposed area to be Quarried
IX - Year Proposed area to be Quarried
X - Year Proposed area to be Quarried

PLATE No-VIB

APPLICANT:
Mr.M.KUMARAVADIVEL,
S/o. MUTHUSAMY
No.3/246, VELAYUTHAMPALAIYAM,
ANJUR, PANDILINGAPURAM,
PUGALUR TALUK,
KARUR DISTRICT.

LEASE AREA:

S.F.No	: 775/1D, 775/1E(Part) & 807/2A(Part)
EXTENT	: 1.72.0Hects
VILLAGE	: ANJUR
TALUK	: PUGALUR
DISTRICT	: KARUR

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- GRAVEL
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- DRAINAGE & SETTLING TANK
- FENCING

SECOND FIVE YEARWISE DEVELOPMENT & PRODUCTION PLAN
PLAN SCALE 1: 1000

Prepared By:

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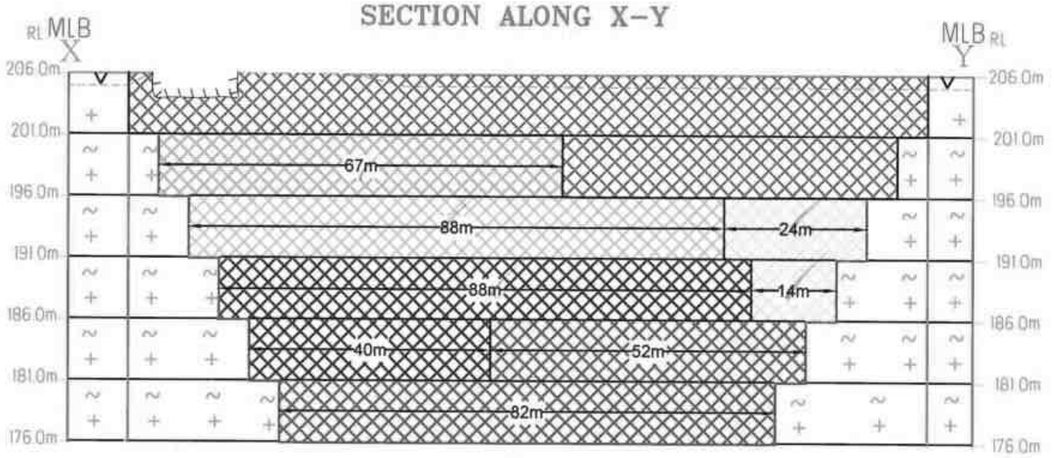
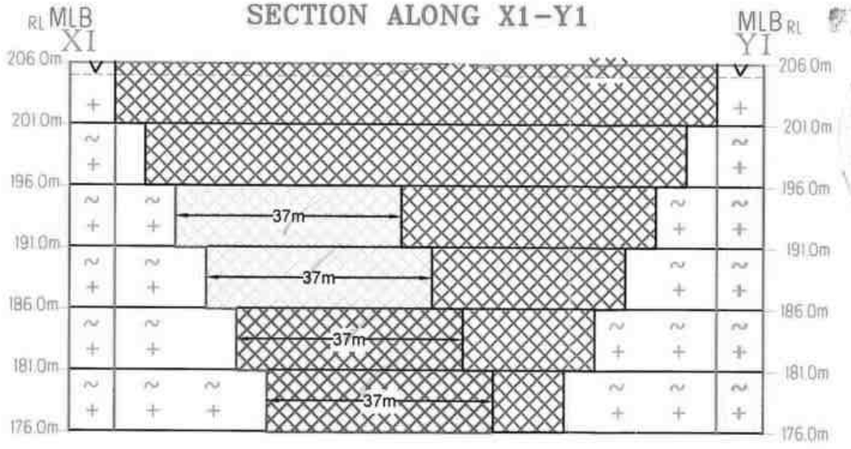
QUALIFIED PERSON

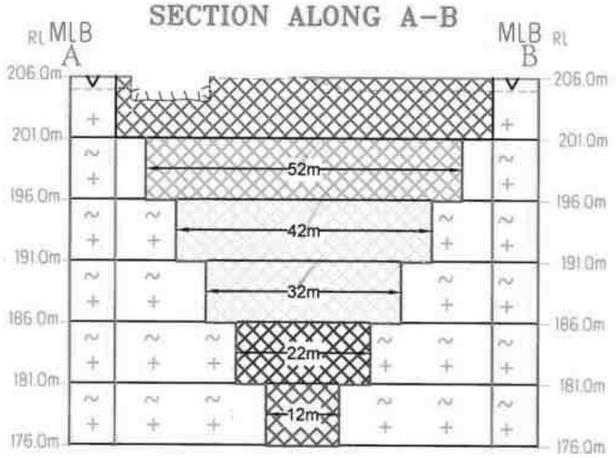
SECTION ALONG X-Y



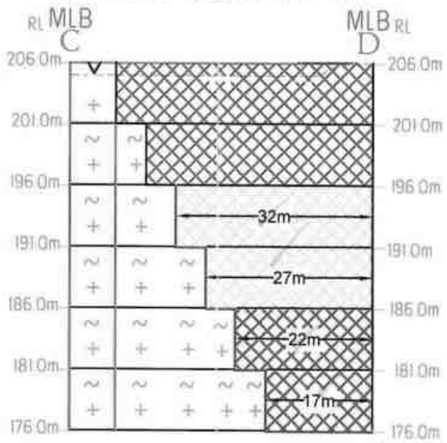
SECTION ALONG X1-Y1



SECTION ALONG A-B



SECTION ALONG C-D



First Five Year area to be Quarried
VI - Year Proposed area to be Quarried
VII - Year Proposed area to be Quarried
VIII - Year Proposed area to be Quarried
IX - Year Proposed area to be Quarried
X - Year Proposed area to be Quarried

SECOND FIVE -YEARWISE PRODUCTION RESERVES

Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume In M^3	Rough Stone in M^3	Gravel in M^3	Bulk Density	Rough Stone in (MT)	Gravel in (MT)
VI-Year	XY-AB	II	67	52	5	17420	17420	.....	2.75	47905	.....
TOTAL						**17420**	**17420**	**0**	**.....**	**47905**	**0**
VII-Year	XY-AB	III	88	42	5	18480	18480	.....	2.75	50820	.....
TOTAL						**18480**	**18480**	**0**	**.....**	**50820**	**0**
VIII-Year	XY-AB	III	24	42	5	5040	5040	.....	2.75	13860	.....
	XIYI-CD	III	37	32	5	5920	5920	.....	2.75	16280	.....
		IV	37	27	5	4995	4995	.....	2.75	13737	.....
	XY-AB	IV	14	32	5	2240	2240	.....	2.75	6160	.....
TOTAL						**18195**	**18195**	**0**	**.....**	**50037**	**0**
IX-Year	XY-AB	IV	88	32	5	14080	14080	.....	2.75	38720	.....
	XIYI-CD	V	40	22	5	4400	4400	.....	2.75	12100	.....
TOTAL						**18480**	**18480**	**0**		**50820**	**0**
X-Year	XY-AB	V	52	22	5	5720	5720	.....	2.75	15730	.....
	XIYI-CD	V	37	22	5	4070	4070	.....	2.75	11193	.....
		VI	37	17	5	3145	3145	.....	2.75	8648	.....
	XY-AB	VI	82	12	5	4920	4920	.....	2.75	13530	.....
TOTAL						**17855**	**17855**	**0**	**.....**	**49101**	**0**
GRAND TOTAL						**90430**	**90430**	**0**	**.....**	**248683**	**0**

PLATE No-VIC

APPLICANT:
Mr.M.KUMARAVADIVEL,
S/o. MUTHUSAMY
No.3/246, VELAYUTHAMPALAIYAM,
ANJUR, PANDILINGAPURAM,
PUGALUR TALUK,
KARUR DISTRICT.

LEASE AREA:
S.F.No : 775/1D,775/1E(Part) & 807/2A(Part)
EXTENT : 1.72.0Hects
VILLAGE : ANJUR
TALUK : PUGALUR
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ULTIMATE BENCH
PROPOSED BENCH

SECOND FIVE YEARWISE DEVELOPMENT & PRODUCTION SECTIONS
SECTION HOR 1 : 1000 & VER 1: 500

Prepared By:
I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

P.VELLAIYAN,M.Sc.,M.Phil.,
QUALIFIED PERSON

Annexure- V

கிராம நிர்வாக அலுவலர் சான்று

413

கரூர் மாவட்டம், புகழூர் வட்டம், எ.1 அத்தூர் கிராமம், புன்செய் புல எண்கள்: 775/1D -0.37.0 ஏர்ஸ், 775/1E [P] -0.97.0 ஏர்ஸ், 807/2A [P] -0.30.0 ஏர்ஸ் ஆக மொத்தம் 1.64.0 ஹெக் பரப்புகள் அனைத்து பட்டா எண் :- 2378 தெய்வமுதேவி மனைவி ராஜலட்சுமி, பட்டா எண்: 1625, ராமசாமி கவுண்டர் மகன் முத்துச்சாமி ஆகியோர் பெயரில் தொடக்க கணக்குகள் பட்டா பதிவாகியுள்ளது. இப்புலங்களில் சாதாரண கற்கள் மற்றும் கிராவல் மண்ணை தோண்டி எடுக்க உரிமம் வழங்கக் கோரி திரு. தெய்வமுதேவி என்பவர் விண்ணப்பம் செய்துள்ளார். மேற்படி புலத்திலிருந்து 300 மீட்டர் சுற்றளவில் மயானம், குடியிருப்புகள், அரசு அங்கீகரிக்கப்பட்ட பட்டா மனைகள், வீடுகள், பள்ளிக்கூடங்கள், புராதான சின்னங்கள் அதிகளவு என வருவாய் தெரிய வருகிறது என சான்றளிக்கப் படுகிறது.

இடம் : அத்தூர்

நாள் : 27.02.2026

M. [illegible]
27.02.24
கிராம நிர்வாக அலுவலர்
1, அத்தூர் கிராமம்
புகழூர் வட்டம், கரூர் மாவட்டம்

[illegible]

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Web: www.accuracyanalabs.in, Mail ID: accuracyanalabs@gmail.com

TC-15901

TEST REPORT

Report Number	TC159012026218705F	Report Date	06.03.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	02.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	04.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	06.03.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	8.1	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	17.8	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	49.5	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	21.0	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218706F	Report Date	06.03.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	03.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	04.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	06.03.2026
Ambient Temperature	Min :28°C Max : 33°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	7.90	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	17.38	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	49.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	21.10	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218707F	Report Date	12.03.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	09.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	10.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	12.03.2026
Ambient Temperature	Min :27°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	7.70	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	16.94	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	49.80	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	22.50	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218708F	Report Date	12.03.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	10.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	11.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	12.03.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	7.80	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	17.16	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	50.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	23.40	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218709F	Report Date	20.03.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	16.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	18.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	20.03.2026
Ambient Temperature	Min :26°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	8.20	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	18.04	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	51.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	21.90	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218710F	Report Date	20.03.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	17.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	18.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	20.03.2026
Ambient Temperature	Min :27°C Max : 33°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	7.10	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	15.62	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	51.10	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	21.60	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218711F	Report Date	27.03.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	23.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	25.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	27.03.2026
Ambient Temperature	Min :27°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.70	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.74	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	51.90	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	23.40	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218712F	Report Date	27.03.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	24.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	25.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	27.03.2026
Ambient Temperature	Min :29°C Max : 33°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	7.00	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	15.40	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	51.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	21.70	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218713F	Report Date	03.04.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	30.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	01.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	03.04.2026
Ambient Temperature	Min :29°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	7.20	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	15.84	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	51.60	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	24.10	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218714F	Report Date	03.04.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	31.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	01.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	03.04.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.80	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.96	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	52.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	24.00	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218715F	Report Date	10.04.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	06.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	08.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	10.04.2026
Ambient Temperature	Min :27°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	8.40	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	18.48	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	52.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	21.50	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218716F	Report Date	10.04.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	07.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	08.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	10.04.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.70	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.74	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	53.80	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	23.10	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218717F	Report Date	17.04.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	13.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	15.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	17.04.2026
Ambient Temperature	Min :26°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.52	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	53.90	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	21.00	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218718F	Report Date	17.04.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	14.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	15.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	17.04.2026
Ambient Temperature	Min :26°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.80	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.96	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	52.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	21.60	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218719F	Report Date	24.04.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	20.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	22.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	24.04.2026
Ambient Temperature	Min :29°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.52	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	53.80	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	23.10	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218720F	Report Date	24.04.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	21.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	22.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	24.04.2026
Ambient Temperature	Min :30°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.10	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.42	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	52.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	22.30	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218721F	Report Date	30.04.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	27.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	29.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	30.04.2026
Ambient Temperature	Min :29°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.00	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.20	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	52.60	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	23.20	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218722F	Report Date	30.04.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	28.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	29.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	30.04.2026
Ambient Temperature	Min : 30°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.10	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.42	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	51.10	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	22.60	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218722F	Report Date	09.05.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	05.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	07.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	09.05.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.70	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.74	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	50.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	22.10	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218723F	Report Date	09.05.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	06.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	07.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	09.05.2026
Ambient Temperature	Min :30°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	7.00	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	15.40	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	49.70	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	23.00	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218724F	Report Date	16.05.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	12.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	14.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	16.05.2026
Ambient Temperature	Min :29°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	7.40	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	16.28	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	49.80	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	22.90	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218725F	Report Date	16.05.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	13.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	14.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	16.05.2026
Ambient Temperature	Min :31°C Max : 36°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.80	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.96	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	49.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	22.40	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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Web: www.accuracyanalabs.in, Mail ID: accuracyanalabs@gmail.com

TC-15901

TEST REPORT

Report Number	TC159012026218726F	Report Date	23.05.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	19.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	21.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	23.05.2026
Ambient Temperature	Min :29°C Max : 36°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.52	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	49.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	23.20	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218727F	Report Date	23.05.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	20.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	21.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	23.05.2026
Ambient Temperature	Min :28°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	7.20	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	15.84	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	49.10	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	22.60	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218728F	Report Date	30.05.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	26.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	28.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	30.05.2026
Ambient Temperature	Min :28°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	7.00	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	15.40	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	50.60	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	22.40	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218729F	Report Date	30.05.2026

Sample Description	Ambient Air Quality - AAQ 1	Sample Condition	Good
Sample Location	Nearby Core - (11°3'13.26"N 77° 47'1.33"E)	Date Of Sampling	27.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	28.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	30.05.2026
Ambient Temperature	Min :30°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	7.40	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	16.28	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	50.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	22.10	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218705F	Report Date	06.03.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam 11° 3'37.01"N 77°47'12.62"E	Date Of Sampling	02.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	04.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	06.03.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.30	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.86	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	45.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.12	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218706F	Report Date	06.03.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	03.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	04.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	06.03.2026
Ambient Temperature	Min :28°C Max : 33°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.10	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.42	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	47.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	19.00	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218707F	Report Date	12.03.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	09.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	10.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	12.03.2026
Ambient Temperature	Min :27°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.52	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	45.60	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.24	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218708F	Report Date	12.03.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	10.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	11.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	12.03.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.20	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.64	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	46.70	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.68	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218709F	Report Date	20.03.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	16.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	18.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	20.03.2026
Ambient Temperature	Min :26°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.50	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.30	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	47.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.92	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218710F	Report Date	20.03.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	17.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	18.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	20.03.2026
Ambient Temperature	Min :27°C Max : 33°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.32	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	45.80	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.32	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218711F	Report Date	27.03.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	23.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	25.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	27.03.2026
Ambient Temperature	Min :27°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.30	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.86	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	44.90	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	17.96	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218712F	Report Date	27.03.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	24.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	25.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	27.03.2026
Ambient Temperature	Min :29°C Max : 33°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.50	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.30	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	46.40	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.56	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218713F	Report Date	03.04.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	30.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	01.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	03.04.2026
Ambient Temperature	Min :29°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.52	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	45.60	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.24	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218714F	Report Date	03.04.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	31.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	01.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	03.04.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.40	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.08	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	45.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.08	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218715F	Report Date	10.04.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	06.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	08.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	10.04.2026
Ambient Temperature	Min :27°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.80	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.96	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	44.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	17.68	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218716F	Report Date	10.04.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	07.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	08.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	10.04.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.30	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.86	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	44.90	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	17.96	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218717F	Report Date	17.04.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	13.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	15.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	17.04.2026
Ambient Temperature	Min :26°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.20	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.64	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	45.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.08	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218718F	Report Date	17.04.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	14.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	15.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	17.04.2026
Ambient Temperature	Min :26°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	7.20	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	15.84	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	45.90	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.36	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218719F	Report Date	24.04.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	20.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	22.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	24.04.2026
Ambient Temperature	Min :29°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	7.40	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	16.28	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	47.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.92	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218720F	Report Date	24.04.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	21.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	22.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	24.04.2026
Ambient Temperature	Min :30°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	7.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	16.72	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	46.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.48	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218721F	Report Date	30.04.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	27.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	29.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	30.04.2026
Ambient Temperature	Min :29°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	7.70	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	16.94	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	45.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.20	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218722F	Report Date	30.04.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	28.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	29.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	30.04.2026
Ambient Temperature	Min : 30°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.30	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	11.66	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	47.70	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	19.08	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218722F	Report Date	09.05.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	05.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	07.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	09.05.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.50	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.10	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	47.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.92	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218723F	Report Date	09.05.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	06.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	07.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	09.05.2026
Ambient Temperature	Min :30°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.32	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	47.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	19.00	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218724F	Report Date	16.05.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	12.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	14.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	16.05.2026
Ambient Temperature	Min :29°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.90	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.98	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	47.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	19.00	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218725F	Report Date	16.05.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	13.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	14.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	16.05.2026
Ambient Temperature	Min :31°C Max : 36°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.20	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.64	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	46.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.48	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218726F	Report Date	23.05.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	19.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	21.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	23.05.2026
Ambient Temperature	Min :29°C Max : 36°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.70	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.74	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	45.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.12	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218727F	Report Date	23.05.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	20.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	21.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	23.05.2026
Ambient Temperature	Min :28°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.52	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	44.70	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	17.88	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218728F	Report Date	30.05.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	26.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	28.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	30.05.2026
Ambient Temperature	Min :28°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.30	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.86	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	45.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.20	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218729F	Report Date	30.05.2026

Sample Description	Ambient Air Quality - AAQ 2	Sample Condition	Good
Sample Location	Kulathupalayam - (11° 3'37.01"N 77°47'12.62"E)	Date Of Sampling	27.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	28.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	30.05.2026
Ambient Temperature	Min :30°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.10	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.42	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	45.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.08	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218705F	Report Date	06.03.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	02.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	04.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	06.03.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.30	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.86	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	46.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.52	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218706F	Report Date	06.03.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	03.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	04.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	06.03.2026
Ambient Temperature	Min :28°C Max : 33°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.10	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.42	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	48.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	19.40	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218707F	Report Date	12.03.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	09.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	10.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	12.03.2026
Ambient Temperature	Min :27°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.52	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	46.60	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.64	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218708F	Report Date	12.03.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	10.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	11.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	12.03.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.20	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.64	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	47.70	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	19.08	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218709F	Report Date	20.03.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	16.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	18.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	20.03.2026
Ambient Temperature	Min :26°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.30	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.30	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	48.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	19.32	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218710F	Report Date	20.03.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	17.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	18.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	20.03.2026
Ambient Temperature	Min :27°C Max : 33°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.32	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	46.80	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.72	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218711F	Report Date	27.03.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	23.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	25.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	27.03.2026
Ambient Temperature	Min :27°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.30	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.86	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	45.90	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.36	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218712F	Report Date	27.03.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	24.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	25.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	27.03.2026
Ambient Temperature	Min :29°C Max : 33°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.50	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.30	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	47.40	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.96	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218713F	Report Date	03.04.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	30.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	01.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	03.04.2026
Ambient Temperature	Min :29°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.52	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	46.60	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.64	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218714F	Report Date	03.04.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	31.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	01.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	03.04.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.40	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.08	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	46.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.48	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218715F	Report Date	10.04.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	06.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	08.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	10.04.2026
Ambient Temperature	Min :27°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.80	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.96	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	45.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.08	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218716F	Report Date	10.04.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	07.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	08.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	10.04.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.30	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.86	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	45.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.20	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218717F	Report Date	17.04.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	13.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	15.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	17.04.2026
Ambient Temperature	Min :26°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.20	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.64	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	46.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.45	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218718F	Report Date	17.04.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	14.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	15.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	17.04.2026
Ambient Temperature	Min :26°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	7.20	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	15.84	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	46.90	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.76	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218719F	Report Date	24.04.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	20.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	22.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	24.04.2026
Ambient Temperature	Min :29°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	7.40	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	16.28	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	48.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	19.32	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218720F	Report Date	24.04.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	21.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	22.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	24.04.2026
Ambient Temperature	Min :30°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	7.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	16.72	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	47.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.88	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218721F	Report Date	30.04.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	27.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	29.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	30.04.2026
Ambient Temperature	Min :29°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	7.70	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	16.94	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	46.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.60	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218722F	Report Date	30.04.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	28.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	29.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	30.04.2026
Ambient Temperature	Min : 30°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.30	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	11.66	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	48.70	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	19.48	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218722F	Report Date	09.05.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	05.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	07.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	09.05.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.50	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.10	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	48.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	19.32	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218723F	Report Date	09.05.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	06.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	07.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	09.05.2026
Ambient Temperature	Min :30°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.32	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	48.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	19.40	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218724F	Report Date	16.05.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	12.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	14.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	16.05.2026
Ambient Temperature	Min :29°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.90	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.98	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	48.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	19.40	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218725F	Report Date	16.05.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	13.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	14.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	16.05.2026
Ambient Temperature	Min :31°C Max : 36°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.20	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.64	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	47.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.88	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218726F	Report Date	23.05.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	19.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	21.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	23.05.2026
Ambient Temperature	Min :29°C Max : 36°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.70	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.74	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	46.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.52	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218727F	Report Date	23.05.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	20.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	21.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	23.05.2026
Ambient Temperature	Min :28°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.52	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	45.70	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.28	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218728F	Report Date	30.05.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	26.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	28.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	30.05.2026
Ambient Temperature	Min :28°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.30	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.86	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	46.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.60	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218729F	Report Date	30.05.2026

Sample Description	Ambient Air Quality - AAQ 3	Sample Condition	Good
Sample Location	Thottiyapalayam - (11° 3'9.96"N 77°46'1.70"E)	Date Of Sampling	27.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	28.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	30.05.2026
Ambient Temperature	Min :30°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.10	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.42	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	46.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.48	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218705F	Report Date	06.03.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	02.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	04.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	06.03.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	11.96	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	36.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	16.80	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218706F	Report Date	06.03.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	03.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	04.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	06.03.2026
Ambient Temperature	Min :28°C Max : 33°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.40	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	11.44	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	38.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	17.10	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218707F	Report Date	12.03.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	09.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	10.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	12.03.2026
Ambient Temperature	Min :27°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.90	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.74	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	36.60	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	17.30	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218708F	Report Date	12.03.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	10.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	11.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	12.03.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.50	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	11.70	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	37.70	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	15.50	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218709F	Report Date	20.03.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	16.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	18.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	20.03.2026
Ambient Temperature	Min :26°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.80	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.48	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	38.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	15.80	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218710F	Report Date	20.03.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	17.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	18.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	20.03.2026
Ambient Temperature	Min :27°C Max : 33°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	3.90	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	10.14	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	36.80	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	15.70	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218711F	Report Date	27.03.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	23.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	25.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	27.03.2026
Ambient Temperature	Min :27°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	11.96	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	35.90	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	15.20	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218712F	Report Date	27.03.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	24.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	25.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	27.03.2026
Ambient Temperature	Min :29°C Max : 33°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.80	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.48	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	37.40	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	17.70	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218713F	Report Date	03.04.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	30.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	01.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	03.04.2026
Ambient Temperature	Min :29°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.90	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.74	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	36.60	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	17.00	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218714F	Report Date	03.04.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	31.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	01.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	03.04.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.70	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.22	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	36.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	17.30	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218715F	Report Date	10.04.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	06.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	08.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	10.04.2026
Ambient Temperature	Min :27°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.10	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.26	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	35.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	16.90	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218716F	Report Date	10.04.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	07.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	08.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	10.04.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	11.96	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	35.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	16.30	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218717F	Report Date	17.04.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	13.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	15.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	17.04.2026
Ambient Temperature	Min :26°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.50	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	11.70	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	36.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	16.50	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218718F	Report Date	17.04.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	14.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	15.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	17.04.2026
Ambient Temperature	Min :26°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.50	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.30	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	36.90	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	17.60	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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Web: www.accuracyanalabs.in, Mail ID: accuracyanalabs@gmail.com

TC-15901

TEST REPORT

Report Number	TC159012026218719F	Report Date	24.04.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	20.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	22.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	24.04.2026
Ambient Temperature	Min :29°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.70	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	14.82	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	38.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	17.50	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218720F	Report Date	24.04.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	21.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	22.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	24.04.2026
Ambient Temperature	Min :30°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.90	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	15.34	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	37.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	17.70	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218721F	Report Date	30.04.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	27.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	29.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	30.04.2026
Ambient Temperature	Min :29°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.00	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	15.60	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	36.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	16.20	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218722F	Report Date	30.04.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	28.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	29.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	30.04.2026
Ambient Temperature	Min : 30°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	3.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	9.36	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	38.70	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	17.30	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218722F	Report Date	09.05.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	05.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	07.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	09.05.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	3.80	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	9.88	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	38.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.90	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218723F	Report Date	09.05.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	06.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	07.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	09.05.2026
Ambient Temperature	Min :30°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	3.90	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	10.14	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	38.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	17.10	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218724F	Report Date	16.05.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	12.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	14.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	16.05.2026
Ambient Temperature	Min :29°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.20	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	10.92	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	38.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	17.70	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218725F	Report Date	16.05.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	13.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	14.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	16.05.2026
Ambient Temperature	Min :31°C Max : 36°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.50	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	11.70	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	37.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.20	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218726F	Report Date	23.05.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	19.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	21.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	23.05.2026
Ambient Temperature	Min :29°C Max : 36°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.00	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.00	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	36.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	17.30	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218727F	Report Date	23.05.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	20.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	21.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	23.05.2026
Ambient Temperature	Min :28°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.90	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.74	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	35.70	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	16.90	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218728F	Report Date	30.05.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	26.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	28.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	30.05.2026
Ambient Temperature	Min :28°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	11.96	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	36.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	17.30	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218729F	Report Date	30.05.2026

Sample Description	Ambient Air Quality - AAQ 4	Sample Condition	Good
Sample Location	Oodayam - (11° 1'37.80"N 77°46'58.11"E)	Date Of Sampling	27.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	28.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	30.05.2026
Ambient Temperature	Min :30°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.40	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	11.44	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	36.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	17.70	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218705F	Report Date	06.03.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	02.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	04.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	06.03.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.30	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.30	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	39.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	19.80	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218706F	Report Date	06.03.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	03.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	04.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	06.03.2026
Ambient Temperature	Min :28°C Max : 33°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.10	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.60	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	41.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	20.10	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218707F	Report Date	12.03.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	09.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	10.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	12.03.2026
Ambient Temperature	Min :27°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.90	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	39.60	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	20.30	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218708F	Report Date	12.03.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	10.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	11.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	12.03.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.20	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.10	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	40.70	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.50	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218709F	Report Date	20.03.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	16.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	18.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	20.03.2026
Ambient Temperature	Min :26°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.50	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.70	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	41.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.80	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218710F	Report Date	20.03.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	17.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	18.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	20.03.2026
Ambient Temperature	Min :27°C Max : 33°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.20	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	39.80	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.70	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218711F	Report Date	27.03.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	23.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	25.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	27.03.2026
Ambient Temperature	Min :27°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.30	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.50	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	38.90	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	18.20	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218712F	Report Date	27.03.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	24.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	25.03.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	27.03.2026
Ambient Temperature	Min :29°C Max : 33°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.50	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.70	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	40.40	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	20.70	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218713F	Report Date	03.04.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	30.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	01.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	03.04.2026
Ambient Temperature	Min :29°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.30	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	39.60	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	20.00	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218714F	Report Date	03.04.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	31.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	01.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	03.04.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.40	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.80	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	39.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	20.30	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218715F	Report Date	10.04.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	06.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	08.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	10.04.2026
Ambient Temperature	Min :27°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.80	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.90	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	38.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	19.90	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218716F	Report Date	10.04.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	07.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	08.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	10.04.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.30	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.10	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	38.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	19.30	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218717F	Report Date	17.04.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	13.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	15.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	17.04.2026
Ambient Temperature	Min :26°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.20	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.80	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	39.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	19.50	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218718F	Report Date	17.04.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	14.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	15.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	17.04.2026
Ambient Temperature	Min :26°C Max : 32°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.20	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.10	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	40.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	20.70	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218719F	Report Date	24.04.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	20.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	22.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	24.04.2026
Ambient Temperature	Min :29°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.40	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.70	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	41.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	20.50	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218720F	Report Date	24.04.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	21.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	22.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	24.04.2026
Ambient Temperature	Min :30°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.10	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	40.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	20.70	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218721F	Report Date	30.04.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	27.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	29.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	30.04.2026
Ambient Temperature	Min :29°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	6.70	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.50	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	39.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	19.20	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218722F	Report Date	30.04.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	28.04.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	29.04.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	30.04.2026
Ambient Temperature	Min : 30°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.30	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.10	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	41.70	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	20.30	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218722F	Report Date	09.05.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	05.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	07.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	09.05.2026
Ambient Temperature	Min :28°C Max : 34°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.50	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.30	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	41.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	21.90	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218723F	Report Date	09.05.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	06.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	07.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	09.05.2026
Ambient Temperature	Min :30°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.70	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	41.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	20.10	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218724F	Report Date	16.05.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	12.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	14.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	16.05.2026
Ambient Temperature	Min :29°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	4.90	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.80	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	41.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	40.20	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218725F	Report Date	16.05.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	13.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	14.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	16.05.2026
Ambient Temperature	Min :31°C Max : 36°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.20	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.30	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	40.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	21.20	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218726F	Report Date	23.05.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	19.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	21.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	23.05.2026
Ambient Temperature	Min :29°C Max : 36°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.70	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	12.90	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	39.30	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	20.30	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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Web: www.accuracyanalabs.in, Mail ID: accuracyanalabs@gmail.com

TC-15901

TEST REPORT

Report Number	TC159012026218727F	Report Date	23.05.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	20.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	21.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	23.05.2026
Ambient Temperature	Min :28°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.60	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.10	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	38.70	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	19.90	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218728F	Report Date	30.05.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	26.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	28.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	30.05.2026
Ambient Temperature	Min :28°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.30	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	13.80	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	39.50	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	20.30	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218729F	Report Date	30.05.2026

Sample Description	Ambient Air Quality - AAQ 5	Sample Condition	Good
Sample Location	Pillapalayam - (11° 3'31.70"N 77°48'8.76"E)	Date Of Sampling	27.05.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	28.05.2026
Sample Drawn By	M/s. Accuracy Analab	Analysis Completion Date	30.05.2026
Ambient Temperature	Min :30°C Max : 35°C	Humidity:51%	Wind Direction :SW

S.NO	PARAMETERS	METHOD	UNITS	RESULT	NAAQS LIMITS
1	Sulphur Dioxide (SO_2)	IS 5182 (Part 2/Sec 1): 2023	µg/m³	5.10	80
2	Nitrogen Dioxide (NO_2)	IS 5182 (Part 6/Sec 2): 2018	µg/m³	11.70	80
3	Particulate Matter, PM_{10}	IS 5182 (Part 23): 2006	µg/m³	39.20	100
4	Particulate Matter, $PM_{2.5}$	IS 5182 (Part 24): 2019	µg/m³	20.70	60

Note: PM_{10} - Particulate Matter <=10 microns, $PM_{2.5}$ - Particulate Matter <=2.5 microns, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m - Milligram per cubic meter, µg/m³ - Nano grams Per cubic meter

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TC-15901

TEST REPORT

Report Number	TC159012026218710F	Report Date	04.04.2026
Customer Name & Address		Mr. M. Kumaravadivel- Rough Stone & Gravel Quarry, S. F. No: 775/1D, 775/1E (Part) & 807/2A (Part), Anjur Village, Pugalur Taluk, Karur District.	
Sample Description	Noise Monitoring	Sample Condition	Good
Test method	IS 9989:1981	Date Of Sampling	31.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	01.04.2026
Sample Drawn By	M/s. Accuracy Analabs	Analysis Completion Date	04.04.2026

S.NO	Locations	Day Time, Leq. Noise Level (Time : 06.00 AM- 10.00 PM)	Night Time, Leq. Noise Level (Time : 10.00 PM- 6.00 AM)
1	Nearby Core 11°3'13.00"N 77°47'4.14"E	Mean : 46.2 dB(A)	Mean : 35.4 dB(A)
The Noise Pollution (Regulation and Control) Rules, 2000 CPCB Industrial Area		75dB(A)	70dB(A)
Sound Level Meter Serial Number		Centre 390 - 160508095	

Note : dB (A) Leq denotes the time weighted average the level of sound in decibel on scale a which is related to human hearing.

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TC-15901

TEST REPORT

Report Number	TC159012026218711F	Report Date	04.04.2026
Customer Name & Address		Mr. M. Kumaravadivel- Rough Stone & Gravel Quarry, S. F. No: 775/1D, 775/1E (Part) & 807/2A (Part), Anjur Village, Pugalur Taluk, Karur District.	

Sample Description	Noise Monitoring	**Sample Condition**	Good
Test method	IS 9989:1981	**Date Of Sampling**	31.03.2026
Sampling Method	AAL/SOP/02/2025	**Analysis Starting Date**	01.04.2026
Sample Drawn By	M/s. Accuracy Analabs	**Analysis Completion Date**	04.04.2026

S.NO	Locations	Day Time, Leq. Noise Level (Time : 06.00 AM- 10.00 PM)	Night Time, Leq. Noise Level (Time : 10.00 PM- 6.00 AM)
1	Kulathupalayam 11°3'36.43"N 77°47'13.01"E	Mean : 40.3 dB(A)	Mean : 36.1 dB(A)
The Noise Pollution (Regulation and Control) Rules, 2000 CPCB Residential Area		55dB(A)	45 dB(A)
Sound Level Meter Serial Number		Centre 390 - 160508095	

Note : dB (A) Leq denotes the time weighted average the level of sound in decibel on scale a which is related to human hearing.

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TC-15901

TEST REPORT

Report Number	TC159012026218712F	Report Date	04.04.2026
Customer Name & Address		Mr. M. Kumaravadivel- Rough Stone & Gravel Quarry, S. F. No: 775/1D, 775/1E (Part) & 807/2A (Part), Anjur Village, Pugalur Taluk, Karur District.	
Sample Description	Noise Monitoring	Sample Condition	Good
Test method	IS 9989:1981	Date Of Sampling	31.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	01.04.2026
Sample Drawn By	M/s. Accuracy Analabs	Analysis Completion Date	04.04.2026

S.NO	Locations	Day Time, Leq. Noise Level (Time : 06.00 AM- 10.00 PM)	Night Time, Leq. Noise Level (Time : 10.00 PM- 6.00 AM)
1	Thottiyapayam 11°3'11.02"N 77°46'1.20"E	Mean : 43.5 dB(A)	Mean : 30.1 dB(A)
The Noise Pollution (Regulation and Control) Rules, 2000 CPCB Residential Area		55 dB(A)	45 dB(A)
Sound Level Meter Serial Number		Centre 390 - 160508095	

Note : dB (A) Leq denotes the time weighted average the level of sound in decibel on scale a which is related to human hearing.

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TC-15901

TEST REPORT

Report Number	**TC159012026218713F**	**Report Date**	**04.04.2026**
Customer Name & Address		**Mr. M. Kumaravadivel- Rough Stone & Gravel Quarry,** S. F. No: 775/1D, 775/1E (Part) & 807/2A (Part), Anjur Village, Pugalur Taluk, Karur District.	
Sample Description	Noise Monitoring	**Sample Condition**	Good
Test method	IS 9989:1981	**Date Of Sampling**	31.03.2026
Sampling Method	AAL/SOP/02/2025	**Analysis Starting Date**	01.04.2026
Sample Drawn By	M/s. Accuracy Analabs	**Analysis Completion Date**	04.04.2026

S.NO	Locations	Day Time, Leq. Noise Level (Time : 06.00 AM- 10.00 PM)	Night Time, Leq. Noise Level (Time : 10.00 PM- 6.00 AM)
1	Oodayam 11°1'37.11"N 77°46'57.88"E	**Mean : 42.8 dB(A)**	**Mean : 32.9 dB(A)**
The Noise Pollution (Regulation and Control) Rules, 2000 CPCB Residential Area		**55 dB(A)**	**45 dB(A)**
Sound Level Meter Serial Number		**Centre 390 - 160508095**	

Note : dB (A) Leq denotes the time weighted average the level of sound in decibel on scale a which is related to human hearing.

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TC-15901

TEST REPORT

Report Number	TC159012026218714F	Report Date	04.04.2026
Customer Name & Address		Mr. M. Kumaravadivel- Rough Stone & Gravel Quarry, S. F. No: 775/1D, 775/1E (Part) & 807/2A (Part), Anjur Village, Pugalur Taluk, Karur District.	
Sample Description	Noise Monitoring	Sample Condition	Good
Test method	IS 9989:1981	Date Of Sampling	31.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	01.04.2026
Sample Drawn By	M/s. Accuracy Analabs	Analysis Completion Date	04.04.2026

S.NO	Locations	Day Time, Leq. Noise Level (Time : 06.00 AM- 10.00 PM)	Night Time, Leq. Noise Level (Time : 10.00 PM- 6.00 AM)
1	Pillapalayam 11°3'30.55"N 77°48'7.28"E	Mean : 44.2 dB(A)	Mean : 32.4 dB(A)
The Noise Pollution (Regulation and Control) Rules, 2000 CPCB Residential Area		55 dB(A)	45 dB(A)
Sound Level Meter Serial Number		Centre 390 - 160508095	

Note : dB (A) Leq denotes the time weighted average the level of sound in decibel on scale a which is related to human hearing.

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TC-15901

TEST REPORT

Report Number	TC159012026218715F	Report Date	04.04.2026
Customer Name & Address		Mr. M. Kumaravadivel- Rough Stone & Gravel Quarry, S. F. No: 775/1D, 775/1E (Part) & 807/2A (Part), Anjur Village, Pugalur Taluk, Karur District.	

Sample Discipline	Water – OW 1	**Sample Condition**	Good
Sample Location	Nearby Core 11°3'15.43"N 77°47'15.10"E	**Date Of Sampling**	31.03.2026
Sample Method	AAL/SOP/02/2025	**Analysis Starting Date**	01.04.2026
Sample Drawn By	M/s. Accuracy Analabs	**Analysis Completion Date**	04.04.2026

S.No	PARAMETERS	Test Method	Unit	Result	IS:10500:2012 LIMITS	
					Acceptable	Permissible
1	pH @25^{0}C	APHA 24th Edition 4500-H+ B	-	7.55	**6.5 - 8.5**	**No relaxation**
2	Colour	APHA 24th Edition 2120-C	Hazen	BQL (1.0)	**5.0**	**15**
3	Odour	IS 3025 (Part 5)	Odourless	Agreeable	**Agreeable**	**Agreeable**
4	Temperature	IS 3025 Part 9 : 2018	^{0}C	25	-	-
5	Taste	IS 3025 Part 7 :2022	Agreeable	Agreeable	**Agreeable**	**Agreeable**
6	Turbidity	APHA 24th Edition 2130-B	NTU	BQL (1.0)	**1.0**	**5.0**
7	Electrical Conductivity @ 25^{0}C	APHA 24th Edition 2510 B	µs/cm	590	-	-
8	Total Dissolved Solids	APHA 24th Edition 2540-C	mg/L	371	**500**	**2000**
9	Aluminium as Al	IS 3025 (part 55):2003	mg/L	BQL (0.001)	**0.03**	**0.2**
10	Ammonia as total ammonia - N	APHA 24th Edition 4500 NH3 -B,C	mg/L	BQL (0.001)	**0.5**	**No relaxation**
11	Barium as Ba	IS 13428 (Anneure G):2024	mg/L	BQL (0.001)	**0.7**	**No relaxation**
12	Boron as B	IS 13428 (Anneure J):2003	mg/L	BQL (0.001)	**0.5**	**1.0**
13	Calcium as Ca	APHA 24th Edition 3500-Ca B	mg/L	72	**75.0**	**200**
14	Chloramines	APHA 24th Edition 4500-Cl	mg/L	BQL (0.001)	**4.0**	**No relaxation**
15	Chloride as Cl	APHA 24th Edition 4500-Cl B	mg/L	81	**250**	**1000**

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TC-15901

TEST REPORT

Report Number: TC159012026218715F **Report Date: 04.04.2026**

S.No	PARAMETERS	Test Method	Unit	Result	IS:10500:2012 LIMITS	
					Acceptable	Permissible
16	Copper as Cu	IS 3025 (part 42):2003	-	BQL (0.001)	0.05	1.5
17	Fluoride as F	APHA 24th Edition 4500-F D	mg/l	BQL (0.001)	1.0	1.5
18	Free Residual chlorine	APHA 24th Edition 4500-Cl	mg/l	BQL (0.001)	0.2	1.0
19	Iron as Fe	IS 3025 (part 53):2003	mg/l	BQL (0.001)	0.3	No relaxation
20	Magnesium as Mg	APHA 24th Edition 3500-Mg B	mg/l	34	30.0	100
21	Manganese as Mn	IS 3025 (part 59):2003	mg/l	BQL (0.001)	0.1	0.3
22	Nitrate as NO_3	APHA 24th Edition 4500-NO3 B	mg/l	15	45.0	No relaxation
23	Phenolic compound as C_6H_5OH	APHA 24th Edition 5530-C	mg/l	BQL (0.001)	0.001	0.002
24	Sulphate (as SO_4)	APHA 24th Edition 4500-SO4 E	mg/l	46	0.1	No relaxation
25	Sulphide (as H_2S)	APHA 24th Edition 4500-S2	mg/l	BQL (0.001)	200	400
26	Alkalinity to Phenolphthalein	APHA 24th Edition 2320-B	mg/l	BQL (0.001)	0.05	No relaxation
27	Alkalinity to methyl orange	APHA 24th Edition 2320-B	mg/l	127	200	600
28	Total Hardness (as $CaCO_3$)	APHA 24th Edition 2340-C	mg/l	246	200	600
29	Zinc (as Zn)	IS 3025 (part 49):2003	mg/l	BQL (0.001)	5.0	15
30	Cadmium (as Cd)	IS 3025 (part 41):2003	mg/l	BQL (0.001)	0.003	No relaxation
31	Lead (as Pb)	IS 3025 (part 47):2003	mg/l	BQL (0.001)	0.01	No relaxation
32	Mercury (as Hg)	IS 3025 (part 48):2003	mg/l	BQL (0.001)	0.001	No relaxation
33	Nickel (as Ni)	IS 3025 (part 54):2003	mg/l	BQL (0.001)	0.07	No relaxation
34	Coliforms	IS 15185 : 2016	MPN/100ml	Absent	Absent	Absent
35	Escherichia Coli	IS 15185 : 2016	MPN/100ml	Absent	Absent	Absent
36	F.Coliforms	IS 15185 : 2016	MPN/100ml	Absent	Absent	Absent
37	Total Plate Count	IS 15185 : 2016	Cfu/ml	Absent	Absent	Absent

Note:. BQL - Below Quantification Limit, $\mu g/m^3$ - Micrograms per cubic meter, mg/m^3 - Milligrams Per cubic meter, APHA – American public Health Association.

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TC-15901

TEST REPORT

Report Number	TC159012026218716F	Report Date	04.04.2026
Customer Name & Address		Mr. M. Kumaravadivel- Rough Stone & Gravel Quarry, S. F. No: 775/1D, 775/1E (Part) & 807/2A (Part), Anjur Village, Pugalur Taluk, Karur District.	
Sample Discipline	Water – OW 2	Sample Condition	Good
Sample Location	Kulathupalayam 11°3'35.39"N 77°47'8.86"E	Date Of Sampling	31.03.2026
Sample Method	AAL/SOP/02/2025	Analysis Starting Date	01.04.2026
Sample Drawn By	M/s. Accuracy Analabs	Analysis Completion Date	04.04.2026

S.No	PARAMETERS	Test Method	Unit	Result	IS:10500:2012 LIMITS	
					Acceptable	Permissible
1	pH @25^{0}C	APHA 24th Edition 4500-H+ B	-	7.85	6.5 - 8.5	No relaxation
2	Colour	APHA 24th Edition 2120-C	Hazen	BQL (1.0)	5.0	15
3	Odour	IS 3025 (Part 5)	Odorless	Agreeable	Agreeable	Agreeable
4	Temperature	IS 3025 Part 9 : 2018	^{0}C	25	-	-
5	Taste	IS 3025 Part 7 :2022	Agreeable	Agreeable	Agreeable	Agreeable
6	Turbidity	APHA 24th Edition 2130-B	NTU	BQL (1.0)	1.0	5.0
7	Electrical Conductivity @ 25^{0}C	APHA 24th Edition 2510 B	µs/cm	585	-	-
8	Total Dissolved Solids	APHA 24th Edition 2540-C	mg/L	410	500	2000
9	Aluminium as Al	IS 3025 (part 55):2003	mg/L	BQL (0.001)	0.03	0.2
10	Ammonia as total ammonia - N	APHA 24th Edition 4500 NH3 -B,C	mg/L	BQL (0.001)	0.5	No relaxation
11	Barium as Ba	IS 13428 (Anneure G):2024	mg/L	BQL (0.001)	0.7	No relaxation
12	Boron as B	IS 13428 (Anneure J):2003	mg/L	BQL (0.001)	0.5	1.0
13	Calcium as Ca	APHA 24th Edition 3500-Ca B	mg/L	57	75.0	200
14	Chloramines	APHA 24th Edition 4500-Cl	mg/L	BQL (0.001)	4.0	No relaxation
15	Chloride as Cl	APHA 24th Edition 4500-Cl B	mg/L	76	250	1000

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TC-15901

TEST REPORT

Report Number: TC1590120262187l6F **Report Date: 04.04.2026**

S.No	PARAMETERS	Test Method	Unit	Result	IS:10500:2012 LIMITS	
					Acceptable	Permissible
16	Copper as Cu	IS 3025 (part 42):2003	-	BQL (0.001)	0.05	1.5
17	Fluoride as F	APHA 24th Edition 4500-F D	mg/l	BQL (0.001)	1.0	1.5
18	Free Residual chlorine	APHA 24th Edition 4500-Cl	mg/l	BQL (0.001)	0.2	1.0
19	Iron as Fe	IS 3025 (part 53):2003	mg/l	BQL (0.001)	0.3	No relaxation
20	Magnesium as Mg	APHA 24th Edition 3500-Mg B	mg/l	17	30.0	100
21	Manganese as Mn	IS 3025 (part 59):2003	mg/l	BQL (0.001)	0.1	0.3
22	Nitrate as NO3	APHA 24th Edition 4500-NO3 B	mg/l	12	45.0	No relaxation
23	Phenolic compound as C_6H_5OH	APHA 24th Edition 5530-C	mg/l	BQL (0.001)	0.001	0.002
24	Sulphate (as SO_4)	APHA 24th Edition 4500-SO4 E	mg/l	4	0.1	No relaxation
25	Sulphide (as H_2S)	APHA 24th Edition 4500-S2	mg/l	BQL (0.001)	200	400
26	Alkalinity to Phenolphthalein	APHA 24th Edition 2320-B	mg/l	BQL (0.001)	0.05	No relaxation
27	Alkalinity to methyl orange	APHA 24th Edition 2320-B	mg/l	124	200	600
28	Total Hardness (as $CaCO_3$)	APHA 24th Edition 2340-C	mg/l	249	200	600
29	Zinc (as Zn)	IS 3025 (part 49):2003	mg/l	BQL (0.001)	5.0	15
30	Cadmium (as Cd)	IS 3025 (part 41):2003	mg/l	BQL (0.001)	0.003	No relaxation
31	Lead (as Pb)	IS 3025 (part 47):2003	mg/l	BQL (0.001)	0.01	No relaxation
32	Mercury (as Hg)	IS 3025 (part 48):2003	mg/l	BQL (0.001)	0.001	No relaxation
33	Nickel (as Ni)	IS 3025 (part 54):2003	mg/l	BQL (0.001)	0.07	No relaxation
34	Coliforms	IS 15185 : 2016	MPN/100ml	Absent	Absent	Absent
35	Escherichia Coli	IS 15185 : 2016	MPN/100ml	Absent	Absent	Absent
36	F.Coliforms	IS 15185 : 2016	MPN/100ml	Absent	Absent	Absent
37	Total Plate Count	IS 15185 : 2016	Cfu/ml	Absent	Absent	Absent

Note:, BQL - Below Quantification Limit, $\mu g/m^3$ - Micrograms per cubic meter, mg/m^3 - Milligrams Per cubic meter, APHA – American public Health Association.

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TC-15901

TEST REPORT

Report Number	TC159012026218717F	Report Date	04.04.2026
Customer Name & Address		Mr. M. Kumaravadivel- Rough Stone & Gravel Quarry, S. F. No: 775/1D, 775/1E (Part) & 807/2A (Part), Anjur Village, Pugalur Taluk, Karur District.	
Sample Discipline	Water – SW 1	Sample Condition	Good
Sample Location	Neyyal river - 11°3'44.85"N 77°47'1.06"E	Date Of Sampling	31.03.2026
Sample Method	AAL/SOP/02/2025	Analysis Starting Date	01.04.2026
Sample Drawn By	M/s. Accuracy Analabs	Analysis Completion Date	04.04.2026

S.No	PARAMETERS	Test Method	Unit	Result	IS:10500:2012 LIMITS	
					Acceptable	Permissible
1	pH @25^{0}C	APHA 24th Edition 4500-H+ B	-	7.52	6.5 - 8.5	No relaxation
2	Colour	APHA 24th Edition 2120-C	Hazen	BQL (1.0)	5.0	15
3	Odour	IS 3025 (Part 5)	Odourless	Agreeable	Agreeable	Agreeable
4	Temperature	IS 3025 Part 9 : 2018	^{0}C	25	-	-
5	Taste	IS 3025 Part 7 :2022	Agreeable	Agreeable	Agreeable	Agreeable
6	Turbidity	APHA 24th Edition 2130-B	NTU	BQL (1.0)	1.0	5.0
7	Electrical Conductivity @ 25^{0}C	APHA 24th Edition 2510 B	µs/cm	826	-	-
8	Total Dissolved Solids	APHA 24th Edition 2540-C	mg/L	485	500	2000
9	Aluminium as Al	IS 3025 (part 55):2003	mg/L	BQL(0.001)	0.03	0.2
10	Ammonia as total ammonia - N	APHA 24th Edition 4500 NH3 - B,C	mg/L	BQL(0.001)	0.5	No relaxation
11	Barium as Ba	IS 13428 (Anneure G):2024	mg/L	BQL(0.001)	0.7	No relaxation
12	Boron as B	IS 13428 (Anneure J):2003	mg/L	BQL(0.001)	0.5	1.0
13	Calcium as Ca	APHA 24th Edition 3500-Ca B	mg/L	125	75.0	200
14	Chloramines	APHA 24th Edition 4500-Cl	mg/L	BQL(0.001)	4.0	No relaxation
15	Chloride as CI	APHA 24th Edition 4500-Cl B	mg/L	155	250	1000

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TC-15901

TEST REPORT

Report Number: TC159012026218717F **Report Date: 04.04.2026**

S.No	PARAMETERS	Test Method	Unit	Result	IS:10500:2012 LIMITS	
					Acceptable	Permissible
16	Copper as Cu	IS 3025 (part 42):2003	-	BQL (0.001)	**0.05**	**1.5**
17	Fluoride as F	APHA 24th Edition 4500-F D	mg/l	BQL (0.001)	**1.0**	**1.5**
18	Free Residual chlorine	APHA 24th Edition 4500-Cl	mg/l	BQL (0.001)	**0.2**	**1.0**
19	Iron as Fe	IS 3025 (part 53):2003	mg/l	BQL (0.001)	**0.3**	**No relaxation**
20	Magnesium as Mg	APHA 24th Edition 3500-Mg B	mg/l	36	**30.0**	**100**
21	Manganese as Mn	IS 3025 (part 59):2003	mg/l	BQL (0.001)	**0.1**	**0.3**
22	Nitrate as NO_3	APHA 24th Edition 4500-NO3 B	mg/l	21	**45.0**	**No relaxation**
23	Phenolic compound as C_6H_5OH	APHA 24th Edition 5530-C	mg/l	BQL (0.001)	**0.001**	**0.002**
24	Sulphate (as SO_4)	APHA 24th Edition 4500-SO4 E	mg/l	69	**0.1**	**No relaxation**
25	Sulphide (as H_2S)	APHA 24th Edition 4500-S2	mg/l	BQL (0.001)	**200**	**400**
26	Alkalinity to Phenolphthalein	APHA 24th Edition 2320-B	mg/l	BQL (0.001)	**0.05**	**No relaxation**
27	Alkalinity to methyl orange	APHA 24th Edition 2320-B	mg/l	140	**200**	**600**
28	Total Hardness (as $CaCO_3$)	APHA 24th Edition 2340-C	mg/l	316	**200**	**600**
29	Zinc (as Zn)	IS 3025 (part 49):2003	mg/l	BQL (0.001)	**5.0**	**15**
30	Cadmium (as Cd)	IS 3025 (part 41):2003	mg/l	BQL (0.001)	**0.003**	**No relaxation**
31	Lead (as Pb)	IS 3025 (part 47):2003	mg/l	BQL (0.001)	**0.01**	**No relaxation**
32	Mercury (as Hg)	IS 3025 (part 48):2003	mg/l	BQL (0.001)	**0.001**	**No relaxation**
33	Nickel (as Ni)	IS 3025 (part 54):2003	mg/l	BQL (0.001)	**0.07**	**No relaxation**
34	Coliforms	IS 15185 : 2016	MPN/100 ml	Absent	**Absent**	**Absent**
35	Escherichia Coli	IS 15185 : 2016	MPN/100 ml	Absent	**Absent**	**Absent**
36	F.Coliforms	IS 15185 : 2016	MPN/100 ml	Absent	**Absent**	**Absent**
37	Total Plate Count	IS 15185 : 2016	Cfu/ml	Absent	**Absent**	**Absent**

Note:, BQL - Below Quantification Limit, µg/m³ - Micrograms per cubic meter, mg/m³ - Milligrams Per cubic meter, APHA – American public Health Association.

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TC-15901

TEST REPORT

Report Number	TC159012026218718F	Report Date	04.04.2026
Customer Name & Address		Mr. M. Kumaravadivel- Rough Stone & Gravel Quarry, S. F. No: 775/1D, 775/1E (Part) & 807/2A (Part), Anjur Village, Pugalur Taluk, Karur District.	
Sample Discipline	Water – BW 1	Sample Condition	Good
Sample Location	Thottiyapalayam 11°3'10.11"N 77°46'1.52"E	Date Of Sampling	31.03.2026
Sample Method	AAL/SOP/02/2025	Analysis Starting Date	01.04.2026
Sample Drawn By	M/s. Accuracy Analabs	Analysis Completion Date	04.04.2026

S.No	PARAMETERS	Test Method	Unit	Result	IS:10500:2012 LIMITS	
					Acceptable	Permissible
1	pH @25^{0}C	APHA 24th Edition 4500-H+ B	-	7.47	6.5 - 8.5	No relaxation
2	Colour	APHA 24th Edition 2120-C	Hazen	BQL (1.0)	5.0	15
3	Odour	IS 3025 (Part 5)	Odourless	Agreeable	Agreeable	Agreeable
4	Temperature	IS 3025 Part 9 : 2018	^{0}C	25	-	-
5	Taste	IS 3025 Part 7 :2022	Agreeable	Agreeable	Agreeable	Agreeable
6	Turbidity	APHA 24th Edition 2130-B	NTU	BQL (1.0)	1.0	5.0
7	Electrical Conductivity @ 25^{0}C	APHA 24th Edition 2510 B	µs/cm	928	-	-
8	Total Dissolved Solids	APHA 24th Edition 2540-C	mg/L	668	500	2000
9	Aluminium as Al	IS 3025 (part 55):2003	mg/L	BQL (0.001)	0.03	0.2
10	Ammonia as total ammonia - N	APHA 24th Edition 4500 NH3 - B,C	mg/L	BQL (0.001)	0.5	No relaxation
11	Barium as Ba	IS 13428 (Anneure G):2024	mg/L	BQL (0.001)	0.7	No relaxation
12	Boron as B	IS 13428 (Anneure J):2003	mg/L	BQL (0.001)	0.5	1.0
13	Calcium as Ca	APHA 24th Edition 3500-Ca B	mg/L	72	75.0	200
14	Chloramines	APHA 24th Edition 4500-Cl	mg/L	BQL (0.001)	4.0	No relaxation
15	Chloride as Cl	APHA 24th Edition 4500-Cl B	mg/L	104	250	1000

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TC-15901

TEST REPORT

Report Number: TC159012026218718F **Report Date: 04.04.2026**

S.No	PARAMETERS	Test Method	Unit	Result	IS:10500:2012 LIMITS	
					Acceptable	Permissible
16	Copper as Cu	IS 3025 (part 42):2003	-	BQL (0.001)	0.05	1.5
17	Fluoride as F	APHA 24th Edition 4500-F D	mg/l	BQL (0.001)	1.0	1.5
18	Free Residual chlorine	APHA 24th Edition 4500-Cl	mg/l	BQL (0.001)	0.2	1.0
19	Iron as Fe	IS 3025 (part 53):2003	mg/l	BQL (0.001)	0.3	No relaxation
20	Magnesium as Mg	APHA 24th Edition 3500-Mg B	mg/l	34	30.0	100
21	Manganese as Mn	IS 3025 (part 59):2003	mg/l	BQL (0.001)	0.1	0.3
22	Nitrate as NO_3	APHA 24th Edition 4500-NO3 B	mg/l	23	45.0	No relaxation
23	Phenolic compound as C_6H_5OH	APHA 24th Edition 5530-C	mg/l	BQL (0.001)	0.001	0.002
24	Sulphate (as SO_4)	APHA 24th Edition 4500-SO4 E	mg/l	59	0.1	No relaxation
25	Sulphide (as H_2S)	APHA 24th Edition 4500-S2	mg/l	BQL (0.001)	200	400
26	Alkalinity to Phenolphthalein	APHA 24th Edition 2320-B	mg/l	BQL (0.001)	0.05	No relaxation
27	Alkalinity to methyl orange	APHA 24th Edition 2320-B	mg/l	246	200	600
28	Total Hardness (as $CaCO_3$)	APHA 24th Edition 2340-C	mg/l	328	200	600
29	Zinc (as Zn)	IS 3025 (part 49):2003	mg/l	BQL (0.001)	5.0	15
30	Cadmium (as Cd)	IS 3025 (part 41):2003	mg/l	BQL (0.001)	0.003	No relaxation
31	Lead (as Pb)	IS 3025 (part 47):2003	mg/l	BQL (0.001)	0.01	No relaxation
32	Mercury (as Hg)	IS 3025 (part 48):2003	mg/l	BQL (0.001)	0.001	No relaxation
33	Nickel (as Ni)	IS 3025 (part 54):2003	mg/l	BQL (0.001)	0.07	No relaxation

Note:, BQL - Below Quantification Limit, $\mu g/m^3$ - Micrograms per cubic meter, mg/m^3 - Milligrams Per cubic meter, APHA – American public Health Association.

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TC-15901

TEST REPORT

Report Number	TC159012026218719F	Report Date	04.04.2026
Customer Name & Address		Mr. M. Kumaravadivel- Rough Stone & Gravel Quarry, S. F. No: 775/1D, 775/1E (Part) & 807/2A (Part), Anjur Village, Pugalur Taluk, Karur District.	
Sample Discipline	Water – OW 3	Sample Condition	Good
Sample Location	Oodayam- 11°1'38.90"N 77°46'56.63"E	Date Of Sampling	31.03.2026
Sample Method	AAL/SOP/02/2025	Analysis Starting Date	01.04.2026
Sample Drawn By	M/s. Accuracy Analabs	Analysis Completion Date	04.04.2026

S.No	PARAMETERS	Test Method	Unit	Result	IS:10500:2012 LIMITS	
					Acceptable	Permissible
1	pH @25^{0}C	APHA 24th Edition 4500-H+ B	-	7.28	6.5 - 8.5	No relaxation
2	Colour	APHA 24th Edition 2120-C	Hazen	BQL (1.0)	5.0	15
3	Odour	IS 3025 (Part 5)	Odourless	Agreeable	Agreeable	Agreeable
4	Temperature	IS 3025 Part 9 : 2018	^{0}C	25	-	-
5	Taste	IS 3025 Part 7 :2022	Agreeable	Agreeable	Agreeable	Agreeable
6	Turbidity	APHA 24th Edition 2130-B	NTU	BQL (1.0)	1.0	5.0
7	Electrical Conductivity @ 25^{0}C	APHA 24th Edition 2510 B	µs/cm	1040	-	-
8	Total Dissolved Solids	APHA 24th Edition 2540-C	mg/L	722	500	2000
9	Aluminium as Al	IS 3025 (part 55):2003	mg/L	BQL (0.001)	0.03	0.2
10	Ammonia as total ammonia - N	APHA 24th Edition 4500 NH3 - B,C	mg/L	BQL (0.001)	0.5	No relaxation
11	Barium as Ba	IS 13428 (Anneure G):2024	mg/L	BQL (0.001)	0.7	No relaxation
12	Boron as B	IS 13428 (Anneure J):2003	mg/L	BQL (0.001)	0.5	1.0
13	Calcium as Ca	APHA 24th Edition 3500-Ca B	mg/L	113	75.0	200
14	Chloramines	APHA 24th Edition 4500-Cl	mg/L	BQL (0.001)	4.0	No relaxation
15	Chloride as Cl	APHA 24th Edition 4500-Cl B	mg/L	155	250	1000

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TC-15901

TEST REPORT

Report Number: TC1590120262187l9F **Report Date: 04.04.2026**

S.No	PARAMETERS	Test Method	Unit	Result	IS:10500:2012 LIMITS	
					Acceptable	Permissible
16	Copper as Cu	IS 3025 (part 42):2003	-	BQL (0.001)	0.05	1.5
17	Fluoride as F	APHA 24th Edition 4500-F D	mg/l	BQL (0.001)	1.0	1.5
18	Free Residual chlorine	APHA 24th Edition 4500-Cl	mg/l	BQL (0.001)	0.2	1.0
19	Iron as Fe	IS 3025 (part 53):2003	mg/l	BQL (0.001)	0.3	No relaxation
20	Magnesium as Mg	APHA 24th Edition 3500-Mg B	mg/l	35	30.0	100
21	Manganese as Mn	IS 3025 (part 59):2003	mg/l	BQL (0.001)	0.1	0.3
22	Nitrate as NO_3	APHA 24th Edition 4500-NO3 B	mg/l	27	45.0	No relaxation
23	Phenolic compound as C_6H_5OH	APHA 24th Edition 5530-C	mg/l	BQL (0.001)	0.001	0.002
24	Sulphate (as SO_4)	APHA 24th Edition 4500-SO4 E	mg/l	61	0.1	No relaxation
25	Sulphide (as H_2S)	APHA 24th Edition 4500-S2	mg/l	BQL (0.001)	200	400
26	Alkalinity to Phenolphthalein	APHA 24th Edition 2320-B	mg/l	BQL (0.001)	0.05	No relaxation
27	Alkalinity to methyl orange	APHA 24th Edition 2320-B	mg/l	240	200	600
28	Total Hardness (as $CaCO_3$)	APHA 24th Edition 2340-C	mg/l	420	200	600
29	Zinc (as Zn)	IS 3025 (part 49):2003	mg/l	BQL (0.001)	5.0	15
30	Cadmium (as Cd)	IS 3025 (part 41):2003	mg/l	BQL (0.001)	0.003	No relaxation
31	Lead (as Pb)	IS 3025 (part 47):2003	mg/l	BQL (0.001)	0.01	No relaxation
32	Mercury (as Hg)	IS 3025 (part 48):2003	mg/l	BQL (0.001)	0.001	No relaxation
33	Nickel (as Ni)	IS 3025 (part 54):2003	mg/l	BQL (0.001)	0.07	No relaxation
34	Coliforms	IS 15185 : 2016	MPN/ 100ml	Absent	Absent	Absent
35	Escherichia Coli	IS 15185 : 2016	MPN/ 100ml	Absent	Absent	Absent
36	F.Coliforms	IS 15185 : 2016	MPN/ 100ml	Absent	Absent	Absent
37	Total Plate Count	IS 15185 : 2016	Cfu/ml	Absent	Absent	Absent

Note:, BQL - Below Quantification Limit, $\mu g/m^3$ - Micrograms per cubic meter, mg/m^3 - Milligrams Per cubic meter, APHA – American public Health Association.

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(NABL Accredited Laboratory)

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Near Collectorate Backside,Chettinayakkanpatti,Dindigul-624004,PH:9589554854,
Web: www.accuracyanalabs.in, Mail ID: accuracyanalabs@gmail.com

TC-15901

TEST REPORT

Report Number	TC159012026218720F	Report Date	04.04.2026
Customer Name & Address		Mr. M. Kumaravadivel- Rough Stone & Gravel Quarry, S. F. No: 775/1D, 775/1E (Part) & 807/2A (Part), Anjur Village, Pugalur Taluk, Karur District.	

Sample Discipline	Soil	**Sample Condition**	Good
Sample Location	Core - 11°3'13.66"N 77°47'3.92"E	**Date Of Sampling**	31.03.2026
Sampling Method	AAL/SOP/02/2025	**Analysis Starting Date**	01.04.2026
Sample Drawn By	M/s. Accuracy Analabs	**Analysis Completion Date**	04.04.2026

S.No	PARAMETERS	Test Method	Unit	Result		
1	Textural Classification	Methods Manual Soil Testing in India	-	(97.9 % passes)		
				Sand%	Silt %	Clay%
				20.8	68	9.1
2	pH in 5% of solution		-	7.77		
3	Electrical Conductivity		dS/m	0.35		
4	Organic Carbon		%	2.2		
5	Moisture		%	9.18		
6	Organic Matter		mg/kg	3.14		
7	Nitrogen		mg/kg	40		
8	Phosphorous		mg/kg	17		
9	Potassium		mg/kg	69		
10	Iron		mg/kg	3.7		
11	Manganese		mg/kg	3.8		
12	Zinc		mg/kg	0.5		
13	Copper		mg/kg	0.8		
14	Sodium Adsorption Ratio (SAR)		-	7		

Note: SAR-Sodium absorption ratio, kg/ha – kilogram/hectare, me/100g – milliequivilents per 100gram, ms/cm – micro Siemens per centimeter

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TC-15901

TEST REPORT

Report Number	TC159012026218721F	Report Date	04.04.2026
Customer Name & Address		Mr. M. Kumaravadivel- Rough Stone & Gravel Quarry, S. F. No: 775/1D, 775/1E (Part) & 807/2A (Part), Anjur Village, Pugalur Taluk, Karur District.	

Sample Discipline	Soil and Rocks	**Sample Condition**	Good
Sample Location	Kulathupalayam - 11°3'37.14"N 77°47'13.67"E	**Date Of Sampling**	31.03.2026
Sampling Method	AAL/SOP/02/2025	**Analysis Starting Date**	01.04.2026
Sample Drawn By	M/s. Accuracy Analabs	**Analysis Completion Date**	04.04.2026

S.No	PARAMETERS	Test Method	Unit	Result		
	Physical Parameters					
1	Textural Classification	Methods Manual Soil Testing in India	-	(98.3 % passes)		
				Sand%	**Silt %**	**Clay%**
				23	64.1	11.2
2	pH in 5% of solution		-	8.21		
3	Electrical Conductivity		dS/m	0.21		
4	Organic Carbon		%	1.9		
5	Moisture		%	7.45		
6	Organic Matter		mg/kg	2.94		
	Macro Nutrients					
7	Nitrogen	Methods Manual Soil Testing in India	mg/kg	42		
8	Phosphorous		mg/kg	20		
9	Potassium		mg/kg	71		
	Micronutrients					
10	Iron	Methods Manual Soil Testing in India	mg/kg	2.4		
11	Manganese		mg/kg	3.8		
12	Zinc		mg/kg	0.8		
13	Copper		mg/kg	0.5		
14	Sodium Adsorption Ratio (SAR)		-	7		

Note: SAR-Sodium absorption ratio, kg/ha – kilogram/hectare, me/100g – milliequivillents per 100gram, mx/cm –,micro Siemens per centimeter

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TC-15901

TEST REPORT

Report Number	TC159012026218722F	Report Date	04.04.2026
Customer Name & Address		Mr. M. Kumaravadivel- Rough Stone & Gravel Quarry, S. F. No: 775/1D, 775/1E (Part) & 807/2A (Part), Anjur Village, Pugalur Taluk, Karur District.	
Sample Discipline	Soil	Sample Condition	Good
Sample Location	Thottiyapalayam -11°3'10.02"N 77°46'0.44"E	Date Of Sampling	31.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	01.04.2026
Sample Drawn By	M/s. Accuracy Analabs	Analysis Completion Date	04.04.2026

S.No	PARAMETERS	Test Method	Unit	Result		
	Physical Parameters					
1	Textural Classification	Methods Manual Soil Testing in India	-	(98.7 % passes)		
				Sand%	Silt %	Clay%
				20.9	65	12.8
2	pH in 5% of solution		-	7.21		
3	Electrical Conductivity		dS/m	0.24		
4	Organic Carbon		%	1.8		
5	Moisture		%	10.1		
6	Organic Matter		mg/kg	3.24		
	Macro Nutrients					
7	Nitrogen	Methods Manual Soil Testing in India	mg/kg	31		
8	Phosphorous		mg/kg	18		
9	Potassium		mg/kg	50		
	Micronutrients					
10	Iron	Methods Manual Soil Testing in India	mg/kg	3.0		
11	Manganese		mg/kg	4.5		
12	Zinc		mg/kg	1.2		
13	Copper		mg/kg	1.5		
14	Sodium Adsorption Ratio (SAR)		-	9		

Note: SAR-Sodium absorption ratio, kg/ha – kilogram/hectare, me/100g – milliequivilentz per 100gram, ms/cm – micro Siemens per centimeter

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TC-15901

TEST REPORT

Report Number	TC159012026218723F	Report Date	04.04.2026
Customer Name & Address		Mr. M. Kumaravadivel- Rough Stone & Gravel Quarry, S. F. No: 775/1D, 775/1E (Part) & 807/2A (Part), Anjur Village, Pugalur Taluk, Karur District.	
Sample Discipline	Soil	Sample Condition	Good
Sample Location	Oodayam - 11°1'38.32"N 77°46'56.77"E	Date Of Sampling	31.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	01.04.2026
Sample Drawn By	M/s. Accuracy Analabs	Analysis Completion Date	04.04.2026

S.No	PARAMETERS	Test Method	Unit	Result
	Physical Parameters			
1	Textural Classification	Methods Manual Soil Testing in India	-	(98.9 % passes) Sand% 24 / Silt % 60.4 / Clay% 14.5
2	pH in 5% of solution		-	7.89
3	Electrical Conductivity		dS/m	0.24
4	Organic Carbon		%	1.2
5	Moisture		%	7.65
6	Organic Matter		mg/kg	2.49
	Macro Nutrients			
7	Nitrogen	Methods Manual Soil Testing in India	mg/kg	38
8	Phosphorous		mg/kg	19
9	Potassium		mg/kg	65
	Micronutrients			
10	Iron	Methods Manual Soil Testing in India	mg/kg	2.4
11	Manganese		mg/kg	3.4
12	Zinc		mg/kg	0.9
13	Copper		mg/kg	1.6
14	Sodium Adsorption Ratio (SAR)		-	5

Note: SAR-Sodium absorption ratio, kg/ha – kilogram/hectare, me/100g – milliequivillents per 100grams, ms/cm – micro Siemens per centimeter

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Web: www.accuracyanalabs.in, Mail ID: accuracyanalabs@gmail.com

TC-15901

TEST REPORT

Report Number	TC159012026218724F	Report Date	04.04.2026
Customer Name & Address		Mr. M. Kumaravadivel- Rough Stone & Gravel Quarry, S. F. No: 775/1D, 775/1E (Part) & 807/2A (Part), Anjur Village, Pugalur Taluk, Karur District.	
Sample Discipline	Soil	Sample Condition	Good
Sample Location	Pillapalayam - 11°3'30.50"N 77°48'8.22"E	Date Of Sampling	31.03.2026
Sampling Method	AAL/SOP/02/2025	Analysis Starting Date	01.04.2026
Sample Drawn By	M/s. Accuracy Analabs	Analysis Completion Date	04.04.2026

S.No	PARAMETERS	Test Method	Unit	Result		
	Physical Parameters					
1	Textural Classification	Methods Manual Soil Testing in India	-	(98.9 % passes)		
				Sand%	Silt %	Clay%
				21.3	65	12.6
2	pH in 5% of solution		-	7.50		
3	Electrical Conductivity		dS/m	0.30		
4	Organic Carbon		%	2.9		
5	Moisture		%	9.24		
6	Organic Matter		mg/kg	3.07		
	Macro Nutrients					
7	Nitrogen	Methods Manual Soil Testing in India	mg/kg	42		
8	Phosphorous		mg/kg	16		
9	Potassium		mg/kg	65		
	Micronutrients					
10	Iron	Methods Manual Soil Testing in India	mg/kg	2.1		
11	Manganese		mg/kg	3.4		
12	Zinc		mg/kg	1.2		
13	Copper		mg/kg	0.8		
14	Sodium Adsorption Ratio (SAR)		-	12		

Note: SAR-Sodium absorption ratio, kg/ha – kilogram/hectare, me/100g – milliequivilents per 100gram, ms/cm – micro Siemens per centimeter

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From:-

Thiru.V. Sasikumar, M.Sc.,
Deputy Director,
Geology and Mining,
Karur.

To:-

Thiru.M. Kumaravadivel,
S/o.Muthusamy,
No.3/246, Velayuthapalayam,
Anjur, Pandilingapuram,
Pugalur Taluk,
Karur District.

R.C. No.870/Mines/2025, Dated: 21.05.2026

Sir,

Sub: Mines and Minerals – Minor Mineral – Karur District – Pugalur Taluk – Anjur Village - Patta land in S.F.Nos. 775/1D (0.37.00 hectares), 775/1E (Part) (1.05.00 hectares) and 807/2A(Part) (0.30.00 hectares) Over an extent of 1.72.00 hectares - Quarry lease application preferred by Thiru.M.Kumaravadivel for quarrying Rough Stone and Gravel – Mining Plan approved – Requested for the details of existing pits in lease applied field and last transported permit for the earlier lease period of the above mentioned field for getting Environmental Clearance -furnished – Regarding.

Ref:
1. Quarry lease Online application for quarrying Rough stone and Gravel preferred by Thiru.M.Kumaravadivel, S/o.Muthusamy, No.3/246, Velayuthapalayam, Anjur, Pandilingapuram, Pugalur Taluk, Karur District, dated: 18.08.2025.
2. Precise Area Communication Notice Rc.No.870/Mines/2025, Dated:19.12.2025.
3. Mining Plan submitted by Thiru.M.Kumaravadivel, letter received in this office on 07.01.2026.
4. The Deputy Director, Geology and Mining, Karur Mining Plan approved letter Rc.No.870/Mines/2025, Dated:19.01.2026
5. Thiru.M.Kumaravadivel letter received in this office on 18.05.2026.

****

One Thiru.M.Kumaravadivel, S/o.Muthusamy, No.3/246, Velayuthapalayam, Anjur, Pandilingapuram, Pugalur Taluk, Karur District has preferred an online application for the grant of Rough Stone and Gravel quarry lease over an extent of 1.72.00 hectares of patta land in S.F.Nos. 775/1D (0.37.00 hectares), 775/1E (Part) (1.05.00 hectares) and 807/2A(Part) (0.30.00 hectares) of AnjurVillage, Pugalur Taluk, Karur

District for a period of Ten years under 19 (1) and 20 of Tamilnadu Minor Mineral Concession Rules 1959.

In the reference 2nd cited the precise area has been communicated to the applicant based on the recommendation of the Revenue Divisional Officer, Karur and Assistant Geologist of Geology and Mining, Karur.

In the reference 3rd cited the mining plan submitted by Thiru.M.Kumaravadivel for grant of lease to quarry rough stone over an extent of 1.72.00 of patta land in S.F.Nos. 775/1D (0.37.00 hectares), 775/1E (Part) (1.05.00 hectares) and 807/2A(Part) (0.30.00 hectares) of Anjur Village, Pugalur Taluk, Karur District a period of Ten years and the same has been approved by the Deputy Director of Geology and Mining, Karur.

The subject land was previously held under quarry lease are detailed as below.

S. No.	Name of the lessee	Taluk Village	S.F.No. Extent	Proceedings/ Date	Lease period
1.	P.R.Muthusamy	Pugalur (Erst While Aravakurichi) TalukAnjurVillage	775/1E etc., 1.63.0	Rc.No. D/47/2003 Dt:18.7.2003	28.8.2003 to 27.8.2008
2.	P.R.Muthusamy		775/1E, 807/2B 1.63.0	Rc.No. B/266/07 Dt:07.01.2009	30.01.2009 to 29.01.2014
3.	Thiru.P.Ravi,		775/1E(P) 776/3 777/1 778/1A 807/2B 807/2C2 4.40.0	Rc.No.554/Mines/2016, date:21.2.2018	21.2.2018 to 20.2.2023 **Covid Extention** 21.02.2023 to 20.08.2024

In the reference 5th cited the applicant has requested certain details for obtaining Environmental Clearance.

Accordingly, the following remarks are furnished

a)	Original Pit dimension	:	Existing Pit Dimension as per approved Mining Plan and field condition as below		
			Pit	**Area (m^2)**	**Depth (m)**
			I	725	2

b)	Quantity achieved vs EC approved quantity	:	The Ex-lessee has obtained transport permit for previous lease periods. • 28.8.2003 to 27.8.2008 – 4486 cbm (Before EC implementation) • 30.01.2009 to 29.01.2014 - 3900cbm (Before EC implementation) • 21.2.2018 to 20.2.2023– 29850 cbm of Rough Stone and 900 cbm of Gravel • The EC approved quantity for the period 02.04.2012 to 01.04.2017 is 53275 cbm of rough stone and 16,380 cbm. • The EC approved quantity for the period 23.10.2017 to 22.10.2022 is 2,35,359cbmof rough stone and 14742 cbm.
c)	Balance Quantity as per Mineable Reserve calculated.	:	• The Mineable reserve is estimated as 1,83,357 m^3/5,04,232 MT of Rough Stone and 5,643m^3/11,286 MT of Gravel for a period of 10 years.
d)	Mined out Depth as on date Vs EC permitted depth	:	• The Mined-out Depth as per the approved Mining plan is 2m. • Previous EC approved depth is 18m.
e)	Details of illegal/illicit Mining	:	-
f)	Violation in the quarry during the past working	:	-
g)	Quantity of material mined out outside the mine lease area	:	Existing pit situated within the lease granted area
h)	Condition of safe zone/benches	:	Quarry operation carried out 2 m depth only.
i)	Revised/Modified Mining plan showing the benches of not exceeding 6m height and ultimate depth of not exceeding 50m	:	The Project Proponent has proposed to quarry by forming the benches 5m height X 5m width to an ultimate depth of 30m below ground level.

Deputy Director,
Geology and Mining,
Karur.

21/05/24

ந.க.எண்.870/கனிமம்/2025

மாவட்ட ஆட்சியர் அலுவலகம்,
புவியியல் மற்றும் சுரங்கத்துறை,
கரூர்.

நாள்: 19.12.2025.

குறிப்பாணை

பொருள்: **கனிமங்களும் குவாரிகளும்** - கரூர் மாவட்டம், புகளூர் வட்டம், அஞ்சூர் கிராமம், பட்டா புல எண்கள் 775/1D (0.37.00), 775/1E (Part) (1.05.00) மற்றும் 807/2A (Part) (0.30.00) ஆகியவற்றின் மொத்தம் 1.72.00 ஹெக்டேர்ஸ் பரப்பில் **திரு.M.குமாரவடிவேல் த/பெ.முத்துசாமி** என்பவர் விண்ணப்பம் செய்தது - வருவாய் கோட்டாட்சியர் நிலயிருப்பு அறிக்கை வரப்பெற்றது - உதவி புவியியலாளர் புலத்தணிக்கை மேற்கொண்டு அறிக்கை சமர்ப்பித்தது - தகுதியான நிலப்பரப்பாக கருதி ஏற்பளிக்கப்பட்ட சுரங்க திட்டம் மற்றும் மாநில சுற்றுச்சூழல் தாக்கல் மதிப்பீட்டு ஆணைய இசைவினை பெற்று சமர்பிக்கக் கோருதல் - தொடர்பாக.

பார்வை:

1. திரு.M.குமாரவடிவேல், த/பெ.முத்துசாமி, க.எண். 3/246, வேலாயுதம்பாளையம், அஞ்சூர், பாண்டிலிங்கபுரம் புகளூர் வட்டம் கரூர் மாவட்டம் என்பவர் குவாரி குத்தகை உரிமம் வழங்கக் கோரும் இணையவழி விண்ணப்பம் நாள்: 18.08.2025.
2. இதே எண்ணிட்ட இவ்வலுவலக கடிதம் எண் ந.க.எண் 870/கனிமம்/2025 நாள்: 18.08.2025.
3. வருவாய் கோட்டாட்சியர், கரூர் அவர்களின் நில இருப்பு அறிக்கை ந.க.எண். அ1/6783/2025, நாள் : 31.10.2025
4. திரு.M.குமாரவடிவேல், என்பவரின் கடித நாள் 14.11.2025
5. உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை கரூர் என்பவரது புலத்தணிக்கை அறிக்கை நாள்: 19.11.2025.
6. அரசாணை (பல்வகை) எண். 169, தொழில் (எம்.எம்.சி-1) துறை நாள்: 04.08.2020 இணைத்து வரப்பெற்றுள்ளது. (தமிழ்நாடு அரசிதழ் சிறப்பு வெளியீடு எண். 315 நாள்: 04.08.2020).
7. அரசாணை (பல்வகை) எண். 37 இயற்கை வளங்கள் (எம்.எம்.சி.1) துறை நாள் 22.04.2025

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கரூர் மாவட்டம், புகளூர் வட்டம், அஞ்சூர் கிராமம், பட்டா புல எண்கள் 775/1D (0.37.00), 775/1E (Part) (1.05.00) மற்றும் 807/2A (Part) (0.30.00) ஆகியவற்றின் மொத்தம் 1.72.00 ஹெக்டேர்ஸ் பரப்பு நிலத்திலிருந்து ஐந்து ஆண்டுகளுக்கு சாதாரண கற்கள் மற்றும் கிராவல் வெட்டியெடுக்க க.எண். 3/246, வேலாயுதம்பாளையம், அஞ்சூர், பாண்டிலிங்கபுரம் புகளூர் வட்டம் கரூர் மாவட்டம், என்ற முகவரியில் இருக்கும் **திரு.M.குமாரவடிவேல்**

த/பெ.முத்துசாமி, என்பவர் பார்வை 1-இல் கண்டுள்ளவாறு இணைய வழியில் விண்ணப்பம் செய்துள்ளார்.

மேற்படி விண்ணப்பம் தொடர்பாக, பார்வை 3-இல் வருவாய் கோட்டாட்சியர், கரூர் அவர்கள் புலத்தணிக்கை மேற்கொண்டு கரூர் மாவட்டம், புகளூர் வட்டம், அஞ்சூர் கிராமம், பட்டா புல எண்கள் 775/1D (0.37.00), 775/1E (Part) (1.05.00) மற்றும் 807/2A (Part) (0.30.00) ஆகியவற்றின் மொத்தம் 1.72.00 ஹெக்டேர்ஸில் மட்டும் **திரு.M.குமாரவடிவேல் த/பெ.முத்துசாமி** என்பவருக்கு ஐந்து ஆண்டுகளுக்கு சாதாரண கற்கள் மற்றும் கிராவல் குவாரி உரிமம் வழங்க அனுமதி வழங்கலாம் என பரிந்துரை செய்துள்ளார்.

இந்நிலையில் பார்வை-4இல் கண்டுள்ளவாறு விண்ணப்பதாரர் குமாரவடிவேல் என்பவர் மேற்படி கரூர் மாவட்டம், புகளூர் வட்டம், அஞ்சூர் கிராமம், பட்டா புல எண்கள் 775/1D (0.37.00), 775/1E (Part) (1.05.00) மற்றும் 807/2A (Part) (0.30.00) ஆகியவற்றின் மொத்தம் 1.72.00 ஹெக்டேர்ஸில் 5 வருட காலத்திற்கு இணையவழியில் குவாரி குத்தகை உரிமம் கோரி விண்ணப்பம் செய்திருந்ததாகவும் அரசாணை எண். 37, நாள்: 22.04.2025-இன்படி ஏற்கனவே குவாரி குத்தகை உரிமம் வழங்கப்பட்ட புலங்களில் மீண்டும் குவாரி குத்தகை உரிமம் வழங்கும் போது 5 வருட காலத்திலிருந்து 10 வருடங்கலாக கால நீட்டிப்பு செய்யப்பட்டுள்ளதை தெரிந்து கொண்டதாகவும் எனவே, தான் குவாரி குத்தகை உரிமம் கோரி சமர்ப்பித்திருந்த விண்ணப்பத்தினை 5 வருடங்களிலிருந்து 10 வருட காலத்திற்கு நீட்டித்து வழங்குமாறு கோரியுள்ளார்.

மேற்படி விண்ணப்பம் தொடர்பாக, பார்வை-5 இல் கண்டவாறு உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை, கரூர் மற்றும் தனிவருவாய் ஆய்வாளர் (கனிமம்) கரூர் ஆகியோர்கள் புலத்தணிக்கை மேற்கொண்டு கரூர் மாவட்டம், புகளூர் வட்டம், அஞ்சூர் கிராமம், பட்டா புல எண்கள் 775/1D (0.37.00), 775/1E (Part) (1.05.00) மற்றும் 807/2A (Part) (0.30.00) ஆகியவற்றின் மொத்தம் 1.72.00 ஹெக்டேர்ஸில் மட்டும் தமிழ்நாடு சிறுகனிம சலுகை விதிகள்1959 விதி எண். 19(1), 20, 33 மற்றும் அரசாணை (பல்வகை) எண். 37 இயற்கை வளங்கள் (எம்.எம்.சி.1) துறை நாள் 22.04.2025-இன்படி **திரு.M.குமாரவடிவேல் த/பெ.முத்துசாமி** என்பவருக்கு பத்து ஆண்டுகளுக்கு சாதாரண கற்கள் மற்றும் கிராவல் குவாரி உரிமம் வழங்க கீழ்கண்ட நிபந்தனைகளுக்குட்பட்டு அனுமதி வழங்கலாம் என பரிந்துரை செய்துள்ளார்.

சிறப்பு நிபந்தனைகள்:-

1) விண்ணப்ப புலத்திற்கு மேற்கு பகுதியில் புல எண் 775/1E-இல் அமைந்துள்ள பட்டா பாதைக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குவாரி பணி செய்ய வேண்டும்.

எனவே, வருவாய் கோட்டாட்சியர், கரூர் மற்றும் உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை, கரூர் ஆகியோர்களின் பரிந்துரைகள் மற்றும் நிபந்தனைகளின் அடிப்படையில் கரூர் மாவட்டம், புகளூர் வட்டம், அஞ்சூர் கிராமம், பட்டா புல எண்கள் 775/1D (0.37.00), 775/1E (Part) (1.05.00) மற்றும் 807/2A (Part) (0.30.00) ஆகியவற்றின் மொத்தம் 1.72.00 ஹெக்டேர்ஸில் 1959-ம் வருட தமிழ்நாடு சிறு கனிமச்சலுகை விதிகளில் விதி எண்கள்.19-(1), 20, 33 மற்றும் அரசாணை (பல்வகை) எண். 37 இயற்கை வளங்கள் (எம்.எம்.சி.1) துறை நாள் 22.04.2025-இன்படியும் மேலும் கீழ்கண்ட நிபந்தனைகளுக்கு உட்பட்டு பத்து வருட காலத்திற்கு **திரு.M.குமாரவடிவேல் த/பெ.முத்துசாமி**, என்பவருக்கு சாதாரண கற்கள் மற்றும் முதல் மூன்று ஆண்டுகளுக்கு கிராவல் குவாரி உரிமம் வழங்குவதற்குரிய தகுதியான நிலப்பரப்பாக கருதப்படுகிறது.

சிறப்பு நிபந்தனைகள்:-

1) விண்ணப்ப புலத்திற்கு மேற்கு பகுதியில் புல எண் 775/1E-இல் அமைந்துள்ள பட்டா பாதைக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளிவிட்டு குவாரி பணி செய்ய வேண்டும்.

நிபந்தனைகள்:-

1. விண்ணப்ப புலத்திற்கு அருகில் உள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் மற்றும் புறம்போக்கு நிலத்திற்கு 10 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு யாதொரு சேதமுமின்றி முறையாக குவாரிப்பணி செய்ய வேண்டும்.

2. குத்தகைக்காலத்தில் கைத்துளைப்பான் கருவி கொண்டு பாறைகளை துளையிட்டும், மிதமான வெடிபொருள் பயன்படுத்தியும், பொதுமக்களுக்கோ, பொது சொத்துக்களுக்கோ யாதொரு சேதமுமின்றி விதிமுறைகளின்படி குவாரிப்பணி செய்ய வேண்டும்.

3. குவாரித் தொழிலாளர்களின் பாதுகாப்பினை உறுதி செய்ய Mettaliferrous Mines, விதிகளின்படி அகலமானதும், பாதுகாப்பானதுமான Benches அமைத்து பாதுகாப்பான முறையில் குவாரிக்குள் வாகனங்கள் சென்றுவரவும் மற்றும் குவாரி தொழிலாளர்களின் பாதுகாப்பினை உறுதி செய்தும் குவாரிப்பணி செய்ய வேண்டும்.

4. குவாரி குத்தகை வழங்க ஏதுவாக துணை இயக்குநர் (சுரங்கம்) அவர்களால் ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தினையும், மாநில அளவிலான சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் (SEIAA) அனுமதி பெற்று மாவட்ட நிர்வாகத்திற்கு விண்ணப்பதாரரால் சமர்ப்பிக்கப்பட வேண்டும்.

மேலும், தமிழ்நாடு சிறு கனிம சலுகை விதிகள்-1959 விதி எண்.41-இன்படி குவாரிப்பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்க திட்டத்தினை 90 தினங்களுக்குள் சமர்ப்பிக்குமாறு **திரு.M.குமாரவடிவேல் த/பெ.முத்துசாமி,** என்பவர் கேட்டுக்கொள்ளப்படுகிறார். மேலும் ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தின் தொடர்ச்சியாக 1959-ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள், விதி எண்.42-இன்படி சுற்றுச்சூழல் தாக்கல் மதிப்பீட்டு ஆணையத்தின் இசைவினைப் பெற்று சமர்பிக்கும் பட்சத்தில் மட்டுமே குவாரி உரிமம் வழங்கப்படும் என இதன் மூலம் தெரிவிக்கப்படுகிறது.

19/12/25

துணை இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
கரூர்.

பெறுநர்:-

திரு.M.குமாரவடிவேல்,
த/பெ/முத்துசாமி, க.எண். 3/246,
வேலாயுதம்பாளையம், அஞ்சூர்,
பாண்டிலிங்கபுரம்,
புகளூர் வட்டம், கரூர் மாவட்டம்.

19.12.25

நகல்:-

1. மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையம், சென்னை.
2. இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கிண்டி, சென்னை.

Green Belt Development, Fencing Photo and Water sprinkling

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, Tamil Nadu, India, Karur, Tamil Nadu , India
Lat 11.053663° Long 77.784457°
Friday, 29/05/2026 11:48 AM GMT +05:30
Google

GPS Map Camera
Karur, Tamil Nadu, India
, Tamil Nadu, India, Karur, Tamil Nadu , India
Lat 11.05369° Long 77.784468°
Friday, 29/05/2026 11:45 AM GMT +05:30
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S. No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1.	Mining of minerals - including opencast and underground mining	1	1 (a) (i)	A

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RAAC minutes dated January 24, 2024, posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no QCI/NABET/ENV/ACO/24/3142 dated Feb 19, 2024. The accreditation needs to be renewed before the expiry date by Geo Technical Mining Solutions, Dharmapuri following due process of assessment.

Issue Date
Feb 19, 2024

Valid up to
Dec 31, 2026

Mr. Ajay Kumar Jha
Sr. Director, NABET

Certificate No.
NABET/EIA/23-26/RA 0319

Prof (Dr) Varinder S Kanwar
(CEO NABET)

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