

DRAFT EIA / EMP REPORT

FOR

ROUGH STONE AND GRAVEL QUARRY

A. Project Proponent Details	
Name	THIRU. S. BALAKRISHNAN
Address	1/105, West Street, Vellur, Virudhunagar Taluk, Virudhunagar District – 626 005
B. Location Details	
Extent	1.60.50 HA
Survey No.	203/7
Location	APPAYANAICKENPATTI VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR DISTRICT, TAMIL NADU
C. Production Details	
Total Production	ROUGH STONE - 1,85,232 m ³ , GRAVEL - 11,834 m ³
Depth	39 m
Lease Period	10 YEARS
D. EIA/EMP details	
ToR reference	TO25B0108TN5106991N DATED 07.04.2025
Baseline Monitoring	SUMMER SEASON (MAR - MAY 2025)

CONSULTANT

CREATIVE ENGINEERS & CONSULTANTS



NABET ACCREDITED CONSULTANCY, NABL ACCREDITED TESTING LAB

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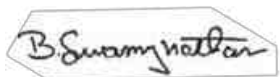
JULY 2025

PRO CODE: CEC/EMP/MI-238

REVISIONS OF EIA/EMP REPORT

Revision number	Report Status	Date of submission
00/JULY/25	Draft EIA /EMP Report	17.07.2025

Environmental Impact Assessment & Environmental Management Plan Report for Rough Stone and Gravel Quarry of Thiru. S. Balakrishnan, survey No. 203/7 over an area of 1.60.50 Ha In Appayanayyakanpatti Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu and authorized for submission by Dr. B. Swamynathan, EIA Coordinator on 17.07.2025 after due review by the personnel and consultation with the project proponents. Current Revision number of the EIA/EMP report is 00/JULY/25, signifying as per the revision mentioned in the above table that this is a draft EIA/EMP report.



Signature:

Date: 17.07.2025

PROJECT PROPONENT DECLARATION

I, Thiru. S. Balakrishnan received Terms of Reference under EIA Notification 2006 from SEIAA, Tamil Nadu vide their letter TO25B0108TN5106991N dated 07.04.2025 for Rough Stone & Gravel Quarry at Survey No. 203/7 over an area Of 1.60.50 Ha In Appayanayakanpatti Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu.

We have entrusted the EIA study to M/s. Creative Engineers & Consultants (CEC), Chennai who have been accredited by the National Accreditation Board for Education & Training (NABET), Quality Council of India with their accreditation valid upto 23.12.2026

The Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) have been prepared as per the generic structure proposed in the EIA notification 2006, ToR issued by SEIAA, Tamil Nadu. The prescribed ToR along with compliance is also incorporated in the EIA/EMP Report.

This report is prepared based on the information and data obtained from the Mining Plan and other records and the field study carried out by the consultant. The data given in the EIA/EMP report are factually correct to the best of my knowledge.

Signature:



For Thiru. S. Balakrishnan

Date: 17.07.2025



CREATIVE ENGINEERS & CONSULTANTS

(NABET ACCREDITED, NABL ACCREDITED TESTING LABORATORY,
DEPARTMENT OF INDUSTRIES AND COMMERCE REGISTERED COMPANY)

EIA Consultant Undertaking

[In compliance with MoEF Office Memorandum No. J-11013/41/2006-IA.II (I) dated 04.08.2009]

Creative Engineers & Consultants (CEC) is an NABL accredited testing Laboratory, and also NABET accredited Category-A environment consultancy organization for preparing EIA/EMP reports for the sectors Mining of minerals, Thermal power plants, Mineral Beneficiation & Cement plants.

CEC has been accredited by the National Accreditation Board for Education & Training (NABET), Quality Council of India for empanelment of EIA Consultants with accreditation valid unto 23.12.2026.

Thiru. S. Balakrishnan received Terms of Reference under EIA Notification 2006 from SEIAA, Tamil Nadu vide their letter TO25B0108TN5106991N dated 07.04.2025 for Rough Stone and Gravel Quarry at Survey No. 203/7 over an area of 1.60.50 Ha In Appayanayyakanpatti Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu.

The prescribed TOR is complied with and incorporated in the EIA Report and submitted. This report is based on the information and data obtained from Approved Mining Plan, other records and data from the field study by CEC. The data generated and given in the EIA/EMP Report are factually correct. The sample analyses are carried out through CEC's laboratory.

(P. Giri)

Chief Executive & EIA Coordinator

Creative Engineers & Consultants

Date: 17.07.2025

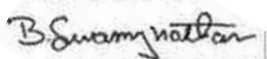
Annexure – VII

Declaration by Experts contributing to the EIA Report for

DRAFT EIA/EMP REPORT FOR ROUGH STONE & GRAVEL QUARRY OF THIRU. S. BALAKRISHNAN, AT SURVEY NO. 203/7 OVER AN AREA OF 1.60.50 HA IN APPAYANAYYAKANPATTI VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR DISTRICT, TAMIL NADU.

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

EIA coordinator:



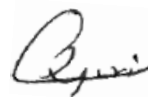
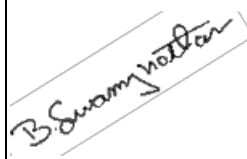
Name: **B.Swamynathan**

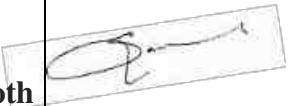
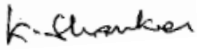
Signature and Date: 17.07.2025

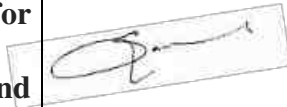
Period of involvement: **Jan 2025 onwards**

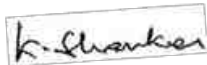
Contact information:

Functional area experts:

S. No.	Functional areas	Name of the expert/s	Involvement (period and task**)	Signature and date
1	AP*	P.Giri	• Identification of baseline monitoring stations and study of the monitored data with respect to the applicable standards. • Identification of sources of air pollution comprising dust, gaseous emission due to mining & other activities • Identification of Impacts & suggestion of mitigation measures Period: Jan 2025 onwards	
		B.Swamynathan	• Data interpretation of Micro meteorological data for wind rose. • Identification of polluting source and suggestion of suitable mitigation measures. Period: Jan 2025 onwards	

2	WP*	G.Sandhya	• Study of the monitored data with respect to the applicable standards. • Identification of Water requirement & Source • Preparation of water balance diagram • Identification of Water polluting sources • Impact of the project on the water quality, both surface and groundwater • Suggestion of Mitigation measures to control water pollution Period: March 2025 onwards	
3	SHW*	P.Giri	• Quantification of mineral & waste from mining operation • Waste disposal method evaluation • Providing dump management plan • Providing Surface Runoff Management Structure Requirements. • Identification of Hazardous waste and its details of disposal Period: March 2025 onwards	
4	SE*	R.Baburaj	• Identification of villages in the study area and finalization of demographic profile of the villages within the study area. • Preparation of sections relevant to SE functional area in the EIA/EMP report Period: March 2025 onwards	
5	EB*	B.Swamynathan	• Perusal of existing data relevant to this project. • Studying the details of flora and fauna, separately for core, buffer zone and forest area based on primary field survey. • Identification of species , Indicating the Schedule of the fauna present in the study area • Assessment of impact on Biological environment and suggestion of mitigative measures • Collecting & providing details of existing and proposed Green belt development /plantation in the core zone Period: March 2025 onwards	
6	HG*	K.Shankar	• Study of existing surface drainage arrangements in the core and buffer zone, impact due to mining on these drainage courses and suggestion of mitigative measures	

			• Perusal of site specific ground water table details for the core zone and the study area. • Studied the hydrological aspects of surface and groundwater in study area • Study about impact on the hydrology due to mining operation • Suggesting mitigative measures like RWH for enhancement of ground water level Period: March 2025 onwards	
7	GEO*	K.Shankar	• Study of geology of the ML area and the surrounding areas. • Provide details about Mineral composition Period: March 2025 onwards	
8	SC*	B.Swamynathan	• Study of soil profile • Assessment of Impact on soil and suggesting plantation scheme. Period: March 2025 onwards	
9	AQ*	G.Sandhya	• Quantification of emission particulars • Air quality modelling for post project impact on the air quality prediction of the study area. Analysis of the Isopleth generated • Arriving at the post project concentration at the AAQ monitoring locations • Preparation of meteorological data in suitable form for input into the model • Simulation of model for generation of Isopleth and data interpretation. • Studying the impact on AAQ monitoring locations due to the generated emissions. • Preparation of sections relevant to AQ functional area in the EIA/EMP report. Period: March 2025 onwards	
10	NV*	P.Giri	• Identification of baseline monitoring stations and study of the monitored data with respect to the applicable standards. • Predict the noise level and vibration level due to proposed mining operation based on scientific evaluation. • Suggesting the Mitigation measures to control noise pollution, Suggesting the Mitigation measures to	

			control ground vibration Period: March 2025 onwards	
11	LU	B.Swamynathan	• Collection of Remote sensing satellite data to study the land use pattern. • Primary field survey and limited field verification • Preparation of Land use map using Satellite data of the project area separately for the core zone and the buffer zone and providing the land use pattern. Period: March 2025 onwards	
12	RH*	K.Shankar	• Identified Major risks involved in the project Mitigation measures suggested to avoid risk. • Preparation of onsite and offsite emergency management plan Period: March 2025 onwards	

*One TM against each FAE may be shown

**Please attach additional sheet if required

Declaration by the Head of the accredited consultant organization/ authorized person

I, **P.Giri** hereby, confirm that the above mentioned experts prepared the EIA report for **DRAFT EIA/EMP REPORT FOR ROUGH STONE & GRAVEL QUARRY OF THIRU. S. BALAKRISHNAN, AT SURVEY NO. 203/7 OVER AN AREA OF 1.60.50 HA IN APPAYANAYYAKANPATTI VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR DISTRICT, TAMIL NADU STATE**

I also confirm that EIA Coordinator (EC) has gone through the report, and the consultant organization shall be fully accountable for any misleading information. It is certified that no unethical practices, plagiarism involved in carrying out the work and external data / text has not been used without proper acknowledgement while preparing this EIA report.

Signature: 

Name: **P.Giri**

Designation: **Chief Executive**

Name of the EIA consultant organization: **Creative Engineers & Consultants, Chennai – 59**

NABET Certificate No. & Issue Date: **No- NABET/EIA/23-26/RA 0331 & date 23.12.2026**

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* * * * *





File No: 11857
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA),
TAMIL NADU)



Dated **07/04/2025**



To,

Thiru. S. Balakrishnan
Thiru. S. Balakrishnan S/o. Shri. Sankappan, 1/105, West Street, Vellur, Virudhunagar Taluk,
Virudhunagar District – 626 005. , Appayanayyakanpatti, VIRUDHUNAGAR, TAMIL NADU, 626124
aravindh973@gmail.com

Subject: Grant of Terms of Reference under the provision of the EIA Notification 2006-as amended regarding.

Sir/Madam,

SEIAA, Tamil Nadu – Terms of Reference with Public Hearing (ToR) for Proposed Rough Stone and Gravel quarry lease over an extent 1.60.5Ha at S.F.No.203/7, Appayanayyakanpatti Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu by Thiru. S. Balakrishnan – under project category - “B1” and Schedule S.No.1(a) – ToR issued along with Public Hearing – preparation of EIA report – Regarding.

Ref:

1. Online Proposal No. SIA/TN/MIN/523950/2025, Dated: 18/02/2025.
2. Your application submitted for Terms of Reference dated: 17.02.2025.
3. Minutes of the 538th meeting of SEAC held on 01.03.2025.
4. Minutes of the 804th authority meeting held on 01.04.2025.

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO25B0108TN5106991N
(ii) File No.	11857
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	Rough Stone and Gravel Quarry of Thiru. S. Balakrishnan
(viii) Name of Company/Organization	s balakrishnan
(ix) Location of Project (District, State)	VIRUDHUNAGAR, TAMIL NADU
(x) Issuing Authority	SEIAA
(xii) Applicability of General Conditions	no
(xiii) Applicability of Specific Conditions	no

1. In view of the particulars given in the Para 1 above, the project proposal inter alia 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 3.03.2025 & 04.03.2025. 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 Thiru. S. Balakrishnan 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.

Copy To

1. The Principal Secretary to Government, Environment, Climate Change and Forests Department, Govt. of Tamil Nadu, Fort St. George, Chennai - 9.
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD Cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
3. The Chairperson, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai - 600 032.
4. The APCCF (C), Regional Office, MoEF & CC (SZ), 34, HEPC Building, 1st & 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai - 34.
5. Monitoring Cell, IA Division, Ministry of Environment, Forests & CC, Paryavaran Bhavan, CGO Complex, New Delhi - 110 003.
6. The District Collector, Virudhunagar District.
7. Stock File.

Annexure 1

Specific Terms of Reference for (Mining Of Minerals)

1. Seac Conditions - Site Specific

S. No	Terms of Reference
1.1	1. The PP shall furnish the action plan to suppress the propagation of dust particles and to reduce the blast-induced ground vibration & noise as per the DGMS Circular No.7 of 1997, since the college and fireworks are located at 600 m and 390 m respectively from the lease boundary of the proposed quarry. 2. 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 required statutory personnel, appropriate environmental management, system of maintaining the haul roads and

S. No	Terms of Reference
	village/panchayat roads, authorized blasting operation, Monitoring system of the environmental & other statutory compliances & its reporting methodology, 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. 3. The PP shall ensure the installation of CCTV at the proposed quarry site and ensure its inclusion during the EIA presentation. 4. The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.

2. Seac Standard Conditions

S. No	Terms of Reference
2.1	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

S. No	Terms of Reference
	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.

S. No	Terms of Reference
	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

S. No	Terms of Reference
	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.

3. Seiaa Standard Conditions:

S. No	Terms of Reference
3.1	<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. 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. <u>Agriculture & Agro-Biodiversity</u> 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.

S. No	Terms of Reference
	12. The Environmental Impact Assessment should study the agro-biodiversity, agro- forestry, horticultural 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. <u>Forests</u> 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. <u>Water Environment</u> 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 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: - Hydrothermal/Geothermal effect due to destruction in the Environment. - Bio-geochemical processes and its foot prints including Environmental stress. - Sediment geochemistry in the surface streams. <u>Energy</u> 28. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished. <u>Climate Change</u> 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

S. No	Terms of Reference
	local livelihood. <u>Mine Closure Plan</u> 32. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued. <u>EMP</u> 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. <u>Risk Assessment</u> 35. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining. <u>Disaster Management Plan</u> 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/unfavorable 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. <u>Others</u> 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.

Standard Terms of Reference for (Mining of minerals)

1.

S. No	Terms of Reference
1.1	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
1.2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given
1.3	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
1.4	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

S. No	Terms of Reference
	Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone)
1.5	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
1.6	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
1.7	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
1.8	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
1.9	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
1.10	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
1.11	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
1.12	A 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 State Expert Appraisal Committees
1.13	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
1.14	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

S. No	Terms of Reference
1.15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given
1.16	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
1.17	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
1.18	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 alongwith 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
1.19	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 Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered
1.20	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 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)
1.21	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
1.22	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

S. No	Terms of Reference
	composition of PM10, particularly for free silica, should be given
1.23	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
1.24	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
1.25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided
1.26	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
1.27	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
1.28	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 State Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished
1.29	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
1.30	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
1.31	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
1.32	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

S. No	Terms of Reference
1.33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report
1.34	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
1.35	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
1.36	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
1.37	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
1.38	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
1.39	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
1.40	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given
1.41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out
1.42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report
1.43	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
1.44	Besides the above, the below mentioned general points are also to be followed:- a) All documents to be properly referenced with index and continuous page numbering. b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated. c) 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. d) Where the documents provided are in a language other than English, an English translation should be provided. e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted. f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF 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. g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR)

S. No	Terms of Reference
	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. h) 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. i) 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



SEIAA SPECIFIC CONDITIONS:

The subject was placed in 804th authority meeting held on 01.04.2025. The authority noted that the subject was placed in the 538th SEAC meeting held on 01.03.2025. 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 1,85,232m³ of rough stone & 11,834 m³ of gravel upto the depth of 39m 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 conditions mentioned in Annexure of this minutes.

A. 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 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.
- 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.

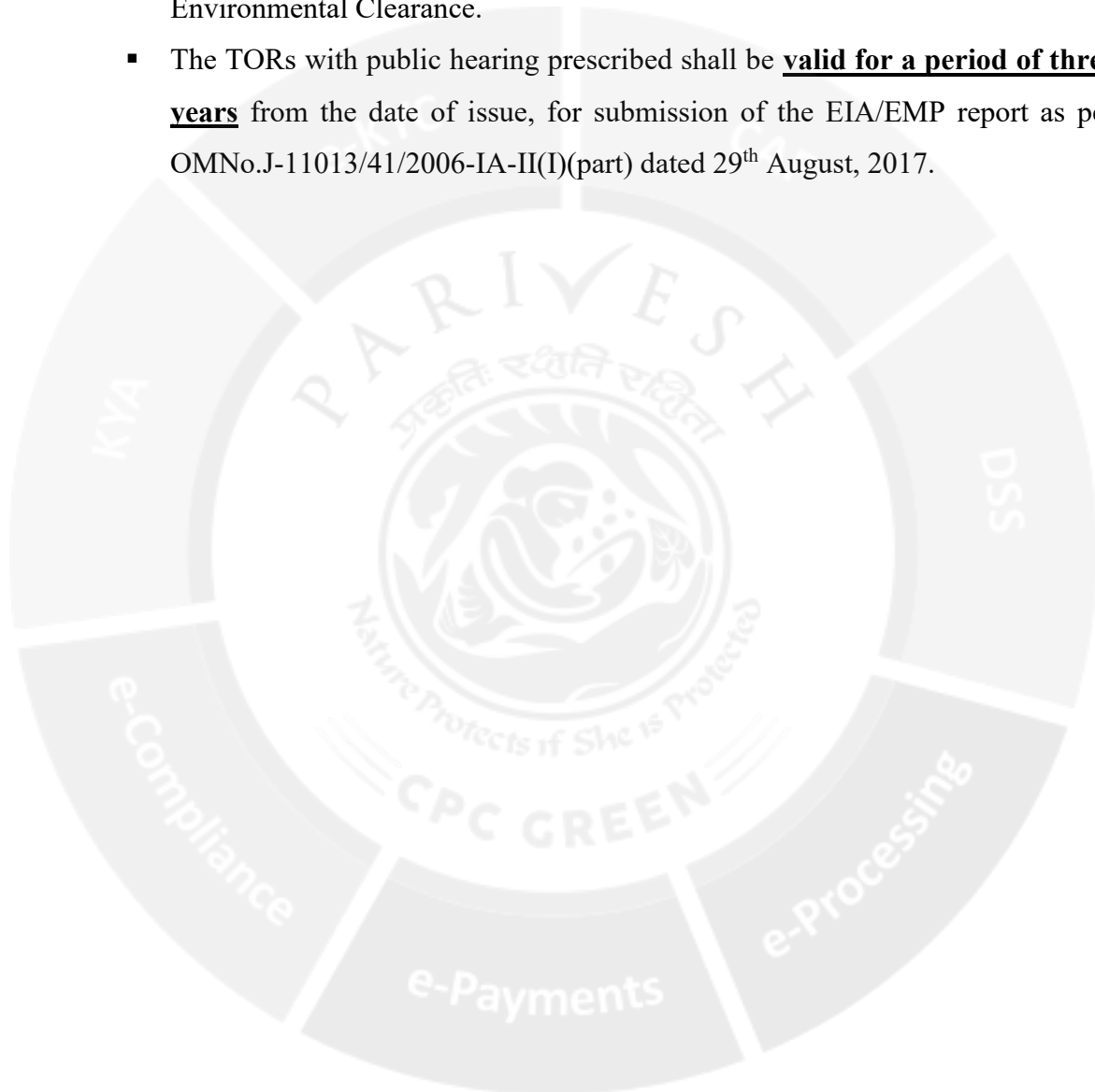
7. Details of village map, “A” register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be submitted along with EIA report.
9. Obtain a letter /certificate from the Assistant Director of Geology and Mining 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 its acquisition, nearby (in 2-3 km.) water body, population, within 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 -11013/77/2004-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 will take 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.



DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU. S. BALAKRISHNAN AT SURVEY NOS. 203/7 OVER AN AREA OF 1.60.5 HA IN APPAYANAYYAKANPATTI VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR DISTRICT, TAMIL NADU.

TOR COMPLIANCE

S.No	ToR Points	Reply	Pg.No
A. SEAC CONDITIONS - SITE SPECIFIC			
1	The PP shall furnish the action plan to suppress the propagation of dust particles and to reduce the blast-induced ground vibration & noise as per the DGMS Circular No.7 of 1997, since the college and fireworks are located at 600 m and 390 m respectively from the lease boundary of the proposed quarry.	•Scientific Study on Blast Induced Ground Vibration and Design of Controlled Blasting Parameters for this cluster was conducted by Department of Mining Engineering, Anna University, Chennai for entire cluster project. Details are given in Para 4.4.2.1, Chapter-IV.	4-19
2	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: 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.	•Agreed •Details of the cluster management committee is provided under Section 10.2.2, Chapter-X.	10-2
3	The PP shall ensure the installation of CCTV at the proposed quarry site and ensure its inclusion during the EIA presentation.	•Agreed	--



DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU. S. BALAKRISHNAN AT SURVEY NOS. 203/7 OVER AN AREA OF 1.60.5 HA IN APPAYANAYYAKANPATTI VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR DISTRICT, TAMIL NADU.

4	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.	•Site photographs have been provided in Chapter-II. Fencing and plantation are already carried out.	2-10
B. 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.	• Nil	--
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.	•Letter from VAO is obtained and given as Annexure – 3.	A-7
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	•Details of the features produced within 500m radius are provided in Figure 2.3, Chapter-II	2-8



DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU. S. BALAKRISHNAN AT SURVEY NOS. 203/7 OVER AN AREA OF 1.60.5 HA IN APPAYANAYYAKANPATTI VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR DISTRICT, TAMIL NADU.

	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.	•Hydrogeological Study is detailed under Section 3.6, Chapter-III.	3-44
5	The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.	•A detailed study of flora and fauna composition in the core and buffer zone of the project has been made through primary field surveys. The details are furnished in para 3.5, Chapter III.	3-38
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.	•There area no Reserve forest, Protected Areas, Sanctuaries, Tiger reserve etc., within 10km Radius.	3-3
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	•Nil	--



DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU. S. BALAKRISHNAN AT SURVEY NOS. 203/7 OVER AN AREA OF 1.60.5 HA IN APPAYANAYYAKANPATTI VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR DISTRICT, TAMIL NADU.

	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.	• Pit slope stability plan has been provided under Section 7.7, Chapter-VII	7-8
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.	• Will be submitted along with the final report	--
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.	• Controlled blasting will be adopted in this project and details of the same has been provided in Section 4.4.2, Chapter-IV	4-19
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.	• Agreed	--
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,	• Nil	--



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13	What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?	• Fresh 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.	• Fresh lease	--
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).	• Project coordinates superimposed in satellite imagery and given as Figure No - 2.4 in Chapter – II. • The 10km Radius Index plan showing buffer zone is given in Figure No.3.1 in Chapter – III. • Geology Map, Geomorphology, Lithology map are enclosed as Figure No.3.18, 3.19 and 3.20, Chapter-III.	2-4 3-2 3-45 & 48
16	The PP shall carry out Drone video survey covering the cluster, Green belt, fencing etc.,	• Agreed	--
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.	• Site photographs have been provided in Chapter-II. Fencing and plantation are already carried out.	2-10
18	The Project Proponent shall provide the details of mineral reserves and mineable	• The details of the geological and mineable reserves are provided in Table No.2.4,	2-15



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	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.	Chapter-II. • The mining method will be Opencast semi mechanized mining using jackhammer drilling, blasting, excavation through excavator & mineral transport through tippers. • The production schedule is given in Table No.2.7, Chapter-II. • Anticipated Impacts of the mining operations and mitigation measures are discussed elaborately in Chapter-IV.	2-17
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 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.	• The organization chart has been provided in Figure No.10.1, Chapter-X.	10-3
20	The Project Proponent shall conduct the 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) 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.	• Details of hydrogeological scenario of this project is provided under section 3.6, Chapter-III.	3-44
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	• The baseline data on micro- meteorology, ambient air quality, Water quality, noise level, soil and flora & fauna are collected during Summer Season (March 2025 to May 2025) and detailed in Section 3.3 to 3.5 of Chapter-III. The details of Traffic is provided under Section 4.9, Chapter-IV.	3-13 & 3-38 4-33



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	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.	•The details of the quarries located within the 500m radius of the project is given vide Annexure-3. •A cumulative impact study has been carried out and furnished in Para 7.6, Chapter-VII. •Environmental Management Plan is provided under Chapter-X.	7-5
23	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	•The rain water falling in the quarry will be harvested in the sump at the lowest level of the quarry. This sump will act as a settling pond to prevent solids escaping along with discharge, before outlet. etc. Towards surface runoff management, a garland drain of length 480 m will be constructed around the quarry and will be connected to a settling pond with silt traps. The supernatant clear water from the settling pond will be flow to the downstream users. The surface runoff management structures diagram is given in Figure No 4.4, Chapter-IV. •Details of rainwater harvesting are provided under Section 4.3.4.2, Chapter-IV.	4-10 4-16
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.	•The land use of the study area was studied to demarcate various LULC categories and its details are provided under section 3.4, Chapter-III. •The land use pattern at present and at the end of the quarrying period has been provided under section 4.5.1, Chapter-IV. •The post mining land use has been provided in Table No. 4.19. The post mining land use plan showing afforestation and water body is shown in Figure No- 4.5.	3-32 4-24
25	Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of	•There is no waste generation anticipated in this quarry operation since the entire excavated material will be utilized. Hence, there is no external overburden dump	2-14



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	land area, distance from mine lease, its land use, R&R issues, if any, should be provided.	involved. Besides, there is no proposal for overburden dump 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 Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.	• Not Applicable	--
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.	• The rain water falling in the quarry will be harvested in the sump at the lowest level of the quarry. This sump will act as a settling pond to prevent solids escaping along with discharge, before outlet. etc. • Towards surface runoff management, garland drain will be constructed around the quarry and will be connected to a settling pond with silt traps. The supernatant clear water from the settling pond will be flow to the downstream users. The surface runoff management structures diagram is given in Figure No 4.6, Chapter-IV. • The methods for reducing water consumption and rainwater harvesting is provided in section 4.3.4, Chapter-IV.	4-14 4-15
28	Impact on local transport infrastructure due to the Project should be indicated.	• From this proposed quarry the entire output will be transported to the crusher units for producing stone aggregates of different sizes or construction of roads, bridges, buildings and other buyers etc. Details of the traffic is provided under section 4.9, Chapter-IV.	4-33
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.	• An ecological survey of the study area was conducted with reference to listing of species and assessment of the existing baseline ecological conditions. Details are provided under section 3.5.1, Chapter-III.	3-38



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30	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	•Details of Mine Closure Plan is provided under section 7.5, Chapter-VII.	7-4
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.	•An ecological survey of the study area was conducted with reference to listing of species and assessment of the existing baseline ecological conditions. Details are provided under section 3.5.1, Chapter-III.	3-38
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.	•Agreed	--
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.	•Agreed	--
34	A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the	•The disaster management plan has been provided under section 7.3.1, Chapter-VII.	7-3



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	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.	• Various risks likely to arise due to mining activities are detailed under section 7.3, Chapter-VII.	7-1
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.	• Details of occupational health and safety aspects are given under the subsections of Para 4.7, Chapter-IV.	4-30
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.	• Details of the socio-economic survey conducted in the buffer zone has been provided in Para 3.2.4, Chapter-III. • Public health facilities will be further aimed to be developed through CER activities wherein health checkups, medical camps for the locals will be conducted.	3-10
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.	• Nearby villages were visited for conducting study to know about socio-economic conditions, including aspirations and requirements of the people for a better living and collected relevant data. The details are provided under section 3.2.4, Chapter-III.	3-10
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.	• PP informed that there is no litigation pending against the project.	--
40	Benefits of the Project if the Project is	• The Rough stone Quarry will benefit this region in the fields of employment	2-20



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	implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	opportunities, improved per capita income for local people, improved social welfare facilities in respect of education, health, infrastructural etc. • Direct employment to about 10 people and indirect employment to scores of people. • By means of carrying out the socio-economic development activities, local community development is expected. Towards the same, the proponent has allocated Rs.5 Lakhs for various activities under CER. From the CER activities allocated for various social welfare activities, the villages near the lease area will be benefited.	
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.	• Nil	--
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.	• EMP is prepared for the entire life of the mine. Affidavit will be provided along with the final EIA/ EMP report.	--
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.	• Agreed	--

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C. Standard CONDITIONS			
Cluster Management Committee			
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.	•Details of the cluster management committee is provided under Section 10.2.2, Chapter-X.	10-2
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.,	•Details of the cluster management committee is provided under Section 10.2.2, Chapter-X.	10-2
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.	•Details of the cluster management committee is provided under Section 10.2.2, Chapter-X.	10-2
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.	•Details of the cluster management committee is provided under Section 10.2.2, Chapter-X.	10-2
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.	•Details of the cluster management committee is provided under Section 10.2.2, Chapter-X.	10-2
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	•Details of the cluster management committee is provided under Section 10.2.2, Chapter-X.	10-2



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	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.	•Details of the cluster management committee is provided under Section 10.2.2, Chapter-X.	10-2
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.	•Details of the cluster management committee is provided under Section 10.2.2, Chapter-X.	10-2
Agriculture & Agro-Biodiversity			
9	Impact on surrounding agricultural fields around the proposed mining Area.	•Most of the study area remain uncultivated and only in patches of land away from the lease area, agricultural activities are carried during monsoon rainfall. Due to poor quality of the soil, inconsistent rainfall, water scarcity, high agricultural labor cost, manpower shortage and less yield are reason for very little agricultural activity in this region	4-26
10	Impact on soil flora & vegetation around the project site.	•The impact of mining on biological environment is provided under Table 4.25, Chapter-IV.	4-20
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.	•The details of flora in the core zone is provided in Table 3.23, Chapter-III. There is no major clearance of vegetation or transplantation involved.	3-40
12	The Environmental Impact Assessment should study the agro-biodiversity, agro-forestry, horticultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.	•An ecological survey of the study area was conducted with reference to listing of species and assessment of the existing baseline ecological conditions. Details are provided under Section 3.5.1, Chapter-III.	3-38
13	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	•The post mining land use has been provided in Table No. 4.19. The post mining land use plan showing afforestation and water body is shown in Figure No- 4.5.	4-24 4-12



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14	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.	• Due to poor soil condition and non-availability of perineal water source, no major agricultural activity is carried out in and around the lease area. Only patches of plantation are observed in few places in the monsoon season based on water availability	4-26
Forests			
15	The project proponent shall detailed study on impact of mining on Reserve forests and free ranging wildlife.	• There are no reserve forest within 10km radius and as such no impact on this front envisaged.	4-26
16	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	• An ecological survey of the study area was conducted with reference to listing of species and assessment of the existing baseline ecological conditions. Details are provided under section 3.5.1, Chapter-	3-38
17	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	• An ecological survey of the study area was conducted with reference to listing of species and assessment of the existing baseline ecological conditions. Details are provided under section 3.5.1, Chapter-III.	3-38
18	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	• There are no national parks or corridors in the 10 km radius. There are no reserve forest in the proximity of the lease area.	4-26
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 details of hydrogeological study is provided under Section 3.6, Chapter-III.	3-44
20	Erosion Control measures.	• Since the entire material from the quarry face will be directly dispatched to the consumers, there will not be any	4-26



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		stockpiles. There are no waste dumps in this quarry. As such there will not be any wash out due to stock pile or waste dumps. • Towards surface runoff management, a garland drain will be constructed around the quarry and will be connected to a settling pond with silt traps. The supernatant clear water from the settling pond will be flow to the downstream users	
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.	• There is no proposal to discharge any effluent into this waterbody. No major impact is envisaged on the nearby water bodies due to project operations	4-26
22	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.	• There is no major perennial waterbody in close proximity of the lease area.	4-26
23	The project proponent shall study and furnish the details on potential fragmentation impact on natural Environment, by the activities.	• The post mining land use has been provided in Table No. 4.19. The post mining land use plan showing afforestation and water body is shown in Figure No- 4.5.	4-24 4-12
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.	• An ecological survey of the study area was conducted with reference to listing of species and assessment of the existing baseline ecological conditions. Details are provided under section 3.5.1, Chapter-III. • The land use pattern details are provided under section 4.5.1, Chapter-IV.	3-38 4-24
25	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	• The nearest major water bodies is provided in Table No.3.2, Chapter-III. • The mining area consists of hard compact rock, hence no major water seepage within the mine is expected from the periphery. The ultimate pit depth of mining is 39 m. The ground water table in this area is below this level. Hence, ground water intersection in not envisaged and ground water will not be affected appreciably due to the quarrying operation.	3-3 4-15
26	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	• The details of hydrogeological study is provided under Section 3.6, Chapter-III.	3-44



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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.	•The details of the same is provided in Table 4.20, Chapter-IV.	4-25
Energy			
28	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.	•The dust control measures are listed under Table 4.1, Water pollution control measures under Section 4.3.2, and noise pollution control measures under Section 4.4.1.2, Chapter-IV. Besides, energy consumption in this project will be optimum and as per requirement.	4-2 4-12 4-18
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.	•Certified vehicles with low carbon emissions will only be used. These equipment's will be properly and regularly maintained. Besides, regular vehicular emission tests will be done for the transport vehicles to ensure minimal impact due to carbon emissions. To further mediate the carbon emissions, a good greenbelt and plantation plan has been planned wherein 750 number of plants will be planted in and around the lease area.	7-9
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.	•Certified vehicles with low carbon emissions will only be used. These equipment's will be properly and regularly maintained. Besides, regular vehicular emission tests will be done for the transport vehicles to ensure minimal impact due to carbon emissions. To further mediate the carbon emissions, a good greenbelt and plantation plan has been planned wherein 750 number of plants will be planted in and around the lease area.	7-9
31	Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood.	•Replied above	--
Mine Closure Plan			



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32	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	•Details of Mine Closure Plan is provided under section 7.5, Chapter-VII.	7-4
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.	•Detailed environmental management plan is provided under Chapter-X.	10-1
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.	•Detailed environmental management plan is provided under Chapter-X.	10-1
Risk Assessment			
35	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	•Various risks likely to arise due to mining activities are detailed under section 7.3, Chapter-VII.	7-1
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 has been provided under section 7.3.1, Chapter-VII.	7-3
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,	•VAO Letter has been provided as Annexure-3	A-7



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	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.	• Will be provided in the Final EIA/EMP Report after completion of public hearing.	--
39	The project proponent shall study and furnish the possible pollution due to plastic and micro plastic on the Environment. The ecological risks and impacts of plastic & micro plastics on aquatic Environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.	• Single use plastics/ use and throwaway plastics will be banned in the site as directed by the Tamil Nadu Government vide GO(Ms)No.84 regarding ban on use of plastic products. The employees will be encouraged to use compostable material or reusable material.	4-33

STANDARD TOR FOR (MINING OF MINERALS)

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.	• Nil	--
2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given	• Precise area communication letter was obtained from the District Collector Virudhanagar.	11-2
3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of	• The production capacity, quantity of waste, its management and mining technology in mine plan and EIA, etc., are compatible with one another.	2-24



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	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/ 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).	• Project coordinates superimposed in satellite imagery and given as Figure No - 2.4 in Chapter – II. • The geology and geomorphology map is provided in Figure No.3.18, 3.19, Chapter-III. The Lithology map and Soil map are provided under Figure No. 3.20, 3.21, Chapter-III. • The 10km Radius Index plan showing buffer zone is given in Figure No.3.1 in Chapter – III.	2-4 3-45 & 48 3-2
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.	• Replied in Standard ToR point no.4	--
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.	• Not Applicable	--
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	• The proponent will frame a well-planned environmental policy. Its details are provided under Section 10.2.1, Chapter-X. • The Mines Manager will undertake effective monitoring and implementation of various environmental control measures promptly and effectively and to oversee various environmental management schemes for air quality control, water quality status, noise level control, plantation programme, social development schemes, etc in the mine. The organizational chart for the same has been provided in Figure No.10.1, Chapter-X.	10-1 10-3



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	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.	• Various risks likely to arise due to mining activities are detailed under section 7.4, Chapter-VII. This being an opencast mine, subsidence is not applicable. The impact due to ground vibrations due to blasting is given in para 4.3.2, Chapter-IV.	7-1 4-12
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 chosen for collecting existing environmental status covers 10 km radial distance from the project periphery (Figure No - 3.1). Data given in the report is for the life of the mine.	3-2
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.	• The land use of the study area was studied to demarcate various LULC categories and its details are provided under section 3.4, Chapter-III. • The land use pattern at present and at the end of the quarrying period has been provided under section 4.5, Chapter-IV. • In the post mining stage, entire 1.18.50Ha of mined out area at 39m depth will be left as water body. 0.02.0 Ha will be the mine roads & infrastructure, 0.35.0 Ha will be covered with vegetation, and 0.05.00 Ha will be fencing.	3-32 4-24
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.	• There is no waste generation anticipated in this quarry operation since the entire excavated material will be utilized. Hence, there is no external overburden dump involved. Besides, there is no proposal for overburden dump outside the lease area.	4-24
12	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of	• There is no forest land in the lease area.	--



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	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.	• There is no forest land in the lease area.	--
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	--
15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given.	• There is no forest land in the lease area.	--
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.	• The mining lease area and the 10 km buffer zone from the periphery of the core zone is devoid of declared ecologically sensitive features like national parks, biospheres, sanctuaries, etc.	4-26
17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant	• Replied in Standard ToR point No.16	--



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	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.	• A detailed study of flora and fauna composition in the core and buffer zone of the project has been made through primary field surveys. The details are furnished in para 3.5, Chapter III.	3-38
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	• Not Applicable	--



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	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 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).	• Not Applicable	--
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 shilling of village(s) including their R&R and socio-economic aspects should be discussed in the Report.	• The mining activities will be carried out within the mine lease area only. The entire mine lease area is a patta land. There is no population within the ML area. Hence, the question of R& R does not arise.	7-4
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	• The baseline data on micro- meteorology, ambient air quality, Water quality, noise level, soil and flora & fauna are collected during Summer Season (March 2025 to May 2025) and detailed in para 3.3 to 3.5 of Chapter-III. • Monitoring stations were selected taking into account, wind direction and location of sensitive receptors. • Free silica composition in PM10 sample has been done and the values are found to	3-13 & 3-38



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	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.	be Below Detectable Limit (DL 0.05mg/m3) which is well within the prescribed limit of 5mg/m3.	
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.	• Air quality modeling details are furnished in para 4.2.2 and its continuous sub paras in Chapter-IV of EIA report. • The impact on air quality due to the proposed project is estimated using AERMOD View Gaussian Plume Air Dispersion Model developed by Lakes Environmental Software which is based on steady state Gaussian plume dispersion. • The model simulations are done for the air pollutant arising from the mining operations, namely, PM10, PM2.5. Ground Level Concentration (GLC) have been computed using hourly meteorological data. • The Isopleths of PM10, PM2.5 concentrations for with control measures scenario have also been drawn and these are given in Figure No.4.1 and 4.2. • It can be seen that on individual basis, the resultant added concentrations with baseline figures with respect to PM10 is in the range of 52.9 µg/m3 to 75.8 µg/m3 and with respect to PM2.5 are in the range of 25.1µg/m3 to 36.7 µg/m3 which are within the stipulated statutory limits. • Additionally, cumulative impact due to working of the proposed projects and also another 2 proposed project on ambient air quality is also assessed. The cumulative post project concentration with respect to PM10 is in the range of 52.9 µg/m3 to 76.3 µg/m3 and with respect to PM2.5 are in the	4-3



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		range of 25.1µg/m3 to 36.7 µg/m3 which are within the statutory limits in each case.	
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 total water requirement for this project will be 8.0 KLD comprising 1.0 KLD for drinking water and domestic use, 5.0 KLD for dust suppression and 2.0 KLD for greenbelt. The water will be sourced initially from outside agencies. Later the rainwater collected in the mine pit sump will be used for this purpose. The water balance diagram for the same is shown in Figure No 4.3.	4-12
25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	Not Applicable.	--
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.	- The rain water falling in the quarry will be harvested in the sump at the lowest level of the quarry. This sump will act as a settling pond to prevent solids escaping along with discharge, before outlet. etc. - Towards surface runoff management, a garland drain of length 480m will be constructed around the quarry and will be connected to a settling pond with silt traps. The supernatant clear water from the settling pond will be flow to the downstream users. The surface runoff management structures diagram is given in Figure No 4.6, Chapter-IV. - The methods for reducing water consumption and rainwater harvesting is provided in section 4.3.4, Chapter-IV.	4-14 4-15
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.	- There are no perineal water courses in the lease areas. Nikshopa Nadi - 130m (SW), Vaippar River-400m- (NE), Uppu Odai - 3.2km-(SE), Marugal Odai – 5.2km – (NE), Kayalkudi River - 7.5km – (NE). Nedunkulam Odai - 8.6km – NE. - The ultimate pit depth of mining is 39m. The ground water table in this area is below this level. Hence, ground water intersection in not envisaged and ground water will not be affected appreciably due to the quarrying operation.	3-3
28	Based on actual monitored data, it may clearly be shown whether working will	The occurrence of groundwater mainly in the porous soil are weathered layers, very negligible amount of groundwater	3-53



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	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.	percolated through the poorly fractured layer, after that there is no existence of groundwater. Since the mining area consists of hard compact rock, no major water seepage within the mine is expected from the periphery. • The ultimate pit depth of mining is 39m. The ground water table in this area is below this level. Hence, ground water intersection in not envisaged and ground water will not be affected appreciably due to the quarrying operation. • Details of hydro geological study are given in Para 3.6.1 Chapter – III.	3-44
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.	• There are no streams passing through the lease area.	--
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 area applied for mining lease is a gentle plain terrain. Part of the lease area has already been mined out. • The ultimate pit depth of mining is 39m. The ground water table in this area is below this level.	11-8 11-3
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. Phasc-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	• Greenbelt / Plantation will be carried out to enhance the vegetative growth and aesthetic in the safety zone area. About 750 trees will be planted in and around the lease area. Details of the same is provided under TableNo.4.21, Chapter-IV.	4-28



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	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.	• From this proposed quarry the entire output will be transported to the crusher units for producing stone aggregates of different sizes or construction of roads, bridges, buildings and other buyers etc. Details of the traffic is provided under section 4.9, Chapter-IV.	4-33
33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	• This is a proposed project. Site services like mine office, first aid room, rest shelters, toilets etc. will be provided as semi-permanent structures.	2-20
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.	• In the post mining stage, entire 1.18.50Ha of mined out area at 39m depth will be left as water body. 0.02.0 Ha will be the mine roads & infrastructure, 0.35.0 Ha will be covered with vegetation, and 0.05.00 Ha will be fencing. Entire mined out area will be properly fenced to prevent inadvertent entry of men and animals. In the post mining stage the rainwater harvested in the mined out void shall be utilized in the area.	11-13
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	• Details of occupational health and safety aspects are given under the subsections of Para 4.7, Chapter-IV.	4-30



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	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	•Details of the socio economic survey conducted in the buffer zone has been provided in Para 3.2.4, Chapter-III. •Public health facilities will be further aimed to be developed through CER activities wherein periodic health checkups, medical camps for the locals will be conducted.	3-10
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.	•Towards the socio economic development of the surrounding area, the proponent has earmarked an amount of Rs. 5 Lakhs under Corporate Environmental Responsibility. The activities identified under CER will be implemented in a phased manner in the nearby Government schools. In consultation with the locals based on the need & priority it will be implemented. Its details are provided in Para 4.6.5, Chapter-IV	4.30
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.	•Detailed Environmental Management plan and its implementation, etc., are furnished in Chapter X.	10-1
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.	•This draft EIA/EMP report will be exposed to public consultation as per mandatory procedures through the District Collector and State Pollution Control Board officials after giving 30 days advance notice in two local newspapers about the scheduled date and time for conduct of the public hearing procedures. •The opinions, concerns and objections of stakeholders will be recorded during the public hearing. All the public queries and the replies to the query by the project proponent and officials concerned will be recorded and incorporated in the EIA/EMP report for approval by SEIAA, Tamil Nadu.	7-1



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40	Details of litigation pending against the project, if any, with direction /order paced by any Court of Law against the Project should be given.	•PP informed that there is no litigation pending against the 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.	• The cost of the project is Rs. 39,88,700 • The Environment Management Budget of Rs. 15.96 Lakhs is allocated under capital cost and Rs. 13.45 Lakhs/annum under recurring cost and the same has been furnished in Table 10.2, Chapter-X. All the recurring cost of maintenance of pollution control measures, environmental monitoring etc., will be met from revenue.	2-21 10-11
42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	• The disaster management plan has been provided under section 7.3.1, Chapter-VII.	7-3
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.	• The proposed Rough Stone Quarry will benefit this region in the fields of employment opportunities, improved per capita income for local people, improved social welfare facilities in respect of education, health, infrastructural etc. • Direct employment to 10 people and indirect employment to scores of people. • By means of carrying out the socio economic development activities, local community development is expected. Towards the same, the proponent has allocated Rs. 5 Lakhs for various activities under CER. From the CER activities allocated for various social welfare activities, the villages near the lease area will be benefited.	2-20



CHAPTER 1 INTRODUCTION

1.1 PURPOSE OF THE REPORT:

Thiru. S. Balakrishnan propose to operate Rough Stone and Gravel Quarry at Survey No. 203/7, over an area of 1.60.50 hectares In Appayanayyakanpatti Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu and has initiated action towards obtaining environmental clearance.

Production capacity is 1,85,232m³ of Rough Stone & 11,834m³ of Gravel up to depth of 39m for the period of ten years, 1,27,590m³ of Rough Stone & 11,834m³ of Gravel up to depth of 26m for the period of 5 years.

Although the individual lease area of this project is less than 5 Ha, the other existing and proposed quarries within the 500m radius cluster along with this subject project works out to >5 Ha. Hence, this proposal is considered under Category – B1 and as per MoEF & CC notification necessitates preparation of EIA/EMP report and public hearing.

This EIA/EMP report for Thiru. S. Balakrishnan is prepared based on standard and additional Terms of Reference issued by SEIAA, Tamil Nadu vide TOR Identification No. TO25B0108TN5106991N dated 07.04.2025 and is in conformance of the generic structure prescribed by MOEF&CC in their notification of September 2006 and the approved mining plan.

1.2 IDENTIFICATION OF PROJECT & PROJECT PROPONENT:

1.2.1 IDENTIFICATION OF THE PROJECT:

Rough stone and Gravel Quarries of Thiru. S. Balakrishnan located in Appayanayyakanpatti Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu.

Table 1.1: Details of the project

Project Name	Survey No.	Area	Land Type
Rough stone and Gravel Quarry of Thiru. S. Balakrishnan	203/7	1.60.5 Ha	Patta land in the name of S. Rajadaran and applicant got consent and registered.

Site vicinity map has been described in Figure 1.1. The rough stone and gravel will be excavated and loaded into tipper to the required buyers .



Figure 1.1: Site Vicinity Map



Table 1.2: Identification of project

Project Name	Rough stone and Gravel Quarry of Thiru. S. Balakrishnan
Extent	1.60.5 Ha
Total Production	1,27,590m ³ of Rough Stone & 11,834m ³ of Gravel up to depth of 26m for the period of 5 years. 1,85,232 m ³ of rough stone and 11,834 m ³ of Gravel up to depth of 39m for the period of 10 years
Peak Production	Annual peak production capacity of 29,790 m ³ of Rough stone and 3,298 m ³ of Gravel.
Ultimate Depth	26m for 5 years and 39m for 10 years (Below ground level)

Source: Approved Mining Plan

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Table 1.3: Statutory Clearances

Name	Issuing Authority	Status	Letter number	Date	Reference
Precise Area Communication	Assistant Director, Geology & Mining Virudhunagar	Received	KV1/717/2024	24.12.2024	Annexure-1 of EIA EMP report
Mine Plan Approval	Assistant Director, Geology & Mining Virudhunagar	Approved	KV1/717/2024	24.01.2025	Annexure-2 of EIA EMP report
District survey report	Collector, Assistant Director, Geology & Mining	Authenticated	As per S.O. 3611(E) dated 25.07.2018	2019	-
Details of other leases within 500m radius	Assistant Director, Geology & Mining Virudhunagar	Obtained	KV1/717/2024	24.01.2025	Annexure-3 of EIA EMP Report
NOC for features with in 300m radius	VAO	Obtained	-		Annexure-4 of EIA EMP Report

1.2.2 IDENTIFICATION OF THE PROJECT PROPONENT:

Table 1.4: Identification of Project Proponent

Applicant Name	Thiru. S. Balakrishnan
Address	Thiru. S. Balakrishnan S/o. Shri. Sankappan, 1/105, West Street, Vellur, Virudhunagar Taluk, Virudhunagar District – 626 005.
Contact Number	97879 69094
Email-ID	

1.3 BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION & PROJECT IMPORTANCE

Table 1.5: Brief Description of Nature of project

Sector	1(a), Non-Coal Mining
Type	Fresh Project
Category	B1



DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU. S. BALAKRISHNAN AT SURVEY NOS. 203/7 OVER AN AREA OF 1.60.5 HA IN APPAYANAYYAKANPATTI VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR DISTRICT, TAMIL NADU.

Mineral to be mined	Rough Stone and Gravel
Major/Minor Mineral	Minor
Mining Method	Opencast mechanized method of mining with jackhammer drilling, blasting, excavator, transportation by tippers.

Table 1.6: Location of the project

S.No	Particulars	Details
1	Corner Coordinates	Latitude: 9° 17' 40.72"N to 9° 17' 44.71"N Longitude: 77° 41' 36.40"E to 77° 41' 41.60"E
2	Toposheet Number	58 G/11
3.	Survey No.	203/7

Location details are elaborated in Para 2.3, Chapter-II.

1.3.1 IMPORTANCE TO THE COUNTRY AND REGION:

Rough stone and Gravel from these quarries will meet the domestic demand. The production and method of mining is planned considering the geological factors, availability of proven technology, demand for the material etc. Safety barriers as per State Government order is left in the planning stage itself. Systematic and scientific mining will be carried out. This project will provide employment opportunities to many people. The proponent will carry out CER activities which will help the surrounding villages to derive socio economic benefits. The activities will be customized based on local needs and prioritized. Hence, livelihood development and employment will arise due to this project.

1.4 SCOPE OF THE STUDY:

Particulars	Details
Proposal no	SIA/TN/MIN/523950/2025, dated: 18.02.2025
File no	11857
Terms of Reference	TO25B0108TN5106991N dated 07.04.2025
Baseline Data Collection	Carried out by Creative Engineers & Consultants , Chennai for Summer Season (March – May 2025)

Based on the terms of reference, data collection, the Environmental Impact Assessment was carried out for the project area (core zone and the buffer zone (10km radius from the core zone) and the following studies were covered:

- Collection of primary and secondary data relevant to the project.



DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU. S. BALAKRISHNAN AT SURVEY NOS. 203/7 OVER AN AREA OF 1.60.5 HA IN APPAYANAYYAKANPATTI VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR DISTRICT, TAMIL NADU.

- One-Season baseline monitoring for environmental parameters such as air, water, noise, soil, flora & fauna, etc. Analysis of parameters in in-house laboratory.
- Documentation of EIA/EMP report with inclusion of relevant studies conducted by other bodies into the EIA/EMP report.
- Identification of significant environmental parameters that are prone to get affected due to pollution. Namely, Air, Water, Noise, Soil, Biological and Land Environment.
- Evaluation and determination of suitable mitigation measures to reduce and control the said pollution.
- Prediction of post project concentration (baseline + incremental) with respect to air environment for core zone and buffer zone.(on individual as well as cumulative basis)
- Formulation of an Environmental Management plan including administrative aspects for proposed implementation of mitigative measures in time.

This draft EIA/EMP report will be submitted for public consultation, as per rules and procedures in this respect, as per the EIA notification 2006. The opinions, concerns and objections, if any, of the surrounding public and other stake holders connected, will be taken into consideration and compliance report thereon will be submitted to SEIAA, Tamil Nadu in the final EIA/EMP report.



CHAPTER 2

PROJECT DESCRIPTION

2.1 TYPE OF PROJECT:

This proposal involves quarrying of Rough stone and Gravel by Thiru. S. Balakrishnan using mechanized opencast method for the lease period of 10 years.

2.2 NEED & JUSTIFICATION FOR THE PROJECT:

There is a huge demand for construction material and the entire material produced from this quarry will be used in the local construction/ infrastructure sector. Considering the following favorable factors it is practically possible to achieve the proposal within the planned period and this proposal is fully justified.

- Availability of good quality proved reserves
- Techno economic viability of the scheme
- Better approachability to the project, availability of logistic facility in proximity to the site
- Economic and Socio Economic Benefits to the region

2.3 LOCATION:

A brief description of the mining area, along with the location, coordinates, accessibility, etc. has been details below in Table No.2.1.

Table 2.1: Mine site description

Project Name	Rough stone and Gravel Quarry of Thiru. S. Balakrishnan
Location	Appayanayyakanpatti Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu.
Survey No.	203/7
Coordinates	Latitude: 9° 17' 40.72"N to 9° 17' 44.71"N Longitude: 77° 41' 36.40"E to 77° 41' 41.60"E
Nearest Village	Ramalingapuram – 1.0km – (NW) side
Nearest Town	Thiruvengadam -5.0km - NE
Nearest Highway	SH-44 – 3.8Km– SW

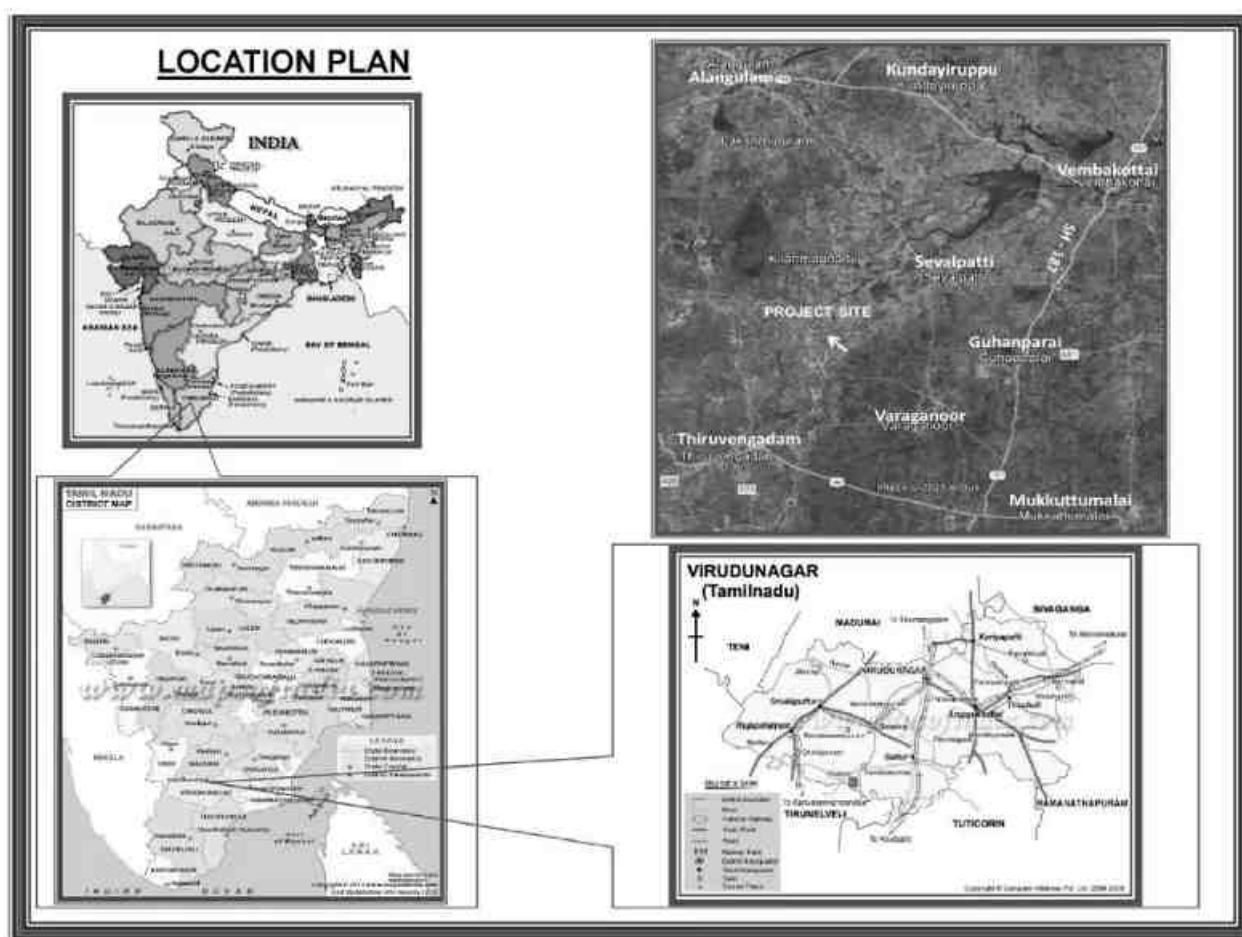


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Nearest Railway Station	Sivakasi -21km - NE
Nearest Airport	Madurai -75km -NE
Accessibility	Lease area is approachable from the existing road which is connected to Sevalpatti to Thiruvengadam State highway road on the south west.
Topography	The lease area is a plain terrain, Massive formation of Charnokite is clearly visible in the old mined out pit and also the nearby quarry. The slope is gentle towards 'southern side.

Location map is provided in **Figure No.2.1**.The approachability map is provided in **Figure No.2.2**. Corner co-ordinates of the lease area and satellite imagery are shown in **Figure No. 2.3 & 2.4** respectively. Village map for 500m radius from the lease is shown in **Figure No. 2.5**.

Figure 2.1: Location Map



DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU. S. BALAKRISHNAN AT SURVEY NOS. 203/7 OVER AN AREA OF 1.60.5 HA IN APPAYANAYYAKANPATTI VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR DISTRICT, TAMIL NADU.

Figure 2.2: Approachability Map



Figure 2.3: Lease Plan

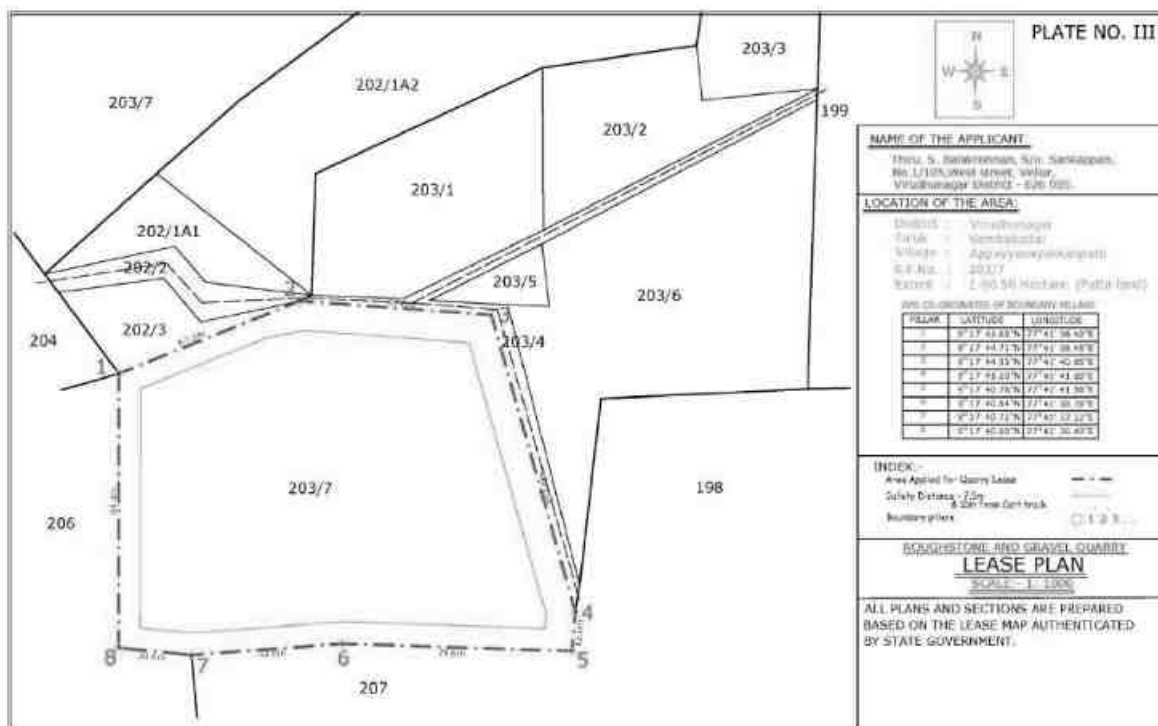


Figure 2.4: Satellite Imagery Showing Corner Co-ordinates



SITE PHOTOGRAPHS



DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU. S. BALAKRISHNAN AT SURVEY NOS. 203/7 OVER AN AREA OF 1.60.5 HA IN APPAYANAYYAKANPATTI VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR DISTRICT, TAMIL NADU.

Figure 2.5: Village Map

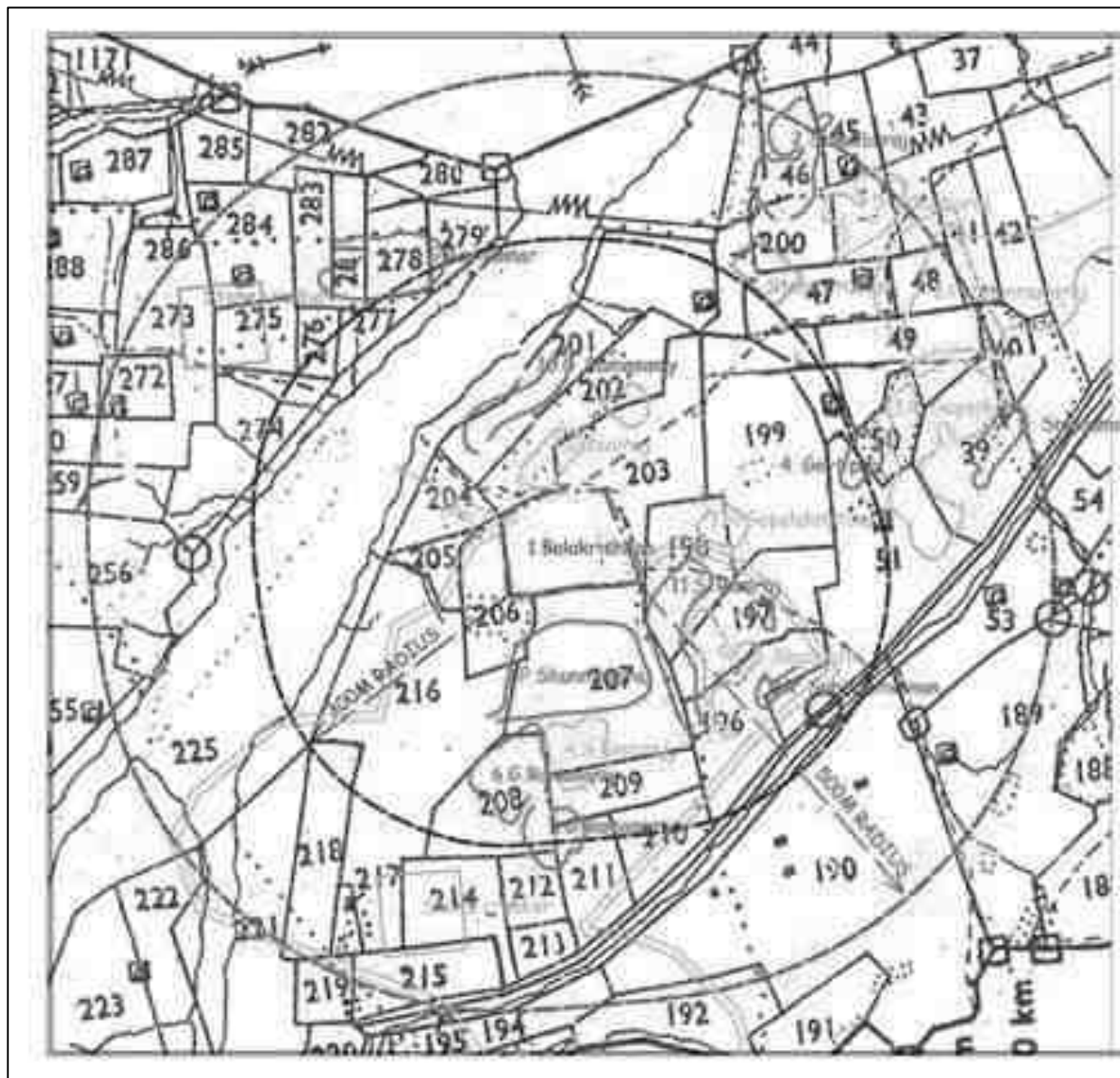


Figure 2.6: Details of features within 500m radius



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As per the conditions of the Terms of Reference, the details of structures located within the 300m and 500m radius are provided below.

Table 2.2: Structures within 500m radius

S.No	Features	Distance
1	Cart track	10m – E
2	Nikshopa Nadi	130m - NE
3	Crusher	380m-SW
4	Fire works	390m-W
5	Vaippar River	400m- NE
6	College	600m - SE

2.4 LAND CLASSIFICATION:

The lease area of Rough stone and Gravel is a patta land in the name applicant got consent and registered and the details of the same has been provided below:

Table 2.3: Survey Number wise Area Breakup

District	Taluk	Village	Survey No	Area in Ha	Ownership
Virudhunagar	Vembakottai	Appayanayyakanpatti	203/7	1.60.50	Patta land in the name of S. Rajadaran and applicant got consent and registered.
Total Area in (Hectares)				1.60.50	

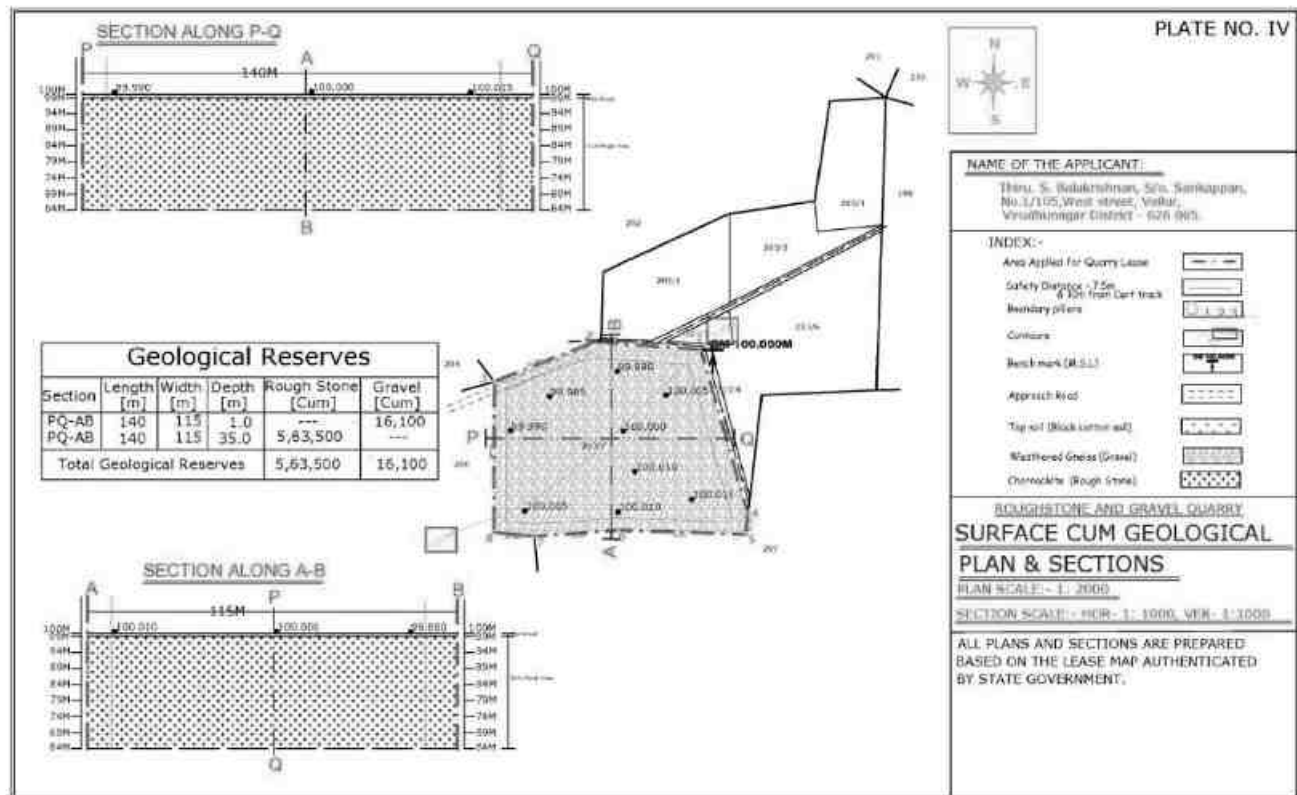
2.5 GEOLOGY:

The area is underlined by the wide range of metamorphic rocks of peninsular gneissic complex.. The geological formations found in the district are Archaean rocks like Gneisses, Granites, Charnockites basic granulites and calc-gneisses. The younger formations are Quartz veins and pegmatite. The rock type noticed in the area for lease is Charnockite which contains mostly Quartz and Feldspar with some ferromagnesian minerals. The Charnockite is part of peninsular Gneisses, a high grade metamorphic rock. The strike of the Charnockite formation is NS with almost vertical dipping.



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Figure 2.7: Geological and Surface Plan Cross Section



2.6 SIZE AND MAGNITUDE OF THE OPERATION:

- The proposed mining will be done by open cast semi mechanized mining method.
- Life of mine will be 10 years.
- Production capacity of 1,27,590m³ of Rough Stone & 11,834m³ of Gravel up to depth of 26m for the period of 5 years & Production capacity of 1,85,232 m³ of rough stone and 11,834 m³ of Gravel up to depth of 39m for the period of 10 years
- There is no waste generation anticipated in this quarry operation since the entire excavated material will be transported directly to buyers.



2.6.1 RESERVES:

Table 2.4: Geological and Mineable Reserves

Type of reserves	Rough stone and Gravel Quarry	
	Rough stone (m ³)	Gravel(m ³)
Geological Resource	6,11,800	16,100
Mineable reserves at 39 m depth	1,85,232- 10 years	11,834- 10 Years

The mineable reserves is arrived after considering the safety distance as per the Precise area letter.

2.6.2 MINING METHOD:

Opencast mechanized mining using jackhammer drilling, blasting, excavation through excavator & mineral transport through tippers will be carried out. The top gravel is soft and can be directly excavated. The rough stone below will be blasted and then excavated. Bench height of 5.0m & 5m width is considered.

Table 2.5: Details of Equipments

EQUIPMENT	CAPACITY	Rough stone and Gravel Quarry
		REQUIREMENT
Excavator	TATA HITACHI EX200	1
Tipper	10 Tonnes	4
Tractor compressor for drilling	175 CFM	1
Dewatering pump	5 HP Diesel pump	1

2.7 PROPOSED SCHEDULE FOR APPROVAL AND IMPLEMENTATION:

The proponent propose to implement the production immediately after obtaining all the statutory approvals such as CTE, CTO, etc. The proponent will comply with the environmental clearance conditions during mining operations. The schedule of project implementation envisaged for this project is provided below. This is a tentative schedule subject to various factor, hence unforeseen variations may occur.



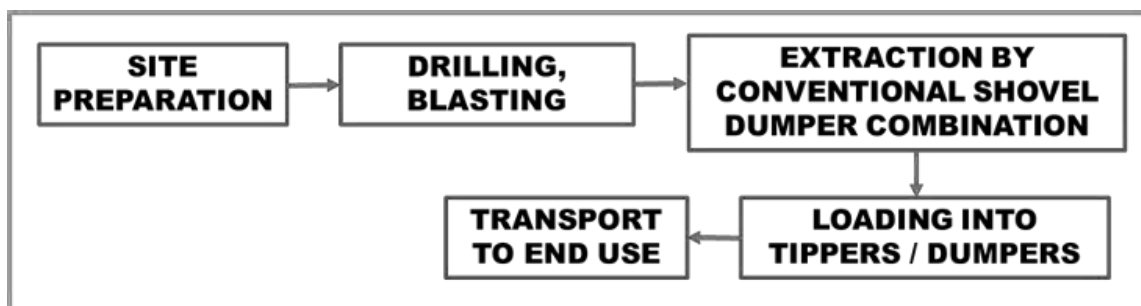
Table 2.6: Proposed Schedule of Implementation

Activities	Months					
	Zero Date	1	2	3	4	5
Obtaining Environmental Clearance						
Obtaining Consent from State Pollution Control Board						
Lease Execution						
Equipment mobilization and Commencement of Mining activity after following all the Statutory Requirements						

2.8 TECHNOLOGY AND PROCESS DESCRIPTION:

The quarry operations involve drilling, blasting, excavation, loading and transportation of rough stone to buyers. The production of Roughs tone in this quarry involves jackhammer drilling and blasting. The primary boulders are removed from the pits by excavators and further made to smaller sizes by rock breakers attached in excavators. It is a conventional opencast semi mechanized method of mining. The process flow diagram of this project is provided below.

Figure 2.8: Process Flow Diagram



2.9 PROJECT DESCRIPTION:

It is a fresh Lease.

2.9.1 PLAN PERIOD:

Production capacity for first 5 year is 1,27,590m³ of Rough Stone & 11,834m³ of Gravel up to depth of 26m for the period of 5 years. Production capacity of 1,85,232m³ of Rough Stone & 11,834m³ of Gravel up to depth of 39m for the period of ten years. The year wise production for the projects has been provided below:



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Table 2.7: Production Schedule During Plan Period.

YEAR	ROUGH STONE IN CU.M.	GRAVEL IN CU.M
I	23,670	3,104
II	24,360	2,716
III	24,360	2,716
IV	25,410	3,298
V	29,790	--
First 5 Year Total	1,27,590	11,834
VI	12,075	--
VII	11,685	--
VIII	11,250	--
IX	11,250	--
X	11,427	--
2nd 5year Total	57,642	--
10Year Total	1,85,232	11,834

During the plan period of 5 years it is proposed to mine out 1,27,590m³ of Rough Stone & 11,834m³ of Gravel up to depth of 26m for the period of 5 years and 1,85,232m³ of Rough Stone & 11,834m³ of Gravel up to depth of 39m for the period of 10 years.

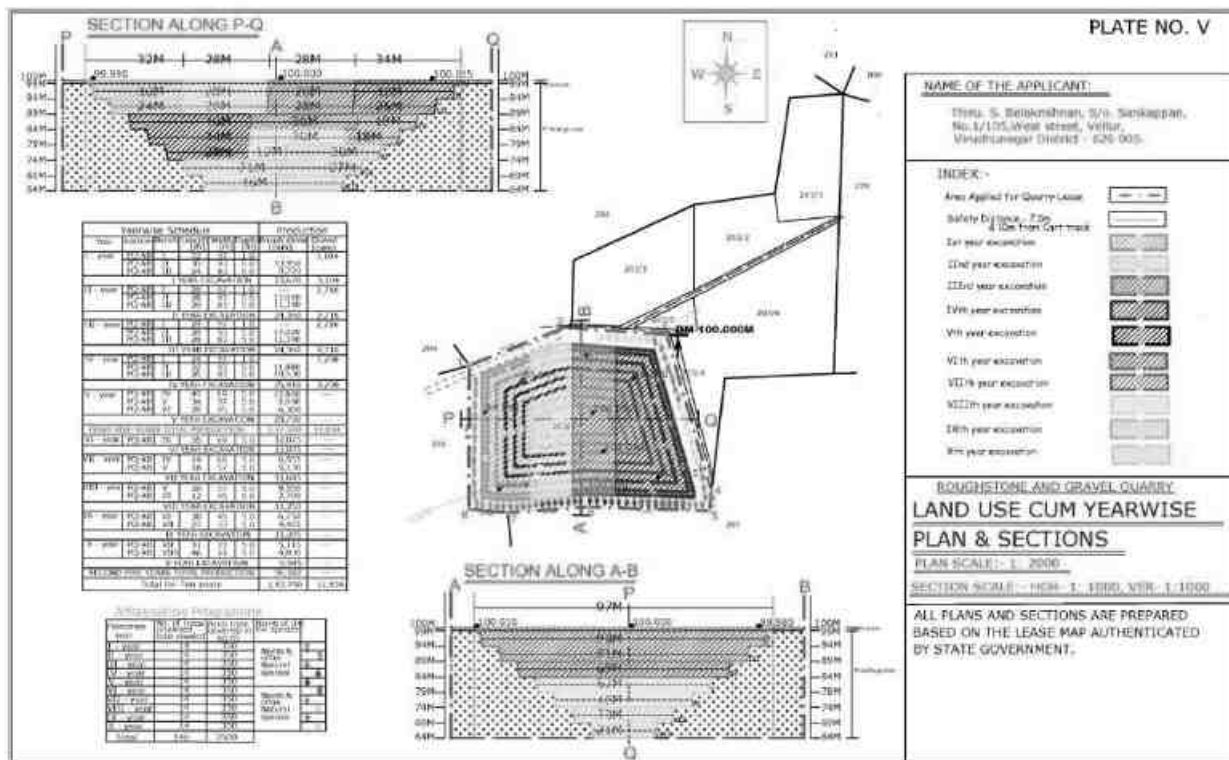


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Waste Disposal during Plan Period:

There is no waste generation anticipated in these quarries since the entire excavated material will be utilized. The top overburden in the form of Gravel and weathered rock will be loaded into tipper and marketed to needy customers on payment of necessary Fees to Government. The excavated rough stone will be excavated and loaded into tipper to the needy buyers for producing crusher aggregates, M Sand.

Figure 2.9: Year wise Plan & Section



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2.9.2 CONCEPTUAL PERIOD:

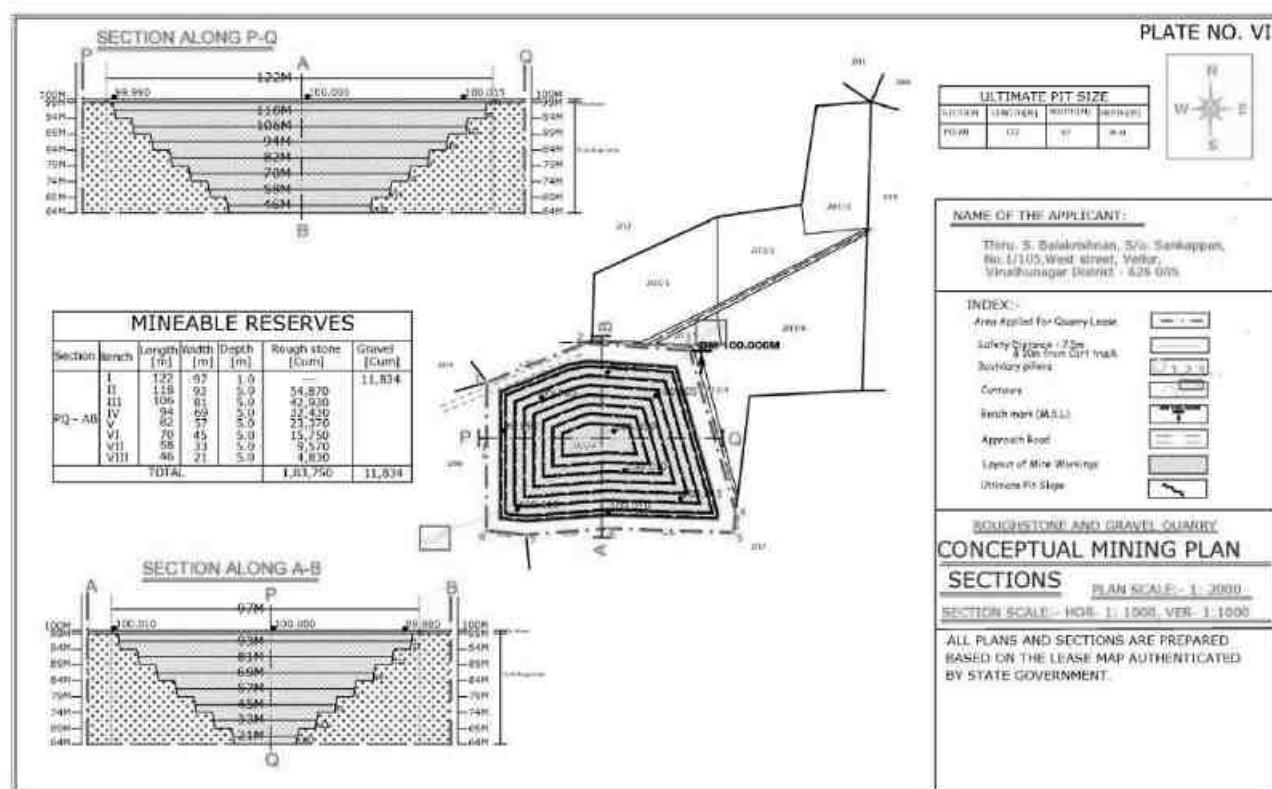
In the post mining stage, entire entire 1.18.50Ha will be used as mined out area at 39m depth. Ultimately the entire mined out area will be left as water body. 0.02.0 Ha will be the mine roads & infrastructure, 0.35.0 Ha will be covered with vegetation, and 0.05.00 Ha will be fencing. The ground water table on the surface in this area is ranging from 55 to 60m BGL Hence, ground water intersection in not envisaged

Table 2.8: Ultimate Pit Dimensions

Length (m)	Width (m)	Depth (m)
122	97	39

The ground water table on the surface in this area is quite deeper. Hence, ground water intersection in not envisaged. The Conceptual Plan & Cross section are shown below:

Figure 2.10: Conceptual Plan and Section



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2.9.4 LAND DEGRADATION/UTILIZATION:

The land use pattern at present and at the end of the quarrying period has been provided below.

Table 2.9: Land Use

Sl. No.	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)
1.	Quarry area	Nil	1.18.50
2.	Infrastructure	Nil	0.01.00
3.	Roads	Nil	0.01.00
4.	Green Belt	Nil	0.35.00
5.	Fencing	Nil	0.05.00
6.	Unutilized	1.60.50	0.00.00
Total		1.60.50	1.60.50

In the post mining stage, entire entire 1.18.50Ha will be used as mined out area at 39m depth. Ultimately the entire mined out area will be left as water body. 0.02.0 Ha will be the mine roads & infrastructure, 0.35.0 Ha will be covered with vegetation, and 0.05.00 Ha will be fencing.

2.9.5 PROJECT REQUIREMENTS:

Table 2.10: Project Requirements

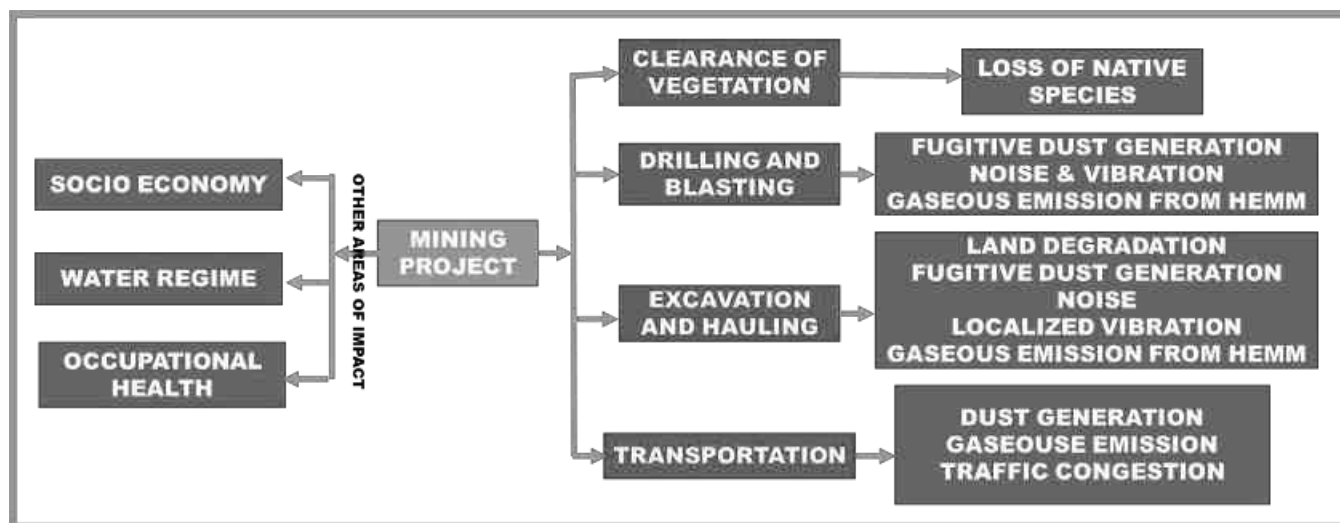
Project Name	Rough stone and Gravel Quarry	
Manpower	10 persons directly and 50 people indirectly.	
Water Requirement and Source	Water Requirement: 5 KLD	
	Details	Quantity (KLD)
	Drinking water and Domestic Use	1.0 KLD
	Dust Suppression	3.0 KLD
	Green belt	1.0 KLD
Total		5.0KLD
Source: The required water will be procured from outside agencies. Rain water harvested in the mine sump shall also be used.		
Power Requirement	No electricity needed for mining operation. The minimum power requirement for office, etc will be met from state grid.	
Site Services	This is a proposed project. Site services like mine office, first aid room, rest shelters, toilets etc. will be provided as semi-permanent structures.	
Project Cost	Rs. 39,88,700	
Funds allocated for socio-economic	Rs.2.0 Lakhs is allocated under CER budget.	



2.10 DESCRIPTION OF MITIGATION MEASURES:

Scientific and systematic development of mines will be carried out by the project authorities for preserving as well as improving the environmental conditions in and around the mining lease area. Elaborate analysis on impacts and mitigation measures to be adopted on implementation of this project and the same has been dealt in Chapter- IV.

Figure 2.11: Schematic Diagram of mining activities and associated impacts



2.11 ASSESSMENT OF NEW & UNTESTED TECHNOLOGY:

There is no new technology that is being implemented. Opencast method of mining which is the proposed method of mining is a proven technology which is technologically and economically viable. No major technological failures are anticipated. A disaster management plan shall be put into place to take care of any unforeseen situation.

2.12 CONCLUSION:

As good environmental preservation is one of the prime motive of the project proponent. It is expected that the project activity will not have any major impact on environmental equilibrium in the study area.

CHAPTER 3 a

DESCRIPTION OF ENVIRONMENT

3.1 GENERAL:

The existing environmental baseline data for the various environmental components were collected in the study area for the purpose of assessing the impact on present environment due to the project activities.

Monitoring was carried out systematically and meticulously as per relevant IS codes, CPCB, MoEF&CC guidelines during Summer Season (March 2025 to May 2025) The details of the study are given in this chapter. For the purposes of this study, the area has been divided into two zones, namely, core and buffer zones. The entire lease area is considered to be the core zone while the buffer zone encompasses a 10km radius from the periphery of the core zone. The details of villages falling in the study area and other features are given in Index Plan in **Figure No - 3.1**

The primary data collection was done by means of field monitoring and the secondary data collection was obtained from published sources and Government documents. The details of the baseline data collection which has been elaborated through the course of this chapter has been concised below:

Table 3.1: Type of Baseline Data

S.No	Studies	Parameters / Study	Location
1	Socio Economy	Demographic Data from Census 2011	Core and Buffer Zone
		Sample Survey	Buffer Zone
2	Micro Meteorology	Rainfall Data from IMD, Viruthunagar	Virudhunagar
		Temperature, Humidity, Wind Speed, Wind Direction	1 Representative Location
3	Ambient Air Quality	PM10, PM2.5, SO2, NOx, CO	1 Core Zone, 5 Buffer Zone
4	Water Quality	Physical and Chemical Parameters	1 Core Zone, 5 Buffer Zone
5	Noise Levels	Ambient Noise	1 Core Zone, 5 Buffer Zone
6	Soil Quality	Physical and Chemical Parameters	1 Core Zone, 2 Buffer Zone
7	Land Use and Land Cover	Land use pattern within 10km study area using RS Satellite	Buffer Zone
		Land use based on Census 2011	Core and Buffer Zone
8	Biological Environment	Flora and Fauna	Core Zone and Buffer Zone
9	Hydrology & Hydro Geology	Hydrogeological profile of the area	Core Zone and Buffer Zone

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Figure 3.1: Study Area Map



**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF
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Table 3.2: Environmental Setting of the Study Area

S.No	PARTICULARS	Details
1	Nearest Highway	Kovilpatti – Thiruvengadam (SH-44)– 4.0km (S)
2	Nearest Railway station	Sivakasi RS – 21km - NE
3	Nearest Airport	Madurai - 74km - NE
4	Nearest major water bodies	Nikshopa Nadi - 130m (N), Vaippar River- 400m- (N), Uppu Odai - 3.2km-(SE), Marugal Odai – 5.2km – (NE), Kayalkudi River - 7.5km – (NE). Nedunkulam Odai - 8.6km – NE.
5	Nearest villages	Ramalingapuram – 1.0km – (NW) side
6	Hills / valleys	Nil within 10m radius
7	Notified Archaeologically important places, Monuments	Nil within 10m radius
8	Local Places of Historical and Tourism Interest	Nil within 10m radius
9	Environmental sensitive areas, Protected areas as per Wildlife Protection Act, 1972 (Tiger reserve, Elephant reserve, Biospheres, National parks, Wildlife sanctuaries, community reserves and conservation reserves)	Nil within 10m radius
10	Reserved / Protected Forests	Nil within 10 km radius
11	Defence Installations	Nil within 10 km radius
12	Seismic Zone	Zone – II (Least Active)
13	Other Industries in the study area	Other than crushers, Roughstone quarries, match box, fire works factories no other major industries are located in the study area.

3.2 SOCIO-ECONOMIC CONFIGURATIONS OF THE AREA:

3.2.1 GENERAL:

The Socio-Economic details of the study area are collected through:

- Identification of villages falling from the study area map with combined Taluk map.
- Collection of primary data through sample survey, village meetings and focused group discussion.
- Collection of the demographic pattern of villages falling in the area through NIC 2011 census data.
- Occupational structure of villages falling in the study area through NIC 2011 census data.
- Details of the amenities available in villages falling in the study area through NIC 2011 census data. The findings of the study are illustrated below:

3.2.2 SECONDARY DATA DESCRIPTION:

The proposed Rough stone and gravel quarry is located in in Appayanaickenpatti Village, Vembakottai Taluk, Virudhunagar District. Based on 2011 census data, in the 10km radius there are 35 Rural Villages and 2 urban areas from Five Taluks namely Sivakasi, Rajapalayam, Sattur, Sankarankoil, Kovilpatti. of 3 districts namely Virudhunagar, Tirunelveli and of Thoothukkudi District. The demographic profile of the study area is given below:

Table 3.3: Social, Economic and Demographic Profile of the Study Area

Details	Population	Percentage
A. Gender-wise distribution		
Male Population	49528	49.35
Female Population	50838	50.65
Total	100366	100
B. Caste-wise population distribution		
Scheduled Caste	23360	23.27
Scheduled Tribes	149	0.15
Other	76857	76.58
Total	100366	100
C. Literate and Illiterate population		

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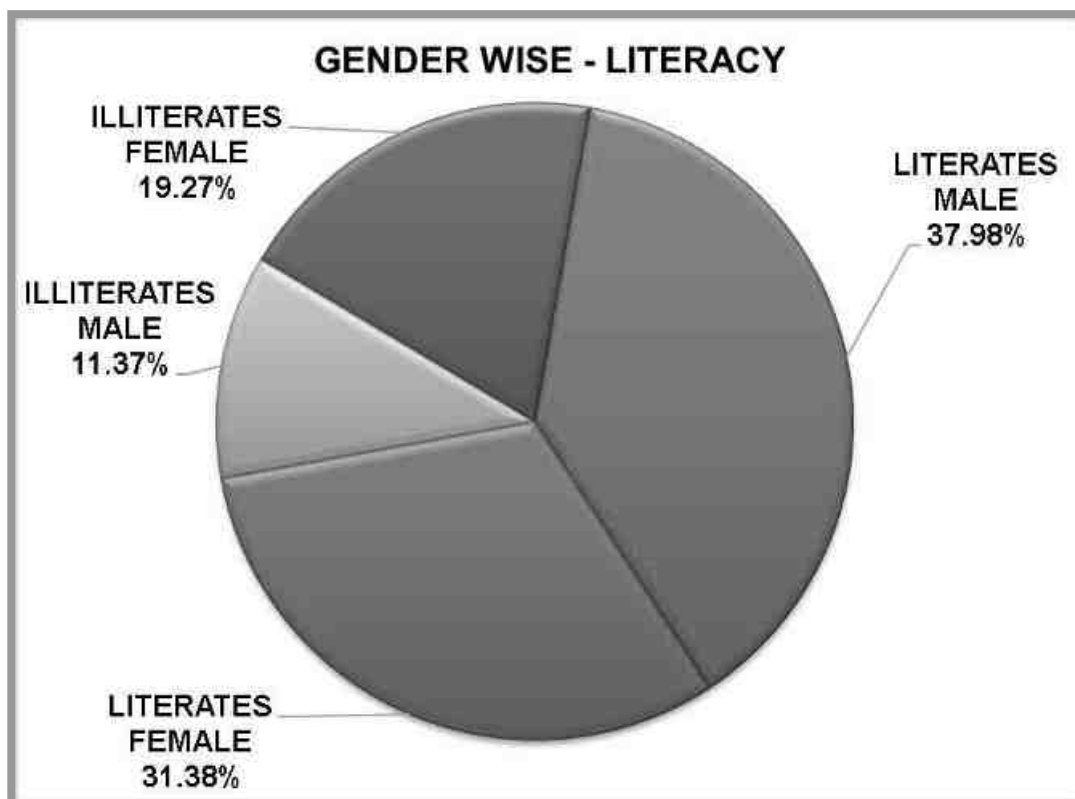
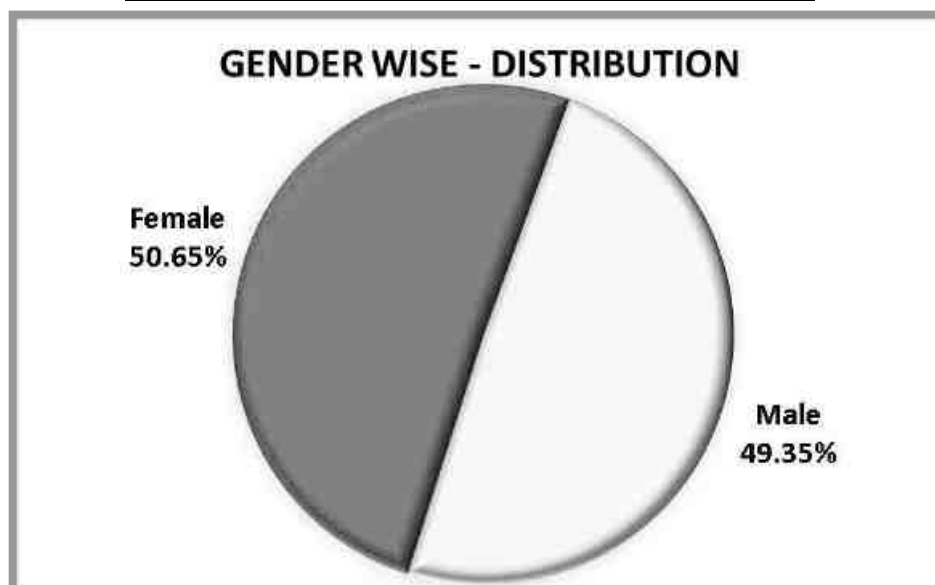
Details	Population	Percentage
Literate Males	38114	54.75
Literate Females	31498	45.25
Total Literate Population	69612	69.36
Others Males	11414	37.11
Others Females	19340	62.89
Others Population	30754	30.64
Total	100366	100
D. Occupational structure		
Main workers	49466	49.30
Marginal workers	5157	5.10
Total Workers	54623	54.40
Total Non-workers	45743	45.60
Total	100366	100

The total population of these 35 rural villages and 2 urban areas is 100366 in which the male population is 49528 (49.35%) and the female population is 50838 (50.65%). This shows that the male and female population ratio is almost equal. Among the total population 0.15% belong to Scheduled Tribes, 23.27% are Scheduled Caste and the balance 76.58% people belong to other castes. Among the total population, 69.36% of the people are literate.

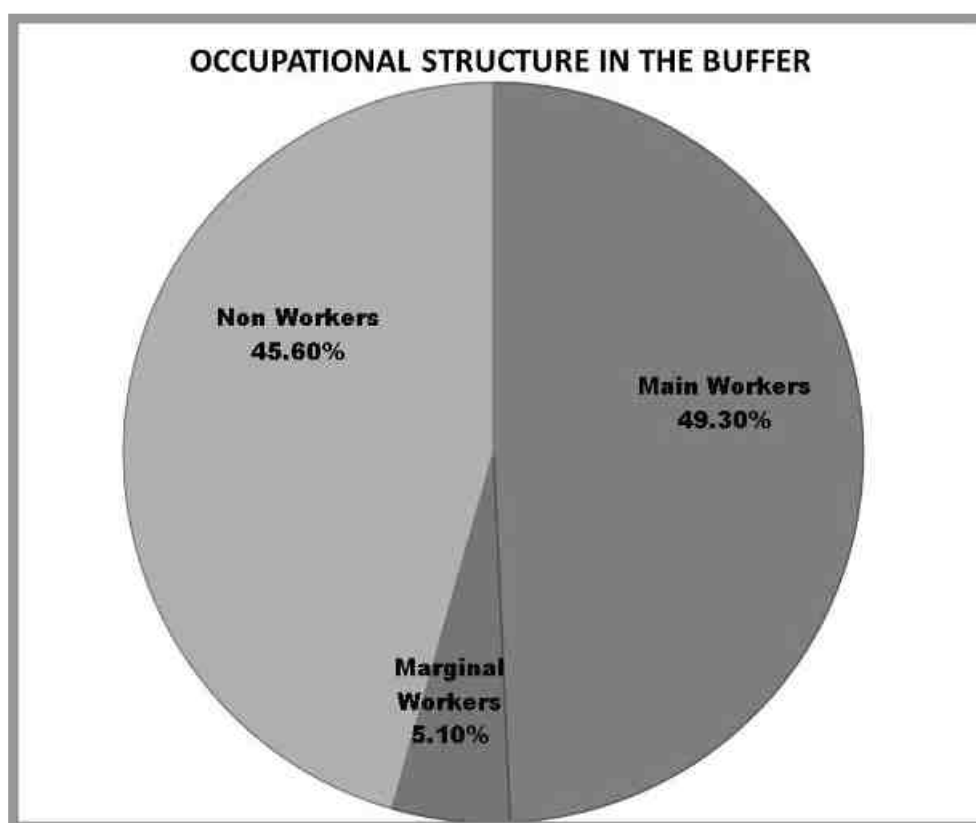
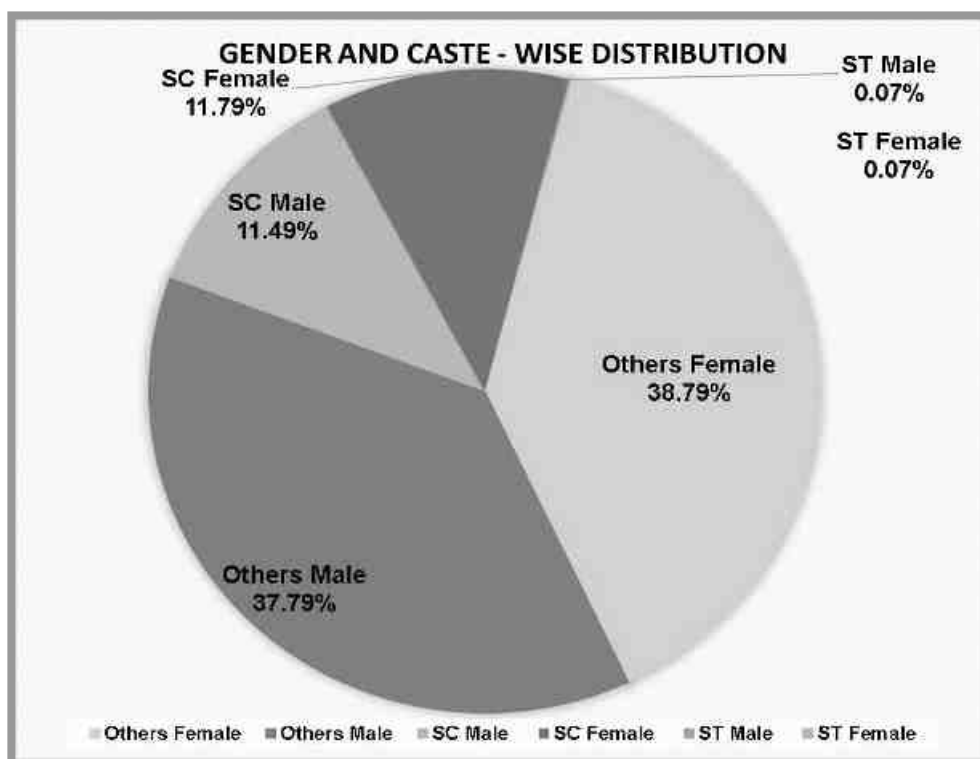
Among the total population, 54.75% are literate males and 45.25% are literate females. This shows that the male literates are slightly more than the female literates. Totally, the illiterate constitute 30.64% of which the female cover 62.89% and the male 37.11%. Illiteracy in women is more than in the male population.

The village wise population, literacy levels and occupational structure details are given in **Annexures 4 and 5**. The demographic structure within the buffer zone is shown diagrammatically in **Figure No – 3.2**.

Figure 3.2: Demographic Structure in Buffer Zone



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3.2.3 DETAILS OF AMENITIES:

Based on 2011 census data, regarding the educational facilities, 35 rural villages out of 35 rural villages have educational facilities. There are totally 73 Primary Schools functioning in these 35 rural villages. Among them 13 villages have one primary school, 13 villages have 2 primary schools, 4 villages have 3 primary schools, 3 villages have 4 primary schools, 2 villages has 5 primary schools. With regards to educational facilities, from Primary School level to Senior Secondary School level, there is availability of some schools in the area. However, beyond this, college level education is not available in the buffer zone. Out of 35 villages, 19 villages have primary health sub centers. Better medical facilities are available in the nearby larger towns.

Table 3.4: Primary Schools in the Buffer Zone Rural Villages

S.No	No of Rural Villages	Number of primary schools	Totals
1	0	0	0
2	13	1	13
3	13	2	26
4	4	3	12
5	3	4	12
6	2	5	10
Total	35		73

Table 3.5: Education Facility Availability

PARTICULARS	Available in village
Govt Primary School	31
Govt Middle School	21
Govt Secondary School	8
Govt Senior Secondary School	6
Govt Arts and Science Degree College	0
Govt Engineering College	0
Govt Medicine College	0
Govt Management Institute	0
Govt Polytechnic	0
Govt Vocational Training School/ITI	0

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Table 3.6: Healthcare Amenities Availability

PARTICULARS	Available in village
Community Health Centre	1
Primary Health Centre	2
Primary Health Sub Centre	19
Maternity And Child Welfare Centre	4
TB Clinic	2
Hospital Allopathic	0
Hospital Alternative Medicine	0
Dispensary	2
Veterinary Hospital	4
Mobile Health Clinic	0
Family Welfare Centre	2

Table 3.7: Infrastructure Facilities

Particulars	Available in village
Tap Water-Treated	30
Covered Well	10
Hand Pump	20
Tube Wells/Borehole	28
Post office	3
Bus services	33
Railway station	0
Commercial Bank	4
Cooperative bank	10

The details of the educational, medical and infrastructural facilities available in the buffer zone as per 2011 census is provided in **Annexures- 6-8**.

However, lot of improvements are observed in the amenities in the area now.



3.2.4 SAMPLE SURVEY:

3.2.4.1 OBJECTIVE:

The objective of the study is to understand the present socio-economic condition, availability of existing infrastructure facilities in the area & to know the needs of the people in the project peripheral villages, to provide an implementable future CER proposal pertaining to specific needs addressing local requirements.

3.2.4.2 APPROACH:

Nearby villages were visited for conducting study to know about socio-economic conditions, including aspirations and requirements of the people for a better living and collected relevant data. Informal discussions were conducted in the villages to capture the overall scenario of the village including their socio economic problems and the aspirations, desires of the community in overall terms.

Salient details of the study are given below:

- Predominantly the study area is rocky, dry, barren land with predominant mining and allied activities.
- Due to scanty rainfall, poor soil condition and less ground water availability, very little plantation and agriculture are observed in the area.
- The study area is predominantly fallow land with thorny bushes.
- Other allied activities livestock rearing and poultry farming are also found.
- Majority of the people are small farmers
- Agriculture is predominantly rainfed and the irrigation is available only during rainy period, during the rest of the time locals have less employment opportunities. Other occupations include Mining worker, construction workers, vendors, etc.
- Bore well is the main source for drinking water. There are OHT's, Ground level tanks, public taps are available.
- Reasonably better amenities like approach road bus facility, electricity, mobile phone connectivity, Public Distribution System , banks etc are available.

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Anganwadi, Appanayakkanpatti



**Community
Hall, Ramalingapuram**



Library, Appanayakkanpatti



OHT, Kundanpatti



Panchyat Office Appanayakkanpatti



Primary School , Appanayakkanpatti

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Primary School, Kundanpatti



Primary School, Vadakanmarinadu



Sub Library, Appanayakkanpatti



Ration Shop, Appanayakkanpatti

3.3 EXISTING ENVIRONMENTAL QUALITY

3.3.1 MICRO-METEOROLOGY

3.3.1.1 General:

The meteorological conditions in an area regulate the dispersion of air pollutants being released into the atmosphere. The principal variables are horizontal convective transport i.e. wind speed and direction and vertical convective transport, i.e. mixing height, stability class and topography of the area.

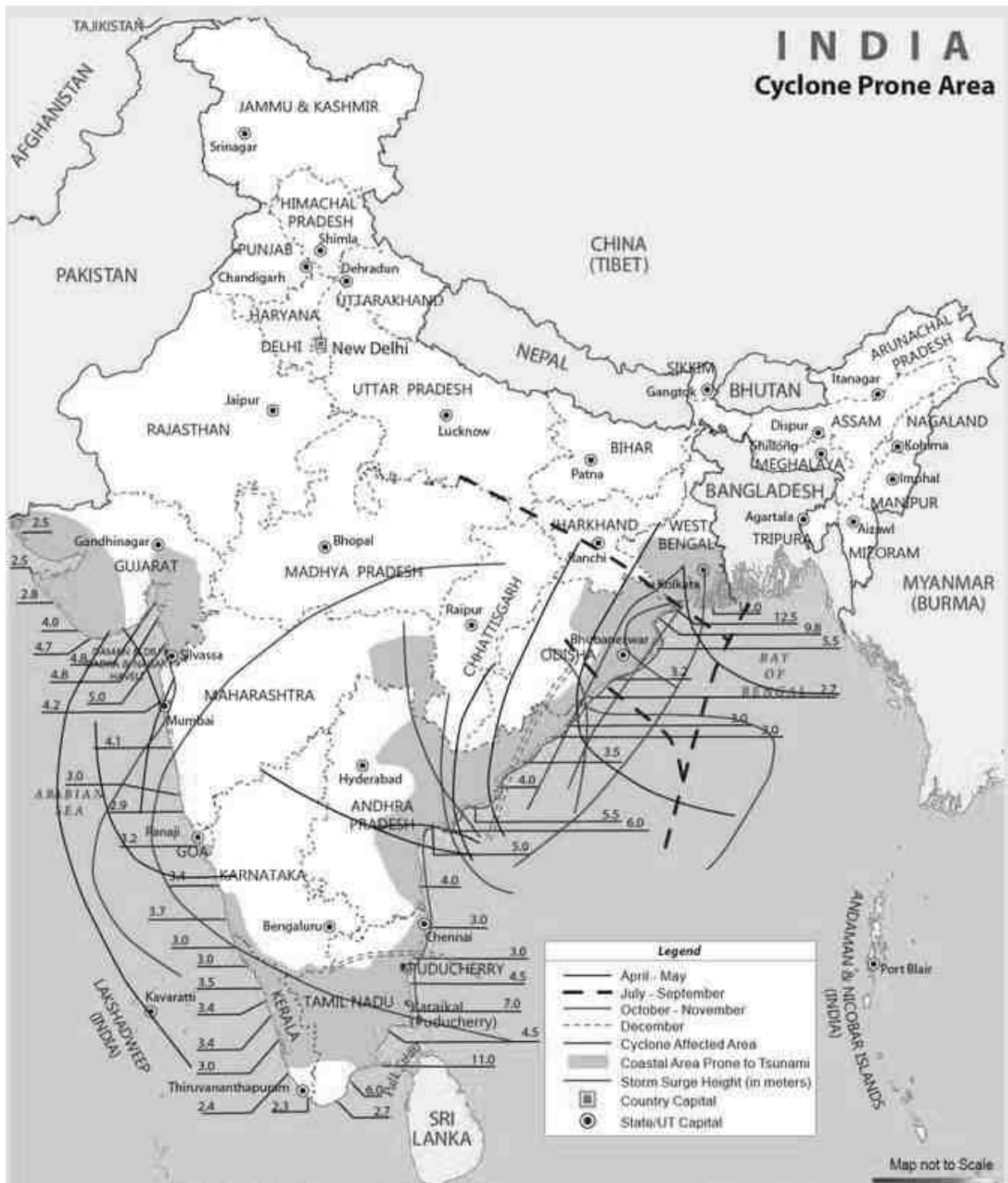
3.3.1.2 Historical Meteorological Data:

A. Cyclones And Depressions

Cyclonic storms and depressions in Bay of Bengal affect the East Coast of India. Isolated ones, forming in January to March in the South Bay of Bengal move West-North-westwards and hit Tamil Nadu coast. In April and May, cyclonic storms and depressions form in the South and adjoining Central Bay and move initially to the Northwest, then North and then recurve to the Northeast striking the Arakan coasts in April and Andhra Pradesh (AP)-Orissa-West Bengal (WB) – Bangladesh coasts in May. Most of the monsoon (June – September) storms develop in the central and in the north bay and move west – north - westwards affecting AP – Orissa – WB coasts. Post monsoon (October – December) storms form mostly in the south and central Bay, recurve between 150 and 180 N affecting Tamil Nadu – AP – Orissa – WB – Bangladesh coasts. **Figure No - 3.3** depicts the history of cyclonic storms, which have struck the Indian coast during the months of October, November and December during the last 75 years. **(Source: Vulnerability Atlas of India series, above figure accessed from www.maps of india.com).** East coast is prone to cyclonic storms round the year but mostly these occur prior to SW i.e., in May and after SW monsoon i.e., in October and November.

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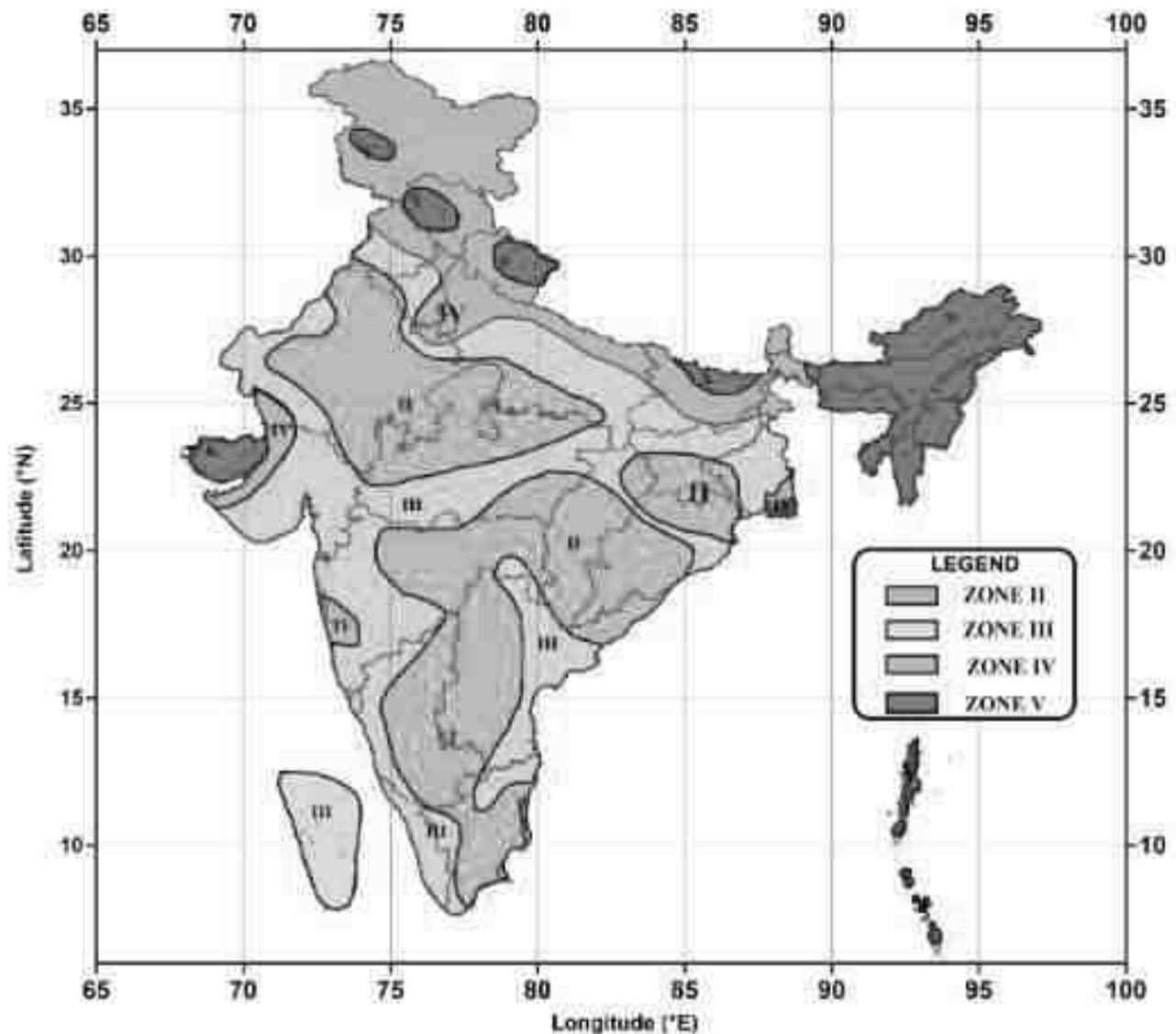
Figure 3.3: Cyclone Prone Areas



B. SEISMIC DATA

From the seismic zone map of India as depicted in the **Figure No - 3.4**, it can be seen that the project site and study area falls in the Zone – II and is described as least active zone.

Figure 3.4: Seismic Zone Map of India



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C. Climate and Rainfall Data:

Temperature: From the middle of February, temperature increases steadily. The weather is quite hot in May and June and the maximum temperature sometimes reaches 40°Celsius. With the onset of the southwest monsoon by the end of May or beginning of June, there is some drop in temperature.

Cloudiness: During the months of April and May, the skies become heavily clouded and threatening in the afternoons on many days when thunderstorms follow. In the southwest and northeast monsoon seasons, the sky is heavily clouded or overcast.

Winds: Generally light to moderate in strength and NW-SW and vice-versa. Between May and September winds are mainly north westerly or westerly. From October to February winds are mainly north easterly or northerly.

Rainfall: Main rainy season is from October to the middle of January. November is generally the rainiest month. The average annual rainfall data from 2011 – 2020 is given in Table No. 3.8.

Rainfall data collected by Virudhu Nagar , IMD station for the period of 2011 to 2020 is given in **Table No.3.8** Rainfall histograms are presented in **Figure No - 3.5 and 3.6.**

Table 3.8: Average Annual Rainfall Data (2011-2020)

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Rainfall
2011	85.49	162.8	109.57	201.3	119.75	392.46	313.13	227.99	199.02	146.11	190.62	197.52	2345.76
2012	16.29	18.37	76.82	297.85	81.31	192.98	223.09	287.28	155.75	234.49	127.34	14.38	1725.95
2013	10.22	43.85	46.9	14.44	27.26	15.48	2.4	115.17	43.3	118.37	68.61	84.27	590.27
2014	11.2	2.25	7.42	14.03	187.33	9.68	9	78.69	65.2	217.23	146.17	55.08	803.28
2015	4.45	3.43	31.39	95.62	114.89	17.83	28.19	53.96	84.73	103.78	279.24	140.03	957.54
2016	0.24	0.03	1.71	5.88	85.2	16.88	69.79	39.75	47.21	66.65	49.6	60.33	443.27
2017	20.72	2.81	15.1	3.18	32.84	7.88	27.54	42.11	62.59	40.74	42.35	17	314.86
2018	0.74	1.28	11.62	21.13	66.02	14.49	33.67	41.94	47.92	134.91	68.92	7.28	449.92
2019	5.08	2.26	3.23	2.33	4.5	17.83	18.5	71.16	163.58	251.1	109.63	88.91	738.11
2020	3.87	0.48	0.11	24.2	69.81	32.41	40.51	45.93	94.14	138.83	241.45	139.88	831.62
NORMAL	18.5	23.5	37.6	76.8	60.2	18.3	31.1	51.6	80.8	191	175.5	64.7	829.6

Source – Virudhunagar District, IMD



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Figure 3.5: Total Rainfall

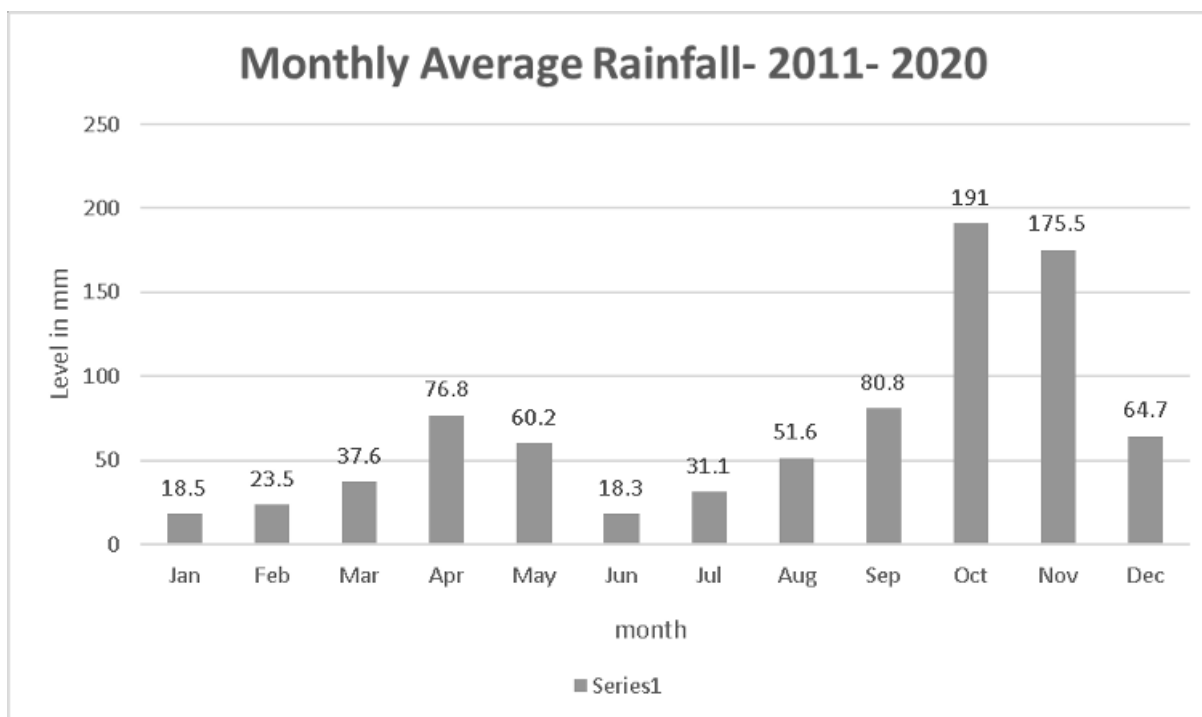
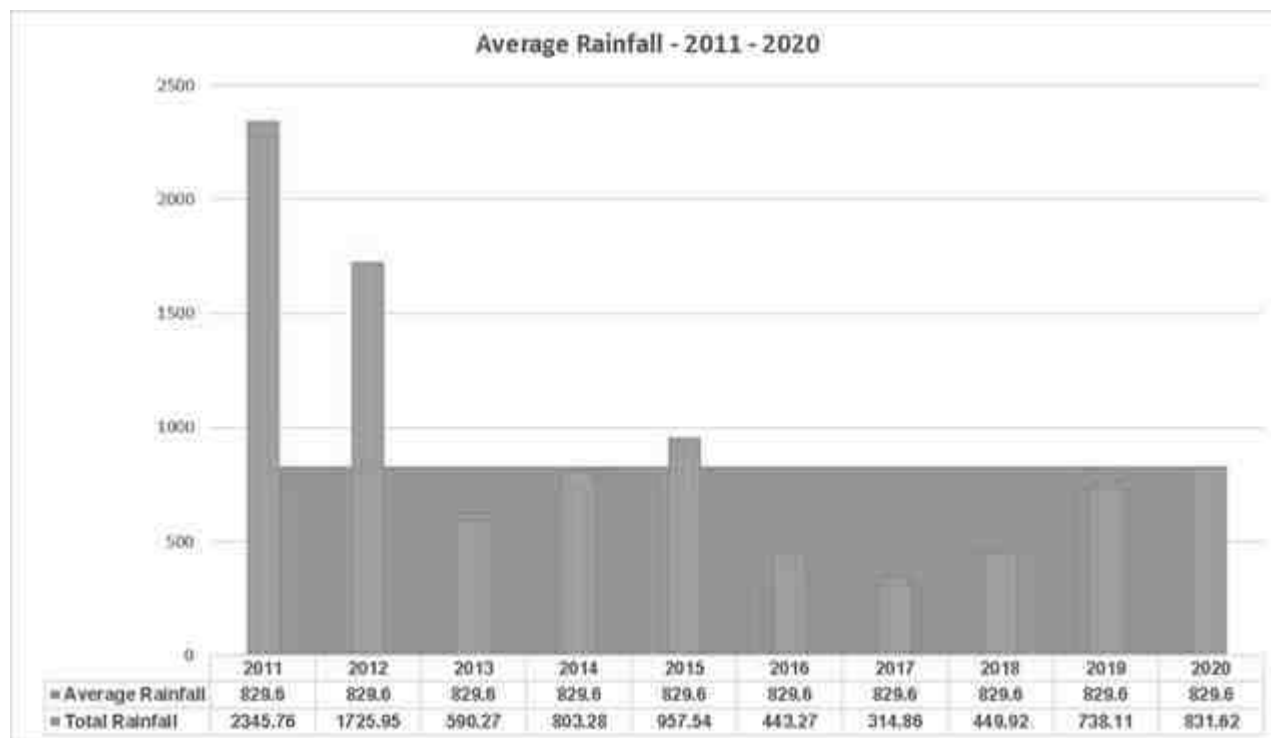


Figure 3.6: Average Annual Rainfall



3.3.1.3 SITE SPECIFIC METEOROLOGICAL DATA:

Micrometeorology and microclimatic parameters like wind velocity, wind direction, ambient temperature, relative humidity, were collected throughout the monitoring period.

DATA ANALYSIS:

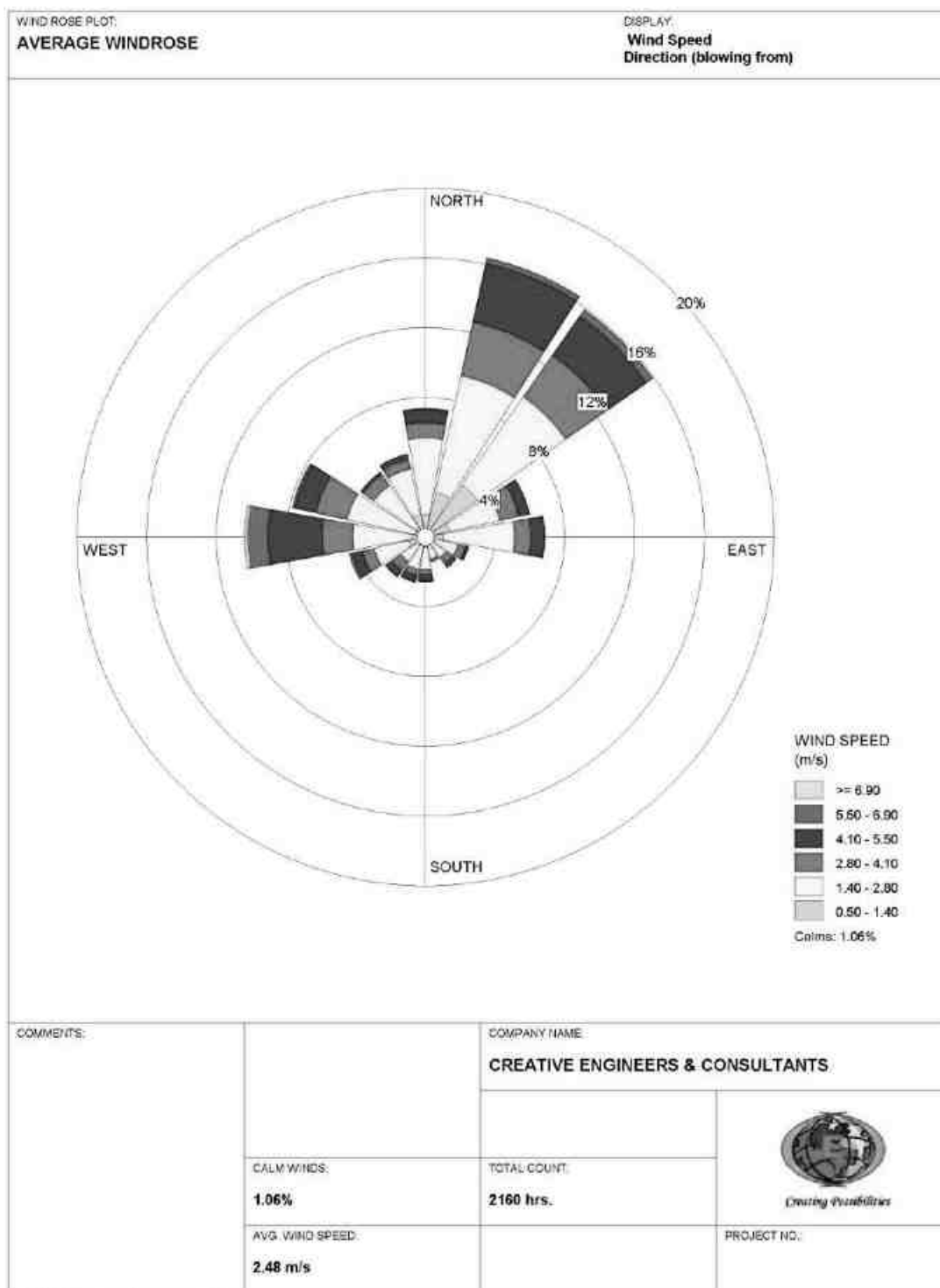
The temperature in the area during the study period ranged from 22.0°C to 40.0°C while the relative humidity varied between 19.8 – 94.4%. The wind speed during the study period ranged from <1.8 to 37.1 Km/hr. The predominant wind direction is from NE. The meteorological data are presented in **Table no – 3.9**. The average wind rose is depicted in **Figure No - 3.7**.

Table 3.9: Meteorological Data

Season: Summer Season, March 2025 to May 2025)			
S.NO	PARAMETERS	MIN	MAX
1	Temperature In °c	22.0	40.0
2	Humidity in %	19.8	94.4
3	Wind speed in km/hr	<1.8	37.1
4	Predominant wind direction from	NE	

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Figure 3.7: Average Wind Rose



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3.3.2 AMBIENT AIR QUALITY (AAQ):

Ambient Air quality has been assessed through a network of 6 ambient air quality stations. The following methodology has been considered for design of ambient air quality monitoring network in the area. Based on these criteria, 6 numbers of air sampling stations were selected in the area as shown below in Table No.3.10.

- ❖ Topography / terrain of study area.
- ❖ Populated areas within study area.
- ❖ Residential /sensitive areas within study area.
- ❖ Magnitude of surrounding industries.0.9
- ❖ Representation of regional background levels.
- ❖ Representation of cross sectional distribution in down wind direction.
- ❖ Predominant wind direction and wind pattern.

Table 3.10: Air Quality Monitoring

1.	Monitoring Period	Summer Season (March 2025 – May 2025)
2.	Monitoring Location	The location map showing Ambient Air Quality study stations are shown in Figure No- 3.8.
3.	Methodology	
	Parameter	Protocol
	a. Particulate Matter (PM10)	Gravimetric (IS 5182: Part 23:2017)
	b. Particulate Matter PM2.5	Gravimetric (IS 5182: Part 24:2019)
	c. Sulphur Dioxide	Colorimetric (West & Gaeke Method) (IS 5182: Part 02: 2017)
	d. Nitrogen Dioxide	Colorimetric(Modified Jacob & Hocheiser Method) (IS 5182: Part 06:2017)
	e. Carbon Monoxide	CO Monitor
4.	f. Silica	Colorimetric (Molybdate Method) NIOSH 7601 -2003
	Monitoring Frequency	2 days in a week, 4 weeks in a month for 3 months in a season.

Table 3.11: Air Quality Monitoring Locations

S.NO	LOCATION CODE	LOCATION	DISTANCE FROM CORE ZONE (KM)	DIRECTION
1	A1	Near Mine Lease Area	-	-
2	A2	Appaiyanayakkanpatti Village	2.1km	W
3	A3	Akkaraipatti Village	1.2km	NW
4	A4	Kundampatti Village	1.4km	S
5	A5	Ammiyarpatti Village	1.4km	NE
6	A6	Avudaiyarpuram Village	2.4km	SW



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Figure 3.8: Ambient Air Quality Study Stations



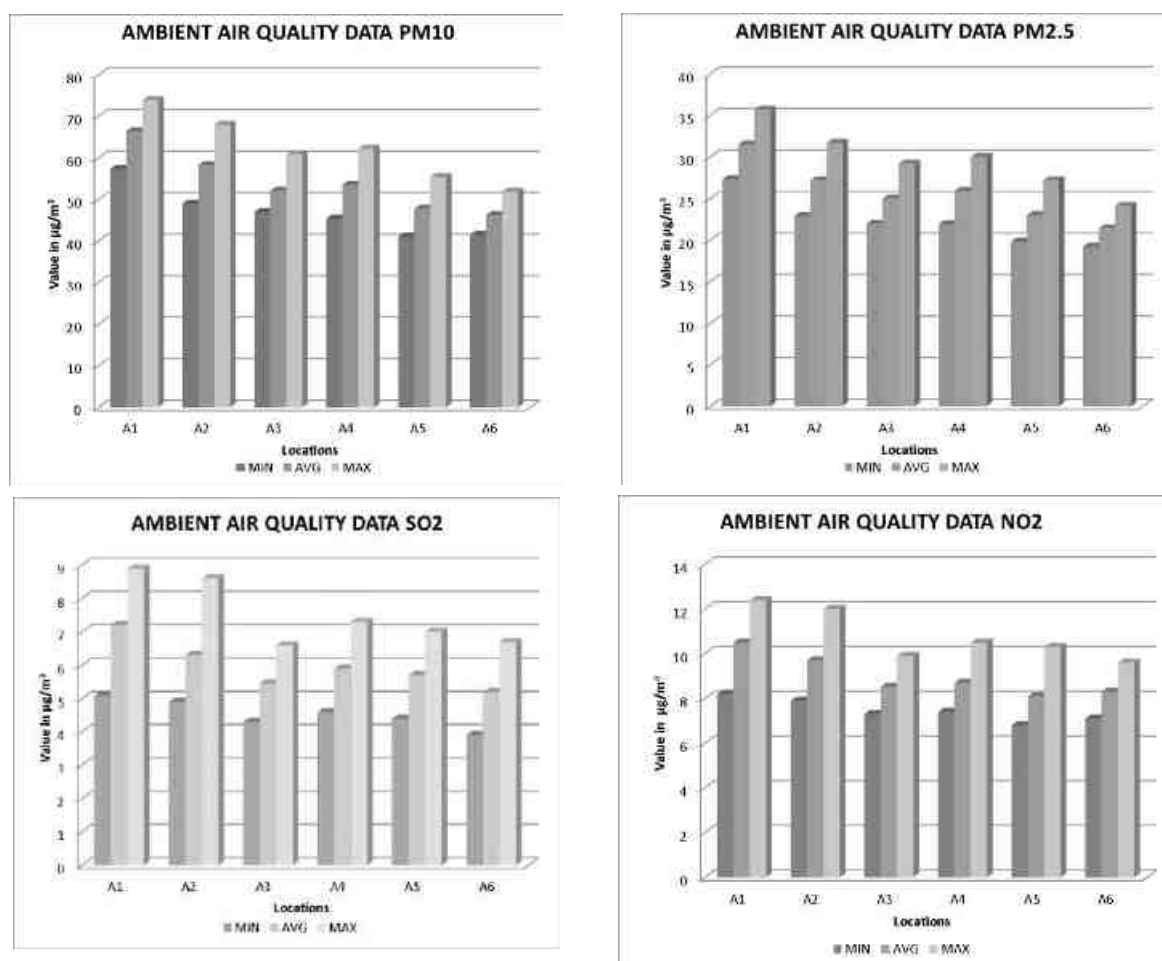
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Table 3.12: Ambient Air Quality Data

PARAMETERS	Cat.*	All Value in $\mu\text{g}/\text{m}^3$											
		PM ₁₀			PM _{2.5}			SO ₂			NO ₂		
LOCATIONS		MIN	AVG	MAX	MIN	AVG	MAX	MIN	AVG	MAX	MIN	AVG	MAX
A1-Near Mine Lease Area	I	57.4	66.4	73.9	27.3	31.5	35.7	5.1	7.2	8.9	8.2	10.5	12.4
A2-Appaiyanayakkanpatti Village	R	49.0	58.3	68.0	22.9	27.2	31.7	4.9	6.3	8.6	7.9	9.7	12.0
A3-Akkaraipatti Village	R	47.0	52.1	60.9	22.0	25.0	29.2	4.3	5.5	6.6	7.3	8.5	9.9
A4-Kundampatti Village	R	45.4	53.5	62.2	21.9	25.9	30.0	4.6	5.9	7.3	7.4	8.7	10.5
A5-Ammiyarpatti Village	R	41.1	47.8	55.4	19.8	23	27.2	4.4	5.7	7	6.8	8.1	10.3
A6-Avudaiyarpuram Village	R	41.5	46.3	51.9	19.2	21.4	24.1	3.9	5.2	6.7	7.1	8.3	9.6
NAAQ Limits		PM ₁₀			PM _{2.5}			SO ₂			NO ₂		
	*	100			60			80			80		
	**	100			60			80			80		

***Note:** Category: * - Industrial, Residential, Rural and other area, ** – Ecologically Sensitive Area (notified by Central Government)

Figure 3.9: Ambient Air Quality Data



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3.3.2.1 Results and Discussion:

The AAQ monitored data for all locations for above parameters are shown in **Table No - 3.12** and in **Figure No - 3.10**. Ambient Air Quality data during the study period is given in **Annexure-9**. From the table it is seen that, in the ambient air, the PM₁₀ values were in the range of 41.1-73.9 µg/m³. PM_{2.5} values were in the range of 19.2 -35.7 µg/m³. SO₂ levels were ranging from 3.9– 8.9 µg/m³. NO₂ levels were ranging from 6.8-12.4 µg/m³.

The existing Ambient Air Quality levels for PM₁₀, PM_{2.5}, SO₂ and NO₂, are within the NAAQ standards prescribed CPCB limits of 100 µg/m³, 60 µg/m³, 80 µg/m³ & 80 µg/m³. The CO values in all the locations were found to be below detectable limit. Silica values in the study area are found to be below detectable limit. (Detection limit – 0.05 mg/m³)

3.3.3 WATER ENVIRONMENT:

Assessment of baseline data on water environment includes Identification of water resources, Collection of water samples and Analyzing water samples collected for physico-chemical parameters as per standards. The water sampling was carried out for 6 locations. Details of the same has been provided below:

Table 3.13: Water Quality Monitoring

1.	Monitoring Period		Summer Season (March 2025 – May 2025)		
2.	Monitoring Location		The location map showing water sampling locations are given in Figure No.3.11 .		
	Code	Location	Sample Type	Distance	Direction
	W1	Near Mine Lease Area	Bore well	-	-
	W2	Appaiyanayakkanpatti Village	Bore well	2.1km	W
	W3	Akkaraipatti Village	Bore well	1.2km	NW
	W4	Kundampatti Village	Bore well	1.4km	S
	W5	Ammiyarpatti Village	Bore well	1.4km	NE
	W6	Avudaiyarpuram Village	Bore well	2.4km	SW
3.	Methodology		Sampling - IS 3025 Part - I		
			Analysis – IS 3025 relevant parts / APHA 23rd Edition		



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Figure 3.10: Location of Water Sampling Stations



Table 3.14: Summary of Water Quality Data

Season	Summer Season (March 2025 – May 2025)	
Monitoring Locations	6 locations	
Parameters	Range of values	Limits*
pH at 25 °C	7.25 – 7.67	6.5-8.5
Total Dissolved Solids, mg/L	298.56 – 590.7	2000
Chloride as Cl ⁻ , mg/L	39.5 – 164	1000
Total Hardness (as CaCO ₃), mg/L	194 – 396	600
Total Alkalinity (as CaCO ₃), mg/L	279– 310	600
Sulphates as SO ₄ ²⁻ , mg/L	16.2 – 25.5	400
Iron as Fe, mg/L	0.03 – 0.09	0.3
Nitrate as NO ₃ , mg/L	1.44 – 5.32	45
Fluoride as F, mg/L	0.23 – 0.52	1.5

3.3.3.1 Results and Discussion:

The results of the water sample analysis are shown in **Table No - 3.14**. The pH values of bore well water were ranging in between 7.25 – 7.67, TDS values were in the range of 298.56 – 590.7mg/L. Chloride values were ranging from 39.5 – 164mg/L. Iron content was found to be in the range 0.03 – 0.09mg/L. The water quality of ground water is found to be within the prescribed Permissible limits of IS: 10500 Norms in the absence of an alternative source as per Drinking Water Specifications. The water quality data is provided in **Annexure-10**.

3.3.4 NOISE ENVIRONMENT:

Opearional phase of this project may lead to increase noise levels from the existing levels at least in and around the project area. As noise level beyond permissible limits will cause adverse impacts on the environment, it has become imperative to assess the noise levels in and around the mine area. Noise level measurements were taken at the 6 locations during the monitoring period. Details of the same are provided below:

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Table 3.15: Noise Level Monitoring

1.	Monitoring Period	Summer Season (March 2025 – May 2025)		
2.	Monitoring Location	The location map showing noise monitoring locations are given in Figure No.3.11.		
	Code	Location	Distance	Direction
	N1	Near Mine Lease Area	-	-
	N2	Appaiyanayakkanpatti Village	2.1km	W
	N3	Akkaraipatti Village	1.2km	NW
	N4	Kundampatti Village	1.4km	S
	N5	Ammiyarpatti Village	1.4km	NE
	N6	Avudaiyarpuram Village	2.4km	SW
3.	Methodology	Noise levels were measured using sound level meter manufactured by (Model No - SL- 4001, Make - Lutron). Sound Pressure Level (SPL) measurements were measured at all locations where ambient air quality monitored; one reading for every hour was taken for 24 hours.		
4.	Monitoring Frequency	Once during monitoring period		



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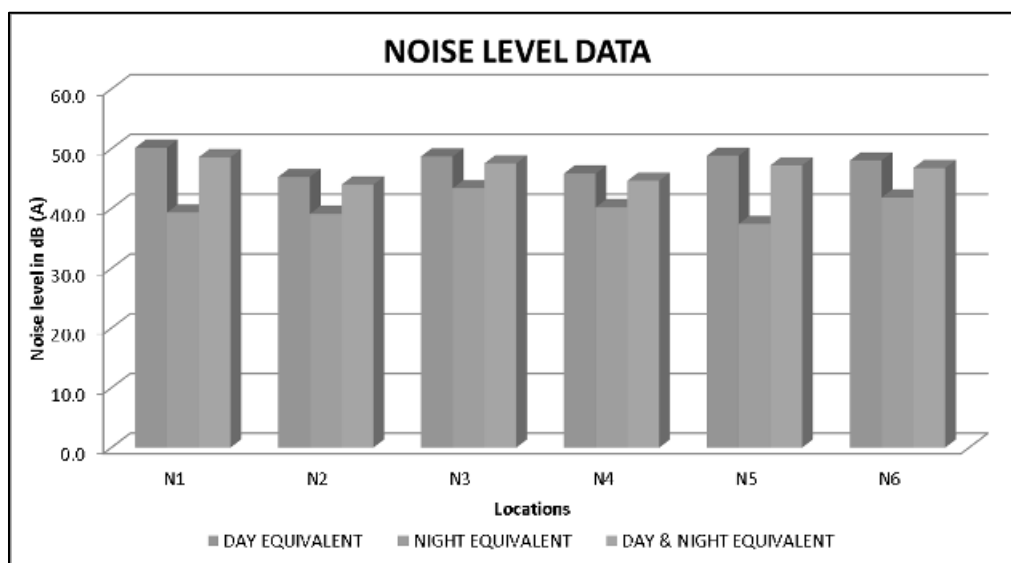
Figure 3.11: Location of Noise Sampling Stations



Table 3.16: Ambient Noise Level in dB (A)

Date and time of monitoring	N1	N2	N3	N4	N5	N6
Day Equivalent	50.2	48.7	45.3	45.9	48.9	48.1
Night Equivalent	39.3	43.4	39.1	40.2	37.4	41.9
Day & Night Equivalent	48.6	47.6	44.0	44.7	47.2	46.8
Limits: As per CPCB: Work zone Exposure in 8 hr - 90 dB(A) As per MoEF&CC: Residential: Day equivalent - 55 dB(A); Night equivalent - 45 dB(A)						

Figure 3.12: Noise Level Data



3.3.4.1 Results and Discussion:

The results of noise levels for all locations are given in **Table No-3.16**. The noise values for all above locations are shown in a comparative chart given in **Figure No - 3.12**. Day Equivalent Noise (Leq-d levels were ranging from 45.3 dB(A) to 50.2 dB(A) and night Equivalent Noise (Leq-d) levels ranged between 37.4 dB(A) to 43.4 dB(A). While comparing with the MOEF&CC Norm of 55 dB(A) for day time and 45 dB(A) for night time, the monitored ambient noise levels were within the limit values for Residential areas.

3.3.5 SOIL CHARACTERISTICS:

Soil samples were collected in 3 locations in the core and buffer zone to analyse the physiochemical characteristics of the soil in the area. Elaborate details of the same has been provided below.

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Table 3.17: Soil Quality Monitoring

1.	Monitoring Period	Summer Season (March 2025 – May 2025)		
2.	Monitoring Location	The location map showing soil sampling locations are given in Figure No.3.13.		
	Code	Location	Distance	Direction
	S1	Near Mine Lease Area	-	-
	S2	Kundampatti Village	1.4km	S
	S3	Ammiyarpatti Village	1.4 km	NE
3.	Methodology	Composite soil samples using sampling augers and field capacity apparatus.		
4.	Monitoring Frequency	Once during monitoring period		



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Figure 3.13: Location of Soil Sampling Stations



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Table 3.18: Soil Quality Data

S.No	Parameters	Unit	S1	S2	S3
1	pH at 25°C	-	6.36	6.25	7.52
2	Electrical Conductivity	(µmhos/cm)	97.54	86.74	82.55
3	Dry matter content	%	96.54	93.78	98.62
4	Water Content	%	3.46	6.22	1.38
5	Organic Matter	%	2.39	2.55	3.12
6	Soil texture	-	CLAY LOAM	SANDY CLAY LOAM	LOAM
7	Grain Size Distribution i. Sand	%	42.59	52.34	36.75
8	ii. Silt	%	28.97	20.75	40.63
9	iii. Clay	%	28.44	26.91	22.62
10	Phosphorous	µg/g	2.95	3.54	2.34
11	Sodium	mg/kg	1040	770	976
12	Potassium	mg/kg	780	624	660
13	Total Nitrogen	mg/kg	732	595	475
14	Total Sulphur	%	BDL(D.L - 0.02)	BDL(D.L - 0.02)	BDL(D.L.0.02)

3.3.5.1 Results and Discussion:

Results of the soil samples show that the pH values were ranging between 6.25 to 7.52 and Electrical Conductivity values were ranging between 82.55 – 97.54 µmhos/cm. Soils are generally silt loam type. Organic matter values were ranging between 2.39 – 3.12%. Total Nitrogen values were ranging between 475 - 732 mg/kg. Phosphorus values were ranging between 2.34 – 3.54 µg/g. Potassium values were ranging between 624 -780 mg/kg. Sodium values were ranging between 770- 1040 mg/kg. Total Sulphur values were observed to be BDL. The soil quality data for the 3 samples collected and analyzed are provided in **Table No – 3.18.**



3.4 LAND ENVIRONMENT - LANDUSE & LAND COVER

For preparing an impact statement, aspects of the land conditions are covered under land use. An industrial project / mine can cause changes in land use, soil process in different intensities depending upon the size of the project and distance involved between the industries and the area. Here, land use status for a radius of 10 km has been studied.

3.4.1 DATA USED AND METHODOLOGY

For the present study on land use pattern of buffer area around the proposed stone and gravel quarry, an archived historical data of Landsat-8 data shas been used as base data acquired on Mar 2025 (**Figure No.3.14**) has been used to generate the require landuse map showing their spatial pattern within the buffer area. The table showing data used for generation of information on landuse and subsequent GIS analysis is given below

Table 3.19: RS satellite image used for the present study

S.No	Type of Data	Date	Generated Map
1.	Landsat-8	Mar 2025	Landuse (LU) Map showing 10 Km around the ML area

Interpretation of satellite image requires understanding of relationship between image elements and their respective terrain elements. Since, in the present study, the landuse information is obtained using visual interpretation, an interpretation key is generated. The image elements such as color, tone, texture, size, shape and associated elements have been used to delineate various landuse categories. The landuse categorization and nomenclature used in the present study is based on the national level landuse classification system, which is adopted for the entire country as recommended by National Remote Sensing Centre (NRSC), Department of Space, Government of India.

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Figure 3.14 : Satellite Data of the Study Area

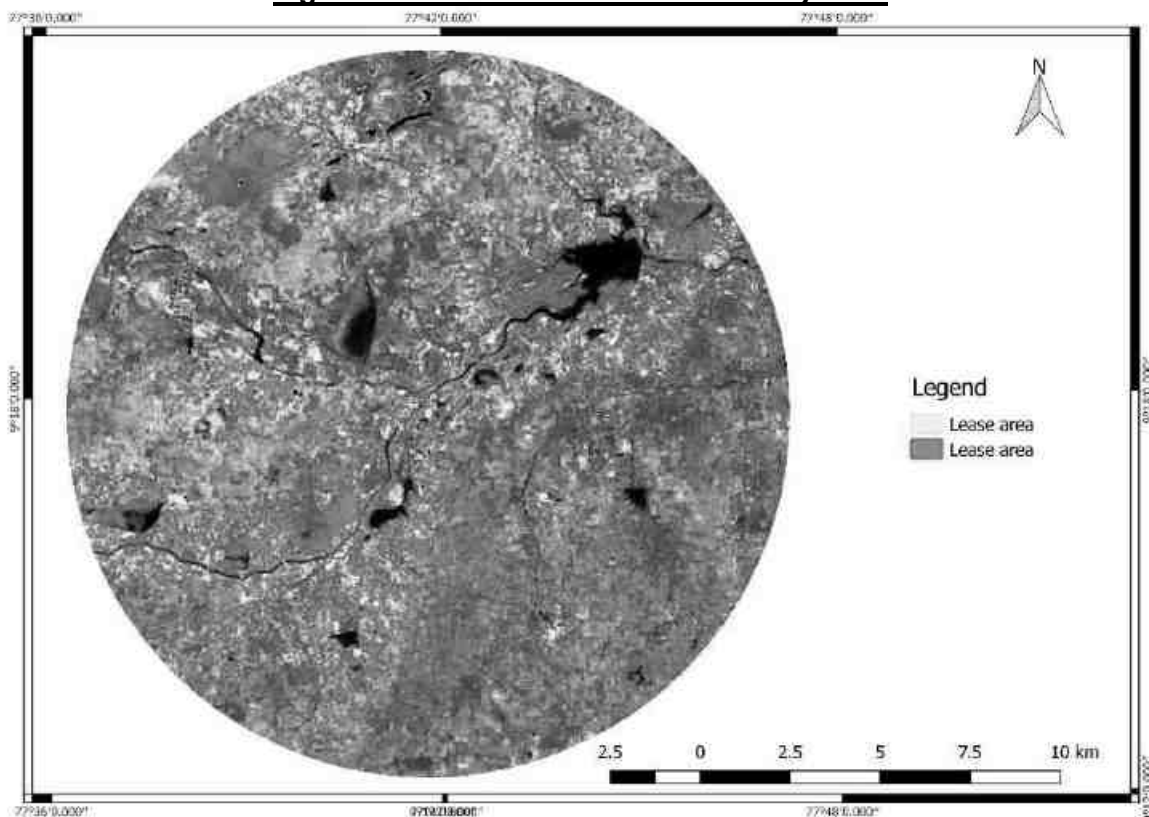


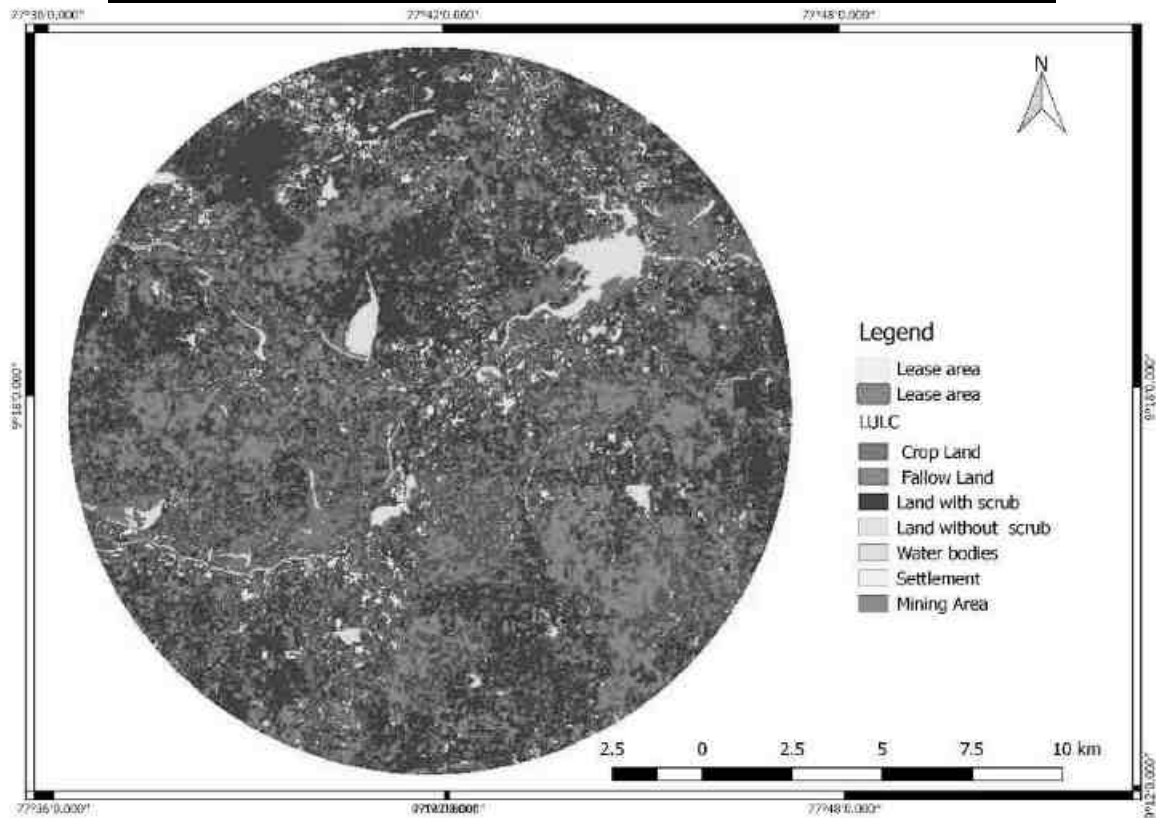
Table 3.20: Major Landuse Units of the Study Area

S.No	Major Category	Landuse unit
1	Built-Up Land	Village, Town, Industrial / Vacant Area
2	Agricultural Land	Crop Land Fallow Land Plantation Farm Land
3	Forest Land	Open Scrub Forest
4	Waste Land Mining Area	Land With Scrub/ Land Without Scrub Barren Rocky/ Stony Waste Quarries / Abandoned Quarries
5	Waterbodies	Tanks/ Rivers / Streams

Such LandUse and Land cover (LULC) categories have been verified using field check and identified sample sites within the buffer area, verified on field and transferred into gis geo-coordinates using observation coordinates received from hand held GPS (global positioning system) instrument. Thus, an interpreted final landuse map has been generated (**Figure No. 3.15**) using above such elaborate procedure and transformed into GIS environment for its spatial distribution and area estimation. Spatial nature and extent of various landuse categories within the buffer area is discussed is given below:

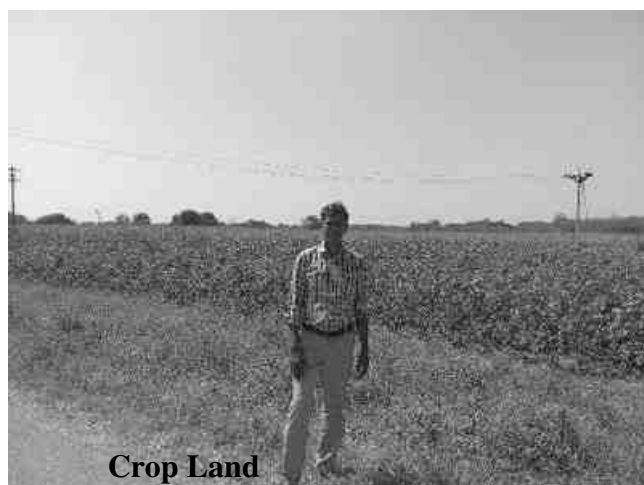
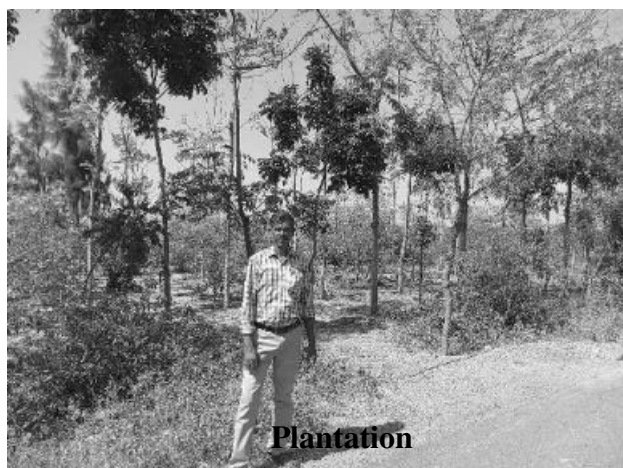
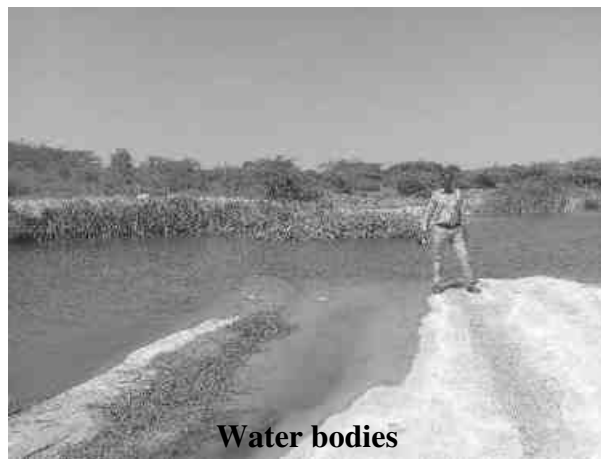
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Figure 3.15: Map Showing Land Use Categories around 10km Buffer



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Photograph showing Land use In Buffer Zone



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Table 3.21: Area Estimation of Landuse Categories in Buffer Zone

S.No	Landuse Feature	Area (Sq.Km)	Percentage
1	Agriculture/ Plantation	86.40	27.07
2	Fallow Land	117.00	36.66
3	Land With Scrub	88.41	27.70
4	Land Without Scrub	7.25	2.27
5	Water bodies	11.69	3.66
6	Settlement	4.70	1.47
7	Mining Area/ Industries	3.74	1.17
	Total	319.19	100

From the above table it is seen that 27.07 % of the study area is agriculture land and 36.66 % are fallow land. Land with scrub constitutes 27.70 %, lands without scrub constitute 2.27% and waterbodies constitute 3.66% and remaining constitute 2.64 %

3.4.2 LAND USED BASED ON REVENUE RECORDS:

The lease area falls in Appanayakkanpatti Villae, Vembakottai Taluk, Virudhunagar District, Tamil Nadu state and the study area for the land use pattern (10 km radius) has been divided into four zones viz. Zone-I (0-2 km), Zone-II (2-5 km), Zone-III (5-10 km) and Zone-IV (0-10 km) respectively. The land use pattern of the study area falling within 10 km radius around the proposed project area is presented in **Table no - 3.22**. Village wise land use pattern is provided in **Annexure-11**.



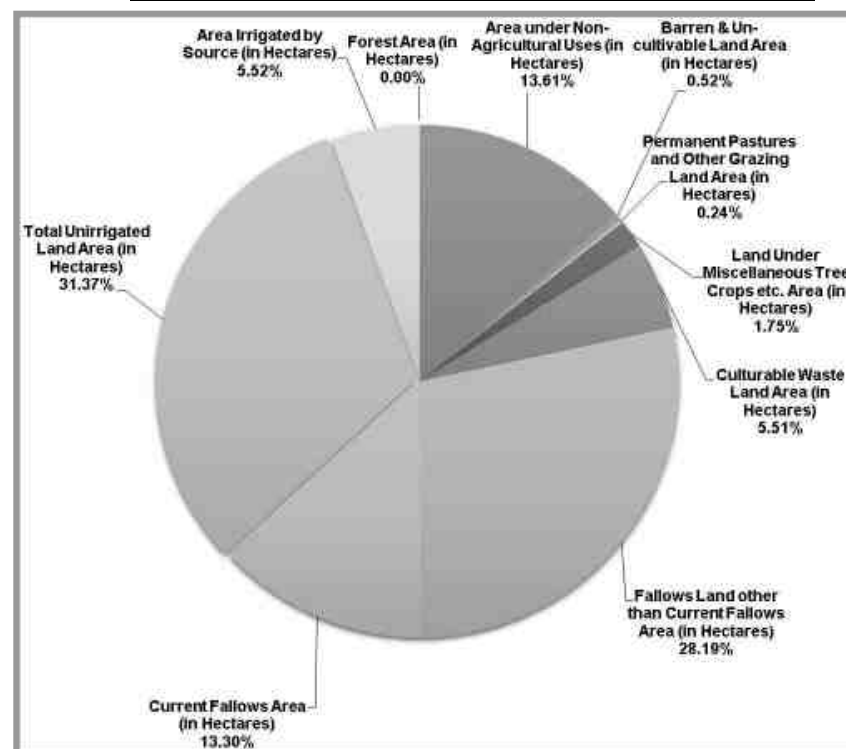
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Table 3.22: Land Use Pattern of the Study Area Falling Within 10 Km Area in (Ha)

VILLAGE NAME	Total Geographical Area	Forest Area	Area under Non-Agricultural Uses	Barren & Un-cultivable Land Area	Permanent Pastures and Other Grazing Land Area	Land Under Miscellaneous Tree Crops etc. Area	Culturable Waste Land Area	Fallows Land other than Current Fallows Area	Current Fallows Area	Total Un irrigated Land Area	Area Irrigated by Source
0- 2 KM	1582.78	0	206.49	14.57	4.18	0	3.88	0	633.33	416.45	303.88
2 - 5 KM	6360.3	0	1179.92	0.74	6	20	938.2	2376.68	87.91	1357.35	393.5
5-10 KM	29019.95	0	3643.29	176.69	77.89	627.2	1094.08	8042.57	4193.62	9820.41	1344.2
Total	36963.03	0	5029.7	192	88.07	647.2	2036.16	10419.25	4914.86	11594.21	2041.58

Figure 3.16: Landuse within the Buffer Zone Area



3.5 BIOLOGICAL ENVIRONMENT:

Study of the biological environment of any area comprises of well-planned ecological survey for the floristic and faunal composition of the areas through various scientifically planned techniques. Accordingly, the ecological survey for the proposed quarry area including core and buffer zone were carried out to identify various species occurring in the area.

3.5.1 FLORA:

An ecological survey of the study area was conducted with reference to listing of species and assessment of the existing baseline ecological conditions. The objective of the survey is as follows:

- ❖ Generate existing data from field observations of various terrestrial floristic occurrences.
- ❖ Collect secondary data from Government records as well as through discussion with Forest officials, knowledgeable public etc.,
- ❖ Compare the data with authentic past records to identify changes, if any.
- ❖ Identify the impact of project operations on the biological aspects.

To accomplish the above objectives, a general ecological survey covering an area of 10 km radius was conducted. The locations were identified for phyto-sociological aspects to assess the current status.

3.5.1.1 Sampling Methodology:

In order to provide representative ecological status for the study area, the 10-km radius buffer area has been divided into four quartiles for biodiversity sampling, i.e., NE (Q-1), NW (Q-2) SW (Q-3) and SE (Q-4). Each of the quartiles have been examined for representative flora on randomly sampled quadrats for trees (10x10 m), shrubs (5x5 m) and herbs (1x1 m) depending upon prevailing geographical conditions and bio-diversity aspects of study area.

Phyto-sociological Survey: Phyto-sociological parameters, viz., Abundance (i.e., density), average and minimum stems were measured to determine the distribution and ecological aspects of the species. Abundance is a measure of the density of distribution of an individual species within a given area. It is calculated by summed individuals of a species. Average species number is calculated for all quadrates; similarly, minimum number of individuals

represented is recorded at quadrats level. A total of 10 quadrats were laid down in core area and a total of 20 quadrats were laid out in four quartiles (5 each) of buffer area.

Quadrats method for flora : Quadrats of 10 × 10m were laid down randomly within core and 10kms buffer area; each quadrat was laid to assess the trees (>5 cm GBH) and 5 × 5 m sub-quadrat nested within the quadrat for shrubs and two plot 1 × 1 m for herbs . The quadrats were laid at a minimum distance of a kilometer apart to maximize the sampling efforts and minimize the species homogeneity, such as small stream area, trees in agricultural bunds, tank bunds, farm forestry plantations, natural forest area, avenue plantations, house backyards, etc. In each sample quadrat, individuals belonging to tree, shrub and herb species were recorded separately, and have been identified on the field. The prevailing land use and habitat quality has been noted down for each location on the field.

Vegetation Analysis using index: Species diversity will be calculated by using Shannon and Wiener (1963) formula as follows:

$$H' = - \sum_{i=1}^R p_i \ln p_i$$

Whereas,

H' is Shannon index of general diversity,

p_i is often the proportion of individuals belonging to the i th species in the dataset of interest.

Evenness index was calculated as: $E = H'/H_{max}$,

Whereas $H_{max} = \log_2$ (number of species in the plot)

A.CORE ZONE:

The lease area is a non-forest, private land and barren land with thorny bushes. The detailed list of plants found in the core zone are given in **Table no – 3.23.**

Table 3.23: List of Floristic Species in the Core Zone

Sl.No	Species Name	Common Name	Family
Trees			
1	<i>Azadirachta indica</i>	<i>Meliaceae</i>	<i>Vembu</i>
2	<i>Prosopis juliflora</i>	<i>Fabaceae</i>	<i>Cimaikkaruvel</i>
Shrubs			
1	<i>Calotropis gigantea</i>	<i>Apocynaceae</i>	<i>Earukku</i>
2	<i>Lantana camara</i>	<i>Verbenaceae</i>	<i>Uni</i>
3	<i>Cassia auriculata</i>	<i>Fabaceae</i>	<i>Aavarampoo</i>
4	<i>Ziziphus jujuba</i>	<i>Rhamnaceae</i>	<i>Elanthai</i>
5	<i>Ricinus communis</i>	<i>Euphorbiaceae</i>	<i>Amanakku</i>
Herbs			
1	<i>Anisomeles malabarica</i>	<i>Lamiaceae</i>	<i>Peyimarutti</i>
2	<i>Solanum xanthocarpum</i>	<i>Solanaceae</i>	<i>Kandangkattari</i>
3	<i>Sida rhombifolia</i>	<i>Malvaceae</i>	<i>Kurundotti</i>
4	<i>Tridax procumbens</i>	<i>Asteraceae</i>	<i>Vettukai poondu</i>
Grasses			
1	<i>Cyperus rotundus</i>	<i>Cyperaceae</i>	<i>Korai pullu</i>
2	<i>Cynodon dactylon</i>	<i>Poaceae</i>	<i>Arugampillu</i>

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C.BUFFER ZONE:

The Dominated species are *Prosopis juliflora*, *Azadirachta indica*, *Borassus flabellifer*, *Acacia nilotica*, *Albizia lebbbeck*, *Acacia leucophloea*, *Acacia auriculiformis*, etc. The detailed list of plants found in the Bufferzone is given in **Table no – 3.26**.

Table 3.24: List of Floristic Species in the Buffer Zone

Sl.No	Species Name	Family	Local Name
Trees			
1	<i>Aegle marmelos</i>	Rutaceae	Vilvamaran
2	<i>Sygygium cumuni</i>	Myrtaceae	Naval
3	<i>Delonix regia</i>	Fabaceae	Gulmohar
4	<i>Madhuca longifolia</i>	Sapotaceae	Iluppai
5	<i>Azadirachta indica</i>	Meliaceae	Vembu
6	<i>Bobax ceiba</i>	Malvaceae	Ilavu
7	<i>Pithecellobium dulce</i>	Fabaceae	Kodukkapuli
8	<i>Leucaena leucocephala</i>	Fabaceae	Subabul
9	<i>Tectona grandis</i>	Verbenaceae	Tekku
10	<i>Ficus religiosa</i>	Moraceae	Poarasamaram
11	<i>Pongamia pinnata</i>	Fabaceae	Pungai
12	<i>Gmelina arborea</i>	Lamiaceae	Kumalaamaram
13	<i>Musa paradisiaca</i>	Musaceae	Valzhilai
14	<i>Cassia fistula</i>	Fabaceae	Konrai
15	<i>Peltophorum pterocarpum</i>	Fabaceae	Kilukiluppai
16	<i>Citrus limon</i>	Rutaceae	Lemon
17	<i>Tamarindus indica</i>	Fabaceae	Puli
18	<i>Borassus flabelliformis</i>	Arecaceae	Panna-maram
19	<i>Polyalthia longifolia</i>	Annonaceae	Nietilingam
20	<i>Prosopis juliflora</i>	Fabaceae	Seemai karuvel
21	<i>Mimusops elengi</i>	Sapotaceae	Magizhamboo
22	<i>Acacia nilotica</i>	Fabaceae	Karuvelan
23	<i>Terminalia arjuna</i>	Combretaceae	Marudha Maram
24	<i>Albizia lebbbeck</i>	Fabaceae	Vagai
25	<i>Thespesia populnea</i>	Malvaceae	Puvarasu
26	<i>Carica papaya</i>	Caricaceae	Pappali
27	<i>Morinda pubescens</i>	Rubiaceae	Manjanathi
28	<i>Morinda tinctoria</i>	Rubiaceae	Nuna
29	<i>Casuarina equisetifolia</i>	Casuarinaceae	Savukku
30	<i>Acacia auriculiformis</i>	Fabaceae	Pencile tree
31	<i>Mangifera indica</i>	Anacardiaceae	Maamaram
32	<i>Cocus nucifera</i>	Arecaceae	Tennai
33	<i>Moringa oleifera</i>	Moringaceae	Murungai
34	<i>Ficus benghalensis</i>	Moraceae	Aalamaram
35	<i>Bauhinia purpurea</i>	Caesalpiniaceae	Mantharai
36	<i>Psidium guava</i>	Myrtaceae	Koyya
37	<i>Samanea saman</i>	Fabaceae	Amaivagai

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Sl.No	Species Name	Family	Local Name
38	<i>Acacia leucophloea</i>	Fabaceae	Valvelam
Shrubs			
1	<i>Lantana camara</i>	Verbenaceae	Uni
2	<i>Ziziphus jujuba</i>	Rhamnaceae	Elanthai
3	<i>Abutilon indicum</i>	Malvaceae	Thuthi
4	<i>Tecoma stans</i>	Bignoniaceae	Yellow trumpetbush
5	<i>Jatropha glandulifera</i>	Euphorbiaceae	Vellaikattukottai
6	<i>Ricinus communis</i>	Euphorbiaceae	Amanakku
7	<i>Justicia adhatoda</i>	Acanthaceae	Adathoda
8	<i>Ixora casei</i>	Rubiaceae	Idlipoo
9	<i>Nerium indicum</i>	Apocynaceae	Arali
10	<i>Lawsonia inermis</i>	Lythraceae	Maruthani
11	<i>Aloe vera</i>	Asphodelaceae	Chotthu kthalai
12	<i>Vitex negundo</i>	Verbinaceae	Vanili
13	<i>Hibiscus rosa-sinensis</i>	Malvaceae	Semparuthi
14	<i>Ipomoea carnea</i>	Convolvulaceae	Pink morning glory
15	<i>Sida cordifolia</i>	Malvaceae	Sida plant
16	<i>Cassia auriculata</i>	Fabaceae	Aavarampoo
17	<i>Calotropis gigantea</i>	Apocynaceae	Earukku
Herbs			
1	<i>Leucas aspera</i>	Lamiaceae	Thumbai
2	<i>Parthenium hysterophorus</i>	Asteraceae	Parthenium
3	<i>Acalypha indica</i>	Amaranthaceae	Kupaimeni keeri
4	<i>Argemone mexicana</i>	Papaveraceae	Mexican poppy
5	<i>Anisomeles indica</i>	Lamiaceae	marutti
6	<i>Phyllanthus niruri</i>	Phyllanthaceae	Keelzhaneeli
7	<i>Tridax procumbens</i>	Asteraceae	Vettukai poondur
8	<i>Sida acuta</i>	Malvaceae	Palambasi
9	<i>Anisomeles malabarica</i>	Lamiaceae	Peyimarutti
10	<i>Cleome viscosa</i>	Cleomaceae	Naai velai
11	<i>Solanum xanthocarpum</i>	Solanaceae	Kandangkattari
12	<i>Sida rhombifolia</i>	Malvaceae	Kurundotti
13	<i>Acanthospermum hispidum</i>	Asteraceae	Gokul kanta
14	<i>Achyranthes aspera</i>	Amaranthaceae	Nayuruvi
Climber			
1	<i>Asparagus racemosus</i>	Asparagaceae	Tannir-vittan
2	<i>Cissus quadrangularis</i>	Vitaceae	Pirandai
3	<i>Abrus precatorius</i>	Fabaceae	Kundumani
Grasses			
1	<i>Cyperus rotundus</i>	Cyperaceae	korai pullu
2	<i>Chloris barbata</i>	Poaceae	Kodai pullu
3	<i>Cynodon dactylon</i>	Poaceae	Arugampillu

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3.5.2 FAUNA:

Methodology: Both direct and indirect observation methods were used to survey the fauna. Point Survey Method was used to study the Bird diversity. Besides, discussion with local villagers Collection secondary data from Government records, published reports as well as through discussion with Forest officials, knowledgeable public were used for the study.

Observation: There is no Wild Life Sanctuary or National Park within the study area of 10 km. Domesticated animals are commonly found.No wild mammalian species was directly sighted during the field survey. There is no Schedule I animals in the buffer zone area. The list of fauna within the study area is given in **Table No – 3.27**.

Table 3.25: List of Fauna in the Buffer Zone

S.No	Common Name	Scientific name	IWPA, Schedule
Mammals			
1	Indian Palm squirrel	Funambus palmarum	IV
2	Wild Boar	Sus scrofa cristatus	III
3	Bonnet macaque	Macaca radiata	IV
4	Indian Grey Mongoose	Herpestes edwardsii	II
5	Common Indian Hare	Lepus ruficaudatus	IV
Birds			
1	Spotted Dove	Streptopelia chinensis	IV
2	Common Kingfisher	Alcedo atthis	IV
3	Common Myna	Acridotheres tristis	IV
4	Rose-ringed Parakeet	Psittacula krameri	IV
5	House Sparrow	Passer domesticus	IV
6	Black Drongo	Dicrurus macrocercus	IV
7	Common Crow	Corvus splendens	V
8	Red-vented Bulbul	Pycnonotus cafer	IV
9	Indian Cuckoo	Cuculus micropterus	IV
10	Little Cormorant	Phalacrocorax niger	IV
11	Purple-rumped Sunbird	Nectarinia zeylonica	IV
12	Little Egret	Egretta garzetta	IV
13	Common Quail	Coturnix coturnix	IV
14	Cattle Egret	Bubulcus ibis	IV
15	Common Babbler	Turdoides caudatus	IV
Reptiles			
1	Garden Lizard	Calotes versicolor	IV
2	Rat Snake	Ptyas mucosa	II
3	Common Indian krait	Bungarus caeruleus	II
Amphibians			
1	Common Indian toad	Bufo melanostictus	IV

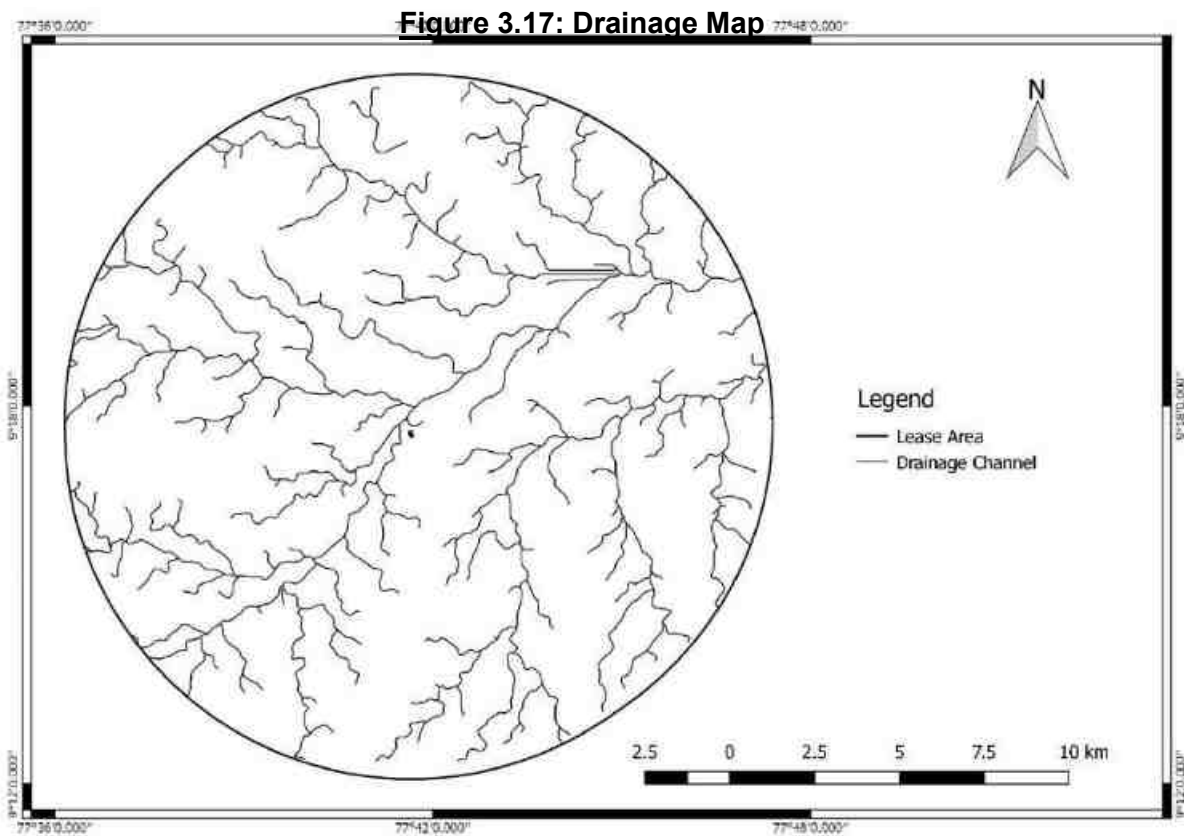
3.6 HYDROGEOLOGICAL STUDY:

This section delves into the study of the hydrogeological scenario of the study area to evaluate the impact of mining activities on the nearby areas. The study area is located in Appanayakkanpatti Village, Vembakottai Taluk, Virudhunagar District is considered to understand the nature of the general hydrogeological conditions of the area.

3.6.1 PHYSIOGRAPHY AND DRAINAGE:

Physiography: The area applied for mining lease is a gentle plain terrain. The topography of the lease area ranges around 101m RL.

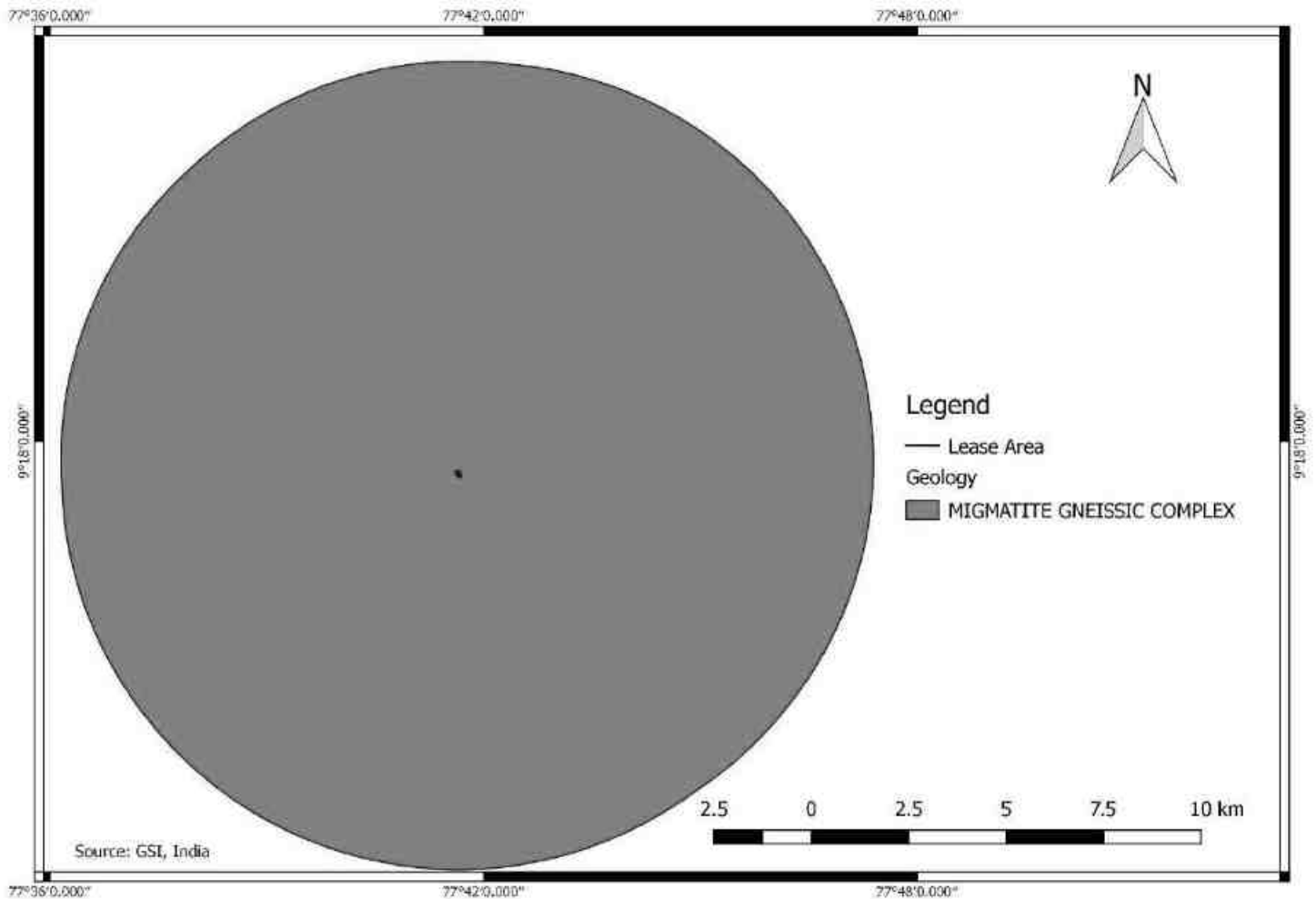
Drainage: There is no major water body in the core zone. Nikshopa Nadi - 130m (SW), Vaippar River-400m- (NE), Uppu Odai - 3.2km-(SE), Marugal Odai – 5.2km – (NE), Kayalkudi River - 7.5km – (NE). Nedunkulam Odai - 8.6km – NE.



3.6.2 GEOLOGY AND GEOMORPHOLOGY

Geology: The type of rock formation in the core and buffered zone is composed of Migmatite Gneissic complex. The lease area falls under Migmatite Gneissic complex category.

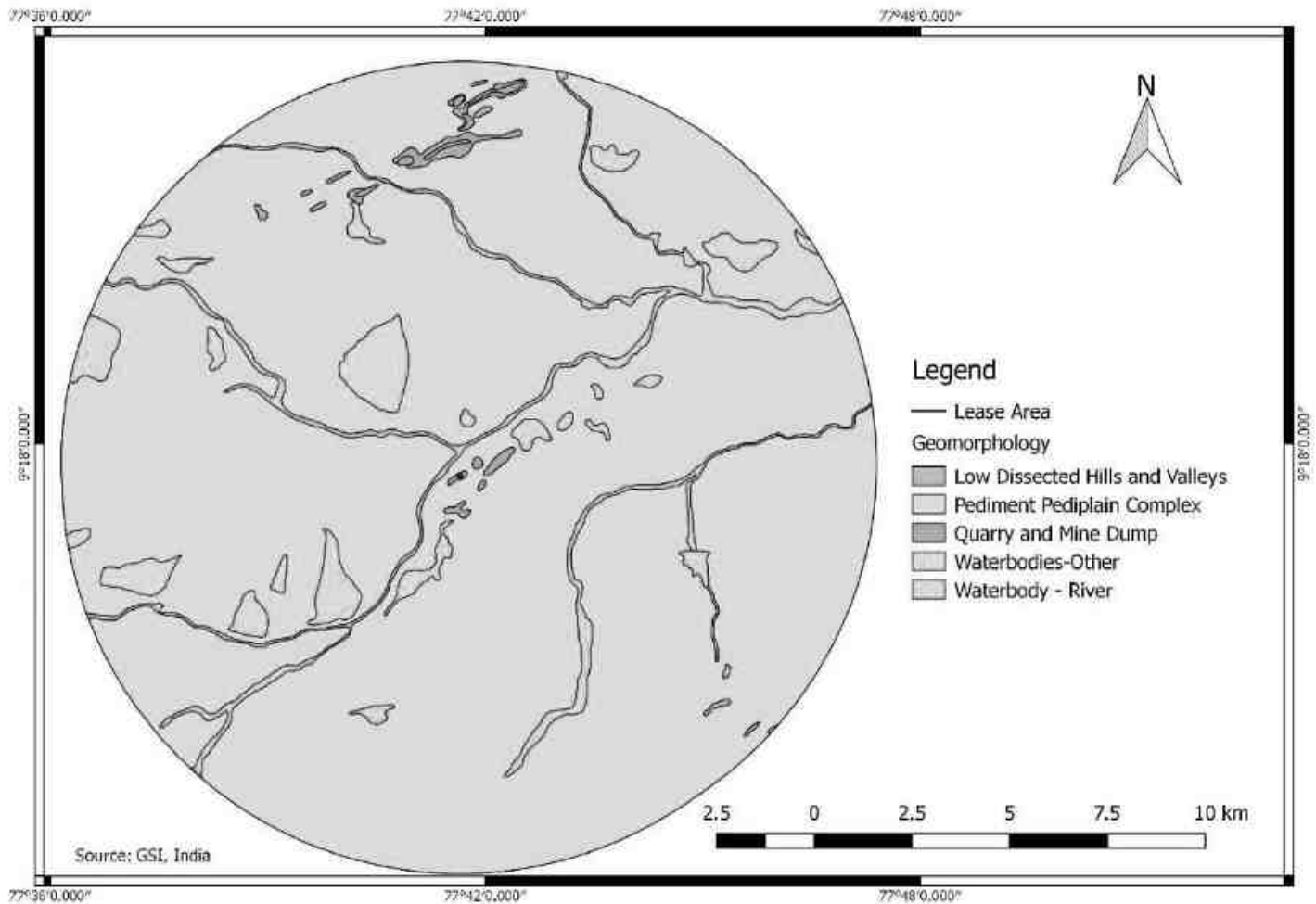
Figure 3.18: Geology Map



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Geomorphology: The geomorphology map of the study derived from the satellite imagery using remote sensing and GIS technique. Predominantly the buffer zone is dominated by Pediment Pediplain complex, and it is the same category that the lease area also falls under.

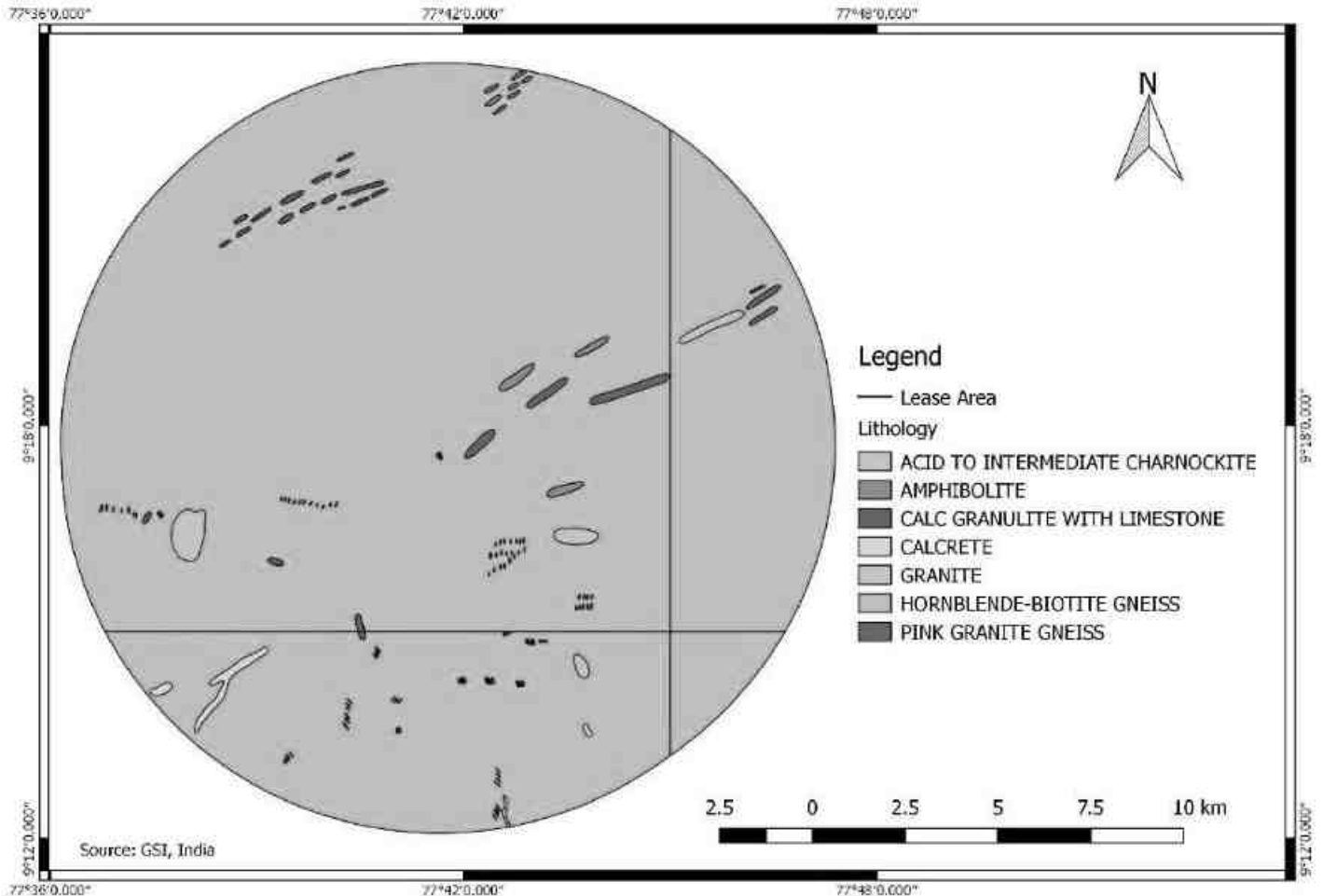
Figure 3.19: Geomorphology Map



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Lithology: The study area is mainly dominated by Hornblende-Biotite Gneiss. The lithology map has been provided below.

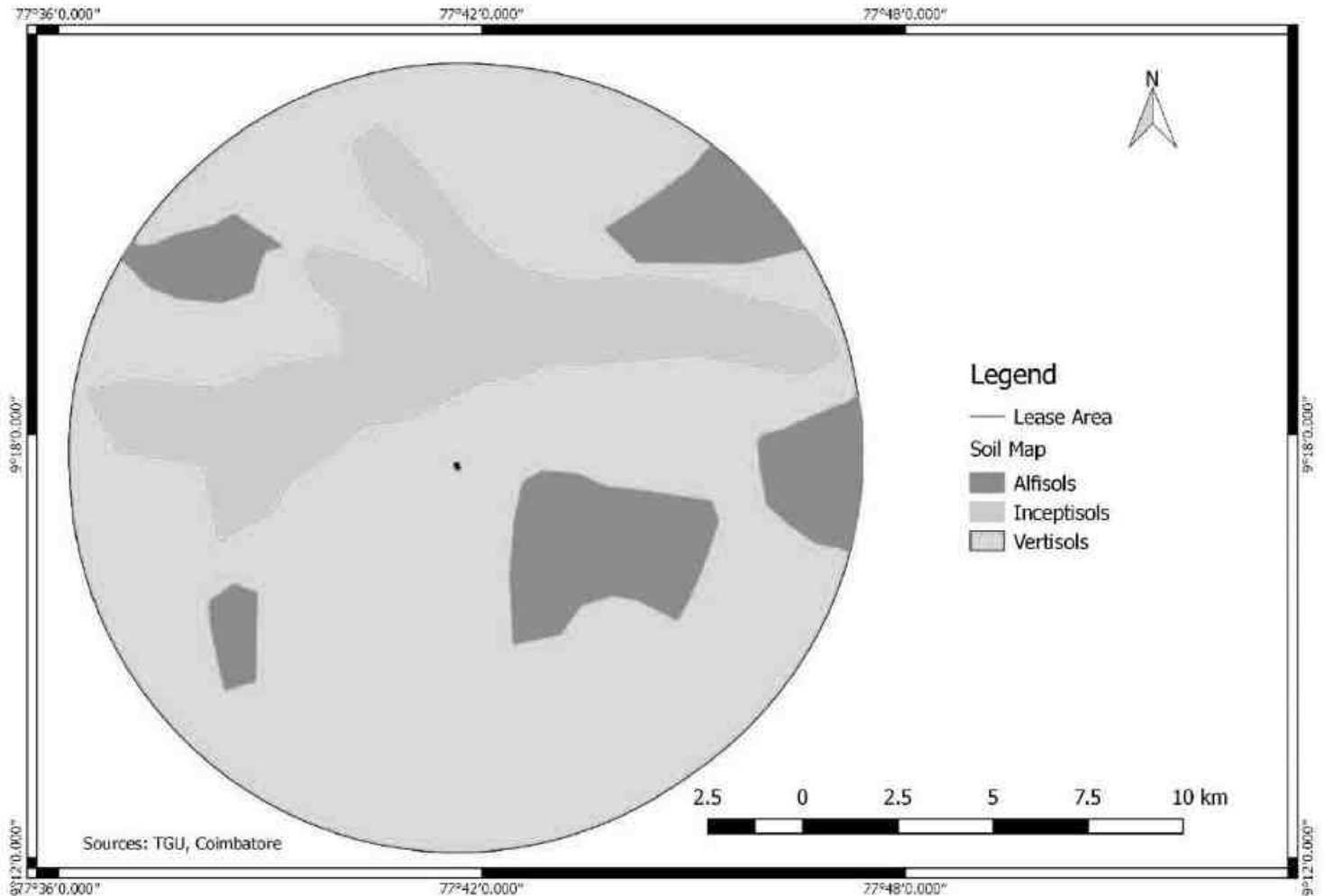
Figure 3.20: Lithology Map



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Soil: The study area is characterized by Inceptisols, Vertisols and Alfisols. The project area is dominated with Inceptisol type of soil.

Figure 3.21: Soil Map



3.6.3 WATER TABLE OF THE AREA:

Based on the depth to water level data obtained from the India-WRIS, Department of Water Resources, Ministry of Jal Shakti for Aruppukottai Block, Viruthunagar District, Tamil Nadu the following is observed.

Table 3.26: General Trend of Depth to Water Level for Aruppukottai Block

Year	Depth to Water Level (m bgl)		Wells Monitored	
	Pre-Monsoon	Post-Monsoon	Pre-Monsoon	Post-Monsoon
2015	2.67 - 9.65	1.74 - 7.94	3	3
2016	3.5 - 7.66	4.07 - 9.9	4	3
2017	-	2.27- 4.88	-	2
2018	4.03-10.38	6.35-8.5	3	2

The premonsoon and post monsoon water levels are depicted in **Figure No.3.25, and 3.26** and they indicate that the depth to water level in project area ranges between 5.0 to 10.0 m bgl during the pre-monsoon season(April) and 0.0 to 0.5 m bgl during the post monsoon season (November).

Figure 3.22: Pre-Monsoon Water Level

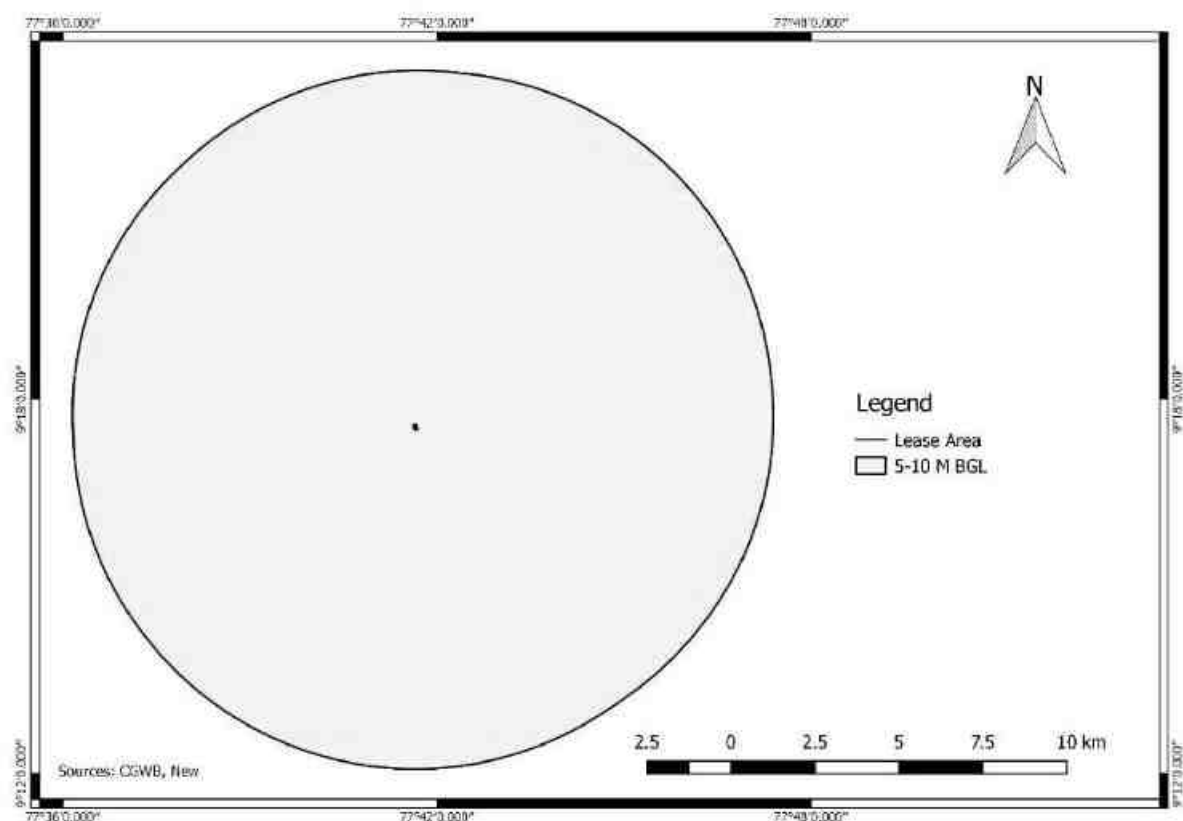
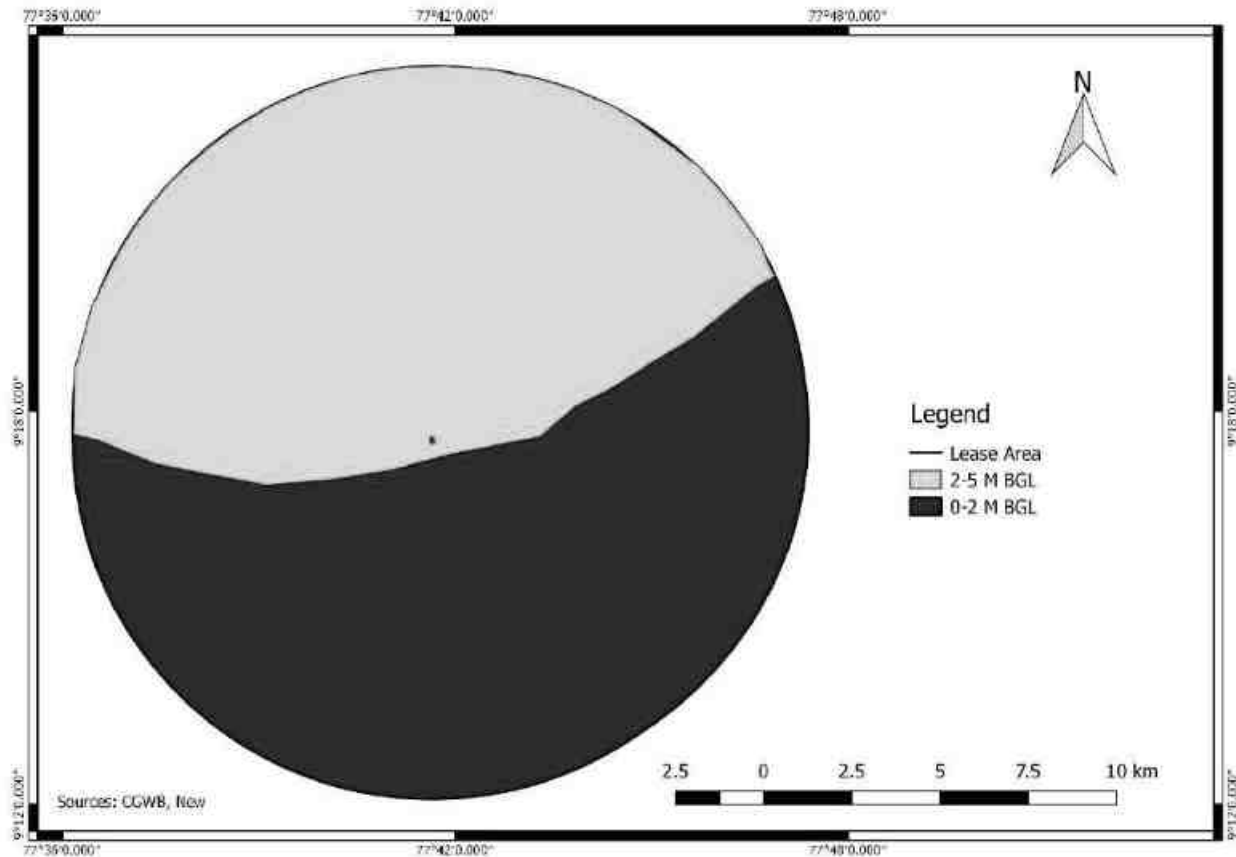


Figure 3.23: Post Monsoon Water Level



3.6.4 HYDROLOGICAL SCENARIO OF THE STUDY AREA:

A Hydro Geological study for the Roughstone and Gravel Quarry was carried out for this cluster by Dr.S. Selvam., M.Sc., Ph.D (Asst. Professor, Geotechnical-Principal Investigator, Dept. of Geology), V.O.Chidambaram College in the nearby area. The primary objective of the study is to carry out hydrogeological evaluation and geophysical investigations to determine the ground water potential, assessment of ground water availability, impact of the proposed quarrying activity on the ground water and surface water regime. Towards this, the following studies were conducted:

3.6.4.1 Electrical Resistivity Method:

Electrical resistivity is used to identify fractures in the rock formation. The Schlumberger array has been used throughout this study.

3.6.4.2 Pseudosections

The 3D pseudo-section is the inversion of apparent resistivity following horizontal and vertical lines. It reflects the resistivity distribution versus electrode spacing values (AB/2) and shows the electrical characteristic of layers following horizontal and vertical lines. Along pseudo sections, the resistivity varies in depth and following the horizontal line, and then we note the vertical and horizontal changes of layers. These changes characterize a diversity of geological structures in depth and along the horizontal line and therefore attest the diversity of observed curve types. Generally, in the 3D model pseudo-sections of the study area, minimum resistivity values appeared in the upper parts because of the hard soil or of the presence of basement in the subsurface and followed by very hard or fissure rocks. 3D model pseudo-sections clearly depict that resistivity value normally increased and there is no any other water bearing formation. The value of the resistivity reveals fractured / fissured zone between 9 to 14 mts below ground level is not contiguous to conduct the ground water seepage.

3.6.4.3 Well Inventory

To know the water table level well/borewell study in the nearby 5 wells and 2 borewells were carried out.

Table 3.27: Well Inventory Data

ID No.	Well/Borewell	Coordinates		Depth of Well / Borewell (M)	Water Level (m)	
		Latitude	Longitude		Pre Monsoon	Post Monsoon
1	Well	9°17'28.00"N	77°41'46.00"E	4.0	3.0	1.0
2	Well	9°17'29.00"N	77°41'46.00"E	4.5	3.0	1.2
3	Well	9°17'32.00"N	77°41'52.00"E	5.0	-	1.5
4	Well	9°17'32.00"N	77°41'53.00"E	6.0	-	1.5
5	Well	9°17'29.00"N	77°41'45.00"E	20.0	8.5	1.2
6	Bore well	9°17'12.00"N	77°41'46.00"E	100	60	-
7	Bore well	9°17'41.00"N	77°42'05.00"E	100	50	-

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LOCATION OF STUDY WELLS



From the above table, it can be seen that shallow water levels are observed in the wells. The range of water levels observed in the wells ranges from 3m – 8.5 m bgl during the pre monsoons season and 1m – 1.5 m bgl during the post monsoon season.

In the study area, the shallow aquifer is developed through dug wells and deeper aquifer through tube wells. The groundwater has revealed that potential fractures are encountered at deeper levels. Rain water collected in the tanks in the region acts as a good source of water during post monsoon. The water in the wells are available mainly after post monsoon and it some times become dry during summer. Bore wells > 300 ft reflects that the yield is only better at deeper water levels

The occurrence of groundwater mainly in the porous soil are weathered layers, very negligible amount of groundwater percolated through the poorly fractured layer, after that there is no existence of groundwater. Besides, the mining area consists of hard compact rock, no major water seepage within the mine is expected. From the nearby working mines no such seepage is also observed.

3.6.4.4 Surface Water Bodies:

Drainage of the area is controlled by Vaippar river. Non- perennial Vaippar river and its tributary Nadhi is located 130 meter (North) and 400 m (North) respectively from the lease area. Ammiyarpatti tank is located 1.1km NE of the lease area.

Based on geophysical study there is no observation of fractured zone/ fissure vein up to 60m of the study area. During the rainy time only surface water flow in vaippar river is observed and in the remaining period it is almost dry. The Ammiyarpatti village tanks are also dry due to scanty rainfalls.

View of River / Nadhi



Based on geophysical study it can be concluded that there is no influence in vaippar river non-perennial tributary in the study area since most of the time it is dry and the intervening mining and the river bed is infested with hard rocky formation.

3.6.4.5 Conclusions:

- The surveyed land and nearby area within 300 metres radius, the sub-surface formations reveal about a metre-thick layer of soil followed by weathered rock available upto 4.0 metres from ground level followed by hard and massive formations of Charnockite rock.
- The geophysical study shows that, there is no moisture below 5.0 metres from ground level and the area is not feasible for ground water extraction.
- The value of the resistivity reveals fractured / fissured zone between 5 to 55 mts below ground level is not contiguous to conduct the ground water seepage.
- There is no water seepage noticed in to the already quarried pits situated 500mts north, north west, north east of the study area.
- Most of the open wells in this area is not in use for agricultural activity and mostly dry crops during rainy seasons cultivated in this area.
- Non- perennial Vaippar river and its tributary Nadhi is located 130 meter (North) and 400 m (N) respectively from the lease area. Based on geophysical study there is no observation of fractured zone/ fissure vein up to 60m of the study area. During the

rainy time only surface water flow in vaippar river is observed and in the remaining period it is almost dry.

- Based on geophysical study it can be concluded that there is no influence in vaippar river non- perennial tributary in the study area since most of the time it is dry and the intervening mining and the river bed is infested with hard rocky formation.
- The Ammiyarpatti village tanks are also dry due to scanty rainfalls.
- Due to paucity of rainfall, poor soil condition no agricultural activities are carried out nearby the site. As such there will be no major impact over local agricultural activities and on water bodies in the surroundings due to mining activities.
- Surface water only act as a main role in agriculture activity in the study area and only patches of seasonal crops are cultivated in the rainfed lands.

Based on the available information and the geophysical investigations it is concluded that the project area is considered to have poor groundwater potential. Productive aquifers are expected beyond depth of 60m BGL. Besides, the mining area consists of hard compact rock, no major water seepage within the mine is expected. There is no water seepage noticed in to the already quarried pits situated nearby the proposed quarry area. Hence, the quarrying rough stone up to the proposed depth may not have any adverse impact in the area over ground water conditions.

* * * * *

CHAPTER 4

ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.1 GENERAL

In these projects Mechanized Open Cast mining will be carried out to quarry out Rough Stone & Gravel. The identified impacts due to the mining operation in the leases individually as well as cumulatively during mining and associated activities have been studied in relation to various environmental components like Air, water, noise, vibration, land, transport etc., and the details of the same are elaborated in this chapter.

4.2 AIR ENVIRONMENT:

4.2.1 IMPACTS DUE TO PROJECT OPERATION:

The existing ambient air quality in the area has been described in Chapter-III. The proposed mining and allied operations may cause deterioration of air quality due to pollution arising from the project operation if prompt care is not taken. The principal sources of air pollution in general due to mining and allied activities will be:

- ❖ Excavation of material.
- ❖ Movement of HEMM such as Excavators, tippers etc.
- ❖ Loading and unloading operation
- ❖ Transportation

Besides, Gas emission will occur as a result of operation of diesel driven mining equipment, compressors, transporting vehicles, etc.

Particulate matter smaller than 10 microns, referred to as PM₁₀, can settle in the bronchi and lungs and cause health problems like Bronchitis, Emphysema, Bronchial Asthma, Irritation of mucus membranes of eyes, etc. Particles smaller than 2.5 micrometers (PM_{2.5}), tend to penetrate into the lungs and very small particles (<100 nanometers) may pass through the lungs to affect other organs.

Besides the above mentioned fugitive dust emissions, atmospheric pollution can occur as a result of emission of SO₂, NO_x, CO etc., from diesel driven mining equipment, generator sets, etc. Larger suspended particles are generally filtered in the nose and throat and do not cause problems. Higher concentration of SO₂, NO_x, CO may cause some health effect on the human



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beings exposed to it. In case of this mine, the following measures will be adopted in the quarry to control impact on the air quality due to mining operations in the lease area:

Table 4.1: Impact and Mitigation Measures – Air Environment

S.No	Activity	Consequence	Mitigation Measures
1	Drilling	Dust Emanation	Usage of Drill bits in good condition
			Covering of drill holes with wet cloth
			Usage of sharp drill bits for drilling of holes.
			Provision of dust filters / mask to workers working at highly dust prone and affected areas.
2	Blasting	Instantaneous dust emanation	Well-designed blasting parameter, effective stemming to achieve optimum breakage occurs without generating fines.
			Use of appropriate explosives for blasting and avoiding overcharging of blast holes.
			Avoiding blasting during high wind periods where the fine dust is carried out away easily affecting the ambient air quality.
			Use of controlled blasting techniques with Nonel to keep the dust generation, noise as well as vibration level within the prescribed limits.
3	Excavation and Loading	Dust emanation, Gaseous Emission	HEMM will be operated as per the manufacturer's guidelines
			Enclosures for operator cabin.
			Imparting sufficient training to operators on safety and environmental parameters.
			Proper maintenance of hauling equipments.
4	Transportation	Dust emanation, Gaseous Emission	Avoiding overloading of dumpers.
			Regular wetting of transport road using mobile water tanker.
			Proper maintenance of haul road and other roads
			Setting up of tyre wash facility in the transport road.
			Avoiding overloading of tippers
			Covering of loaded tippers with tarpaulins during transportation
5	Others	Dust emanation, Gaseous Emission	Vehicular emissions will be controlled through regular and proper preventive maintenance schedules and emissions tests are done with diesel smoke meter equipment to ensure emission values.
			Development of greenbelt / barriers around mine in the safety zone and carrying out plantation within the lease area.
			Fencing with green net as necessary will be carried out around the lease periphery on all sides.

Due to adoption of all these measures, no major impact on air quality is envisaged due to the proposed opencast mining operations in the leases.



The impact on air quality due to the proposed projects is estimated using AERMOD View Gaussian Plume Air Dispersion Model developed by Lakes Environmental Software which is based on steady state Gaussian plume dispersion. Details of the modeling study / estimation including the modeling technique and post project air quality values are elaborated in the following paras.

4.2.2 AIR QUALITY IMPACT PREDICTION:

The model simulations are done for the air pollutant arising from the mining operations, namely, PM₁₀, PM_{2.5}. Ground Level Concentration (GLC) have been computed using hourly meteorological data.

Table 4.2: Emission Sources

ACTIVITY	SOURCE TYPE
A. Mining operations	Open pit
B. Transportation	Line

4.2.2.1 Emission Factors

Quantification of particulate emissions has been carried out by the emission factor technique. Emission factor is a statistical average of the rate at which a pollutant is released during an activity. This factor when multiplied by the level of that activity in a given situation will give the overall effect. Fugitive emissions have been predicted by using standard equations given and suggested by AP-42, USEPA(1998), Coal S&T Project and for mining & allied activities and other factors. The modeling is done for the peak production to know the worst case scenario on individual basis as well as cumulative basis. The details of the emission factors used for the same is provided below:

Table 4.3: Emission Factors

S.No	Activity	PM10	PM2.5	Unit
1	Ore Loading	1.5×10^{-3}	2.1×10^{-4}	Kg/T
2	OB Loading	1.4×10^{-4}	1.5×10^{-5}	Kg/T
3	Hauling inside lease area	0.19	0.019	g/VKT
4	Drilling	0.1	0.04	Kg/hole



4.2.2.2 Emission Rates:

Based on the emission factors for the peak production capacity, after adopting necessary control measures like dust suppression, Proper maintenance of HEMM, using better quality diesel, using latest equipment, proper maintenance of roads, etc. the expected emission rate due to various operations in this project is calculated and is given below:

Table 4.4: Emission Rate

ACTIVITIES	PM ₁₀ (g/sec)	PM _{2.5} (g/sec)
Excavation	0.01	0.00
Drilling	0.04	0.02
Hauling	0.04	0.01
Total	0.09	0.03

A. Emission Source Coordinates: The center of mine was assumed (0, 0) in the mathematical modeling.

B. Meteorological Conditions Used In Predictions: The hourly meteorological data has been generated for the monitoring period and the same has been used in the predictions.

4.2.2.3 Results and Discussions

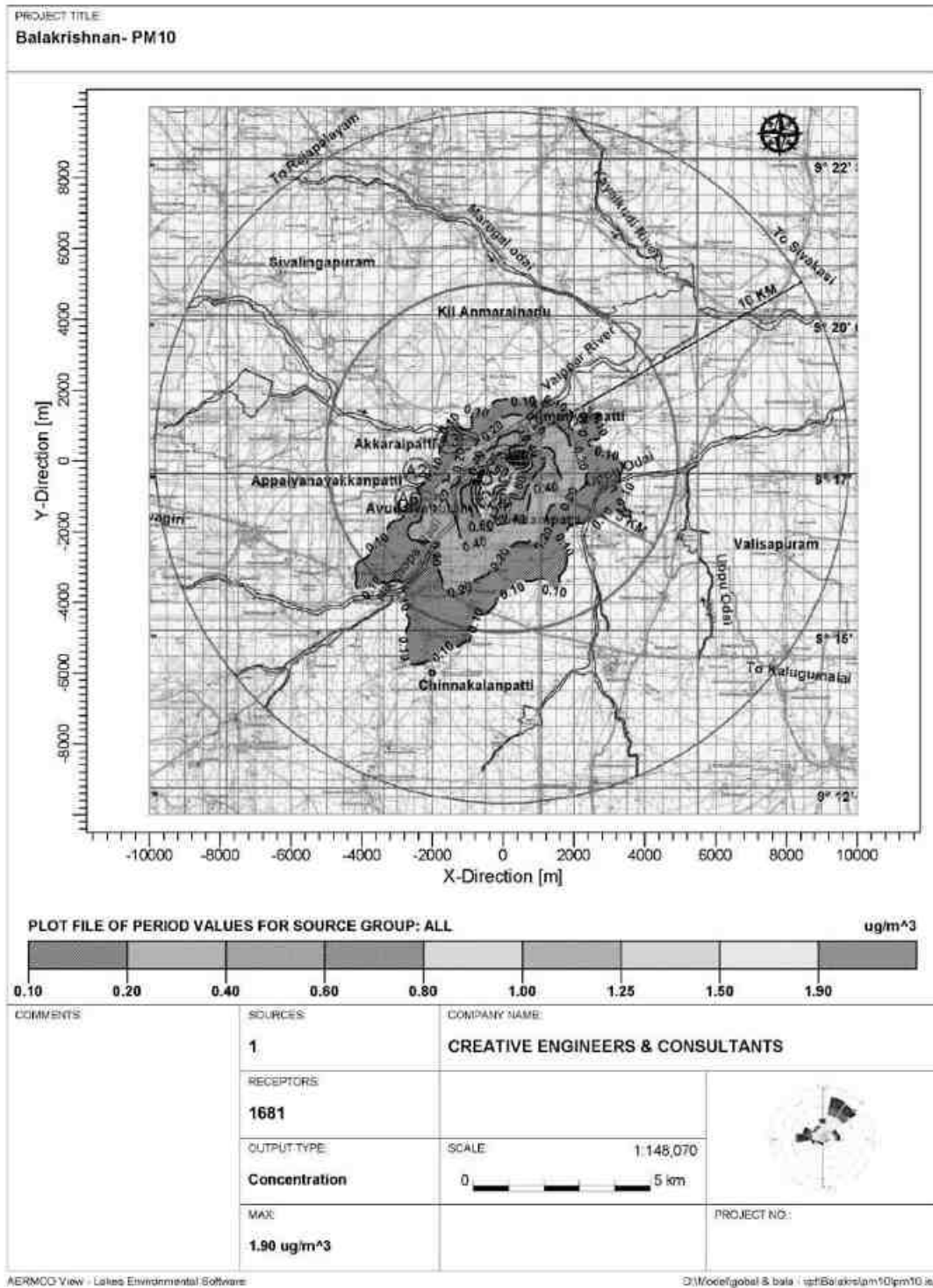
Table 4.5: Peak Incremental Concentration

S.No	Parameters	Peak incremental concentration µg/m ³ – Individual basis
1	PM ₁₀	1.90
2	PM _{2.5}	0.65

It is observed that the peak incremental concentration for PM₁₀, PM_{2.5} occurring very near the source. At away from the source the values are getting reduced due to dispersion effects. The Isopleths of PM₁₀, PM_{2.5} concentrations with control measures scenario have also been drawn and these are given in **Figure No.4.1 and 4.2**. The incremental and predicted concentrations at the locations of ambient air quality have been discussed in the following section.

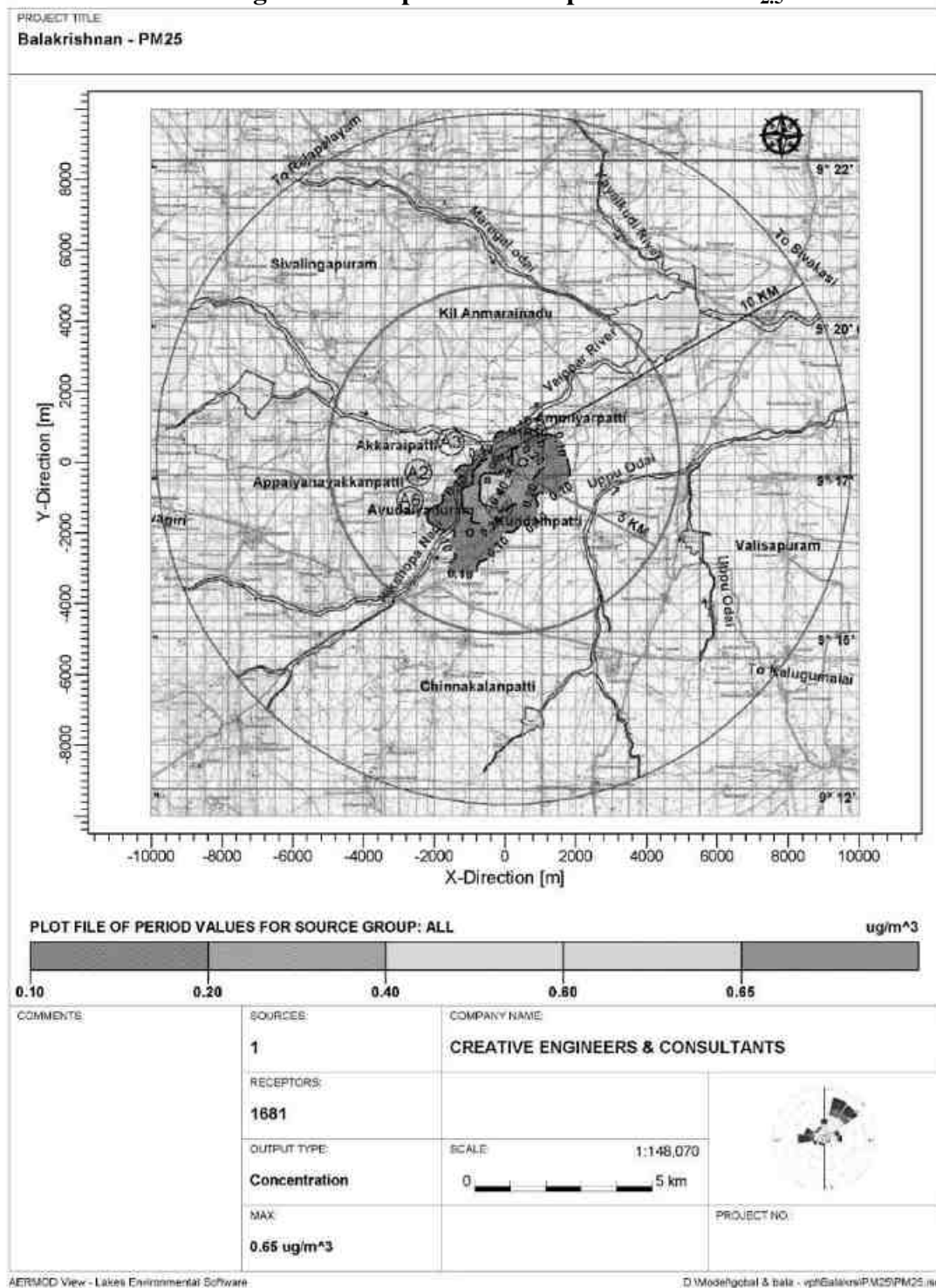
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Figure 4.1: Isopleth of GLC prediction – PM₁₀



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Figure 4.2: Isopleth of GLC prediction – PM_{2.5}



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Predicted Ambient Air Quality:

Table 4.6: Concentrations Of PM₁₀ after Project Implementation

Values in µg/m³

S. No	Location	Background Concentration			Statutory Limits
			Incremental Conc	Post Project Conc	
1	A1-Near Mine Lease Area	73.9	1.9	75.8	-
2	A2-Appaiyanayakkanpatti Village	68.0	<1.0	69.0	100
3	A3-Akkaraipatti Village	60.9	<1.0	61.9	
4	A4-Kundampatti Village	62.2	<1.0	63.2	
5	A5-Ammiyarpatti Village	55.4	<1.0	56.4	
6	A6-Avudaiyarpuram Village	51.9	<1.0	52.9	

Table 4.7: Concentrations Of PM_{2.5} after Project Implementation

Values in µg/m³

S. No	Location	Background Concentration			Statutory Limits
			Incremental Conc	Post Project Conc	
1	A1-Near Mine Lease Area	35.7	<1.0	36.7	-
2	A2-Appaiyanayakkanpatti Village	31.7	<1.0	32.7	60
3	A3-Akkaraipatti Village	29.2	<1.0	30.2	
4	A4-Kundampatti Village	30.0	<1.0	31.0	
5	A5-Ammiyarpatti Village	27.2	<1.0	28.2	
6	A6-Avudaiyarpuram Village	24.1	<1.0	25.1	

It can be seen that, the resultant added concentrations with baseline figures with respect to PM10 is in the range of 52.9 µg/m³ to 75.8 µg/m³ and with respect to PM2.5 are in the range of 25.1 µg/m³ to 36.7 µg/m³ which are within the stipulated statutory limits for the project.



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Additionally, cumulative impact due to working of **Thiru. Balakrishnan** project and proposed projects namely **R. Gopalakrishnan** on ambient air quality is assessed, and the details regarding the same has been provided below:

Table 4.8: Emission Rate - Cumulative

Activities	PM₁₀ (g/sec)	PM_{2.5}(g/sec)
Excavation	0.02	0.01
Drilling	0.10	0.04
Hauling	0.09	0.01
Total	0.21	0.06

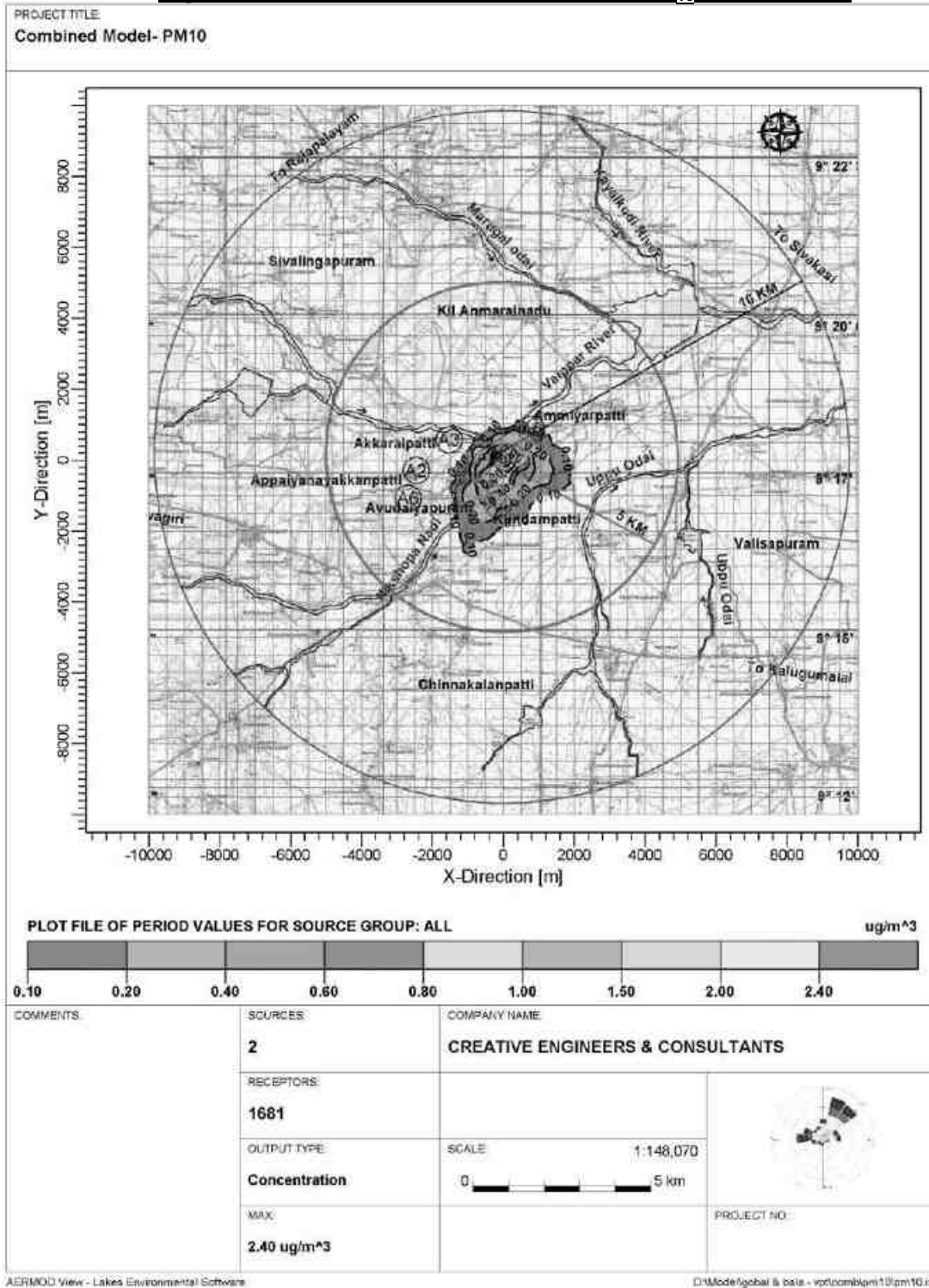
Table 4.9: Peak Incremental Concentration- Cumulative

Parameters	Peak incremental concentration $\mu\text{g}/\text{m}^3$
PM ₁₀	2.40
PM _{2.5}	0.95



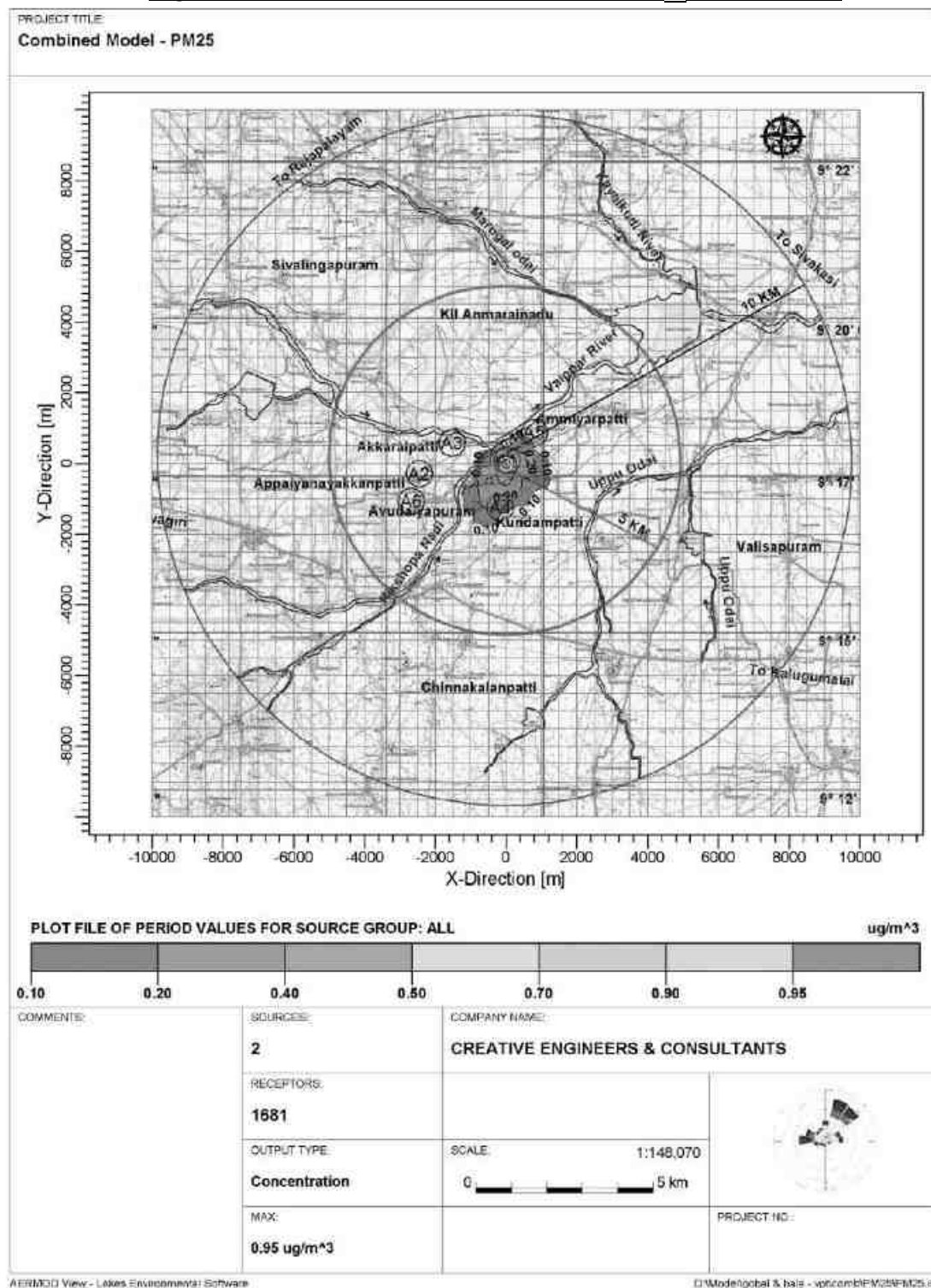
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Figure 4.3: Isopleth of GLC prediction – PM₁₀– Cumulative



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Figure 4.4: Isopleth of GLC prediction – PM_{2.5}– Cumulative



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The post project concentrations of PM₁₀, PM_{2.5}, (GLC) (base line + incremental) after adopting necessary control measures is provided below:

Table 4.10: Post Project Concentrations Of PM₁₀-Cumulative

Values in $\mu\text{g}/\text{m}^3$

S. No	Location	Background Concentration	Incremental Conc	Post Project Conc	Statutory Limits
1	A1-Near Mine Lease Area	73.9	2.4	76.3	-
2	A2-Appaiyanayakkanpatti Village	68.0	<1.0	69.0	100
3	A3-Akkaraipatti Village	60.9	<1.0	61.9	
4	A4-Kundampatti Village	62.2	<1.0	63.2	
5	A5-Ammiyarpatti Village	55.4	<1.0	56.4	
6	A6-Avudaiyarpuram Village	51.9	<1.0	52.9	

Table 4.11: Post Project Concentrations Of PM_{2.5}-Cumulative

Values in $\mu\text{g}/\text{m}^3$

S. No	Location	Background Concentration	Incremental Conc	Post Project Conc	Statutory Limits
1	A1-Near Mine Lease Area	35.7	<1.0	36.7	-
2	A2-Appaiyanayakkanpatti Village	31.7	<1.0	32.2	60
3	A3-Akkaraipatti Village	29.2	<1.0	30.7	
4	A4-Kundampatti Village	30.0	<1.0	31.0	
5	A5-Ammiyarpatti Village	27.2	<1.0	28.2	
6	A6-Avudaiyarpuram Village	24.1	<1.0	25.1	

The cumulative post project concentration with respect to PM₁₀ is in the range of 52.9 $\mu\text{g}/\text{m}^3$ to 76.3 $\mu\text{g}/\text{m}^3$ and with respect to PM_{2.5} are in the range of 25.1 $\mu\text{g}/\text{m}^3$ to 36.7 $\mu\text{g}/\text{m}^3$ which are within the statutory limits in each case. For preservation of environment in this mine strict enforcement of management schemes and regular air quality monitoring will be undertaken for taking corrective actions, as needed. By adopting the effective implementation of all the mitigative measures, no adverse impact on Air quality due to the mining operation in this lease area is expected.

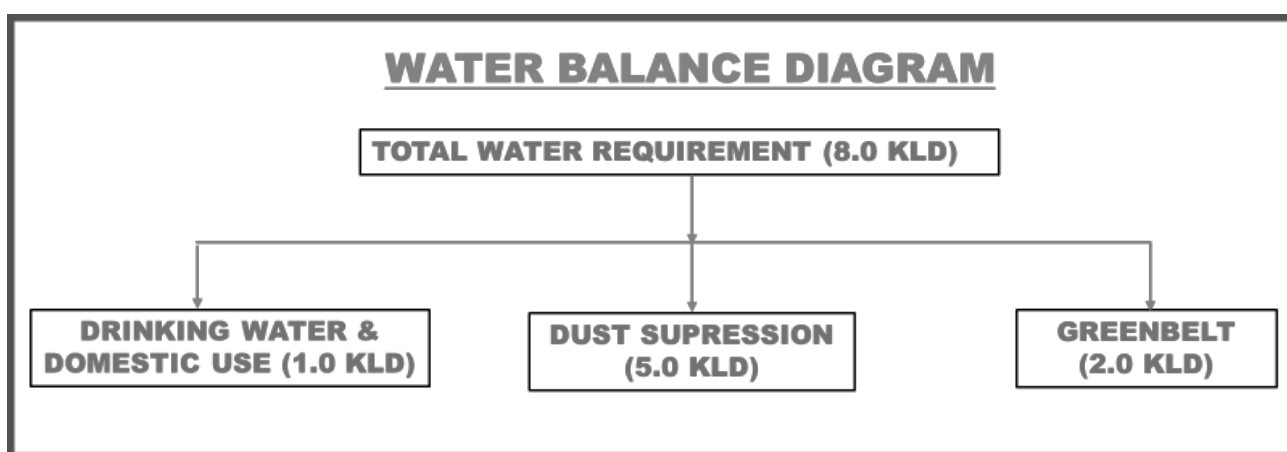


4.3 WATER ENVIRONMENT:

4.3.1 WATER REQUIREMENT:

The water requirement for this project is expected to be 8 KLD comprising 1.0 KLD for drinking water and domestic use, 5.0 KLD for dust suppression and 2.0 KLD for greenbelt. The water will be sourced initially from outside agencies. Later the rainwater collected in the respective mine pit sump will be used for this purpose. The water balance diagram for the same is shown in Figure No 4.7.

Figure 4.5: Water Balance Diagram



4.3.2 SOURCES OF WATER POLLUTION:

The existing water environment showing water quality at different sampling stations in the area has been described in Chapter-III.

Direct impact on human beings due to poor water quality consequent to mining operation can lead to various water borne diseases like diarrhea, jaundice, dysentery, typhoid, etc. Besides, the polluted water may not be useful for animal or human consumption, vegetation and may affect aquatic life, if effluents are not properly treated to remove the harmful pollutants. The major sources of water pollution normally associated due to mining and allied operations are:

- a. Domestic effluent.
- b. Washouts from stockpile if any.
- c. Disturbance to drainage course in the project area
- d. Generation of mine pit water pumped out from deeper workings if any.

4.3.3 TREATMENT SCHEME:

A. Generation of domestic effluent:

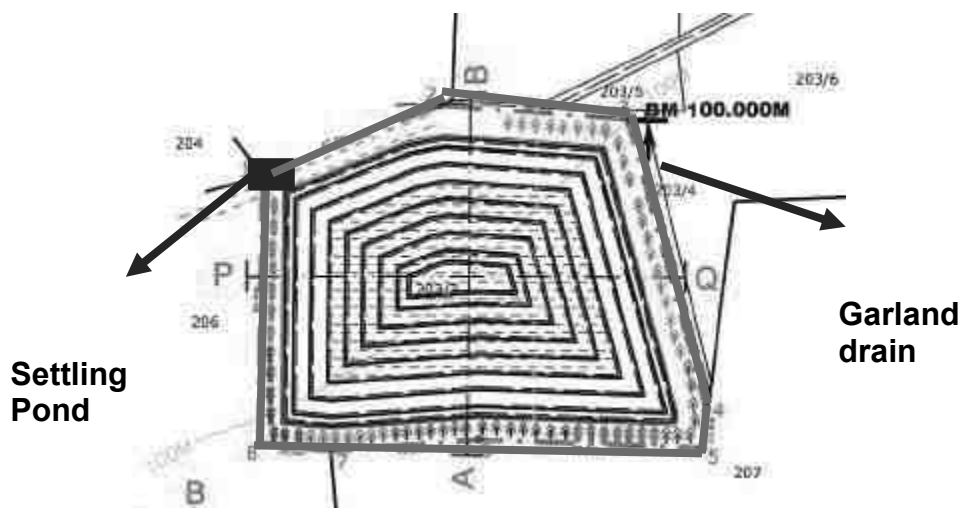
The domestic sewage to be generated from the projects will be collected in respective septic tank with soak pits.

B. Washouts from overburden, ore stockpile, etc.

Since the entire material from the quarry faces will be directly dispatched to the consumers, there will not be any stockpiles. There are no waste dumps in the quarry. As such there will not be any wash out due to stock pile or waste dumps.

The rain water falling in the quarries will be harvested in the sump at the lowest level of the respective quarry. This sump will act as a settling pond to prevent solids escaping along with discharge, before outlet. etc. Towards surface runoff management, a garland drain of length 480 m will be constructed and will be connected to settling ponds with silt traps. The supernatant clear water from the settling pond will be flow to the downstream users. The surface runoff management structures diagram is given in **Figure No 4.8.**

Figure 4.6: Surface Runoff Management Structures



C. Disturbance to drainage courses

Nikshopa Nadi - 130m (N), Vaippar River-400m- (N),. Due to scanty rainfall these drainage channels remains dry for most of the year. Lease area is at an higher elevation and it does not farm as a water catchment area. It is of shallow depth with rock exposure and bushes and it remains dry for the most of the year. By proper surface runoff management, the rainwater from the lease periphery will be channelized through the peripheral garland drain all around the lease area and Supernatant clear water will be discharged ensuring proper flow of rainwater for downstream users. There is no proposal to discharge any effluent into this waterbody. As such no major impact is envisaged on the nearby water bodies due to project operations.

D. Generation of mine pit water pumped out from deeper workings if any.

The occurrence and movement of groundwater in hard rock formations are restricted to the porous zones of weathered formations and the open systems of fractures, fissures and joints. Generally, in hard rock regions, occurrence of weathered thickness is discontinuous in space and depth. Hence recharge of groundwater in hard rock formations is influenced by the intensity and depth of weathering. As already mentioned, the lease area is part of a compact rock formation with less intergranular porosity and fractures leading to less permeability and

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transmissivity values and as such the ground water level in this area is deep from surface. As such hence no major water seepage within the mines is expected from the periphery. The ultimate pit depth of mining is 39 m. The ground water table in this area is below this level. Hence, ground water intersection is not envisaged and ground water will not be affected appreciably due to the quarrying operation. The working nearby quarries also depicts the same scenario. As mentioned earlier, the rainfall will be collected in the mine floor sump and advantageously used. Excess water if any in the sump will be pumped to settling pond for downstream users.

4.3.3.1 STAGE OF GROUNDWATER DEVELOPMENT

Details of hydrological scenario of the study area were given in para 3.6, Chapter – III. The groundwater resource data of Virudhunagar district was obtained from the data provided in the technical report of the Central Ground Water Board, South Eastern Coastal Region – ‘District groundwater brochure, Virudhunagar District.’

Table 4.12: Ground Water Resources Estimation– Vembakottai Taluk (M.Cum)

Net Groundwater Availability	Existing Gross Draft for Irrigation	Existing Gross Draft for Domestic and industrial water supply	Existing Gross Draft for all uses	Allocation for Domestic and Industrial Requirement supply upto next 25 years (2029)	Allocation for Domestic and Industrial Requirement supply upto next 25 years (2029)	Stage of Ground water Development (%)	Category of Block
26.82	13.14	23.7	15.51	24.7	11.22	58	Safe

From the table it is seen that the stage of groundwater development of Vembakottai where the study area falls is 58% and as such this area can be categorized as ‘Safe’ from ground water development point of view. Thus there is scope for further ground water development.

4.3.4 REDUCING WATER CONSUMPTION OVER THE YEARS:

4.3.4.1 GENERAL METHODS:

Use of water will be monitored and used to the minimum required. Awareness will be spread to the employees about the importance of water conservation. Tap and showers will be turned off immediately after use and any leaks will be monitored and immediately controlled. Water requirement for greenbelt and dust suppression can be reduced by choosing the native plants/trees species with low water requirement and which can sustain in such conditions for greenbelt/ plantation and also optimum usage to the required minimum. While the dust suppression itself is an important method of pollution control for air pollution due to dust, the



water consumption will be monitored strictly. The water tanker will be examined for any sources of leaks and if found will be immediately sealed so that water can be utilized for dust suppression effectively without loss.

4.3.4.2 RAINWATER HARVESTING PLAN

Since the lease proximate areas are hard rocky formations with less water potential and the rainwater is the major source for replenishment of ground water, effective rainwater harvesting and other water augmentation measures are proposed in this project.

- a) Development of garland drain around the quarry connected to settling tank.
- b) Cleaning of drain periodically to prevent siltation
- c) The supernatant clear water from the settling pond will drain into the nearby drainage on the western side of the lease.
- d) Utilizing the rainwater harvested in the mine pit to meet the water requirement of the project.
- e) Excess water, if any in consultation with local villagers and in line with government practices shall be provided to the downstream users.

4.4 NOISE AND VIBRATION:

4.4.1 NOISE ENVIRONMENT:

The ambient noise levels in the study area have been discussed in Chapter - III. The data shows that the existing noise levels are within statutory tolerable limits. The impact prediction and control measure for noise environment due to mining and allied activities is described below:

4.4.1.1 IMPACT PREDICTION DUE TO NOISE:

Noise is one of the inevitable causes of pollution in mining operations, largely due to the extensive mechanization adopted. Besides, other operations such as drilling, blasting, movement of vehicles, etc., also produce noise of considerable magnitude in mining operations. The main sources of noise and expected levels are given below in **Table no – 4.9.**



Table 4.13: Main Sources of Noise

Sl. No.	Source	Inside Cabin	Noise level at dB(A) 10 m. from source
1	Shovel	84-91	59-68
2.	Dumpers/Tippers	87-96	75-85
3.	Drill	88- 95	75-83

Prolonged exposure to a high noise level is harmful to the human auditory system and can create mental fatigue, rebellious attitude, annoyance and carelessness, which may lead to neglect of work and also result in accidents. The impact of noise level as per World Health Organization's 1986 notification is given below in **Table No - 4.10**.

Table 4.14: Impact of Noise Levels

NOISE LEVELS	ADVERSE EFFECTS
90-115 dB	Partial deafness and nervous irritability
> 115 dB	Permanent deafness
Impulsive noise (>90dB)	Frightens livestock grazing in the nearby areas

OSHA (Occupational Safety and Health Administration), USA and other similar organisations stipulate that noise level up to 90 dB(A) is acceptable for eight hours exposure Leq (Equivalent sound level) (8hrs) per day. The Directorate General of Mines Safety, in circular No. DG (Tech)/18 of 1975, has prescribed the noise level in mining occupations (TLV) for workers, in an 8 hour shift period with unprotected ear as 90 dB(A) or less.

The noise will be felt only near the active sources. There will be considerable reduction in the noise level due to the absorption factor, environmental surroundings and other attenuation factors. As far as absorption factor is concerned, If the ground cover is vegetated or has a soft texture, sound will decrease at the rate of 4.5 dB(A) every time the distance between the source and the observer is doubled. Besides, there will be shielding factor, which takes into account the environmental surroundings. With every 30m of dense land scape vegetation, 5 dB(A) of additional attenuation can be obtained up to a maximum of 10 dB(A). As such at away places the effect of noise will not be felt.

Anticipated noise levels resulting from operation of the various machineries like excavator, tippers, drill have been computed using point source model. Computation of cumulative noise levels at the nearby villages is made based on the assumption that there are no attenuation paths between the source and the boundary. Noise modeling is carried out using the following formula:



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$Lp2 = Lp1 - 20 \log R2/R1$, Where, $Lp1$ and $Lp2$ are sound pressure levels at points located at distances $R1$ and $R2$ respectively from the source. The study results are as follows:

Table 4.15: Post Project Noise Levels

Sl.No	Location	Baseline Day Eq.in dB(A)	Post project noise Eq in dB(A)	Limit dB(A) as per MoEF&CC
1	Appaiyanayakkanpatti Village	48.7	48.9	55
2	Akkaraipatti Village	45.3	45.6	55
3	Kundampatti Village	45.9	46.2	55
4	Ammiyarpatti Village	48.9	49.3	55
5	Avudaiyarpuram Village	48.1	48.3	55

From the studies, it is found that the predicted Noise Levels due to mining operations at the periphery of the mine lease itself will be less even without considering any attenuation factor. However, practically there will be attenuation due to vegetation etc., and as such there will not be any adverse noise propagation outside the lease boundary. Since the habitations are also away the effect of noise due to mining operations will not be felt at all in the surrounding villages.

4.4.1.2 CONTROL MEASURES FOR NOISE ENVIRONMENT:

Hence, by following mitigative measures for noise control, the impact on noise levels will be insignificant:

- Planting rows of native trees along roads, around mine area and other noise generating centers to act as acoustic barriers.
- Sound proof operator's cabin for equipments like shovel, tippers, etc.
- Proper and regular maintenance of equipments may lead to less noise generation.
- Providing in-built mechanism for reducing sound emissions.
- Providing earplugs to workers exposed to higher noise level.
- Conducting regular health check-up of workers including Audiometry test for the workers engaged in noise prone area.



- Displaying the noise level status of operational machinery on the machines to know the extent of noise level and to control the time to which the worker is exposed to higher noise levels.

Further green belt and afforestation will be planned and executed to abate noise and dust propagation in the area.

4.4.2 GROUND VIBRATION DUE TO BLASTING EFFECTS:

Vibrations due to blasting may cause damage to nearby structures, if appropriate control measures are not adopted. Fly rock is another possible damage causing outcome of blasting.

To ensure no adverse impact is caused to the nearby structures blasting study is carried out and its details are given below:

4.4.2.1 Blasting Study:

'Scientific Study on Blast Induced Ground Vibration and Design of Controlled Blasting Parameters' for the projects in the cluster was conducted by **Department of Mining Engineering, Anna University, Chennai** and this proposed quarries also comes under this cluster project . The cluster study has proposed a controlled blasting design based on the available information and site inspections to find out the influence of blasting to be carried out in the cluster quarry operations including the causeway on it and any sensitive structures in respect of blast-induced ground vibrations, fly-rock, airborne dust, and blasting fumes. Salient point of the study is given below.

Objectives of the Study:

- Site visit and collection of data.
- Submission of the detailed methodology for blasting including safety measures to be taken.
- Design trial blasts and to prescribe safe methodology for regular blasting operations.
- Carry out at least 10 controlled trial blasts and monitor blast-induced ground vibrations at least at 20 points under the supervision of the author of this report and their team.
- Develop a scaled distance equation for the site and determine the site constant which are site specific.



- Fine-tune the blast design, if required, which will restrict the blast-induced ground vibrations to the levels tolerable to the said site-specific the fly-rock and minimise their effect on the residents, traffic on the road, people working in the agricultural lands and effects on the dam.
- Training the people in carrying out the designed blast and blast vibration monitoring.
- Submit the report including suggesting a suitable methodology for carrying out regular drilling, controlled blasting operations in the quarry, and also appropriate safety measures to be taken to guard against blast-induced vibrations and fly-rock.

Control of Fly rock: Fly rock can be controlled by judicious selection of blast parameters mentioned above based on experience and calculations using certain empirical formulae developed from the site investigations. The fly rocks produced during the blasting can be controlled by adopting the following measures:

- Proper blast design and its implementation.
- Careful inspection of site before laying out blast holes and deciding the drilling pattern to be adopted based on the bench geometry.
- Drilling in accordance with the requisite blast design.
- Blast hole charging (using optimum charge factor).
- Maintaining the adequate stemming column.
- Use of proper stemming material
- Imparting adequate training to the blasting crew.

Blasting can certainly be carried out in the cluster rough stone and gravel quarries in a very safe manner by resorting to controlled blasting techniques restricting the maximum charges per delay based on the distance of the structure to be protected from the blasting site and adopting proper initiation sequencing under the supervision of qualified and experienced Blaster as per the requirement of the statute.



Design of Controlled Blasting:

To minimize generation of blast-induced ground vibrations and thereby their adverse effects on the college, residential buildings and other structures, the blast vibration predictor equation for the cluster quarry area has been developed by determining the field constants (which are site-specific) by monitoring ground vibrations during all 15 trial blasts in the nearby working quarries. This monitoring was carried out by TWO numbers of seismographs by locating them at the shortest distance from the blasting cluster site. Based on the parameters like the maximum explosive charge per delay, measured peak particle velocities (PPV), distances of each of the blasting sites to the monitoring stations of that particular blast, predictor equations for the cluster area have been developed using regression analysis. This predictor equation was used to calculate the maximum (safe) explosive charge per delay by substituting the distance of the blasting site from the nearest college and residential structures.

The predictor PPV for the proposed rough stone and gravel quarry site with constraint of allowable PPV limit is 2 mm/s at the distance of more than 250 m.

$$V = 4.49 * (D/Q^{1/2})^{-0.338}$$

Table 4.16: Summary of PPV predicted

Distance (m)	Maximum charge per delay (kg)	Predicted PPV (mm/s)
50	25	2.06
100	25	1.63
150	25	1.42
200	25	1.29
250	25	1.19
300	25	1.13
350	25	1.07
400	25	1.02
450	25	0.98
500	25	0.95
550	25	0.92
600	25	0.89
650	25	0.87
700	25	0.85

Conclusion:

This scientific report has been prepared to determine the influence of ground vibrations and fly-rock generated due to blasting in the proposed and existing quarries associated as a cluster quarry on the surrounding sensitive structures, residential structures, village roads and any other structures not belonging to the owner. The report also addresses the associated environmental issues like noise, fly rock, etc. Based on the investigations, recommendations are made in this report to carry out controlled blasting in the said quarry in a safe manner without affecting the structures under consideration and the surrounding environment.

It is concluded that the controlled blasting using NONEL by limiting maximum explosive charge per delay, did not produce peak particle velocities (blast vibrations) greater than 2 mm/s at the locations of the interest, namely, College building, Women's hostel building, residential and other buildings implying that they are safe.

All the blasting face shall be chosen in the North-West direction that is working face away from the college building structures to avoid the propagation of ground vibration from the blasting site. In unavoidable condition, line drilling or muffle blasting technique shall be adopted in the blasting site facing along the North-East and South-East direction. If the blasting is conducted at the depth of 5 to 10 m from the surface, it is highly recommended to adopt the controlled blasting technique by mean of muffle blasting to avoid the fly rock.

Noise (air over pressure) pollution by blasting is impulsive in nature and that too for a very short duration during a specific period of the day when the blasting timings are restricted to a specific period of the day instead of spreading throughout the day and the same is also announced and declared. This air over pressure will not cause any structural damage to the College building, Women's hostel building, residential and other buildings. This problem can be reduced by restricting the timings of the blasting and also restricting the number of blasts per week.

Restricting the specific explosive charge, cleaning the top & near the toe of the bench thoroughly before drilling, charging & blasting and adopting V pattern of initiation, the fly-rock can be restricted to within the leasehold area. Avoiding overcharging, cleaning the top & near the toe of the bench thoroughly before drilling, charging & blasting, use of water as per the recommendations of this report would substantially control adverse effect. The recommendations of this report are site specific and can be effectively implemented only in the



proposed quarry associated as a cluster quarry and not to the quarries outside the study area. However, blast induced ground vibrations can cause damage to the causeway, residential and other structures in the village, and fly-rock can endanger the surroundings, if indiscriminate blasting of multiple rows of drillholes are blasted with instantaneous detonators using huge charges of high explosives per delay (more than what has been recommended in this report per delay) is used.

It is highly recommended that the blasting operations shall be conducted as per the report suggestions and recommendations for the production blasts to be carried out in future.

By adoption of above measures, it will be ensured that the ground level vibration due to blasting are maintained within the limits prescribed by DGMS, Dhanbad at the mining areas vide Circular No. 7 dated 29 -08-1997 as given below

Table 4.17: Permissible Peak Particle Velocity (PPV) In Mining Areas

In mm/sec

Type of structure	Dominant excitation frequency Hz		
	<8 Hz	8-25 Hz	>25 Hz
A. Buildings/structures not belonging to owner			
Domestic houses /structures (Kuchha brick and cement)	5	10	15
Industrial buildings (RCC and framed structures)	10	20	25
Objects of historical importance and sensitive structures.	2	5	10
B. Building belonging to owner with limited span of life			
Domestic houses/structures (Kuchha brick and cement)	10	15	25
Industrial buildings (RCC and framed structures)	15	25	50

Besides, different blasting time for the projects in the vicinity is suggested and the timing is to be mentioned in the display board in the respective mines entrance.

Since the production from this lease is less, the number of holes and total charge to be used is expected to be less and as such the blast induced vibration is easily controllable and no adverse impact on this front is expected.

4.5 LAND ENVIRONMENT:

The present land use pattern, and the post mining land use pattern is shown below:

Table 4.18: Land Use

Sl. No.	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)
1.	Quarry area	Nil	1.18.50
2.	Infrastructure	Nil	0.01.00
3.	Roads	Nil	0.01.00
4	Green Belt	Nil	0.35.00
5	Fencing	Nil	0.05.00
6	Unutilized	1.60.50	0.00.00
Total		Total	1.60.50

4.5.1 LAND RECLAMATION:

There is no waste generation anticipated in this quarry operation since the entire excavated material will be utilized. Hence, there is no external overburden dump involved. In the post mining stage, mined out area will be left as water body and the rest will be covered with vegetation.

Table 4.19: Land Use During Post Operational Period

S.No	Description	Land use (Ha.)			
		Plantation	Water body	Others	Total
1	Quarrying Pit	-	1.18.50	-	1.1850
3	Green Belt	0.35.0	-	-	0.35.0
5	Others	--	-	0.07.0	0.07.0
	TOTAL	0.35.0	1.18.50	0.07.0	1.60.50

In the post mining stage, entire 1.18.50Ha will be used as mined out area at 39m depth. Ultimately the entire mined out area will be left as water body. 0.02.0 Ha will be the mine roads & infrastructure, 0.35.0 Ha will be covered with vegetation, and 0.05.00 Ha will be fencing. Entire mined out area will be properly fenced to prevent inadvertent entry of men and animals. In the post mining stage the entire mined out area shall be used as a rainwater harvesting pond.

Mine closure :

At the end of the life of the mine, the following points will be ensured:

- The mine benches will be properly dressed, loose material in the face if any and the mine site will also be cleared.
- Mine Closure activities will be carried out progressively by way of fencing, laying of garland drain around the lease periphery & plantation.
- The peripheral barbed wire fencing, will be strengthened to prevent inadvertent entry of public and animal. surface runoff management arrangements will be improved so as not to disturb the hydrological cycle of the area post mining.
- Besides, to prevent any access to the mined out void, entrance will be secured with tall gate and a blockage bund across the access road.
- No entry / safety board will be erected all around the lease area.
- Benches will be kept intact and haul road accessibility will be maintained.
- Regular checking to prevent inherent entry in to the lease area post mining will be done.
- PP will ensure effective post closure monitoring.

4.6 BIOLOGICAL ENVIRONMENT:

4.6.1 EXISTING FLORA AND FAUNA:

lease area is barren with grasses and bushes. Details of flora/fauna pattern in core and buffer zones have been described in chapter - III.

4.6.2 IMPACT OF MINING ON BIOLOGICAL ENVIRONMENT:

The significance of impact on biological environment due to mining and allied activities on various fronts is described below:



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Table 4.20: Impact on Biological Environment

S.No	ISSUES	OBSERVATIONS
1	Clearance of vegetation due to mining and allied activities	There is no major vegetation is observed. As such there will be no clearance of vegetation is involved in the leases.
2	Retardation of tree growth, tip burning, etc, due to deposition of dust and the Particulate matter generated from the mining operation.	Necessary mitigative measures like dust suppression, proper maintenance of equipment's, roads will be carried out to prevent dust generation.
3	Proximity to national park/ wildlife sanctuary/reserve forest/mangroves/Coastline/estuary/ sea	The mining lease areas and the 10 km buffer zone from the periphery of the core zone is devoid of declared ecologically sensitive features like national parks, biospheres, sanctuaries, etc.
4	Release of effluents into water body that also supplies water to wildlife	There is no proposal to discharge any effluent into nearby water bodies.
5	Proposed project could increase siltation that would affect nearby biodiversity area	Surface runoff management structures like garland drain, settling pond etc. as explained above will be constructed and as such there will not be any appreciable impact on surface water quality which in turn can affect the bio diversity of the area.
6	Activities of the project affects the breeding/nesting sites of birds and animals	In the present ML area, there is no wetland. A migratory bird needs sufficient wetlands with sufficient food, shelter, roosting places and nesting places which is not possible here.
7	Located near an area populated by rare or endangered species	The study area is observed to be not ecologically sensitive and no endangered or endemic species as per IUCN red list is observed.
8	Risk of fall/slip or cause death to wild animals due to project activities	In the post mining stage, barbed wire fencing is proposed all around the mined-out void to prevent falling of animals in the mine pits.
9	Project affects the forest-based livelihood/any specific forest product on which local livelihood depends	Not applicable
10	Project likely to affect migration routes	No migration routes are in the area.
11	Project likely to affect flora of an area, which have medicinal value	No such significantly important medicinal value species within the ML area and its nearby region.
12	The project likely to affect wetlands, fish breeding grounds, marine ecology	There are no any wetlands, fish breeding grounds, marine ecology nearby the ML area which will be affected due to this project.
13	Project affects the Agriculture, Forestry and Traditional Practices	Since the lease area forms part of a vast tract of hard rocky formation , no agricultural activities are possible and practiced in the lease and its nearby areas. Agricultural activities are carried out far away lands irrigated by tanks and wells during monsoon rainfall. By adoption of systematic mining adhering to all the



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		environmental mitigation measures as explained earlier, no adverse impact on the far away agricultural or surrounding environs envisaged.
14	Impact on soil health and biodiversity	The lease area is rocky type with very little and poor soil cover. (Photograph of the site attached in Chapter-II). Besides, there is no waste generation, disposal or stacking involved in this project. As such no loss of soil health and Bio-diversity is expected.
15	Climate change leading to droughts, floods, etc.	• No adverse impact on the surrounding environment is envisaged since the number of equipments to be used to achieve this production is less and the magnitude of operation is of very small level. • Besides, as is it a mining project, no adverse generation of heat is envisaged. • Certified vehicles with low carbon emissions will only be used. These equipments will be properly and regularly maintained. Besides, regular vehicular emission tests will be done for the transport vehicles to ensure minimal impact due to carbon emissions. To further mediate the carbon emissions, a good greenbelt and plantation plan has been planned.
16	Pollution leading to release of greenhouse gases (GHG) rise in temperature (Hydrothermal/Geothermal effect due to destruction in environment, Bio-geochemical processes and its foot prints including environmental stress) and livelihood of local people.	• Geologically the area in and around the lease area contains charnokite type rock formation containing mostly fallow land. As such there no major vegetation or agricultural activities are observed. • There are no Protected or Eco-Sensitive Zone or forest land nearby wherein it can have an impact. • It will be ensured that mining will be carried out adhering to all the statutory rules and regulations and maintaining the environmental quality within the prescribed standards by effective implementation of various mitigative measures. • These mitigative measures will be continued for the entire lease period ensuring no impact on the environment. • As such release of Greenhouse gases (GHG), rise in temperature, affecting livelihood of the local people, loss of Agriculture, Forestry and Traditional Practices is not envisaged. Such a limited scope will not induce any climatic change leading to droughts, floods etc. • Extensive plantation will be developed in and around the lease area for carbon absorption.
17	Possibilities of water contamination and impact on aquatic ecosystem health and impact on Sediment geochemistry in the surface streams	• This being a mining project no process effluent will be generated. • Water generation is expected to be due to ✓ Direct rainfall falling within the pit ✓ Rain water draining near the lease area. • Direct rain fall will be collected in the mine floor sump. Water from sump will be pumped to settling pond for downstream



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	users. • Rainwater from the mine periphery will be collected through peripheral garland drain. Garland drain will be connected to a settling pond. Supernatant clear water from settling pond confirming to applicable limits will be let out to downstream users for agricultural or other purposes. • Due to above mentioned reasons and absence of perinial water bodies nearby where in any marine ecosystem is observed, no effect on this front is expected.

There are no migratory corridors, migratory avian-fauna, rare endemic and endangered species. Therefore there shall be no impacts due to mining activity on them. Even though there are no adverse impact on bio diversity and flora/fauna status due to project operations, positive impacts will arise due to well-planned reclamation measures for restoration of land status in the area ultimately to productive land category with elaborately planned green belt development activities.

4.6.3 CONTROL MEASURES FOR BIOLOGICAL ASPECTS:

To reduce the adverse effects on flora/fauna status of the area due to deposition of dust generated from mining operations, mobile water tanker systems will be ensured in all dust prone areas to arrest dust generation. Methodical and well-planned plantation scheme will be carried out depending upon the immediate need, priority and availability of land. The plantation will be done along the lease boundary in a phased manner.

4.6.4 GREEN BELT & PLANTATION:

In the lease area, safety barrier 7.5m around the periphery and 10m safety zone. about 750 trees will be planted in and around the lease area..

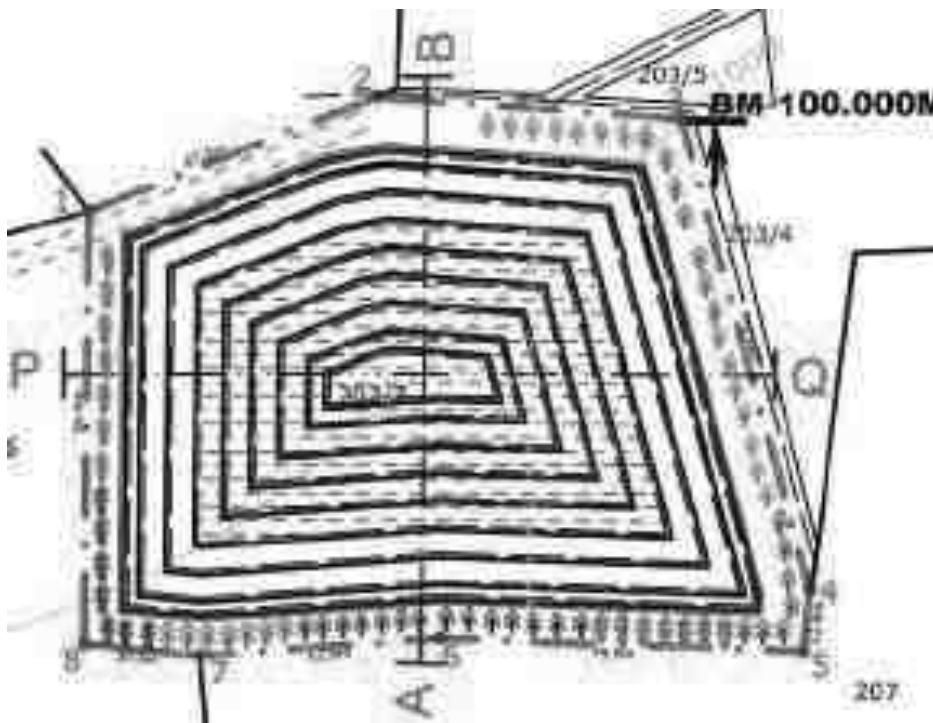
Table 4.21: Proposed Plantation

Year	No of trees	Name of the species
1-10	250	Pungai, Vagai, Vembu, Manjal konrai, Naval, Puvarasu, etc.,
	200	
	100	
	100	
	100	
Total	750	



In the post mining stage, entire entire 1.18.50Ha of mined out area will be left as water body. 0.02.0 Ha will be the mine roads & infrastructure, 0.35.0 Ha will be covered with vegetation, and 0.05.00 Ha will be fencing.

Figure 4.7: Mine Closure Plan



4.6.5 SOCIO ECONOMIC ENVIRONMENT:

The lease areas are in the respective proponent's possession. Hence, there are no habitations or hutments in the core zone area and no rehabilitation or resettlement problems will arise here.

The mining operations in the proposed mines will each employ about 16 persons directly and about 50 persons on indirect basis through allied opportunities in logistics, trading, repairing works etc. good employment potential will arise in this area, which will provide raising income levels and standards of living in the area through various service related activities connected with the project operations as shown under.

- Project related logistical operations for transport of Rough Stone, etc,
- Various trading services for consumer goods, spare parts, sundry items, etc.

- Contractual services connected with the project.
- Green belt and horticultural works in the project.
- Casual labor needs for various activities.

Besides, there will be improvement in the following aspects due to project operation:

- ❖ Improvement in infrastructural facilities, providing education aids etc. in nearby schools
- ❖ Betterment of drinking water facilities.
- ❖ Benefit to the State and the Central governments through financial revenues by way of royalty, tax, duties, etc from this project directly and also indirectly.

From above details, it is clear that the project operations will have highly beneficial positive impact in the area.

Table 4.22: CER Cost

Project Name	Details
Project Cost (Rs.)	Rs. 39,88,700
CER Cost Requirement (2% of the Project Cost) (Rs.)	Rs. 59,322
CER cost allocated (Rs.)	Rs. 2.0 Lakhs

However, towards the socio-economic development of the surrounding area, Rs.2 Lakhs is allocated. The activities identified under CER will be implemented in a phased manner in provision of facilities in nearby Government School.

4.7 OCCUPATIONAL HEALTH AND SAFETY:

4.8.1 BASELINE STATUS:

Primary data collection through field survey conducted in the study area reveals that there is no reported incident of any occupational diseases in the area. Hazardous jobs like blasting, loading, etc. are planned to be executed safely and with all precautionary measures as prescribed in Metalliferous Mines Regulations of 1961, so as to minimize hazards and incidences of health problems.



4.8.2 IMPACTS ON OCCUPATIONAL HEALTH DUE TO PROJECT OPERATIONS:

Anticipated occupational illness sequel to mining activities can be as follows:

- Dust related pneumonia
- Tuberculosis
- Rheumatic arthritis
- Segmental vibration
- Miner's Nystagamus

4.8.3 MITIGATIVE MEASURES FOR OCCUPATIONAL HEALTH:

To reduce pollution emanation from the project, following measures are being and will be taken:

- Water sprinkling on haul roads etc.
- Green belt creation to arrest dust and reduce noise propagation.
- Acceptance of good control measures for reducing air pollution, as mentioned earlier in the chapter.
- Control of noise levels through good preventive maintenance of machineries, green belt creation, provision of ear plug to workers, etc.
- In addition to above measures, the following remedial steps are being and will be enforced to ensure minimization of occupational health and safety problems.
- Medical examination of workers by qualified doctors, as per DGMS circulars.
- Regular awareness campaigns amongst staff and workers
- Staff will be provided with PPE to guard against excess noise levels, Dust generation and inhalation, etc., as per standards prescribed by DGMS.

4.8.4 MITIGATIVE MEASURES FOR SAFETY ASPECTS:

The following safety gadgets will be provided to the staff and workers based on their area of operation and work & requirement:

Sl No	Safety Equipment's
1.	Helmets
2.	Shoes
3.	Goggles
4.	Dust Mask
5.	Hand Gloves
6.	Reflective Jackets
7.	Ear Muffs
a8.	Signal Lights/Flags

4.8 LOGISTICAL SYSTEM:

From these proposed quarries the entire output will be transported to the crusher units for producing stone aggregates of different sizes or construction of roads, bridges, buildings and other buyers etc.

The lease area can be approached through localized road which is well connected with highway roads. The expected peak transport will be as follows:

Table 4.23: Details of Transportation

Sl.no	Particulars of activity	Details
A	Maximum Rough stone Transported (m3/year)	29,790
B	No of days in a year	300
C	Transport hours per day	8
D	Truck capacity in Cum	8.0
E	Trips per hour	1 to 2 Trips/hr

From the above table it is seen that there will be about less 2 trips per hour. The existing road can absorb this traffic due to this project. However, the following mitigative measures are suggested:

- ❖ Water sprinkling on material in the transport vehicles before transporting, so that no dust nuisance during transport will arise.
- ❖ Plantation on either side of the transport road in consultation with the concerned department.
- ❖ Proper maintenance of transport roads

- ❖ Proper maintenance of transport vehicles.
- ❖ Avoiding overloading of material
- ❖ Covering of loaded vehicles with tarpaulins sheet if warranted.
- ❖ Limiting of speed
- ❖ Provision of tyre washing facility at the mine outlet

4.9 WASTE MANAGEMENT:

Solid Waste: Since the entire mined out material will be used there will not be any solid waste generation from these projects.

Liquid waste: There is no process effluent generation from these mines. Hence no liquid waste is generated.

Hazardous waste management: In these projects the following management practices will be followed:

- Ensuring availability of different colour bins for collection of different types of waste.
- Storing of Hazardous waste material in a separate storage area with impervious containers for waste oil, oil contaminated clothes, used lead acid batteries, scraps, tyre storage etc.
- Ensure that there are no leakages/spillages of hazardous wastes.
- Ensuring that the fire extinguisher system is available at hazardous material storage area.

The hazardous waste if any will be disposed through authorized recyclers or re-processors periodically. The hazardous wastes will be transported in accordance with the provisions of rules. By effective implementation of above said mitigation measures no major impact due to Hazardous waste is expected.

Plastic waste: Single use plastics/ use and throwaway plastics will be banned in the site as directed by the Tamil Nadu Government vide GO(Ms)No.84 regarding ban on use of plastic products. The employees will be encouraged to use compostable material or reusable material.

* * * * *



CHAPTER 5

ANALYSIS OF ALTERNATIVES

5.1 ALTERNATE TECHNOLOGY:

In this proposed Rough Stone and Gravel Quarry, Mechanized Open Cast mining will be carried out. It involves jack hammer drilling, blasting, excavation, loading and transportation of Rough stone to the crushing units. As this method is techno economically proven, consideration of an alternate technology is not warranted.

5.2 ALTERNATE SITE:

The mineral deposits are site specific in nature; hence question of seeking alternate site does not arise.

* * * * *



CHAPTER 6

ENVIRONMENTAL MONITORING PROGRAMME

6.1 GENERAL

In this project, appropriate environmental monitoring programme are framed. Regular, systematic and sustained programme schedules for implementation and monitoring of various control measures are devised with clear cut guidelines of various concerned plans for keeping a continuous surveillance on the various environmental quality parameters in the area.

The monitoring schedules are planned to aim at regular and systematic study of various pollution levels with respect to air and water quality, noise levels etc., to ensure that they conform to the standards laid down by the Environment Protection Act, 1986 and various Central and State Pollution Control Board Limits.

The various methodologies and frequency of studies of all environmental quality parameters will be as per prescribed norms laid down by MOEF&CC and State Pollution Control Board. This being a small quarry operation, the Mines in-charge will take care of all the environmental related works also.

Environmental control measures include components like air, water and soil quality, noise levels, afforestation measures, etc. For monitoring of environment over the life of the mine, a set of stations for study of quality parameters are fixed as per the actual requirements and prevailing conditions of environmental factors, as dictated from time to time, depending on the prevailing pollution levels.

6.2 MONITORING SCHEDULES FOR VARIOUS PARAMETERS

The monitoring schedules are planned for systematic study of various pollution levels with respect to air and water qualities, noise levels, etc. to ensure that they conform to the standards laid down by Environmental Protection Act and various statutory Limits. The monitoring schedules to be adopted in the proposed quarry is given below. However, based on the need and priority it may be suitably modified / improved in consultation with local authorities.

Since there are other leases within the cluster, it is proposed to form a cluster management committee (CMC) and its details are provided under Section 10.2.2, Chapter-X.



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Table 6.1: Environmental Monitoring Schedule

S.No	Environmental Parameters	Parameters to be monitored	Monitoring area coverage /locations	Frequency of monitoring
1	Air Quality	Sulphur dioxide (SO ₂), Oxides of Nitrogen (NO ₂), Respirable Particulate Matter (PM _{2.5} and PM ₁₀).	2 locations in the buffer zone and 1 work zone locations.	Once in a year in each location.
2	Water Quality	General, Physical, and chemical parameters	Ground Water samples (around the project area) and Mine Pit water samples	Once in a year
3	Water Table Fluctuations	Water Levels	Nearby wells and Borewells	On yearly basis pre and post monsoon level
4	Noise	Leq. Lmax Lmin, Leq Day & Leq Night dB(A)	Work zone locations and buffer zone villages	Once in a year
5	Vibration	Peak Particle Velocity	Mine periphery	Once to arrive at optimum blasting parameters
6	Socio Economic Environment	Socio Economic Survey, Review of implementation of CER activities proposed	Buffer Zone	Yearly basis
7	Occupational Health	Occupational health survey to detect early incidence of diseases, Audiometry Test for workers in noise prone area and review of safety matters.	Staff and Workers involved in the project	Once in a year
8	Greenbelt	Maintenance	Within & outside the lease area	Regularly

6.3 LEGISLATIVE AND REGULATORY FRAME WORK:

The project will have environmental policy declaring its responsibility and commitment to protect the environment and to ensure public safety. The existing policy will be available with all concerned officials of the plant. The following environmental standards as per methodologies prescribed, by MOEF/CPCB/TNPCB will be enforced in this project:

Table 6.2: Environmental Standards

Standards	Issued By	Reference
National Ambient Air Quality Standards	Central Pollution Control Board	Table No. 6.3
Water quality standards per IS 10500:2012	Bureau of Indian Standards	Table No.6.4
Noise Standards	CPCB / MoEF&CC	Table No.6.5
Permissible Peak Particle Velocity	DGMS, Dhanbad	Table No.6.6



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Table 6.3: National Ambient Air Quality Standards

[NEPI III] - PART 4

भाग का उपखंड : असाधारण

3

**NATIONAL AMBIENT AIR QUALITY STANDARDS
CENTRAL POLLUTION CONTROL BOARD
NOTIFICATION**

New Delhi, the 18th November, 2009

No. B-29016/2009/PCI-I.—In exercise of the powers conferred by Sub-section (2) (b) of section 16 of the Air (Prevention and Control of Pollution) Act, 1981 (Act No.14 of 1981), and in supersession of the Notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998, the Central Pollution Control Board hereby notify the National Ambient Air Quality Standards with immediate effect, namely:-

NATIONAL AMBIENT AIR QUALITY STANDARDS

S. No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		
			Industrial, Residential, Rural and Other Areas	Ecologically Sensitive Areas (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur Dioxide (SO ₂), µg/m ³	Annual* 24 hours**	50 80	20 80	- Improved West and Gaeke - Ultraviolet fluorescence
2	Nitrogen Dioxide (NO ₂), µg/m ³	Annual* 24 hours**	40 80	30 80	- Modified Jacob & Hochheiser (Na-Arsenite) - Chemiluminescence
3	Particulate Matter (size less than 10µm) or PM ₁₀ , µg/m ³	Annual* 24 hours**	60 100	60 100	- Gravimetric - TOEM - Beta attenuation
4	Particulate Matter (size less than 2.5µm) or PM _{2.5} , µg/m ³	Annual* 24 hours**	40 60	40 60	- Gravimetric - TOEM - Beta attenuation
5	Ozone (O ₃), µg/m ³	8 hours** 1 hour**	100 180	100 180	- UV photometric - Chemiluminescence - Chemical Method
6	Lead (Pb), µg/m ³	Annual* 24 hours**	0.50 1.0	0.50 1.0	- AAS/ICP method after sampling on EPA 2000 or equivalent filter paper - ED-XRF using Teflon filter
7	Carbon Monoxide (CO), mg/m ³	8 hours** 1 hour**	02 04	02 04	- Non Dispersive Infra Red (NDIR) spectroscopy
8	Ammonia (NH ₃), µg/m ³	Annual* 24 hours**	100 400	100 400	- Chemiluminescence - Indophenol blue method



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4 THE GAZETTE OF INDIA : EXTRAORDINARY [PART III—Sec. 4]

(1)	(2)	(3)	(4)	(5)	(6)
9	Benzene (C ₆ H ₆) µg/m ³	Annual*	05	05	- Gas chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10	Benzo(a)Pyrene (BaP) - particulate phase only, ng/m ³	Annual*	01	01	- Solvent extraction followed by HPLC/GC analysis
11	Arsenic (As), ng/m ³	Annual*	06	06	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni), ng/m ³	Annual*	20	20	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper

* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

Note. — Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.

SANT PRASAD GAUTAM, Chairman
[ADVT-III/4/184/09/Ext.]

Note: The notifications on National Ambient Air Quality Standards were published by the Central Pollution Control Board in the Gazette of India, Extraordinary vide notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998.



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Table 6.4: IS – 10500 :2012 Standards

Table 1 Organoleptic and Physical Parameters
(Foreword and Clause 4)

Sl No.	Characteristic	Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source	Method of Test, Ref to Part of IS 3025	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
i)	Colour, Hazen units, <i>Max</i>	5	15	Part 4	Extended to 15 only, if toxic substances are not suspected in absence of alternate sources
ii)	Odour	Agreeable	Agreeable	Part 5	a) Test cold and when heated b) Test at several dilutions
iii)	pH value	6.5-8.5	No relaxation	Part 11	—
iv)	Taste	Agreeable	Agreeable	Parts 7 and 8	Test to be conducted only after safety has been established
v)	Turbidity, NTU, <i>Max</i>	1	5	Part 10	—
vi)	Total dissolved solids, mg/l, <i>Max</i>	500	2 000	Part 16	—

NOTE — It is recommended that the acceptable limit is to be implemented. Values in excess of those mentioned under 'acceptable' render the water not suitable, but still may be tolerated in the absence of an alternative source but up to the limits indicated under 'permissible limit in the absence of alternate source' in col 4, above which the sources will have to be rejected.



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Table 2 General Parameters Concerning Substances Undesirable in Excessive Amounts
(Foreword and Clause 4)

Sl No.	Characteristic	Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source	Method of Test, Ref to	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
i)	Aluminium (as Al), mg/l, Max	0.03	0.2	IS 3025 (Part 55)	—
ii)	Ammonia (as total ammonia-N), mg/l, Max	0.5	No relaxation	IS 3025 (Part 34)	—
iii)	Anionic detergents (as MBAS) mg/l, Max	0.2	1.0	Annex K of IS 13428	—
iv)	Barium (as Ba), mg/l, Max	0.7	No relaxation	Annex F of IS 13428* or IS 15302	—
v)	Boron (as B), mg/l, Max	0.5	1.0	IS 3025 (Part 57)	—
vi)	Calcium (as Ca), mg/l, Max	75	200	IS 3025 (Part 40)	—
vii)	Chloramines (as Cl ₂), mg/l, Max	4.0	No relaxation	IS 3025 (Part 26)* or APHA 4500-Cl G	—
viii)	Chloride (as Cl), mg/l, Max	250	1 000	IS 3025 (Part 32)	—
ix)	Copper (as Cu), mg/l, Max	0.05	1.5	IS 3025 (Part 42)	—
x)	Fluoride (as F) mg/l, Max	1.0	1.5	IS 3025 (Part 60)	—
xi)	Free residual chlorine, mg/l, Min	0.2	1	IS 3025 (Part 26)	To be applicable only when water is chlorinated. Tested at consumer end. When pro- tection against viral infec- tion is required, it should be minimum 0.5 mg/l
xii)	Iron (as Fe), mg/l, Max	0.3	No relaxation	IS 3025 (Part 53)	Total concentration of man- ganese (as Mn) and iron (as Fe) shall not exceed 0.3 mg/l
xiii)	Magnesium (as Mg), mg/l, Max	30	100	IS 3025 (Part 46)	—
xiv)	Manganese (as Mn), mg/l, Max	0.1	0.3	IS 3025 (Part 59)	Total concentration of man- ganese (as Mn) and iron (as Fe) shall not exceed 0.3 mg/l
xv)	Mineral oil, mg/l, Max	0.5	No relaxation	Clause 6 of IS 3025 (Part 39) Infrared partition method	—
xvi)	Nitrate (as NO ₃), mg/l, Max	45	No relaxation	IS 3025 (Part 34)	—
xvii)	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	0.001	0.002	IS 3025 (Part 43)	—
xviii)	Selenium (as Se), mg/l, Max	0.01	No relaxation	IS 3025 (Part 56) or IS 15303*	—
xix)	Silver (as Ag), mg/l, Max	0.1	No relaxation	Annex J of IS 13428	—
xx)	Sulphate (as SO ₄) mg/l, Max	200	400	IS 3025 (Part 24)	May be extended to 400 pro- vided that Magnesium does not exceed 30
xxi)	Sulphide (as H ₂ S), mg/l, Max	0.05	No relaxation	IS 3025 (Part 29)	—
xxii)	Total alkalinity as calcium carbonate, mg/l, Max	200	600	IS 3025 (Part 23)	—
xxiii)	Total hardness (as CaCO ₃), mg/l, Max	200	600	IS 3025 (Part 21)	—
xxiv)	Zinc (as Zn), mg/l, Max	5	15	IS 3025 (Part 49)	—

NOTES

1 In case of dispute, the method indicated by '*' shall be the referee method.

2 It is recommended that the acceptable limit is to be implemented. Values in excess of those mentioned under 'acceptable' render the water not suitable, but still may be tolerated in the absence of an alternative source but up to the limits indicated under 'permissible limit in the absence of alternate source' in col 4, above which the sources will have to be rejected.



Table 6.5: Noise Level Standards

Area Code	Category of Area	Limits in dB(A) Leq	
		Day Time	Night Time
(A)	Industrial area	75	70
(B)	Commercial area	65	55
(C)	Residential area	55	45
(D)	Silence Zone	50	40

Note :

1. Day time shall mean from 6 a.m. and 10.0 p.m.
2. Night time shall mean from 10.0 p.m. and 6 a.m.
3. Silence zone is an area comprising not less than 100 meters around hospitals, educational institutions, courts, religious places or any other area which is declared as such by the competent authority.
4. Mixed categories of areas may be average as one of the four above mentioned categories by the competent authority.

* dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.

A “decibel” is a unit in which noise is measured.

“A”, in dB(A) Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear.

Leq: It is energy mean of the noise level over a specified period.

Table 6.6: Permissible Noise For Industrial Workers As Laid Down By CPCB

Exposure time (in hr. per day)	Limit in dB(A)
8	90
4	93
2	96
1	99
1/2	102
1/4	105
1/8	108
1/16	111
1/32	114



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Table 6.7: Permissible Peak Particle Velocity (PPV) In Mining Areas

In mm/sec.

Type of structure	Dominant excitation frequency Hz		
	<8 Hz	8-25 Hz	>25 Hz
A. Buildings/structures not belonging to owner			
Domestic houses /structures (Kuchha brick and cement)	5	10	15
Industrial buildings (RCC and framed structures)	10	20	25
Objects of historical importance and sensitive structures.	2	5	10
B. Building belonging to owner with limited span of life			
Domestic houses/structures (Kuchha brick and cement)	10	15	25
Industrial buildings (RCC and framed structures)	15	25	50

The above said monitoring location and the frequency of monitoring shall be suitably modified in consultation with the nodal agency as per the actual requirements and prevailing conditions of the mine and environmental factors, as dictated from time to time, depending on the prevailing pollution levels, if required.

6.4 ENVIRONMENTAL MONITORING COST:

Towards environmental monitoring it is proposed to allocate a budget of Rs. 50,000 per annum. Further details of the capital and recurring cost of environmental management has been provided in in Table No. 10.2, Chapter-X.

* * * * *



CHAPTER 7 ADDITIONAL STUDIES

7.1 GENERAL:

The additional studies covered for this EIA / EMP report are:

1. Public consultation of the project as per MoEF&CC mandates.
2. Risk Assessment
3. Cumulative Impact Study
4. R&R Plan
5. Mine closure planning

7.2 PUBLIC CONSULTATION:

This draft EIA/EMP report will be submitted for Public Hearing as per mandatory procedures through the District Collector and State Pollution Control Board officials after giving 30 days advance notice in two local newspapers about the scheduled date and time for conduct of the public hearing procedures. The opinions, concerns and objections of stakeholders will be recorded during the public hearing. All the public queries and the replies to the query by the project proponent and officials concerned will be recorded and incorporated in the EIA/EMP report for approval by SEIAA, Tamil Nadu.

7.3 RISK ASSESSMENT:

For the various risks, likely to arise, detailed analysis of causes and control measures is given in below:

S.No	Factors	Causes of risks	Control measures
1.	Removal of material	a) Bench may slide due to its unconsolidated nature. b) Vibration due to movement of vehicles in the benches.	Overall bench slope angle will be maintained optimally as per DGMS requirement. Working bench width will be more than bench height.
2.	Drilling	a) Due to high pressure of compressed air hoses may burst.	• Periodical preventative maintenance and replacement of worn out accessories in the compressor and drill equipment.



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S.No	Factors	Causes of risks	Control measures
		b) Down the hole drill rod may break due to improper maintenance of rod.	As per manufacturers recommendation rod to be replaced and bits will be changed.
3.	Blasting	a) Fly rock, ground vibration, noise etc. b) Improper charging of explosives	- Burden and spacing will be kept optimum on trial basis. - Explosive charge per delay will be minimized. - Controlled blasting with Nonel will be used.
4.	Excavation	a) Hauling and loading equipment are in such proximity while excavation b) Swinging of bucket over the body of tipper c) Driving of unauthorized person	- Operator shall not operate the machine when person & vehicles are in such proximity. - Shall not swing the bucket over the cab and operator leaves the machine after ensuring the bucket is on ground. - Shall not allow any unauthorized person to operate the machine by effective supervision.
5.	Transportation	a) Operating the vehicle "nose to tail" b) Overloading of material c) While reversal & overtaking of vehicle d) Operator of truck leaving his cabin when it is loaded	- It will be ensured that all these causes will be nullified by giving training to the operators. - No over loading will be done. - Audio visual reverse horn will be provided. - Proper training will be given.
6.	Fire due to electricity and Oil	a) Due to the short circuit of cables & other electrical parts b) Due to the leakage of inflammable liquid like diesel, oil etc.	- Electrical parts shall be cleaned frequently with the help of dry air blower - All fastening parts and places will be tightening. Suitable fire suppression equipment shall be provided.
7.	Natural calamities	Unexpected happenings	The mine management is capable to deal with the situation.

These being small rough stone projects that too working in a safe area, no major disaster is expected.



7.3.1. DISASTER MANAGEMENT PLAN:

In General, following natural/industrial hazards may occur during normal operation.

- Inundation of mine pit due to flood/excessive rains :
- Slope failure of the pit and waste dumps
- Accident due to heavy mining equipment and
- Blasting and use of Explosives

Mining operation in the lease will be carried out under the management control and direction of a qualified mine manager. The DGMS have been issuing a number of standing orders, model standing orders and circulars to be followed by the mine management in case of disaster. All these orders statutory rules and regulations will be followed. Seismically project site and study area falls in the Zone – II and is described as least active zone. There are no perennial water body near the lease area to cause any flooding. As such no disaster due to this project is envisaged.

In order to take care of above hazard / disasters the following control measures have been adopted.

- Checking and regular maintenance of garland drains and earthen bunds to avoid any inflow of surface water in the mine pit.
- Avoiding mining during heavy monsoon period and marching of all the HEMM to the top benches during rainy period.
- Provision of high capacity standby pumps with generator sets with sufficient quantity of diesel for emergency pumping especially during monsoon.
- All safety precautions and provisions of regulations will be strictly followed during all mining operations
- Prohibiting entry of unauthorized persons.
- Provision of Firefighting and first-aid provisions in the mines.
- Provisions of all the safety appliances such as safety boot, helmets, goggles, dust masks, ear plugs and ear muffs etc. are made available to the employees for their use.



- Training and refresher courses for all the employees working in hazardous premises
- Observance of all safety precautions for blasting and storage of explosives as per MMR 1961.
- Working of mine, as per approved plans and regularly updating the mine plans
- Cleaning of mine faces regularly
- Proper storage, usage of explosives through competent persons.
- Regular maintenance and testing of all mining equipment as per manufacturers guidelines
- Suppression of dust on the haulage roads with frequent water sprinkling, etc.
- Increasing the awareness of safety and disaster through competitions, posters and annual safety weeks and environmental weeks, encouraged through suitable rewards and other similar drives.

The management and the EMC will be able to deal with the situations efficiently keeping in view of the likely sources of dangers in the mine.

7.4 REHABILITATION AND RESETTLEMENT (R & R) PLAN:

The mining activities will be carried out within the mine lease areas only. Mine lease areas are Patta lands. There is no population within the ML area. Hence, the question of R& R does not arise.

7.5 MINE CLOSURE PLAN:

In the mine closure stage all necessary measures will be taken as per Act & Rules, There is no proposal for back filling, reclamation and rehabilitation. The quarried pits after the end of life of mine will be properly fenced all around to prevent inherent entry of public and cattle and all the statutory requirements will be fulfilled. As already explained, in the post mining stage the rainwater harvested in the mined out void shall be utilized for irrigation and domestic needs locally. The mine closure plan is provided in **Figure 4.5**.



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7.6 CUMULATIVE IMPACT STUDY:

The lease area is located in Appayanaickenpatti Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu. The details of the other quarries located within the 500m radius of the project considered for cumulative impact study now (**Annexure-3A and 3B**) has been provided below:

Table 7.1: Details of quarries within 500m radius

Sl.No	Quarry detail	Taluk & Village	S.F. No.& Extent (Hect)	Proceedings No. & Lease Period
I	Existing Quarries:			
	Nil			
II	Abandoned Quarry :			
1.	G. Ravikumar	Vembakottai & Appayanayyakanpatti	276,278,etc., (3.85.50 Hects)	KV1/938/2017 Dated: 13.12.2018 20.01.2018 to 19.12.2023
2.	S.Subburaj	Vembakottai & Appayanayyakanpatti	44,46/1 (2.20.50 Hects)	KV1/7441/2017 Dated: 01.02.2019 25.02.2019 to 24.02.2024
3.	P.Shunmugaraj	Vembakottai & Appayanayyakanpatti	207/2A,2B (1.91.50 Hects)	KV1/202/2018 Dated: 01.02.2019 25.02.2019 to 24.02.2024
4.	G.Ramasamy	Vembakottai & Appayanayyakanpatti	211/1A1,1A2,2A. etc., (0.93.00 Hects)	KV1/24590/2015 Dated: 01.02.2019 25.02.2019 to 24.02.2024
5.	G.Ramasamy	Vembakottai & Appayanayyakanpatti	208/1,2,3&214/1 (1.98.00 Hects)	KV1/1227/2014 Dated: 03.03.2016 27.05.2016 to 26.05.2019
6.	S. Sivaraman	Vembakottai & Appayanayyakanpatti	39/3 (0.96.50 Hects)	KV1/788/2018 Dated: 17.09.2018 28.09.2018 to 27.09.2020
7.	P. Shunmugaraj	Vembakottai &	38/6A,41/2,43/3,6&4	KV1/2794/2014 Dated:



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		Appayanayyakanpatti	8 (2.74.50 Hects)	08.05.2017 22.05.2017 to 21.05.2022
8.	S. Ramaraj	Vembakottai & Appayanayyakanpatti	196/1A,197/1, etc., (2.88.00 Hects)	KV1/21616/2014 Dated: 09.02.2018 26.02.2018 to 25.02.2023
III	Present Proposed Quarry :			
1.	R. Gopalakrishnan	Vembakottai & Appayanayyakanpatti	199/6A, (1.08.00 Hects)	KV1/221/2022 dated 26.04.2022
2.	S. Ragupathi	Vembakottai & Appayanayyakanpatti	196/2A,3,4&49, (1.86.50 Hects)	KV1/390/2019 dated 18.12.2020
3.	R. Gayathri	Vembakottai & Appayanayyakanpatti	39/1A,1B2A&49, (2.30.20 Hects)	KV1/572/2019 dated 11.12.2019
4.	S. Ramraj	Vembakottai & Appayanayyakanpatti	207/3A,3B, etc., (1.28.50 Hects)	KV1/638/2021 dated 01.09.2021
5.	S. Subburaj	Vembakottai & Appayanayyakanpatti	43/1A,1B(p),45/1A1, (1.58.00 Hects)	KV1/523/2019 dated 12.05.2022
6.	P. Shunmugaraj	Vembakottai & Appayanayyakanpatti	196/6B&8, (1.08.00 Hects)	KV1/712/2022 dated 02.01.2023
7.	G.Kaniraj	Vembakottai & Appayanayyakanpatti	202/1A2 (1.21.50 Hects)	KV1/158/2021 dated 13.08.2021
8.	S. Balakrishnan	Vembakottai & Appayanayyakanpatti	203/7 (1.60.50 Hects)	KV1/717/2024 dated 24.12.2024

From that above it is seen that, the other existing and proposed quarries within the 500m radius along with this subject project works out to >5 Ha. As such cluster situation applicable and this EMP is prepared. A map showing the existing and proposed quarries located near the lease area is provided Figure No.7.1 given below:





The baseline monitoring carried out for this project reflects the cumulative impact of the existing quarries. The cumulative impacts of the proposed Rough stone and Gravel Quarries of Thiru Balakrishnan & Thiru. R. Gopalakrishnan are provided in detail in Chapter-IV of the EIA/EMP Report. From the study it is observed that by ensuring systematic mining with proper mitigative measures as suggested in the report no adverse impact on the surrounding environment is envisaged. It is also worth mentioning that, these proposed quarry leases are more of a substitute for the recently expired quarry leases and as such cumulatively no additional pollution load may be there.

7.7 PIT SLOPE STABILITY PLAN

- Factors affecting slope stability of the mines are
 - Geological structure comprising dip, intervening shear zone formation, clay intrusion, joints / discontinuities, faults etc.,
 - Lithology of formation
 - slope geometry
 - Ground water availability which may cause increased thrust on the faces
- Site specific analysis
 - Since the formation is of homogeneous rock type probability of slope failure is low and can be avoided if proper measures are adopted.
 - There will be a 7.5m wide barrier zone which will form a ridge which can also take care of the top section and as such no risk is envisaged on this front.
 - During future workings the following measures will be ensured:
 - Pruning of top worked out pit area and adopting proper bench pattern.
 - Regular inspection of the mine faces to be carried out by mines manager for ensuring absence of any structural features like faults, joints, dyke, intrusive material in the rock strata which may affect the slope stability and cleared.
 - No loose material or boulders is to be stacked on the mine top or pit benches.



- Height of the benches should be 5m. Working bench width should be at least 2.5 times the bench height. Ultimate pit bench width will be 5m & slope is kept at 45° to ensure slope stability.
- Haul road formation will be at 1 in 16 slope with adequate road width with benches intact.
- There will be no ground water table intersection.
- No seepage is expected due to formation. Adequate drainage management system comprising peripheral garland drain, settling pond to regulate monsoon water will be created to prevent saturation of compact layers, apparent drainage over the bench slope to avert damages to quarry face and manage the water flow.

The above will ensure safe and stable mine prospects. Slope stability study is site specific and largely dependent on the geological formation of the local strata. As such, carrying out such special studies after commencement of mining operation with exposed rock of sufficient quantity, depth only is expected to deliver the desired results. Besides, during mining, such study will provide to arrive at the optimum bench slope parameters design. As such, scientific study through involving reputed institution will be carried out during the course of mining.

CONCLUSION:

No adverse impact on the surrounding environment is envisaged from these projects due to enforcing all the mitigative measures during mining.

Certified vehicles with low carbon emissions will only be used. These equipment's will be properly and regularly maintained. Besides, regular vehicular emission tests will be done for the transport vehicles to ensure minimal impact due to carbon emissions. To further mediate the carbon emissions, a good greenbelt and plantation plan has been planned.

Geologically the area in and around the lease area contains charnokite type rock formation containing mostly fallow land. As such there no major vegetation or agricultural activities are observed. There are no Protected or Eco-Sensitive Zone or forest land nearby wherein it can have an impact.



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It will be ensured that mining will be carried out adhering to all the statutory rules and regulations, appointing statutory personnel's like qualified mines manager, blaster, informing DGMS before commencement of mining operations and maintaining the environmental quality within the prescribed standards by effective implementation of various mitigative measures.

As such release of Greenhouse gases (GHG), rise in temperature, affecting livelihood of the local people, loss of Agriculture, Forestry and Traditional Practices is not envisaged. Such a limited scope will not induce any climatic change leading to droughts, floods etc. Mine closure plan is prepared for the lease period and already included in the approved mine plan.

Hydrological investigation carried out and as given in Para 3.6 of Chapter III & para 4.3 Chapter – IV shows that the all-time ground water table in this area is much below the mining level. Hence, ground water intersection is not envisaged for the entire life of the mine and ground water will not be affected due to the quarrying operation. As such there will not be any adverse impact on the ground water regime. Besides, this being a mining project, there will be not be any process effluent. As mentioned earlier, the rainfall will be collected in the mine floor sump and gainfully used as per CGWA requirement. Excess water if any in the sump will be pumped to settling pond and supernatant clear water let out for downstream users.

It will be ensured that mining will be carried out adhering to all the statutory rules and regulations, appointing statutory personnel's like qualified mines manager, blaster, informing DGMS before commencement of mining operations and maintaining the environmental quality within the prescribed standards by effective implementation of various mitigative measures for the entire lease period.

* * * * *



CHAPTER 8 PROJECT BENEFITS

The proposed Rough stone and Gravel Quarries will improve physical and social infrastructures in the area like:

- Direct employment.
- Indirect employment to scores of people.
- Financial gains for the governments, through collection of various taxes like royalty, GST, etc.,
- Increase in General Awareness of the People.
- Continual improvements of the local amenities for the local society
- Improvement of the General Living Standard of the People in the Vicinity
- Overall Improvement in HDI (Human Development Index)
- Growth of Allied Industries in the Area.
- Improvement in Per Capita Income.
- Providing certain facilities for the local schools and panchyats

In short, the proposed Rough Stone Quarry will benefit this region in the fields of employment opportunities, improved per capita income for local people, improved social welfare facilities in respect of education, medical systems, infrastructural build-up, etc in its own way.

By means of carrying out the socio-economic development activities, local community development is expected. Towards the same, the proponent have allocated Rs.2.0 Lakhs for various activities under CER. From the CER activities allocated for various social welfare activities, the villages near the lease area will be benefited.

* * * * *



CHAPTER 9

ENVIRONMENTAL COST BENEFIT ANALYSIS

Appendix-III of the MoEF notification S.O. 1533 dated 14.09.2006, which describes the generic structure of Environmental Impact Assessment document, states that the chapter 'Environmental cost benefit analysis' is applicable if it is recommended during scoping stage.

ToR for Roughstone and Gravel Quarry of was granted by SEIAA vide **TOR Identification TO25B0108TN5106991N dated 07.04.2025**. Environmental cost benefit analysis is not prescribed in the terms of reference. Hence, it is not applicable.

* * * * *



CHAPTER 10

ENVIRONMENTAL MANAGEMENT PLAN

10.1 INTRODUCTION:

This chapter describes the implementation strategies of the environmental management measures described through the course of this EIA/EMP report for the purpose of mitigating significant impacts due to the proposed mining operations separately in the leases.

10.2 COMPONENTS OF THE ENVIRONMENTAL MANAGEMENT PLAN:

The environmental management plan comprises identification of the major impacts due to project operations and their suitable mitigative measures. (Provided in an elaborate manner in Chapter-IV) Based on the environmental policy of the company, the environmental management cell will oversee the implementation of these mitigative measures. The details of the proponent's environmental policy, environmental management cell and also the budgetary allocation towards various environmental management measures has been elaborated in this chapter.

10.2.1 ENVIRONMENTAL POLICY:

The proponents will frame a well-planned environmental policy. The salient features of this policy will be.

- ❖ Ensuring risk-free and safe mining operations by following all rules and conditions prescribed in the Indian mines Act, metalliferous mining regulation, mineral conservation and development rules, etc,
- ❖ Ensuring environmental preservation by adoption of remedial measures for control of air, water quality, noise status, biological improvements, green belt creation, etc.,
- ❖ Extending CER activities to cater to the needs of local community for various benefits like improvement of physical and social infrastructures for the welfare of local community.



- ❖ Ensuring that all mining operations such as deployment of HEMM, conduct of drilling and blasting operations, etc are strictly conducted keeping with regulatory standards & maintaining safe working environment in the area.
- ❖ Providing periodical training on safety, Health, & Environment to all employers.
- ❖ Any infringement / violation of any rule or unsafe mining operations should be reported mines manager, should be reported by the foremen/ blaster mate etc, who will take immediate corrective measures for avoiding major disasters. The report will ultimately reach the owner through upwardly hierarchical communicative channels from the lowest level to superior levels in a quick time bound duration.
- ❖ The mines manager will exercise overall control over entire mining and connected operations and all infringements / violations on any count pertaining to unsafe operations, environmental degradation, etc, should be brought to the notice of the owner of the quarry. Remedial measures for such violations and deviations should be taken care by the mines manager to avoid any hazards or disasters in the mine and nearby areas. The persons responsible for such violations will be punished through appropriate disciplinarily penal actions.
- ❖ The EC conditions and stipulations will be strictly observed by Mines manager of the mine in various issues like prescribed environmental monitoring schedules conducting of vibratory studies due to blasting, creation of green belt, management of mined area, occupational health review, etc.
- ❖ Penalty actions will be taken by the proponent in cases of continuous negligence resulting in violations deviations in this respect.
- ❖ A time schedule of once in 90 days for review of all operational factors as mentioned above is to be enforced, for proper and quick corrective actions needed in the matter.

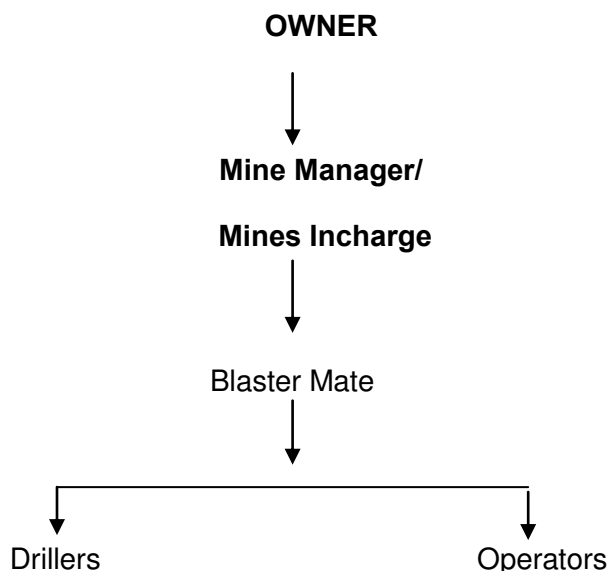
10.2.2 ENVIRONMENTAL MANAGEMENT CELL:

The Mines Manager/Mine Incharge of the respective mines will undertake effective monitoring and implementation of various environmental control measures promptly and effectively and to oversee various environmental management schemes for air quality control, water quality



status, noise level control, plantation programme, social development schemes, etc in the mine.
The organizational chart for the same has been provided below:

Figure 10.1: Organization Chart



The Mines Manager/Mines Incharge in the mine project site will be directly responsible for various environmental activities in the mine. The owner will correlate and oversee the environmental activities and their effective implementation in consonance with the guidelines in the EMP. The Mines Manager/Mines Incharge will oversee the environmental administration at the mine and he will directly supervise all activities of environmental administration on environmental issues. Necessary assistance from sub ordinates, external consultants and laboratories shall be taken.

Environmental control measures will span various factors like land degradation, air, water and soil quality, noise levels, effective land reclamation for excavated areas, afforestation measures, etc. The administrative functions are given below.

- ❖ To observe the implementation of environmental control measures.
- ❖ To study the effects of project activities on the environment.
- ❖ To ensure implementation of Plantation Programme. Regular monitoring of survival rate of plants is carried out to achieve the desired result.

- ❖ To keep records of monitoring etc., in a systematic way, so as to facilitate easy access, when needed by statutory agencies, etc. Also send prescribed returns to statutory authorities.
- ❖ To ensure that adequate fencing and plantation is carried out in the safety zones.
- ❖ Conducting environmental studies and reporting to SPCB.
- ❖ To interact and liaise with Government Departments.
- ❖ To evaluate the performance of existing pollution control equipment and systems periodically and take timely action to keep the equipment at its optimum performance condition.
- ❖ To take immediate preventive action in case of some unforeseen environmental pollution attributable to the project.
- ❖ Conducting safety audits and programmes to create safety awareness in workers/ staff.
- ❖ Conducting annual health audits to detect any health problems promptly in the workers/staff. This will reduce occupational health problems.
- ❖ Imparting training on safety and conduct safety drills to educate employees. Firefighting equipment and system has to be kept in 'ready-to-fight' condition.
- ❖ Carrying out socio economic study in the surrounding areas to find out the benefits derived by the society due to the project and also to fulfill the deficiency, if any, immediately.
- ❖ Ensuring proper mine closure arrangements

Considering the other mines in the cluster, the Environmental Management Cell of these projects will also act as a Cluster Management Committee. The various activities undertaken to be undertaken by this committee are detailed below:

- Effective implementation of the environmental management measures in a holistic manner
- Devising an operation plan for mining and transportation activities.



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- Various natural calamities like rain, flooding, evacuation plans etc. will also be deliberated by this committee to form risk management and emergency management plan pertaining to the cluster.
- The environmental policy of the company will be implemented and proper sustainable mining in accordance with statutory regulations will be enforced for the quarries in the cluster.
- Furnishing action plan regarding restoration strategy
- Deliberate on the health of the workers involved in the mining and also the health of the public
- Carrying out detailed study on the impact of mining on:
 - Soil health & biodiversity
 - Climate change leading to droughts, floods, etc.
 - Pollution leading to release of greenhouse gases (GHG) rise in temperature and livelihood of local people
 - Possibilities of water contamination and impact on aquatic ecosystem health.
 - Agriculture, Forestry & Traditional practices.
 - Hydro geothermal /Geothermal effect due to destruction in the Environment.
 - Bio-geochemical process and its footprints including environmental stress.
 - Sediment geochemistry
- Furnishing action plan to achieve sustainable development goals with regards to water, sanitation and safety.
- Furnishing fire safety and evacuation plans in case of fire accidents.
- Implementation of steps to effectively utilize energy.



10.2.3 ENVIRONMENTAL MANAGEMENT PLAN:

10.2.3.1 General:

Systematic monitoring systems and well-conceived and efficient Environment Management Plan will ensure that during the project operations, the various environmental parameters, are well within the statutorily sustainable limits. The environmental control measures proposed to keep various environmental parameters of the project in terms of air, water, noise, land, biological environment, etc. has been described below.

10.2.3.2 Air Quality:

With regards to air quality, to mitigate the fugitive and gaseous emission resulting from mining and allied activities, the following control measures are proposed to be undertaken in quarries:

- Regular water sprinkling in the transport roads using mobile tankers for dust suppression.
- Controlled blasting techniques with NONEL.
- Provision of dust filters / mask to workers working at highly dust prone and affected areas.
- Covering of drill holes with wet cloth, using sharp drill bits
- Avoiding blasting during high wind periods where the fine dust is carried out away easily affecting the ambient air quality.
- Proper maintenance of haul roads, HEMM and dumpers.
- Covering of loaded tippers with tarpaulins during transportation
- Vehicular emissions will be controlled through regular and proper preventive maintenance schedules and emissions tests are done with diesel smoke meter equipment to ensure emission values.
- Besides, there will be good green belt cover will be developed around mine periphery and in safety zone.
- Green netting will be carried out around the lease periphery on all sides.



10.2.3.3 Water Environment:

There will be no process effluent generated from either project. The domestic sewage to be generated will be collected in septic tank with soak pit arrangements. Besides, there will be no waste dumps or stockpiles within the lease areas as the entire material will be directly dispatched to the consumers.

Surface runoff management structures such as garland drain connected to a settling pond will be constructed around the quarries to collect the rain water. The supernatant clear water from the settling pond will be provided to nearby downstream users. Towards rainwater harvesting, the rainwater harvested in the mine will be used to meet the water requirements during mining and excess water in consultation with villagers and in line with government practices will be out in to the nearby stream or shall be distributed to the nearby villages as per their need.

There are no perineal water courses in the leases. There is no proposal to discharge any effluent into either of these water bodies. No major impact is envisaged on the nearby water bodies due to project operations

10.2.3.4 Noise Environment:

During the project operations, various control measures as listed below will be carried out to mitigate adverse impact due to the noise generated due to mining and allied activities:

- Good plantation will be carried out in the safety zone areas
- Noise protectors, insulation of operator cabins, installation of silencers in machineries, etc.
- Proper and regular maintenance of equipments
- Providing earplugs to workers exposed to higher noise level.
- Providing in-built mechanism for reducing sound emissions.
- Conducting regular health check-up of workers including Audiometry test for the workers engaged in noise prone area.

- Displaying the noise level status of operational machinery on the machines to know the extent of noise level and to control the time to which the worker is exposed to higher noise levels.

10.2.3.5 Ground Vibration

During the project operations, various control measures as listed below will be carried out to mitigate adverse impact due to the ground vibration caused due to blasting activities:

- ❖ Controlled blasting techniques to maintain the peak particle velocity (PPV) below DGMS prescribed levels.
- ❖ Ideally formulating drilling and charging pattern and ensuring using less charge per delay.
- ❖ To contain fly rocks, stemming column will not be less than burden of the hole. Blasting area will also be muffled, if necessary, to stop fly rocks propagation.
- ❖ Blasting will not be carried out when strong winds are blowing towards the inhabited areas. Blasting will be done during midday time and never at night.
- ❖ Proper care and supervision during blasting by a competent and experienced person.
- ❖ Besides, different blasting time for the projects in the vicinity is suggested and the timing is to be mentioned in the display board in the respective mines entrance.

Further details regarding the same has been provided under section 4.4.2, Chapter-IV.

10.2.2.6 Biological Environment:

The mining lease area and 10km buffer zone are devoid of declared ecologically sensitive features such as national parks, sanctuaries etc. There is no endangered or endemic species as per IUCN red list is observed. There will be no major clearance of vegetation involved in this project areas are free from major vegetation and contains bushes and shrubs only. However, good greenbelt and plantation programmes are planned within the lease area.



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10.2.2.7 Socio-Economic Environment:

The proposed project operations will provide positive impacts in the region on the employment area as well as on physical and social infrastructural status. Many other tangible benefits will be gained by the local people in the surrounding areas due to ancillary units, trading operations, contractual needs, casual labor, green belt development, etc. Towards the socio-economic development of the surrounding area, the proponent have earmarked an amount of Rs.2.0 Lakhs under Corporate Environmental Responsibility. The activities identified under CER will be implemented in a phased manner.

10.3 ENVIRONMENTAL POLLUTION CONTROL COST:

In this proposed quarry Implementation of environmental control measures as stated above involves capital as well as recurring expenses. The probable capital and recurring environmental control cost are calculated and given below

Table 10.1: Environmental Control Cost

Activities	Mitigation Measure	Provision for Implementation	Capital	Recurring
Air Environment	Compaction, gradation and drainage on both sides for Haulage Road	Rental Dozer & drainage construction on haul road @ Rs. 10,000/- per hectare; and yearly maintenance @ Rs. 10,000/- per hectare	0.16	0.16
	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	8.00	0.50
	Muffle blasting – To control fly rocks during blasting	Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0.00	0.05
	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	0.25	0.03
	No overloading of trucks/tippers/tractors	Manual Monitoring through Security guard	0.00	0.01
	Stone carrying trucks will be covered by tarpaulin	Monitoring if trucks will be covered by tarpaulin	0.00	0.10
	Enforcing speed limits of 20 km/hr within ML area	Installation of Speed Governors @ Rs. 5000/- per Tipper/Dumper deployed - 2 Units	0.20	0.02
	Regular monitoring of exhaust fumes as per RTO norms	Monitoring of Exhaust Fumes by Manual Labour	0.00	0.05
	Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	Provision for 2 labours @ Rs.10,000/labour (Contractual) per Hectare	0.00	0.32
	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	0.50	0.20
Sub-Total			9.11	1.44



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Activities	Mitigation Measure	Provision for Implementation	Capital	Recurring
Noise Environment	Source of noise will be during operation of transportation vehicles, HEMM for this proper maintenance will be done at regular intervals.	Provision made in Operating Cost	-	-
	Oiling & greasing of Transport vehicles and HEMM at regular interval will be done	Provision made in Operating Cost	-	-
	Adequate silencers will be provided in all the diesel engines of vehicles.	Provision made in Operating Cost	-	-
	It will be ensured that all transportation vehicles carry a fitness certificate.	Provision made in Operating Cost	-	-
	Safety tools and implements that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	-	-
	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Provision made in Operating Cost	-	-
	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	-	-
	Provision for Portable blaster shed	Installation of Portable blasting shelter	0.50	0.20
	NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 Tonnes of Blasted Material	0.00	2.41
Sub-Total			0.50	2.61
Waste Management	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	0.25	0.20
		Installation of dust bins	0.05	0.00
	Bio toilets will be made available outside mine lease on the land of owner itself	Provision made in Operating Cost	0.00	0.00
Sub-Total			0.30	0.22
Mine Closure	1. Progressive Closure Activity - Surface Runoff management	Provision for garland drain @ Rs. 10,000/- per Hectare with maintenance of Rs. 5,000/- per annum	0.16	0.08
	2. Progressive Closure Activity 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	3.21	0.16
	3. Progressive Closure Activity Green belt development - 500 trees per one hectare - Proposal for 750 Trees - 300 Inside Lease Area & 450 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)	0.60	0.18
		Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring)	1.35	0.27
	4. Implementation of Final Mine Closure Activity as per Approved Mining Plan on Last Year	Few activities already covered as progressive closure activities as greenbelt development, wire fencing, garland drain. *For Final Closure Activities 15% of the proposed closure cost will be spent during the final mine	0.80	0



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Activities	Mitigation Measure	Provision for Implementation	Capital	Recurring
		closure stage - Last Year		
	5. Contribution towards Green Fund. As per TNMMCR 1959, Rule 35 A	The Contribution towards Green Funds @ 10% of peak production Seigniorage fee are indicated as part of EMP Budge and not necessarily implemented in the Project Site	1.67	0
Sub-Total			5.32	0.69
Implementation of EC, Mining Plan & DGMS Condition	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 mentioning Environmental Conditions	0.10	0.01
	Air, Water, Noise and Soil Quality Sampling every 6 Months for Compliance Report of EC Conditions	Submission of 2 Half Yearly Compliance - Lab Monitoring Report as per CPCB norms	0.00	0.5
	Workers will be provided with Personal Protective Equipment's	Provision of PPE @ Rs. 4000/- per employee with recurring based on wear and tear (say, @ Rs. 1000/- per employee)	0.40	0.1
	Slope stability action plan	Slope stability action plan in the end of fourth year plan period	0.00	0.00
	Health check up for workers will be provisioned	IME & PME Health check up @ Rs. 1000/- per employee	0.00	0.27
	First aid facility will be provided	Provision of 2 Kits per Hectare @ Rs. 2000/-	0.00	0
	Mine will have safety precaution signages, boards.	Provision for signages and boards made	0.1	0.02
	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	0.80	0.10
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	0.3	0.05
	Implementation as per Mining Plan and ensure safe quarry working	Mines Manager (1 st Class / 2 nd 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	7.8
Sub-Total			1.70	8.71
TOTAL			15.96	13.45

Towards EMP measures, Rs.15.96 Lakhs is allocated under capital cost and Rs.13.45 Lakhs per annum will be spent under recurring cost. All the recurring cost of maintenance of pollution control measures, environmental monitoring etc., will be met from revenue and will be spent for the entire lease period.



10.4 CONCLUSION:

Since the production from this lease area is less, the number of equipments to be used, magnitude of operation and consequent impact on the surrounding environment is expected to be less and as such no significant impact on environment is envisaged. With meticulously well planned Environmental Management Plan, with various programme schedules and timely execution objectives, as above, it will be ensured that the future environmental quality in the area is well maintained within statutory limits. The environmental management strategy as explained above will prove that industrial growth, if properly planned with all environmental concerns and appropriate remedial measures can go a long way to improve life pattern and living conditions of the local community around the project.

* * * * *



CHAPTER 11

SUMMARY & CONCLUSION

11.1 INTRODUCTION:

Thiru. S. Balakrishnan propose to operate Rough Stone and Gravel Quarry at Survey No. 203/7, over an area of 1.60.50 hectares In Appayanayyakanpatti Village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu and has initiated action towards obtaining environmental clearance. Production capacity is 1,85,232m³ of Rough Stone & 11,834m³ of Gravel up to depth of 39m for the period of ten years. Its details are as follows:

Table 11.1: Basic details of the project

1	Project Name	Rough stone and Gravel Quarry of S. Balakrishnan
2	Survey No.	203/7
3	Extent	1.60.50 Ha
4	Production	The Proposed Production is 1,85,232m ³ of Rough Stone & 11,834m ³ of Gravel up to depth of 39m for the period of ten years. Production capacity for first 5 year is 1,27,590m ³ of Rough Stone & 11,834m ³ of Gravel.
5	Land ownership	Patta land in the name of S. Rajadaran and applicant got consent and registered.

Although the individual lease area of this project is less than 5 Ha, the other existing and proposed quarries within the 500m radius cluster along with this subject project works out to >5 Ha. Hence, this proposal is considered under Category – B1 and as per MoEF & CC notification necessitates preparation of EIA/EMP report and public hearing. Apart from this proposal of Thiru. S. Balakrishnan, another proposal of Thiru. R. Gopalakrishnan is also falling in the cluster. As such combined impact prediction and individual EMP report preparation is carried out. This EIA/EMP report for Thiru. S. Balakrishnan is prepared based on standard and additional Terms of Reference issued by SEIAA, Tamil Nadu vide TOR Identification No. TO25B0108TN5106991N dated 07.04.2025 and is in conformance of the generic structure prescribed by MOEF&CC in their notification of September 2006 and the approved mining plan.



DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU. S. BALAKRISHNAN AT SURVEY NOS. 203/7 OVER AN AREA OF 1.60.5 HA IN APPAYANAYYAKANPATTI VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR DISTRICT, TAMIL NADU.

11.2 SALIENT DETAILS OF THE PROJECT:

Table 11.2: Salient details of the projects

Details	
A.Statutory Clearances	
Precise Area Communication	Issued by Department of Geology & Mining vide KV1/717/2024 -Mines, Dated: 24.12.2024. (Annexure-1)
Mining Plan Approval	Approved Department of Geology & Mining vide Roc. KV1/717/2024, dated 24.01.2025 (Annexure-2)
Details of Quarries within 500m radius	Approved Department of Geology & Mining vide Roc. KV1/717/2024, dated 24.01.2025 (Annexure-3A)
B. Application for Environmental Clearance	
Terms of Reference	TO25B0108TN5106991N dated 07.04.2025
Baseline Data Collection	Carried out by Creative Engineers & Consultants , Chennai for Summer Season (Mar 2025 – May 2025)
C.Site Details	
Location	Appayanaickenpatti village, Vembakottai Taluk, Virudhunagar District, Tamil Nadu
Coordinates	Latitude: 9° 17' 40.72"N to 9° 17' 44.71"N Longitude: 77° 41' 36.40"E to 77° 41' 41.60"E
Nearest Village	Ramalingapuram – 1.0km – (NW) side
Nearest Town	Thiruvengadam -5.0km - NE
Nearest Highway	SH-44 – 3.8Km– SW
Nearest Railway Station	Sivakasi -21km - NE
Nearest Airport	Madurai -75km -NE
Accessibility	Lease area is approachable from the existing road which is connected to Sevalpatti to Thiruvengadam State highway road on the south west.
Topography	The lease area is a plain terrain, Massive formation of Charnokite is clearly visible in the old mined out pit and also the nearby quarry. The slope is gentle towards 'southern side.
D. Environmental Setting of the Study Area	
Nearest Water Bodies	Nikshopa Nadi - 130m (N),Vaippar River-400m- (N), Uppu Odai - 3.2km-(SE), Marugal Odai – 5.2km – (NE), Kayalkudi River - 7.5km – (NE). Nedunkulam Odai - 8.6km – NE.
Nearest Reserve Forests	Nil within 10 km radius
Notified Archaeologically important places, Monuments	Nil within 10km radius
Local Places of Historical and Tourism Interest	Nil within 10 km radius
Environmental sensitive areas, Protected areas as per Wildlife Protection Act, 1972*	Nil within 10km radius



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Other industries	Other than crushers, Rough stone quarries, match box, fire works factories no other major industries are located in the study area.
E. Technical Description	
Past production details	-
Geological Reserves	6,11,800 m ³ of rough stone & 16,100 m ³ of gravel
Mineable Reserves	Rough stone - 1,85,232 m ³ Gravel - 11,834 m ³
Mining Method	Opencast mechanized mining using jackhammer drilling, blasting, excavation through excavator & mineral transport through tippers will be carried out.
Production	Production capacity of 1,85,232 m ³ of rough stone and 11,834 m ³ of Gravel up to depth of 39m for the period of 10 years
Waste Generation and Management	There is no waste generation anticipated in these quarries since the entire excavated material will be utilized.
Ultimate Depth	39 m
F. Project Requirements	
Manpower	10 persons directly and 50 people indirectly.
Water Requirement and Source	Water Requirement: 8 KLD Source: The required water will be procured initially from outside agencies. Later Rain water harvested in the mine sump can also be used.
Power Requirement	No electricity needed for mining operation. The minimum power requirement for office, etc will be met from state grid.
Site Services	This is a proposed project. Site services like mine office, first aid room, rest shelters, toilets etc. will be provided as semi-permanent structures.
Project Cost	Rs. 39,88,700 /-

Mining and its associated activities are only observed within 300m radius.



11.3 EXISTING ENVIRONMENTAL SCENARIO:

11.3.1 GENERAL:

The studies and data collection have been carried out systematically and meticulously as per relevant IS codes, CPCB and MoEF&CC guidelines and as per approved ToR during **Summer Season (Mar 2025 to May 2025)** For the purpose of this study, the area has been divided into two zones, namely, core and buffer zones. The lease area is considered to be the core zone while the buffer zone encompasses a 10km radius from the periphery of the core zone.

11.3.2 SOCIO-ECONOMIC STATUS:

The proposed Rough stone and gravel quarries are located in in Appayanaickenpatti Village, Vembakottai Taluk, Virudhunagar District. Based on 2011 census data, in the 10km radius there are 35 Rural Villages and 2 urban areas from Five Taluks namely Sivakasi, Rajapalayam, Sattur, Sankarankoil, Kovilpatti. of 3 districts namely Virudhunagar, Tirunelveli and of Thoothukkudi District. The demographic profile of the study area is given below:

Table 11.3: Social, Economic And Demographic Profile of the Study Area

Details	Population	Percentage
A. Gender-wise distribution		
Male Population	49528	49.35
Female Population	50838	50.65
Total	100366	100
B. Caste-wise population distribution		
Scheduled Caste	23360	23.27
Scheduled Tribes	149	0.15
Other	76857	76.58
Total	100366	100
C. Literate and Illiterate population		
Literate Males	38114	54.75
Literate Females	31498	45.25
Total Literate Population	69612	69.36
Others Males	11414	37.11
Others Females	19340	62.89
Others Population	30754	30.64



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Details	Population	Percentage
Total	100366	100
D. Occupational structure		
Main workers	49466	49.30
Marginal workers	5157	5.10
Total Workers	54623	54.40
Total Non-workers	45743	45.60
Total	100366	100

11.3.2.1 SAMPLE SURVEY:

Nearby villages were visited for conducting sample Village survey on all socio-economic aspects and requirements of the people. The existing socio-economic scenario is studied and CER activities are also suggested to the proponent. The study details are given in **Para 3.2.4, Chapter – III.**

11.3.3 EXISTING ENVIRONMENTAL QUALITY:

Table 11.4: Baseline Data

A. Meteorological Data			
Parameters	Minimum	Maximum	
Temperature In ⁰ c	22.0	40.0	
Humidity in %	19.8	94.4	
Wind speed in km/hr	<1.8	37.1	
Predominant wind direction from	NE		
B. Ambient Air Quality Data – 6 Locations			
Parameters	Core Zone	Buffer Zone	Limits
Particulate Matter (Size <10 µm)	57.4 – 73.9	41.1 – 68.0	100
Particulate Matter (Size <2.5 µm)	27.3 – 35.7	19.2 – 31.7	60
Sulphur Dioxide (as SO ₂)	5.1 – 8.9	3.9 – 8.6	80
Nitrogen Dioxide (as NO ₂)	8.2 – 12.4	6.8 – 12.0	80
Conclusion: The existing Ambient Air Quality levels for PM10, PM2.5, SO2 and NO2, are within the NAAQ standards prescribed CPCB limits. The CO values in all the locations were found to be below detectable limit. Silica values in the study area are found to be below detectable limit. (Detection limit – 0.05 mg/m3)			



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C. <u>Water Quality</u> – 6 Locations			
pH at 25 °C		7.25 – 7.67	6.5-8.5
Total Dissolved Solids, mg/L		298.56 – 590.7	2000
Chloride as Cl-, mg/L		39.5 – 164	1000
Total Hardness (as CaCO3), mg/L		194 – 396	600
Total Alkalinity (as CaCO3), mg/L		279– 310	600
Sulphates as SO42-, mg/L		16.2 – 190	400
Iron as Fe, mg/L		0.03 – 0.09	0.3
Nitrate as NO3, mg/L		1.44 – 5.32	45
Fluoride as F, mg/L		0.23 – 0.52	1.5
Conclusion: The water quality of ground water is found to be within the prescribed Permissible limits of IS: 10500 Norms in the absence of an alternative source as per Drinking Water Specifications.			
D. <u>Noise Levels</u> – 6 Locations			
Parameter	Core Zone	Buffer Zone	Limit
Day Equivalent	50.2	45.3 – 48.9	55
Night Equivalent	39.3	37.4 – 43.4	45
Comparing with the MOEF&CC Norm of 55 dB(A) for day time and 45 dB(A) for night time, the monitored ambient noise levels were within the limit values for Residential areas.			
E. <u>Soil Quality</u> – 3 Locations			
Parameter	Buffer Zone		
pH	6.25 – 7.52		
Electrical Conductivity (µmho/cm)	82.55 – 97.54		
Organic matter (%)	2.39 – 3.12		
Total Nitrogen (mg/kg)	475 - 732		
Phosphorus (mg/kg)	2.34 – 3.54		
Sodium (mg/kg)	770 – 1040		
Potassium (mg/kg)	624-780		
Soil is of Slit loam type.			



F. Land Environment:

For the present study on land use pattern in the study area, remote sensing satellite data have been used. The area estimated of land use categories around the 10km buffer zone is provided below:

Table 11.5: Land Use in 10Km Buffer Zone

S.No	Land use Feature	Area (Sq.Km)	Percentage
1	Agriculture/ Plantation	86.40	27.07
2	Fallow Land	117.00	36.66
3	Land With Scrub	88.41	27.70
4	Land Without Scrub	7.25	2.27
5	Water bodies	11.69	3.66
6	Settlement	4.70	1.47
7	Mining Area/ Industries	3.74	1.17
	Total	319.19	100

From the above table it is seen that 27.07 % of the study area is agriculture land and 36.66 % are fallow land. Land with scrub constitutes 27.70 %, lands without scrub constitute 2.27% and waterbodies constitute 3.66% and remaining constitute 2.64 %

.Biological Environment:

Flora: The lease area is a non forest, private land & area is mostly barren interspersed with thorny bushes only.

Buffer Zone comprise of agricultural land, rocky waste land, barren land and mined out pits. The Dominated species in the buffer zone are Prosopis juliflora, Sygygium cumuni, Borassus flabellifer, Albizia lebbeck, Acacia auriculiformis, Azadirachta indica, etc. The list of flora in the core and buffer zone is provided in Table No.3.24 and 25, Chapter-III.

Fauna: There is no Wild Life Sanctuary or National Park within the study area of 10 km. Domesticated animals like Cows, Buffalos, Dogs, Cats etc., are commonly found. The lease and 10 Km buffer zone does not fall in the Western Ghats ESA boundary. From the study it observed that the area in general consists of species of least concern only. The area does not form the migratory path of the birds also. List of fauna within the study area is given in Table No – 3.26, Chapter-III.



H) HYDROLOGICAL STUDY:

The area applied for mining lease is a gentle plain terrain. There are no perennial water courses in the lease areas.

In the study area, the shallow aquifer is developed through dug wells and deeper aquifer through tube wells. The groundwater has revealed that potential fractures are encountered at deeper levels. Rain water collected in the tanks in the region acts as a good source of water during post monsoon. The water in the wells are available mainly after post monsoon and it reduces during summer. Bore wells are as deep as 400 ft also and it reflects that the yield is only better at deeper water levels

The occurrence of groundwater mainly in the porous soil are weathered layers, very negligible amount of groundwater percolated through the poorly fractured layer, after that there is no existence of groundwater. Besides, the mining area consists of hard compact rock, no major water seepage within the mine is expected. From the nearby working mines, no such seepage is also observed.

The stage of groundwater development of Vembakottai where the study area falls is 58%. In view of this, this area can be categorized as 'Safe' from ground water development point of view.

11.4 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES:

11.4.1 GENERAL:

The identified impacts due to the mining operation of the leases individually as well as cumulatively during mining and associated activities have been studied in relation to various environmental components like Air, water, noise, vibration, land, transport etc.,

11.4.2 AIR ENVIRONMENT:

The principal sources of air pollution in the area due to mining and allied activities are dust generation in the mine due to various activities such as excavation of material, movement of HEMM, loading, unloading and transportation operations.. Besides, Gas emission also occur as a result of emission of SO₂, NO_x, CO etc., from diesel driven mining equipment, compressors,



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generator sets, etc. The following measures will be adopted to control impact on the air quality due to mining operations in the lease area:

Table 11.6: Mitigation Measures – Air Environment

S.No	Activity	Mitigation Measures
1	Drilling	Usage of Drill bits in good condition
		Covering of drill holes with wet cloth
		Usage of sharp drill bits for drilling of holes.
		Provision of dust filters / mask to workers working at highly dust prone and affected areas.
2	Blasting	Well-designed blasting parameter, effective stemming to achieve optimum breakage occurs without generating fines.
		Use of appropriate explosives for blasting and avoiding overcharging of blast holes.
		Avoiding blasting during high wind periods where the fine dust is carried out away easily affecting the ambient air quality.
		Use of controlled blasting techniques with Nonel to keep the dust generation, noise as well as vibration level within the prescribed limits.
3	Excavation and Loading	Proper maintenance of HEMM
		Enclosures for operator cabin.
		Imparting sufficient training to operators on safety and environmental parameters.
		Proper maintenance of hauling equipments.
		Avoiding overloading of dumpers.
4	Transportation	Regular wetting of transport road using mobile water tanker.
		Proper maintenance of haul road and other roads
		Setting up of tyre wash facility in the transport road.
		Avoiding overloading of tippers
		Covering of loaded tippers with tarpaulins during transportation
		Vehicular emissions will be controlled through regular and proper preventive maintenance schedules and emissions tests are done with diesel smoke meter equipment to ensure emission values.
5	Others	Development of greenbelt / barriers around mine in the safety zone and carrying out plantation within the lease area.
		Fencing with green net as necessary will be carried out around the



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	lease periphery on all sides

Due to adoption of all these measures, no major impact on air quality is envisaged due to this proposed opencast mining operation.

The impact on air quality through model simulations are done using AERMOD View Gaussian Plume Air Dispersion Model for the air pollutant arising from the mining operations, namely, PM₁₀, PM_{2.5}. **Ground Level Concentration (GLC)** have been computed .

It can be seen, the resultant added concentrations with baseline figures with respect to PM₁₀ is in the range of 52.9 µg/m³ to 75.8 µg/m³ and with respect to PM_{2.5} are in the range of 25.1µg/m³ to 36.7 µg/m³, which are within the stipulated statutory limits for the projects.

Additionally, cumulative impact due to proposed project Thiru. S. Balakrishnan and namely R. Gopalakrishnan on ambient air quality is also assessed. The cumulative post project concentration with respect to PM₁₀ is in the range of 52.9 µg/m³ to 76.3 µg/m³ and with respect to PM_{2.5} are in the range of 25.1µg/m³ to 36.7 µg/m³ which are within the statutory limits in each case.

For preservation of environment in this mine strict enforcement of management schemes will be undertaken for taking corrective actions, as needed. By adopting the effective implementation of all the mitigative measures, no adverse impact on Air quality due to the mining operation in this lease area is expected.

11.4.3 WATER ENVIRONMENT:

The water requirement for this project is expected to be 8 KLD comprising 1.0 KLD for drinking water and domestic use, 5.0 KLD for dust suppression and 2.0 KLD for greenbelt. The water will be sourced initially from outside agencies. Later the rainwater collected in the respective mine pit sump will be used for this purpose.

The activity / source of pollution, its impact / consequence, proposed control measures are explained below:



Table 11.7: Mitigation Measures – Water Pollution

S.No	Source	Consequence	Mitigation Measures
A	Domestic use	Generation of waste water	The domestic sewage to be generated from the project will be collected in septic tank with soak pits.
B	Rainfall	Runoff from waste dump and stack	Towards surface runoff management, a garland drain of length 480 m will be constructed around the quarry and will be connected to a settling pond with silt traps. The supernatant clear water from the settling pond will flow to the downstream users.
		Rainwater Harvesting	The rain water falling in the quarry will be harvested in the sump at the lowest level of the quarry. This sump will act as a settling pond to prevent solids escaping along with discharge if any..
C	Drainage Course	Disturbance to drainage course	Nikshopa Nadi - 130m (N), Vaippar River-400m- (N). Due to scanty rainfall these drainage channels remains dry for most of the year. Lease area is at an higher elevation and it does not farm as a water catchment area. It is of shallow depth with rock exposure and bushes and it remains dry for the most of the year. By proper surface runoff management, ensuring proper flow of rainwater for downstream users will be ensured. There is no proposal to discharge any effluent into this waterbody. As such no major impact is envisaged on the nearby water bodies due to project operations.

Stage of Groundwater Development: The groundwater resource data of Virudhunagar district was obtained from the data provided in the technical report of the Central Ground Water Board, South Eastern Costal Region – ‘District groundwater brochure, Virudhunagar District.’ Based on the report it is seen that that the stage of groundwater development of Vembakottai where the study area falls is 58% and as such this area can be categorized as ‘Safe’ from ground water development point of view. Thus there is scope for further ground water development.

- **Generation of mine pit water:** The occurrence and movement of groundwater in hard rock formations are restricted to the porous zones of weathered formations and the open systems of fractures, fissures and joints. Generally, in hard rock regions, occurrence of weathered thickness is discontinuous both in space and depth. Hence recharge of groundwater in hard rock formations is influenced by the intensity and depth of



weathering. In the nearby region, the formations are compact with less intergranular porosity and fractures leading to less permeability and transmissivity values and as such the ground water level in this area is deep from surface. The mining area consists of hard compact rock, hence no major water seepage within the mine is expected from the periphery. Besides, the ground water potential in the region is low. The ultimate pit depth of mining is 39m. The ground water table in this area is below this level. Hence, ground water intersection is not envisaged and ground water will not be affected appreciably due to the quarrying operation.

11.4.4 NOISE ENVIRONMENT:

Anticipated noise levels resulting from operation of the various machineries like excavator, tippers, drill have been computed using point source model. Computation of cumulative noise levels at the nearby villages is made based on the assumption that there are no attenuation paths between the source and the boundary. From the studies, it is found that the predicted Noise Levels due to mining operations at the periphery of the mine lease itself will be less even without considering any attenuation factor. However, practically there will be attenuation due to vegetation etc., and as such there will not be any adverse noise propagation outside the lease boundary. Since the habitations are also away the effect of noise due to mining operations will not be felt at all in the surrounding village. Hence, by implementing the following mitigative measures for noise control, the impact on noise levels will continue to be insignificant:

- Planting rows of native trees along roads, around mine area and other noise generating centres to act as acoustic barriers.
- Sound proof operator's cabin for equipments like shovel, tippers, etc.
- Proper and regular maintenance of equipments may lead to less noise generation.
- Providing in-built mechanism for reducing sound emissions.
- Providing earplugs to workers exposed to higher noise level.
- Conducting regular health check-up of workers including Audiometry test for the workers engaged in noise prone area.



Further green belt and afforestation will be planned and executed to abate noise and dust propagation in the area.

11.4.5. VIBRATION:

Since the production from this lease is less, the number of holes and total charge to be used is expected to be less and as such the blast induced vibration is easily controllable and by ensuring the following control measures, no adverse impact on this front is expected:

- 1) Carrying out controlled blasting using Nonel delay detonator.
- 2) Optimum design for burden and spacing.
- 3) Reducing explosive charge per delay to minimum.
- 4) The peak particle velocity (PPV) of ground vibration will be kept very low through optimally controlled blasting techniques, after necessary field trials.
- 5) To contain fly rocks, stemming column to be less than burden of the hole. Blasting area will also be muffled, if necessary, to stop fly rocks propagation.
- 6) Blasting will not be carried out when strong winds are. Blasting will be done during midday time.
- 7) Controlled blasting to avoid tension cracks which may endanger the stability of bench slopes in the mine.
- 8) Proper care and supervision during blasting by a competent and experienced person to be carried out.
- 9) Adopting different blast timing for the leases in the cluster

By adoption of above measures, it will be ensured that the ground level vibration due to blasting are maintained within the limits prescribed by DGMS, Dhanbad at the mining areas vide Circular No. 7 dated 29 -08-1997. Elaborate details regarding the same are provided under section 4.4.2, Chapter-IV.

11.4.6 IMPACT ON LAND ENVIRONMENT:

There is no waste generation anticipated in these quarry operations since the entire excavated material will be utilized. Hence, there is no external overburden dump involved. Plantation will



be carried out in this safety zone area. In the post mining stage, entire 1.18.50 Ha will be used and left as water body. 0.02.0 Ha will be the mine roads & infrastructure, 0.35.0 Ha will be covered with vegetation, and 0.05.00 Ha will be fencing.. Entire mined out area will be properly fenced to prevent inadvertent entry of men and animals. In the post mining stage the rainwater harvested in the mined out void shall be utilized.

11.4.7 BIOLOGICAL ENVIRONMENT:

Leased and its nearby area is of dry rocky type with very little vegetation. Necessary mitigative measures like dust suppression, proper maintenance of equipment's, greenbelt and plantation etc., will be carried out to prevent dust generation & any further impact on the vegetation. About 500 trees will be planted in and around the lease area.

11.4.8 SOCIO ECONOMIC ENVIRONMENT:

The entire lease area is a private patta land. Hence, there are no habitations or hutments in the core zone area and no rehabilitation or resettlement is involved. The mining operations in the proposed mines will each employ about 10 persons directly and about 50 persons. Besides through allied opportunities in logistics, trading, repairing works etc. good employment potential will arise in this area, which will provide raising income levels and standards of living in the area through various service-related activities connected with the project operations.

Towards the socio-economic development of the surrounding area, Rs.2.0 Lakhs is allocated for each project. The activities identified under CER will be implemented in a phased manner in provision of facilities in nearby Government School.

11.4.9 OCCUPATIONAL HEALTH AND SAFETY ASPECTS:

In order to ensure minimisation of occupational health and safety problems in the project operation, the following preventive remedial measures will be effectively exercised in the project operations, so as to comply with applicable standards.

- Medical examination of workers at pre-entry level stage of workers, etc., by qualified doctors, with periodical examination of all workers/staff at least once a year, as per DGMS circulars.
- Regular awareness campaigns amongst staff and workers



- Staff will be provided with PPE to guard against excess noise levels, Dust generation and inhalation, etc., as per standards prescribed by DGMS.

11.4.10 IMPACT ON LOCAL LOGISTICAL SYSTEM DUE TO PROJECT:

From this proposed quarry the entire output will be transported to the consumers like external crusher units for producing stone aggregates of different sizes or construction of roads, bridges, buildings and other buyers etc. Since the productivity is less, there will be about 1 to 2 trips per hour. The transport route can absorb this negligible traffic due to this project. The following mitigative measures are suggested for mitigation of adverse impacts on the logistical aspect of the project:

- ❖ Water sprinkling on material in the transport vehicles before transporting, so that no dust nuisance during transport will arise.
- ❖ Plantation on either side of the transport road in consultation with the concerned department.
- ❖ Proper maintenance of transport roads and vehicles
- ❖ Avoiding overloading of material
- ❖ Covering of loaded vehicles with tarpaulins sheet if warranted.
- ❖ Installation of barriers at vulnerable locations
- ❖ Provision of tyre washing facility at the mine outlet

11.4.11 WASTE MANAGEMENT:

Since the entire mined out material will be used there will not be any solid waste generation from this project. There is no process effluent generation from the mines. Hence no liquid waste is generated.

The hazardous waste generated will be stored in a separate storage area with impervious containers for waste oil, oil contaminated clothes, used lead acid batteries, scraps, tyre storage etc. It will be disposed through authorized recyclers or re-processors periodically. The hazardous wastes will be transported in accordance with the provisions of rules. By effective



implementation of above said mitigation measures no major impact due to Hazardous waste is expected.

Single use plastics/ use and throwaway plastics will be banned in the site as directed by the Tamil Nadu Government vide GO(Ms)No.84 regarding ban on use of plastic products. The employees will be encouraged to use compostable material or reusable material.

11.5 ENVIRONMENTAL MONITORING PROGRAMME:

The monitoring schedules are planned for systematic study of various pollution levels with respect to air and water qualities, noise levels, etc. to ensure that they conform to the standards laid down by Environmental Protection Act and various statutory Limits.

Monitoring location and the frequency of monitoring shall be suitably modified in consultation with the nodal agency as per the actual requirements and prevailing conditions of the mine and environmental factors, as dictated from time to time, depending on the prevailing pollution levels, if required.

Towards EMP measures, Rs. 15.96 Lakhs is allocated under capital cost and Rs. 13.45 Lakhs per annum will be spent under recurring cost. All the recurring cost of maintenance of pollution control measures, environmental monitoring etc., will be met from revenue and will be spent for the entire lease period.

Further details of the capital and recurring cost of environmental management have been provided in in Table No. 10.2, Chapter-X.

11.6 ADDITIONAL STUDIES:

This draft EIA/EMP report will be submitted for public hearing as per mandatory procedures through the District Collector and State Pollution Control Board officials after giving 30 days advance notice in two local newspapers about the scheduled date and time for conduct of the public hearing procedures. The opinions, concerns and objections of stakeholders will be recorded during the public hearing. All the public queries and the replies to the query by the project proponent and officials concerned will be recorded and incorporated in the EIA/EMP report for approval by SEIAA, Tamil Nadu. Elaborate description in respect of Risk Assessment and Mine closure plan are given in **Chapter - VII**.



DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF THIRU. S. BALAKRISHNAN AT SURVEY NOS. 203/7 OVER AN AREA OF 1.60.5 HA IN APPAYANAYYAKANPATTI VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR DISTRICT, TAMIL NADU.

The baseline monitoring carried out for this project reflects the cumulative impact of the existing quarries. The cumulative impacts of the proposed Rough stone and Gravel Quarries of Thiru. S.Balakrishnan project and another proposed projects namely R. Gopalakrishnan are provided in detail in Chapter-IV of the EIA/EMP Report. From the study it is observed that by ensuring systematic mining with proper mitigative measures as suggested in the report no adverse impact on the surrounding environment is envisaged. It is also worth mentioning here that, these proposed quarry leases are more of a substitute for the recently expired quarry leases and as such cumulatively no major additional pollution load is expected.

11.7 CONCLUSION:

Since the production from this lease area is less, the number of equipments to be used, magnitude of operation and consequent impact on the surrounding environment is expected to be less and as such no significant impact on environment is envisaged. With meticulously well planned Environmental Management Plan, with various programme schedules and timely execution objectives, as above, it will be ensured that the future environmental quality in the area is well maintained within statutory limits. The environmental management strategy as explained above will prove that industrial growth, if properly planned with all environmental concerns and appropriate remedial measures can go a long way to improve life pattern and living conditions of the local community around the project.

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CHAPTER 12

DISCLOSURE OF CONSULTANTS ENGAGED

Creative engineers & consultants, Chennai is an **NABL** accredited testing laboratory and **NABET** accredited EIA consultancy. Established over 25 years ago, this company has steadily made good strides in the environmental impact assessment fields, and is also one of the first companies to get accredited by **NABET** as an accredited consultant organization as early as 2011. Creative engineers & consultants has to its credit, successful completion of numerous EIA/EMP reports, grant of environmental clearances and periodic environmental monitoring works. Presently, the company has been accredited by **NABET** as a 'Category-A' organization for the sectors of mining of minerals (opencast only), thermal power plants, mineral beneficiation and cement plants with the accreditation valid upto 23.12.2026. The team of experienced professionals that are a part of this organization has been detailed below.

Figure 12.1: disclosure of consultants engaged

Expert name	Qualification	Position	Experience
Mr. P. Giri	AMIE (mining)	EIA coordinator & Functional area expert (AP,NV,HW),	Over 30 years of experience in eia/emp report, mine plan preparation, including modeling
Mr. K. Shankar	M.sc (geology). Pgmeng	Functional area expert (GEO, HG, SHW, RH) & IBM approved RQP.	Over 25 years of experience in eia/emp report, mine plan, hydrological report preparation
Mr.S.S.rajendran	M.sc. (pharmaceutical chemistry)	Lab head	More than 9 years of experience in environmental laboratory.
Mr. R. Babu raj	M.a (sociology), B.com(y.l&cost), Iti, advance diploma in computer application	Functional area expert (socio economy)	Over 13 years of experience in dispersion modeling, computer applications. Specialized in cad and computer software, applications. 5years experience in the field of socio economy



**DRAFT EIA/EMP REPORT FOR ROUGH STONE AND GRAVEL QUARRY OF
THIRU. S. BALAKRISHNAN AT SURVEY NOS. 203/7 OVER AN AREA OF 1.60.5 HA IN
APPAYANAYYAKANPATTI VILLAGE, VEMBAKOTTAI TALUK, VIRUDHUNAGAR DISTRICT,
TAMIL NADU.**

Expert name	Qualification	Position	Experience
			and its allied report preparation.
Mr. B. Govindaraman	B.sc.	Field technician	Over 20 years of field monitoring & data collection experience
Dr.B.Swamynathan	M.Sc (Ecology & Environmental Sciences), M.phill (Botany), Ph.D (Ecology & Environmental Sciences)	EIA Coordinator & Functional area expert (EB,SC,LU&AP)	More than 14 years of experience in environment and allied fields.
Ms. G. Sandhya	B. Tech chemical engineering M.tech environmental engineering	EIA Coordinator & Functional area expert (AQ&WP)	Over 6 years experience in preparation of eia/emp reports

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புவியியல் மற்றும் சுரங்கத்துறை

ந.க.எண்:கேவி1/717/2024

உதவி இயக்குநர் அலுவலகம்
மாவட்ட ஆட்சியர் அலுவலக வளாகம்
விருதுநகர்.

நாள்:24.12.2024.

குறிப்பாணை

பொருள்: கனிமங்களும் குவாரிகளும் - விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண். 203/7 விஸ்தீரணம் 1.60.50 ஹெக்டேர் பரப்பில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி திரு.பாலகிருஷ்ணன் என்பவருக்கு உரிமம் வழங்கல் - உகந்த பரப்பு (Precise Area) தேர்வு செய்யப்பட்டது - சுரங்கத்திட்டம் மற்றும் மாநில அளவிலான சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் இசைவினைப் பெற்று சமர்ப்பிக்க கோருவது - தொடர்பாக.

- பார்வை:**
1. திரு.பாலகிருஷ்ணன் , க.எண்.1/172 , மேற்கு தெரு வெள்ளூர் கிராமம், விருதுநகர் மாவட்டம் , விண்ணப்பம் நாள்:28.06.2024.
 2. இவ்வலுவலக கடிதம் எண் ந.க.கேவி1/717/2024, நாள்: 04.07.2024 (வருவாய் கோட்டாட்சியர், சாத்தூர் அவர்களுக்கு முகவரியிட்டது).
 3. சாத்தூர், வருவாய் கோட்டாட்சியர் கடித எண் மூ.மு.அ2/3507/2024, நாள்: 14.10.2024.
 4. உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை அவர்களின் புலத்தணிக்கை அறிக்கை நாள்: 10.12.2024.
 5. 1959 -ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 41 மற்றும் 42.
 6. அரசாணை எண்.169 தொழில் (எம்.எம்.சி.1) துறை, நாள்: 04.08.2020.
 7. தொடர்புடைய ஆவணங்கள்.

விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண். 203/7 விஸ்தீரணம் 1.60.50 ஹெக்டேர் பரப்பில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் வழங்கக்கோரி விருதுநகர் மாவட்டம் மற்றும் வட்டம், வெள்ளூர் கிராமம், மேற்கு தெரு , க.எண்.1/172 என்ற முகவரியில் வசித்து வரும் திரு.பாலகிருஷ்ணன் என்பவர் பார்வை 1-ல் காணும் விண்ணப்பத்தினை உரிய ஆவணங்களுடன் சமர்ப்பித்துள்ளார்.

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சாத்தூர், வருவாய் கோட்டாட்சியர், அவர்களின் அறிக்கையில் குவாரி உரிமம் வழங்கக் கோரிய விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண். 203/7 விஸ்தீரணம் 1.60.50 ஹெக்டேர் பரப்பில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் கோரிய புல எண்.203/7 பரப்பு 1.60.50 ஹெக்டேர் பட்டா எண்.2213-ல் சுப்பாரெட்டியார் மகன் ராஜேந்திரன் என்பவர் பெயரில் கிராமக் கணக்கில் தாக்கலாகியுள்ளது.மேற்படி புலத்தின் உரிமையாளர் ராஜேந்திரன் என்பவரால் உரிமம் கோரும் நபரான ச.பாலகிருஷ்ணன் என்பவருக்கு நோட்டரி பப்ளிக் முன்னிலையில் ஒப்பந்த பத்திரம் செய்து கொடுக்கப்பட்டுள்ளது எனவும்,

குவாரி உரிமம் கோரும் புலத்தின் நான்குமால் விபரம்:-

வடக்கு - புல எண்.202/3 - கடற்கரை புஞ்சை நிலம், 202/2 - அரசு புறம்போக்கு வண்டிப்பாதை,

தெற்கு - புல எண்.207/1 - ராமராஜ் புஞ்சை நிலம்,

கிழக்கு - புல எண்.203/4 - அரசு புறம்போக்கு வண்டிப்பாதை,

மேற்கு - புல எண்.206 - ராமராஜ் புஞ்சை நிலம்,

உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கக் கொரும் புலத்திலிருந்து 300 மீட்டர் சுற்றளவில் குடியிருப்புகள் ஏதுமில்லை. மேலும் 50 மீட்டர் சுற்றளவில் கோவில், மசூதி, நினைவுச் சின்னங்கள், உயர் மின்னழுத்த கம்பி பாதைகள் மற்றும் இடுகாடு ஏதுமில்லை. 500 மீட்டர் சுற்றளவில் புராதானச் சின்னங்கள் மற்றும் பழமையான கல்வெட்டுகள் ஏதுமில்லை. மனுதாரர் உரிமம் கோரும் புலத்திற்கு 50 மீட்டர் சுற்றளவில் இருப்புப்பாதை, சாலை, மின் இணைப்புகள், குளம், ஓடை மற்றும் கால்வாய் போன்ற நீர்நிலைகள் ஏதுவும் கிடையாது. பிரஸ்தா புலத்திற்கு செல்வதற்கு பாதை வசதியானது புல எண்.225/3 திரு.இராஜேந்திரன் என்பவரின் நிலத்தின் வழியாகவும், புல எண்.216/1, 216/3 அரசு மேய்க்காங் வழியாகவும், புல எண்.205 திரு.இராஜேந்திரன், புல எண்.206 - திரு.ராமராஜ் என்பவரின் நிலத்தின் வழியாகவும் செல்கிறது. மேற்படி பாதை செல்லும் நிலத்தின் உரிமையாளர்களிடமிருந்து சம்மதக்கடிதம் பெறப்பட்டுள்ளது. உரிமம் கோரும் புலத்திற்கு தெற்கில் சுமார் 50 மீட்டர் இடைவெளியில் புல எண்.207/2ஏ, 2டி-ல் திரு.ராஜேந்திரன் என்பவரின் முடிவற்ற குவாரியும், 206 மற்றும் 207/1 புலங்களில் திரு.ராமராஜ் என்பவரின் செயல்படாத குவாரியும் சுமார் 100 மீட்டருக்குள் அமைந்துள்ளது. அதேபோன்று வடக்குப் பகுதியில் 50 மீட்டர் சுற்றளவில் புல எண்.202/1ஏ2 மற்றும் 202/1பி-ல் திரு.கனிராஜ் என்பவரின் முடிவற்ற குவாரி உள்ளது. மேலும் கிழக்குப் பகுதியில் புல எண்.198/4, 197/1, 196/1ஏ-ல் திரு.சுப்புராஜ் மற்றும் புல எண்.199/6ஏ-ல் கோபாலகிருஷ்ணன் என்பவர்களின் செயல்படாத குவாரியும் 200 மீட்டர் இடைவெளியில் அமைந்துள்ளது எனவும்,

ச. பாலகிருஷ்ணன்

விண்ணமிக்கப்பட்ட புலங்களை சுற்றிலும் 300 மீட்டர் சுற்றளவில் குடியிருப்புகள், பள்ளிகள், கோயில்கள், மசூதிகள், சுடுகாடு ஏதும் இல்லை. 50 மீட்டர் சுற்றளவில் தேசிய / மாநில நெடுஞ்சாலைகள், ஆறுகள், கட்டிடங்கள், உயர் /தாழ்வழுத்த மின்கம்பிகள் இல்லை. உயர்வகை மரங்கள் ஏதுவும் இல்லை. வனத்துறையால் பாதுகாக்கப்பட்ட பகுதியாக அறிவிக்கப்பட்ட சரணாலயங்கள், தேசிய பூங்காக்கள் சுற்றுச்சூழல் உணர் திறன் மிக்க பகுதிகள் (ECO-SENSITIVE ZONE), 1 கிமீட்டர் சுற்றளவில் காடுகள், 500 மீட்டர் சுற்றளவில் அருங்காட்சியக துறையின் மூலம் பாதுகாக்கப்பட்ட பகுதிகளாக அறிவிக்கப்பட்ட இடங்கள் மற்றும் வரலாற்று சின்னங்கள் எதும் இல்லை எனவும், மேற்படி, நிலங்களில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி அமையவுள்ள இடத்தின் நான்குமால் வடக்கு - புல எண்.202/3 - கடற்கரை புஞ்சை நிலம், 202/2 - அரசு புறம்போக்கு வண்டிப்பாதை,தெற்கு - புல எண்.207/1 - ராமராஜ் புஞ்சை நிலம்,கிழக்கு - புல எண்.203/4 - அரசு புறம்போக்கு வண்டிப்பாதை, மேற்கு - புல எண்.206 - ராமராஜ் புஞ்சை நிலம் அமைந்துள்ளது எனவும் ,

எனவே, விண்ணப்பதாரர் திரு.பாலகிருஷ்ணன் என்பவரின் கோரிக்கையினை ஏற்று விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண். 203/7 விஸ்தீரணம் 1.60.50 ஹெக்டேர் பரப்பில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதிஎண்.19 மற்றும் 20-ன் படி பின்வரும் நிபந்தனைகளுக்குட்பட்டு வழங்க பரிந்துரை செய்கிறேன் என தெரிவித்துள்ளார்.

நிபந்தனைகள்:

1. அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீ பாதுகாப்பு இடைவெளி விடுத்து குவாரி செய்தல் வேண்டும்.
2. புல எண்.202/2, 203/4-ல் செல்லும் வண்டிப்பாதைக்கு பாதிப்பு ஏற்படுத்தாதவாறு 10 மீ பாதுகாப்பு இடைவெளி விடுத்து குவாரி பணிகள் செய்தல் வேண்டும்.
3. பொதுமக்கள் / விவசாய நிலங்களுக்கு பாதிப்பு ஏற்படாத வகையில் தகுதி வாய்ந்த அங்கீகரிக்கப்பட்ட நபர்கள் மூலம் வெடிமருந்துகள் சேமிக்கப்பட்டு குவாரியில் வெடித்தல் வேண்டும். குவாரியில் குறைந்த சக்தி கொண்ட வெடி மருந்துகளை பயன்படுத்தல் வேண்டும்.
4. சுரங்கத்திட்டம் மற்றும் சுற்றுச்சூழல் தடையில்லாச் சான்று குத்தகை உரிமம் வழங்குவதற்கு முன் சமர்ப்பிக்க வேண்டும்.
5. குவாரியில் வேலை செய்யும் தொழிலாளர்கள் தொழிலாளர் நலவாரியம் மற்றும் காப்பீடு திட்டத்தில் பதிவு செய்து தொழிலாளர் நலன் பேண்பட வேண்டும்.
6. குழந்தை தொழிலாளர்களை குவாரி பணியில் அமர்த்தக் கூடாது.

S. Narayanaiah

7. கனிமங்களை வாகனங்களில் கொண்டு செல்லும் போது பாதசாரிகள், பொது மக்கள் மற்றும் பிற வாகனங்கள் பாதிக்காதவண்ணம் தார்பாய்கள் கொண்டு மூடி எடுத்துச் செல்ல வேண்டும்.

எனவே, ஸ்ரவாய் கோட்டாட்சியர், உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை அலுவலர்களின் பரிந்துரையினை ஏற்றும் நிபந்தனைகளுக்கு உட்பட்டும், விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண். 203/7 விஸ்தீரணம் 1.60.50 ஹெக்டேர் பரப்பில் 1959 -ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதி எண்: 19 (1) மற்றும் 20 -ன் படி 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்க தகுதி வாய்ந்த நிலப்பரப்பாக (Precise Area) கருதப்படுகிறது.

எனவே, தமிழ்நாடு சிறுகனிம சலுகை விதிகள்-1959 விதி எண்:41-ன்படி குவாரி பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்கத் திட்டத்தினை (Mining Plan) 90 தினங்களுக்குள்ளும் விதி எண்:42-ன்படி மாநில அளவிலான சுற்றுசூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் (State Level Environmental Impact Assessment Authority) இசைவினைப் பெற்று சமர்ப்பிக்குமாறும் மனுதாரர் திரு.பாலகிருஷ்ணன் என்பவர் கேட்டுக் கொள்ளப்படுகிறார்.

உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
விருதுநகர்.

பெற்றநர்
திரு.பாலகிருஷ்ணன்,
க.எண்.1/172,
மேற்கு தெரு,
வெள்ளூர் கிராமம்,
விருதுநகர் மாவட்டம்,

நகல்
உறுப்பினர் செயலர்,
மாநில சுற்றுசூழல் தாக்க மதிப்பீட்டு ஆணையம் (SEIAA),
சென்னை.

தி. பாலகிருஷ்ணன்

From

Dr.S.Suhatharahima, M.Sc.,Ph.D.,
Assistant Director,
Geology and Mining,
Virudhunagar.

To

Thiru.S.Balakrishnan,
S/o Sri.Sankappan,
D.No: 1/105, West Street,
Virudhunagar Taluk,
Virudhunagar District-626 005.

Roc.No:KV1/717/2024, Dated:24.01.2025.

Sir,

Sub: Mines and Minerals - Minor Mineral - Virudhunagar District - Vembakkottai Taluk - Appayyanayakkanpatti Village - Patta Land - S.F.Nos: 203/7 Extent 1.60.50 Hectares - Quarry lease application preferred by Thiru.S.Balakrishnan, S/o.Sri.Sankappan, for quarrying Rough Stone and Gravel - Approval of Mining Plan - Regarding.

Ref: 1. Quarry lease application received from Thiru. S.Balakrishnan dated: 28.06.2024.
2. The Assistant Director, Geology and Mining, Virudhunagar Rc.No.KV1/717/2024, Dated: 24.12.2024.
3. Thiru. S.Balakrishnan S/O Sri.Sankappan letter, dated: 24.01.2025.

Thiru. S.Balakrishnan, S/o Sri.Sankappan, has preferred an application for the grant of quarrying lease to quarry Rough Stone and Gravel over an extent of 1.60.50 Hectares of Patta Land in S.F.Nos: 203/7 of Appayyanayakkanpatti Village, Vembakkottai Taluk & Virudhunagar District for a period of 10 (Ten) Years Under Rule 19 of Tamil Nadu Minor Mineral Concession Rules 1959.

2) The application was examined and consented to grant lease to quarrying Rough Stone and Gravel over an extent of 1.60.50Hectares of Patta Land in S.F.No: 203/7 for a period of 10 (Ten) years subject to produce Mining Plan for approval and to obtain Environment Clearance from SEIAA in the reference 2nd cited.

3) The applicant has submitted the Mining Plan, prepared as per the guidelines issued by the Commissioner of Geology and Mining and as per the Rules and Acts. The Geological reserves, Mineable reserves and yearwise production are discussed in Table 1, 2 & 3 of the mining plan. The Geological reserves is estimated as 6,11,800 cbm Roughstone and 16,100 cbm of Gravel. The mineable reserves is estimated as 1,85,232 cbm Roughstone and 11,834 cbm of Gravel upto a depth of 39 m below ground level for the period of Ten years.

* S A6

The Environmental Management Plan and Mine Closure plan are discussed in Part - B (10) and all conditions have been incorporated in the Mining Plan as laid down by the authorities.

4) In view of the above, in exercise of the powers delegated under Rule 41 of Tamil Nadu Minor Mineral Concession Rules, 1959, I hereby approve the Mining Plan submitted by Thiru. S.Balakrishnan S/o Sri.Sankappan, for quarrying Rough Stone and Gravel over an extent of 1.60.50 Hectares of Patta Land in S.F.Nos: 203/7 of Appayyanayakanpatti Village, Vembakkottai Taluk & Virudhunagar District for a period of 10 (Ten) to obtain Environment Clearance from SEIAA, Chennai subject to the following conditions:

1. The Mining Plan is approved without prejudice to any other law applicable to the quarry permission from time to time where such Laws are made by the State Government or any other authority.
2. This approval of the Mining Plan does not in any way imply the approval of the Government in terms of any other provisions of the Tamil Nadu Minor Mineral Concession Rules, 1959.
3. The Mining Plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
4. The approval of the Mining Plan does not in any way imply the approval of the Government in terms of any other provisions of the Mines and Minerals (Development and Regulation) Amendment Act, 2015 or any other connected Laws including, Environment Protection.
5. Act, 1986, and the Rules made there under in Tamil Nadu Minor Mineral Concession Rules, 1959.

Encl: Two copies of Mining Plan.

Copy to:
The Member Secretary,
State Level Environmental Impact
Assessment Authority,
Panagal Maligai,
No. 1 Jeenis Road,
Saidapet, Chennai-15.


24/1/25
Assistant Director,
Geology and Mining,
Virudhunagar.


24/1/25

From

Dr.S.Suhatharahima, M.Sc.,Ph.D.,
Assistant Director,
Geology and Mining,
Virudhunagar.

To

To
Thiru.S.Balakrishnan,
S/o Sri.Sankappan,
D.No: 1/105, West Street,
Virudhunagar Taluk,
Virudhunagar District-626 005.

Roc.No:KV1/717/2024, Dated:24.01.2025

Sir,

Sub: Mines and Minerals - Minor Mineral -
Virudhunagar District - Vembakkottai Taluk -
Appayyanayakkanpatti Village - Patta Land -
S.F.Nos: 203/7 Extent 1.60.50Hectares - Quarry
lease application preferred by Thiru.
S.Balakrishnan S/o Sri.Sankappan, for quarrying
Rough Stone and Gravel -Details of quarries in 500
meter radius - Regarding.

Ref: 1. Quarry lease application received from Thiru.
S.Balakrishnan dated: 28.06.2024.
2. The Assistant Director, Geology and Mining,
Virudhunagar Rc.No.KV1/717/2024, Dated:
24.12.2024.
3. Thiru. S.Balakrishnan S/O Sri.Sankappan
letter, dated: 24.01.2025.

Thiru. S.Balakrishnan has preferred an application for the grant of quarrying lease to quarry Rough Stone and Gravel over an extent of 1.60.50 Hectares of Patta Land in S.F.Nos: 203/7 of Appayyanayakkanpatti Village, Virudhunagr Taluk & Virudhunagar District for a period of 10 (Ten) Years Under Rule 19 of Tamil Nadu Minor Mineral Concession Rules 1959.

2) The application was examined and consented to grant lease to quarrying Rough Stone and Gravel over an extent of 1.60.50 Hectares of Patta Land in S.F.No: 203/7 for a period of 10 (Ten) years subject to produce Mining Plan for approval and to obtain Environment Clearance from SEIAA in the reference 2nd cited.

3) The applicant has submitted the Mining Plan, prepared as per the guidelines issued by the Commissioner of Geology and Mining and as per the Rules and Acts. The Geological reserves, Mineable reserves and yearwise production are discussed in Table 1, 2 & 3 of

III	Present Proposed Quarry :			
1	R. Gopalakrishnan	Vembakottai & Appayanayakkanpatti	199/6A (1.08.00 Hects)	KV1/221/2022 Dated : 26.04.2022
2	S. Ragupathi	Vembakottai & Appayanayakkanpatti	196/2A,3,4& 49 (1.86.50 Hects)	KV1/390/2019 Dated : 18.12.2020
3	R. Gayathri	Vembakottai & Appayanayakkanpatti	39/1A,1B2A& 49 (2.30.20 Hects)	KV1/572/2019 Dated : 11.12.2019
4	S. Ramraj	Vembakottai & Appayanayakkanpatti	207/3A,3B, etc., (1.28.50 Hects)	KV1/638/2021 Dated : 01.09.2021
5	S. Subburaj	Vembakottai & Appayanayakkanpatti	43/1A,1B(p),4 5/1A1, (1.58.00 Hects)	KV1/523/2019 Dated : 12.05.2022
6	P. Shunmugaraj	Vembakottai & Appayanayakkanpatti	199/6B & 8 (1.08.00 Hects)	KV1/712/2022 Dated : 02.01.2023
7	G. Kaniraj	Vembakottai & Appayanayakkanpatti	202/1A2 (1.21.50 Hects)	KV1/158/2021 Dated : 13.08.2021
8.	S. Balakrishnan	Vembakottai & Appayanayakkanpatti	203/7 (1.60.50 Hects)	KV1/717/2024 Dated : 24.12.2024
		TOTAL	29.48.7 (Hect)	

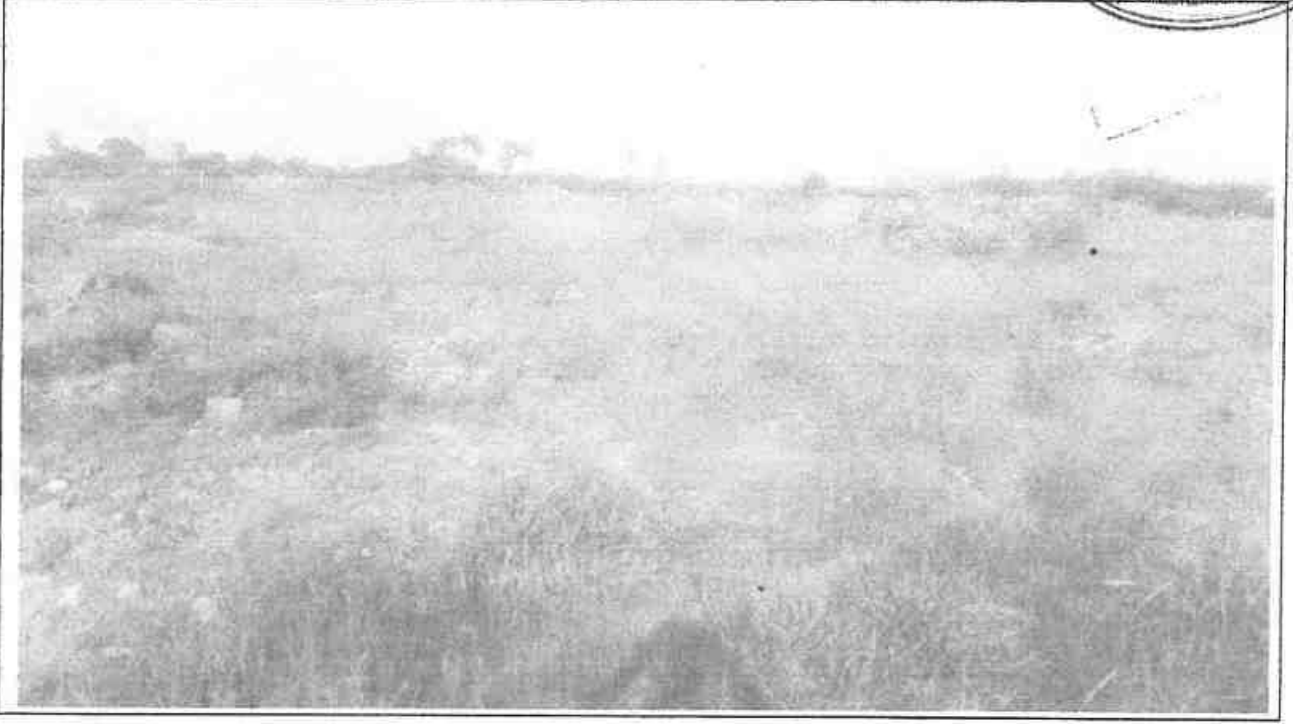

**Assistant Director,
Geology and Mining,
Virudhunagar.**

Copy to :

State Level Environmental Impact
 Assessment Authority,
 Panagal Maligai,
 No. I Jeenis Road,
 Saidapet, Chennai-15.

SAGS 90525 2/2024

MINES LAND PHOTO



விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம் புன்செய் புலஎண். 203/7 விஸ்தீரணம் 1-60.50 ஹெக்டேரில் மட்டும் 10 வருடங்களுக்கு உதவிஇயக்குனர், புவியியல் மற்றும் சுரங்கத்துறை, விருதுநகர் மாவட்ட ஆட்சியர் அலுவலக வளாகம், விருதுநகர் அவர்களின் செயல்முறை ஆணை எண்.கே.வி.1/717/2024 நாள் 24.12.2024ன் படி திரு. S. பாலகிருஷ்ணன், த/பெ. சங்கப்பன், 1/105, மேற்குதெரு, வெள்ளூர், விருதுநகர் மாவட்டம் அவர்களுக்கு உடைகல் மற்றும் கிராவல் வெட்டி எடுப்பதற்கு அங்கீகரிக்கப்பட்ட இடம் என்பதை இதன் மூலம் சான்றளிக்கிறேன்.

மேற்படி இடத்திற்கு செல்வதற்கு அணுகுபாதை வசதி உள்ளது என்றும் சான்றளிக்கிறேன்.

இடம்: அப்பையநாயக்கன்பட்டி

நாள்: 30.12.2024.

மனுதாரர் கையெழுப்பம்

S. பாலகிருஷ்ணன்

30/12/2024
VILLAGE ENGINEER
APPAYANAICKENPATTI VILLAGE,
VEMBAKOTTAI (T.K.)
VIRUDHUNAGAR (DI..)

S. பாலகிருஷ்ணன்

கிராம நிர்வாக அலுவலரின் சான்று



விருதுநகர் மாவட்டம், வெம்பக்கோட்டை

அப்பையநாயக்கன்பட்டி கிராமம் புன்செய் புலஎண். 203/7 விஸ்தீரணம் 1-60.50 ஹெக்டேரில் மட்டும் 10 வருடங்களுக்கு உதவிஇயக்குனர், புவியியல் மற்றும் சுரங்கத்துறை, விருதுநகர் மாவட்ட ஆட்சியர் அலுவலக வளாகம், விருதுநகர் அவர்களின் செயல்முறை ஆணை எண். கே.வி.1/717/2024 நாள் 24.12.2024ன் படி திரு. S. பாலகிருஷ்ணன், த/பெ. சங்கப்பன், 1/105, மேற்குதெரு, வெள்ளூர், விருதுநகர் மாவட்டம் அவர்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி செய்ய தகுதி வாய்ந்த பரப்பாக குறிப்பானை வழங்கப்பட்டுள்ளது.

மேலும் குவாரி அமைய உள்ள இடத்த சுற்றிலும் 300 மீட்டர் சுற்றளவில் குடியிருப்புகள், கோயில்கள், புராதான சின்னங்கள் ஏதும் இல்லை. மேற்படி புல எண்கள். கிராம கணக்கு தடை ஆணை புத்தகத்தில் இடம் பெறவில்லை. குவாரி அமைய உள்ள இடத்திற்கு செல்ல போதிய அணுகுபாதை வசதி உள்ளது.

30/12/2024
VILLAGE ADMINISTRATIVE OFFICER
கிராம நிர்வாக அலுவலர்
VEMBAKOTTAI (T.K)
VIRUDHUNAGAR (Dt.,)

* S. பாலகிருஷ்ணன்

POPULATION BREAKUP & LITERACY LEVEL IN THE BUFFER ZONE

Sl.No	No. of Villages	Name of village	Rural / urban	HOUSE HOLDS	POPULATION			POPULATION BELOW 6 AGE GROUP			SCHEDULE CASTE			SCHEDULE TRIBE			LITRERATES			ILLITRERATES		
					TOTAL	MALE	F.MALE	TOTAL	MALE	F.MALE	TOTAL	MALE	F.MALE	TOTAL	MALE	F. MALE	TOTAL	MALE	F.MALE	TOTAL	MALE	F.MALE
0-2 km,Sivakasi Sub-District, Virudhunagar District																						
1	1	Appanayakkanpatti	Rural	1017	4594	2135	2459	379	202	177	1086	529	557	0	0	0	3291	1620	1671	1303	515	788
		total (A)		1017	4594	2135	2459	379	202	177	1086	529	557	0	0	0	3291	1620	1671	1303	515	788
2-5 km,Sivakasi Sub-District, Virudhunagar District																						
2	1	Kilanmarinadu	Rural	637	2388	1190	1198	252	116	136	525	261	264	0	0	0	1614	914	700	774	276	498
Sattur Sub-District, Virudhunagar District																						
3	1	Sevalpatti	Rural	1316	4806	2438	2368	569	288	281	579	307	272	21	12	9	3098	1795	1303	1708	643	1065
4	2	Kuganparai	Rural	394	1290	641	649	119	61	58	167	78	89	0	0	0	899	489	410	391	152	239
Sankarankoil Sub-District,Tirunelveli District																						
5	1	Chattrappatti	Rural	403	1420	699	721	151	69	82	800	395	405	0	0	0	1020	562	458	400	137	263
6	2	Varaganur	Rural	781	2574	1268	1306	245	133	112	574	290	284	0	0	0	1790	987	803	784	281	503
Sankarankoil Sub-District,Tirunelveli District																						
7	1	Thiruvenkadam (TP)	Urban	2368	8337	4144	4193	865	454	411	2281	1151	1130	78	37	41	5866	3234	2632	2471	910	1561
		total (B)		5899	20815	10380	10435	2201	1121	1080	4926	2482	2444	99	49	50	14287	7981	6306	6528	2399	4129
5-10 km,Rajapalayam Sub-District, Virudhunagar District																						
8	1	Gopalapuram	Rural	423	1461	708	753	128	61	67	385	189	196	0	0	0	1051	572	479	410	136	274
9	2	Vadagarai	Rural	992	3454	1720	1734	316	156	160	91	42	49	0	0	0	2539	1413	1126	915	307	608
Sivakasi Sub-District, Virudhunagar District																						
10	1	Edirkottai	Rural	1203	4329	2129	2200	465	254	211	331	156	175	0	0	0	3086	1656	1430	1243	473	770
11	2	Kongankulam	Rural	318	1050	507	543	87	44	43	138	64	74	0	0	0	761	409	352	289	98	191
12	3	Alangulam (Part)	Rural	508	1924	1004	920	164	95	69	480	247	233	0	0	0	1473	812	661	451	192	259
13	4	Kundayiruppu	Rural	1846	6812	3365	3447	852	424	428	1677	820	857	0	0	0	4602	2498	2104	2210	867	1343
14	5	Kangaraseval	Rural	429	1627	790	837	180	96	84	408	187	221	0	0	0	1047	561	486	580	229	351
15	6	Vembakottai	Rural	1196	4478	2225	2253	573	285	288	756	371	385	0	0	0	3128	1714	1414	1350	511	839
16	7	Surarpatti	Rural	406	1523	751	772	195	103	92	999	496	503	0	0	0	933	525	408	590	226	364
17	8	Lakshmipuram	Rural	1603	5610	2771	2839	577	251	326	1327	652	675	5	3	2	3847	2156	1691	1763	615	1148
Sattur Sub-District, Virudhunagar District																						
18	1	Sankarapandiyapuram	Rural	893	3200	1580	1620	315	163	152	1116	540	576	0	0	0	2096	1171	925	1104	409	695
19	2	Thlukkankurichchi	Rural	655	2294	1116	1178	269	135	134	143	66	77	0	0	0	1409	781	628	885	335	550
20	3	Sippipparai	Rural	677	2299	1115	1184	199	103	96	832	414	418	0	0	0	1593	856	737	706	259	447
Sankarankoil Sub-District,Tirunelveli District																						
21	1	Kalingappatti	Rural	1775	6537	3242	3295	641	330	311	1573	784	789	24	12	12	4347	2429	1918	2190	813	1377
22	2	Naduvappatti	Rural	290	998	492	506	81	50	31	78	35	43	0	0	0	589	328	261	409	164	245
23	3	Maipparai	Rural	542	1842	885	957	157	76	81	322	161	161	0	0	0	1272	684	588	570	201	369
24	4	Sangupatti	Rural	677	2418	1222	1196	228	122	106	1104	559	545	11	6	5	1673	959	714	745	263	482
25	5	Vellakulam	Rural	1152	3946	1903	2043	322	164	158	553	269	284	0	0	0	2787	1485	1302	1159	418	741
26	6	A.Karisalkulam	Rural	914	3394	1634	1760	330	169	161	341	159	182	0	0	0	2248	1219	1029	1146	415	731
27	7	Kulasekarapperi	Rural	171	645	327	318	53	25	28	0	0	0	0	0	0	416	239	177	229	88	141
28	8	Kurunjakulam	Rural	397	1425	675	750	122	66	56	616	282	334	9	4	5	1069	562	507	356	113	243
29	9	Sundaresapuram	Rural	95	323	154	169	38	17	21	28	19	9	0	0	0	215	116	99	108	38	70
30	10	Kulakkattakurichi	Rural	278	854	418	436	78	41	37	194	93	101	0	0	0	558	321	237	296	97	199
Kovilpatti Sub-District,Thoothukkudi District																						
31	1	Sundaresapuram	Rural	335	1179	613	566	116	54	62	459	242	217	0	0	0	874	508	366	305	105	200
32	2	Kuruvinatham	Rural	439	1640	826	814	223	112	111	722	365	357	0	0	0	1126	615	511	514	211	303
33	3	Mukkuttumalai	Rural	297	896	441	455	98	65	33	272	139	133	0	0	0	586	310	276	310	131	179
34	4	Lakshmiammalpuram	Rural	316	1115	545	570	108	63	45	724	361	363	0	0	0	826	444	382	289	101	188
35	5	Nakkalamuthanpatti	Rural	351	1215	612	603	118	67	51	396	189	207	0	0	0	826	462	364	389	150	239
36	6	Vadakkupatti	Rural	447	1539	768	771	163	75	88	476	220	256	0	0	0	1248	656	592	291	112	179
Sivakasi Sub-District, Virudhunagar District																						
37	1	Alangulam (CT)	Urban	1364	4930	2475	2455	456	236	220	807	398	409	1	1	0	3809	2052	1757	1121	423	698
		total (C)		20989	74957	37013	37944	7652	3902	3750	17348	8519	8829	50	26	24	52034	28513	23521	22923	8500	14423
		Grand Total (A+B+C)		27905	100366	49528	50838	10232	5225	5007	23360	11530	11830	149	75	74	69612	38114	31498	30754	11414	19340

*Source: District Primary Cences Absract, Virudhunagar, Tirunelveli, Thoothukkudi District of Tamilnadu State-2011

OCCUPATIONAL STRUCTURE IN THE BUFFER ZONE

Sl.No	No. of Villages	Name of village	Rural / urban	MAIN WORKERS		CULTIVATORS		AGRI LABOURS		HOUSE HOLD		OTHERS		MARGINAL WORKERS		NON WORKERS	
				MALE	F.MALE	MALE	F.MALE	MALE	F.MALE	MALE	F.MALE	MALE	F.MALE	MALE	F.MALE	MALE	F.MALE
0-2 km,Sivakasi Sub-District, Virudhunagar District																	
1	1	Appanayakkanpatti	Rural	1125	1097	85	99	307	499	28	19	705	480	54	106	956	1256
		total (A)		1125	1097	85	99	307	499	28	19	705	480	54	106	956	1256
2-5 km,Sivakasi Sub-District, Virudhunagar District																	
2	1	Kilanmarinadu	Rural	648	417	38	21	53	141	8	14	549	241	75	86	467	695
Sattur Sub-District, Virudhunagar District																	
3	1	Sevalpatti	Rural	1474	1159	59	23	178	229	16	42	1221	865	19	50	945	1159
4	2	Kuganparai	Rural	433	412	165	150	61	107	24	21	183	134	14	20	194	217
Sankarankoil Sub-District,Tirunelveli District																	
5	1	Chattrappatti	Rural	436	410	11	3	359	384	0	0	66	23	0	0	263	311
6	2	Varaganur	Rural	802	768	204	197	367	451	11	9	220	111	3	5	463	533
Sankarankoil Sub-District,Tirunelveli District																	
7	1	Thiruvenkadam (TP)	Urban	2290	1407	244	172	471	576	11	32	1564	627	176	310	1678	2476
		total (B)		6083	4573	721	566	1489	1888	70	118	3803	2001	287	471	4010	5391
5-10 km,Rajapalayam Sub-District, Virudhunagar District																	
8	1	Gopalapuram	Rural	271	99	35	14	11	9	9	8	216	68	186	250	251	404
9	2	Vadagarai	Rural	1006	704	214	91	304	366	14	20	474	227	17	22	697	1008
Sivakasi Sub-District, Virudhunagar District																	
10	1	Edirkottai	Rural	1178	836	70	34	44	37	11	5	1053	760	131	182	820	1182
11	2	Kongankulam	Rural	320	271	11	7	197	222	1	0	111	42	3	1	184	271
12	3	Alangulam (Part)	Rural	547	340	21	6	42	58	9	14	475	262	9	9	448	571
13	4	Kundayiruppu	Rural	1707	1406	141	87	344	472	26	19	1196	828	220	251	1438	1790
14	5	Kangaraseval	Rural	478	413	52	38	114	139	3	5	309	231	6	22	306	402
15	6	Vembakottai	Rural	1251	795	50	10	133	87	9	10	1059	688	88	219	886	1239
16	7	Surarpatti	Rural	274	254	4	7	34	22	0	0	236	225	185	195	292	323
17	8	Lakshmipuram	Rural	1570	1198	128	123	507	607	21	26	914	442	119	61	1082	1580
Sattur Sub-District, Virudhunagar District																	
18	1	Sankarapandiyapuram	Rural	961	797	123	89	227	200	4	3	607	505	14	24	605	799
19	2	Thlukkankurichchi	Rural	669	594	8	5	76	44	9	5	576	540	49	86	398	498
20	3	Sippipparai	Rural	471	352	94	111	229	183	1	2	147	56	200	195	444	637
Sankarankoil Sub-District,Tirunelveli District																	
21	1	Kalingappatti	Rural	1751	1297	165	79	1078	1037	24	18	484	163	164	162	1327	1836
22	2	Naduvappatti	Rural	324	325	56	56	261	258	1	0	6	11	1	2	167	179
23	3	Maipparai	Rural	565	564	77	56	395	464	1	4	92	40	1	0	319	393
24	4	Sangupatti	Rural	473	351	15	10	174	204	8	5	276	132	236	219	513	626
25	5	Vellakulam	Rural	1142	1058	110	95	687	727	25	25	320	211	34	62	727	923
26	6	A.Karisalkulam	Rural	987	915	95	60	738	782	7	6	147	67	26	97	621	748
27	7	Kulasekarapperi	Rural	196	193	16	1	151	27	0	144	29	21	6	6	125	119
28	8	Kurunjakulam	Rural	402	384	127	46	157	272	2	4	116	62	12	40	261	326
29	9	Sundaresapuram	Rural	100	84	45	33	40	47	0	0	15	4	0	1	54	84
30	10	Kulakkattakurichi	Rural	256	261	50	24	153	194	1	0	52	43	1	3	161	172
Kovilpatti Sub-District,Thoothukkudi District																	
31	1	Sundaresapuram	Rural	415	310	195	158	142	137	0	0	78	15	1	3	197	253
32	2	Kuruvinatham	Rural	416	383	182	35	157	311	0	1	77	36	90	42	320	389
33	3	Mukkuttumalai	Rural	233	218	28	26	176	183	0	0	29	9	13	20	195	217
34	4	Lakshmiammalpuram	Rural	343	313	21	16	289	270	1	0	32	27	4	6	198	251
35	5	Nakkalamuthanpatti	Rural	364	331	33	22	263	286	0	1	68	22	10	15	238	257
36	6	Vadakkuppatti	Rural	494	410	138	96	322	292	0	0	34	22	0	3	274	358
Sivakasi Sub-District, Virudhunagar District																	
37	1	Alangulam (CT)	Urban	1350	618	98	11	191	232	61	24	1000	351	103	112	1022	1725
		total (C)		20514	16074	2402	1446	7636	8169	248	349	10228	6110	1929	2310	14570	19560
		Grand Total (A+B+C)		27722	21744	3208	2111	9432	10556	346	486	14736	8591	2270	2887	19536	26207

*Source: District Primary Cences Absract, Virudhunagar, Tirunelveli, Thoothukkudi District of Tamilnadu State-2011

EDUCATIONAL FACILITIES IN THE BUFFER ZONE

Sl.No	No. of Villages	Name of village	Educational Facilities (A(1)/ NA(2))	Govt Pre - Primary School (Nursery/LKG/UKG) (Numbers)	Govt Primary School (Numbers)	Govt Middle School (Numbers)	Govt Secondary School (Numbers)	Govt Senior Secondary School (Numbers)	Govt Arts and Science Degree College (Numbers)	Govt Engineering College (Numbers)	Govt Medicine College (Numbers)	Govt Management Institute (Numbers)	Govt Polytechnic (Numbers)	Govt Vocational Training School/ITI (Numbers)	Government Non Formal Training Centre (Numbers)	Government School For Disabled (Numbers)
0-2 km,Sivakasi Sub-District, Virudhunagar District																
1	1	Appanayakkanpatti	1	2	0	0	0	0	0	0	0	0	0	0	0	0
		total (A)		2	0	0	0	0	0	0	0	0	0	0	0	0
2-5 km,Sivakasi Sub-District, Virudhunagar District																
2	1	Kilanmarinadu	1	2	1	0	0	0	0	0	0	0	0	0	1	0
Sattur Sub-District, Virudhunagar District																
3	1	Sevalpatti	1	5	2	1	1	1	0	0	0	0	0	0	2	0
4	2	Kuganparai	1	1	1	1	0	0	0	0	0	0	0	0	1	0
Sankarankoil Sub-District,Tirunelveli District																
5	1	Chattrappatti	1	2	3	1	0	0	0	0	0	0	0	0	1	0
6	2	Varaganur	1	3	1	1	0	0	0	0	0	0	0	0	1	0
		total (B)		13	8	4	1	1	0	0	0	0	0	0	6	0
5-10 km,Rajapalayam Sub-District, Virudhunagar District																
7	1	Gopalapuram	1	1	2	1	0	0	0	0	0	0	0	0	2	0
8	2	Vadagarai		3	2	1	1	0	0	0	0	0	0	0	3	0
Sivakasi Sub-District, Virudhunagar District																
9	1	Edirkottai	1	2	2	0	0	0	0	0	0	0	0	0	2	0
10	2	Kongankulam	1	1	0	0	0	0	0	0	0	0	0	0	0	0
11	3	Alangulam (Part)	1	5	3	3	2	2	0	0	0	0	0	0	3	0
12	4	Kundayiruppu	1	3	3	1	0	0	0	0	0	0	0	0	3	0
13	5	Kangaraseval	1	2	1	1	0	0	0	0	0	0	0	0	1	0
14	6	Vembakottai	1	4	5	1	1	1	0	0	0	0	0	0	5	1
15	7	Surarpatti	1	2	3	1	0	0	0	0	0	0	0	0	3	0
16	8	Lakshmipuram	1	4	4	0	0	0	0	0	0	0	0	0	4	0
Sattur Sub-District, Virudhunagar District																
17	1	Sankarapandiyapuram	1	3	4	1	1	1	0	0	0	0	0	0	4	0
18	2	Thlukkankurichchi	1	1	2	1	0	0	0	0	0	0	0	0	2	0
19	3	Sippipparai	1	1	2	1	1	1	0	0	0	0	0	0	3	0
Sankarankoil Sub-District,Tirunelveli District																
20	1	Kalingappatti	1	2	4	1	1	1	0	0	0	0	0	0	1	0
21	2	Naduvappatti	1	1	2	0	0	0	0	0	0	0	0	0	1	0
22	3	Maipparai	1	1	1	1	0	0	0	0	0	0	0	0	1	0
23	4	Sangupatti	1	2	0	0	0	0	0	0	0	0	0	0	0	0
24	5	Vellakulam	1	4	4	3	0	0	0	0	0	0	0	0	1	0
25	6	A.Karisalkulam	1	2	3	1	1	0	0	0	0	0	0	0	1	0
26	7	Kulasekarapperi	1	1	1	1	0	0	0	0	0	0	0	0	1	0
27	8	Kurunjakulam	1	2	1	1	0	0	0	0	0	0	0	0	1	0
28	9	Sundaresapuram	1	1	1	0	0	0	0	0	0	0	0	0	1	0
29	10	Kulakkattakurichi	1	1	0	0	0	0	0	0	0	0	0	0	1	0
Kovilpatti Sub-District,Thoothukkudi District																
30	1	Sundaresapuram	1	1	1	0	0	0	0	0	0	0	0	0	1	0
31	2	Kuruvinatham	1	2	1	0	0	0	0	0	0	0	0	0	1	0
32	3	Mukkuttumalai	1	2	2	0	0	0	0	0	0	0	0	0	1	0
33	4	Lakshmiammalpuram	1	2	1	0	0	0	0	0	0	0	0	0	1	0
34	5	Nakkalamuthanpatti	1	1	1	0	0	0	0	0	0	0	0	0	1	0
35	6	Vadakkuppatti	1	1	1	1	0	0	0	0	0	0	0	0	1	0
		total (C)		58	57	21	8	6	0	0	0	0	0	0	50	1
		Grand Total (A+B+C)		73	65	25	9	7	0	0	0	0	0	0	56	1

*Source: District Primary Cences Absract, Virudhunagar, Tirunelveli, Thoothukkudi District of Tamilnadu State-2011

MEDICAL FACILITIES IN THE BUFFER ZONE

Sl.No	No. of Villages	Name of village	Medical Facilities (A(1)/NA(2))	Community Health Centre (Numbers)	Primary Health Centre (Numbers)	Primary Health Sub Centre (Numbers)	Maternity And Child Welfare Centre (Numbers)	TB Clinic (Numbers)	Hospital Allopathic (Numbers)	Hospital Alternative Medicine (Numbers)	Dispensary (Numbers)	Veterinary Hospital (Numbers)	Mobile Health Clinic (Numbers)	Family Welfare Centre (Numbers)
0-2 km,Sivakasi Sub-District, Virudhunagar District														
1	1	Appanayakkanpatti	1	0	0	1	0	0	0	0	0	0	0	0
		total (A)		0	0	1	0	0	0	0	0	0	0	0
2-5 km,Sivakasi Sub-District, Virudhunagar District														
2	1	Kilanmarinadu	1	0	0	1	0	0	0	0	0	0	0	0
Sattur Sub-District, Virudhunagar District														
3	1	Sevalpatti	1	0	0	1	0	0	0	0	0	0	0	0
4	2	Kuganparai		0	0	0	0	0	0	0	0	0	0	0
Sankarankoil Sub-District,Tirunelveli District														
5	1	Chattrappatti	1	0	0	1	0	0	0	0	0	0	0	0
6	2	Varaganur	1	0	0	1	0	0	0	0	0	0	0	0
		total (B)		0	0	4	0	0	0	0	0	0	0	0
5-10 km,Rajapalayam Sub-District, Virudhunagar District														
7	1	Gopalapuram	2	0	0	0	0	0	0	0	0	0	0	0
8	2	Vadagarai	1	0	0	1	1	0	0	0	0	0	0	0
Sivakasi Sub-District, Virudhunagar District														
9	1	Edirkottai	1	0	0	1	0	0	0	0	0	0	0	0
10	2	Kongankulam	1	0	0	1	0	0	0	0	0	0	0	0
11	3	Alangulam (Part)	1	1	1	1	1	1	0	0	1	1	0	1
12	4	Kundayiruppu	1	0	0	3	0	0	0	0	0	0	0	0
13	5	Kangaraseval	2	0	0	0	0	0	0	0	0	0	0	0
14	6	Vembakottai	1	0	0	1	1	0	0	0	0	1	0	0
15	7	Surarpatti	2	0	0	0	0	0	0	0	0	0	0	0
16	8	Lakshmipuram	1	0	0	1	0	0	0	0	0	0	0	0
Sattur Sub-District, Virudhunagar District														
17	1	Sankarapandiyapuram	1	0	0	1	0	0	0	0	0	0	0	0
18	2	Thlukkankurichchi	2	0	0	0	0	0	0	0	0	0	0	0
19	3	Sippipparai	1	0	0	1	0	0	0	0	0	0	0	0
Sankarankoil Sub-District,Tirunelveli District														
20	1	Kalingappatti	1	0	1	1	1	1	0	0	1	1	0	1
21	2	Naduvappatti	2	0	0	0	0	0	0	0	0	0	0	0
22	3	Maipparai	1	0	0	1	0	0	0	0	0	0	0	0
23	4	Sangupatti	2	0	0	0	0	0	0	0	0	0	0	0
24	5	Vellakulam	1	0	0	1	0	0	0	0	0	0	0	0
25	6	A.Karisalkulam	1	0	0	1	0	0	0	0	0	1	0	0
26	7	Kulasekarapperi	2	0	0	0	0	0	0	0	0	0	0	0
27	8	Kurunjakulam	1	0	0	1	0	0	0	0	0	0	0	0
28	9	Sundaresapuram	2	0	0	0	0	0	0	0	0	0	0	0
29	10	Kulakkattakurichi	2	0	0	0	0	0	0	0	0	0	0	0
Kovilpatti Sub-District,Thoothukkudi District														
30	1	Sundaresapuram	2	0	0	0	0	0	0	0	0	0	0	0
31	2	Kuruvinatham	2	0	0	0	0	0	0	0	0	0	0	0
32	3	Mukkuttumalai	2	0	0	0	0	0	0	0	0	0	0	0
33	4	Lakshmiammalpuram	2	0	0	0	0	0	0	0	0	0	0	0
34	5	Nakkalamuthanpatti	2	0	0	0	0	0	0	0	0	0	0	0
35	6	Vadakkuppatti	2	0	0	0	0	0	0	0	0	0	0	0
		total (C)		1	2	16	4	2	0	0	2	4	0	2
		Grand Total (A+B+C)		1	2	21	4	2	0	0	2	4	0	2

*Source: District Primary Cences Absract, Virudhunagar, Tirunelveli, Thoothukkudi District of Tamilnadu State-2011

Note : A: Available, NA- Not Available

INFRASTRUCTURAL FACILITIES IN THE BUFFER ZONE

Sl.No	No of Villages	Name of village	Tap Water-Treated	Covered Well	Hand Pump	Tube Wells/Bo rehole	Spring	River/Can al	Tank/Pond/ Lake	Post Office	Sub Post Office	Post And Telegrap h Office	Telephone (landlines)	Mobile Phone Coverage	Public Bus Service	Railway Station	Commerci al Bank	Cooperativ e Bank	Agricultural Credit Societies
0-2 km,Sivakasi Sub-District, Virudhunagar District																			
1	1	Appanayakkanpatti	2	2	2	1	2	2	2	2	1	2	1	1	1	2	2	1	1
2-5 km,Sivakasi Sub-District, Virudhunagar District																			
2	1	Kilanmarinadu	1	2	1	1	2	2	2	2	2	2	1	1	1	2	2	2	1
Sattur Sub-District, Virudhunagar District																			
3	1	Sevalpatti	1	2	1	1	2	2	2	1	1	1	1	1	1	2	2	1	1
4	2	Kuganparai	2	2	1	1	2	2	2	2	1	2	1	1	1	2	2	1	1
Sankarankoil Sub-District,Tirunelveli District																			
5	1	Chattrappatti	1	1	2	1	2	2	2	2	1	2	1	1	1	2	2	2	2
6	2	Varaganur	1	2	2	1	2	2	2	2	1	2	1	1	1	2	2	2	2
5-10 km,Rajapalayam Sub-District, Virudhunagar District																			
7	1	Gopalapuram	1	2	2	2	2	2	2	2	1	2	1	1	1	2	1	2	2
8	2	Vadagarai	2	2	2	1	2	2	2	2	1	2	1	1	1	2	2	1	1
Sivakasi Sub-District, Virudhunagar District																			
9	1	Edirkottai	1	1	2	2	2	2	2	2	1	2	1	1	1	2	2	1	1
10	2	Kongankulam	1	2	1	1	2	1	2	2	2	2	1	1	1	2	2	2	1
11	3	Alangulam (Part)	1	1	1	1	2	2	2	1	1	1	1	1	1	2	1	1	1
12	4	Kundayiruppu	1	2	2	1	2	2	2	2	1	2	1	1	1	2	2	2	1
13	5	Kangaraseval	1	2	1	1	1	2	2	2	1	2	1	1	1	2	2	2	2
14	6	Vembakottai	1	1	1	1	2	2	2	1	1	1	1	1	1	2	1	2	2
15	7	Surarpatti	1	2	1	1	2	2	2	2	2	2	1	1	1	2	2	2	2
16	8	Lakshmipuram	1	1	1	1	2	2	2	2	1	2	1	1	1	2	2	2	1
Sattur Sub-District, Virudhunagar District																			
17	1	Sankarapandiyapuram	1	2	2	1	2	2	1	2	1	2	1	1	1	2	2	1	2
18	2	Thlukkankurichchi	1	2	1	1	2	2	2	2	2	2	1	1	1	2	2	1	1
19	3	Sippipparai	2	2	1	1	2	2	2	2	1	2	1	1	1	2	2	2	1
Sankarankoil Sub-District,Tirunelveli District																			
20	1	Kalingappatti	1	1	1	1	2	2	2	2	1	2	1	1	2	2	1	2	1
21	2	Naduvappatti	1	2	2	1	2	2	2	2	2	2	1	1	1	2	2	1	1
22	3	Maipparai	1	2	1	2	2	2	2	2	1	2	1	1	1	2	2	2	2
23	4	Sangupatti	1	1	1	1	2	2	2	2	2	2	1	1	2	2	2	2	2
24	5	Vellakulam	1	1	2	2	2	2	2	2	1	2	1	1	1	2	2	2	2
25	6	A.Karisalkulam	1	2	1	2	2	2	2	2	1	2	1	1	1	2	2	2	2
26	7	Kulasekarapperi	1	2	2	2	2	2	2	2	1	2	1	1	1	2	2	2	2
27	8	Kurunjakulam	1	1	2	1	2	2	2	2	1	2	1	1	1	2	2	2	2
28	9	Sundaresapuram	1	2	1	1	2	2	2	2	1	2	1	1	1	2	2	2	2
29	10	Kulakkattakurichi	1	2	1	1	2	2	2	2	1	2	1	1	1	2	2	2	2
Kovilpatti Sub-District,Thoothukkudi District																			
30	1	Sundaresapuram	1	2	2	1	2	2	2	2	2	2	1	1	1	2	2	2	2
31	2	Kuruvinatham	2	2	2	1	2	2	2	2	2	2	1	1	1	2	2	2	2
32	3	Mukkuttumalai	1	2	1	1	2	2	2	2	2	2	1	1	1	2	2	2	2
33	4	Lakshmiammalpuram	1	2	1	1	2	2	2	2	2	2	1	1	1	2	2	2	2
34	5	Nakkalamuthanpatti	1	1	1	1	2	2	2	2	2	2	1	1	1	2	2	1	1
35	6	Vadakkuppatti	1	2	2	2	2	2	2	2	2	2	1	1	1	2	2	2	2

*Source: District Primary Cences Absract, Virudhunagar, Tirunelveli, Thoothukkudi District of Tamilnadu State-2011

Note : A: Available, NA- Not Available, A(1), NA(2)



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DEPARTMENT OF INDUSTRIES AND COMMERCE REGISTERED COMPANY)

AMBIENT AIR QUALITY

Project	:	Rough Stone and Gravel Quarry Of Thiru. S. Balakrishnan
Name of the Location	:	Near Mine Lease Area
Station Code	:	A1

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	04.03.2025	72.9	34.5	8.6	12.1
2	05.03.2025	67.8	32.4	7.7	10.8
3	15.03.2025	61.6	29.3	6.1	9.2
4	16.03.2025	70.7	33.5	8.2	11.6
5	18.03.2025	57.4	27.3	5.1	8.2
6	19.03.2025	62.9	29.9	6.5	9.6
7	29.03.2025	60.2	28.6	5.7	8.8
8	30.03.2025	65.1	30.9	7.1	10.2
9	01.04.2025	58.2	27.6	5.3	8.4
10	02.04.2025	63.7	30.3	6.7	9.8
11	12.04.2025	62.3	29.5	6.3	9.4
12	13.04.2025	71.4	33.8	8.3	11.7
13	15.04.2025	73.9	35.7	8.9	12.4
14	16.04.2025	68.6	32.5	7.9	11.3
15	26.04.2025	66.5	31.6	7.3	10.4
16	27.04.2025	71.6	33.9	8.4	11.8
17	29.04.2025	72.2	34.3	8.5	12.1
18	30.04.2025	67.2	31.9	7.5	10.6
19	10.05.2025	73.5	34.7	8.7	12.2
20	11.05.2025	69.3	32.8	7.9	11.2
21	13.05.2025	62.1	28.9	5.9	9.1
22	14.05.2025	70.1	33.2	8.1	11.4
23	24.05.2025	59.6	28.4	5.5	8.6
24	25.05.2025	64.4	30.5	6.9	10.2
	MIN	57.4	27.3	5.1	8.2
	AVE	66.4	31.5	7.2	10.5
	MAX	73.9	35.7	8.9	12.4

Note: BDL – Below Detectable Limit, DL: Detectable Limit.

Prepared by



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AMBIENT AIR QUALITY

Project	:	Rough Stone and Gravel Quarry Of Thiru. S. Balakrishnan
Name of the Location	:	Appaiyanayakkanpatti Village
Station Code	:	A2

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	04.03.2025	66.1	30.9	8.0	11.5
2	05.03.2025	61.9	28.9	6.6	10.6
3	15.03.2025	55.4	25.9	5.7	8.9
4	16.03.2025	58.6	27.4	6.2	9.8
5	18.03.2025	50.6	23.7	5.1	8.1
6	19.03.2025	54.6	25.5	5.6	8.6
7	29.03.2025	60.2	28.3	6.4	10.1
8	30.03.2025	56.2	26.3	5.9	9.2
9	01.04.2025	49.0	22.9	4.9	7.9
10	02.04.2025	57.0	26.6	6.0	9.3
11	12.04.2025	67.4	31.5	8.4	11.8
12	13.04.2025	62.6	29.3	6.7	10.9
13	15.04.2025	58.1	27.0	6.1	9.5
14	16.04.2025	64.2	30.0	7.0	11.1
15	26.04.2025	52.2	24.4	5.3	8.3
16	27.04.2025	59.4	27.7	6.3	9.9
17	29.04.2025	51.4	24.0	5.2	8.2
18	30.04.2025	53.0	24.8	5.4	8.4
19	10.05.2025	68.0	31.7	8.6	12.0
20	11.05.2025	63.4	29.6	6.9	10.9
21	13.05.2025	49.9	23.3	5.1	8.1
22	14.05.2025	54.0	25.2	5.5	8.5
23	24.05.2025	65.0	30.3	7.3	11.3
24	25.05.2025	61.0	28.5	6.5	10.2
	MIN	49.0	22.9	4.9	7.9
	AVE	58.3	27.2	6.3	9.7
	MAX	68.0	31.7	8.6	12.0

Note: BDL – Below Detectable Limit, DL: Detectable Limit.

Prepared by



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AMBIENT AIR QUALITY

Project	:	Rough Stone and Gravel Quarry Of Thiru. S. Balakrishnan
Name of the Location	:	Akkaraipatti Village
Station Code	:	A3

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	06.03.2025	47.0	22.0	5.6	8.6
2	07.03.2025	57.8	27.6	4.9	7.9
3	13.03.2025	53.0	24.8	6.5	9.6
4	14.03.2025	48.2	22.5	5.8	8.9
5	20.03.2025	52.4	24.5	6.4	9.5
6	21.03.2025	60.9	29.2	5.2	8.2
7	27.03.2025	51.6	26.4	4.7	7.8
8	28.03.2025	47.8	25.4	5.3	8.3
9	03.04.2025	58.2	23.9	6.3	9.4
10	04.04.2025	53.4	27.2	4.8	7.8
11	10.04.2025	52.4	26.7	4.6	7.6
12	11.04.2025	50.2	23.4	6.1	9.2
13	17.04.2025	53.9	25.1	4.3	7.3
14	18.04.2025	55.7	28.9	5.4	8.4
15	24.04.2025	49.0	22.9	5.9	9.1
16	25.04.2025	50.6	23.7	6.2	9.3
17	01.05.2025	48.9	23.4	5.1	8.1
18	02.05.2025	49.4	23.1	6.0	9.2
19	08.05.2025	53.4	25.0	6.6	9.9
20	09.05.2025	47.6	22.3	5.7	8.8
21	15.05.2025	52.1	24.8	4.5	7.5
22	16.05.2025	54.3	26.9	5.1	8.2
23	22.05.2025	49.9	23.5	4.4	7.4
24	23.05.2025	53.4	26.9	5.5	8.5
	MIN	47.0	22.0	4.3	7.3
	AVE	52.1	25.0	5.5	8.5
	MAX	60.9	29.2	6.6	9.9

Note: BDL – Below Detectable Limit, DL: Detectable Limit.

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CREATIVE ENGINEERS & CONSULTANTS

(NABET ACCREDITED, NABL ACCREDITED TESTING LABORATORY,
DEPARTMENT OF INDUSTRIES AND COMMERCE REGISTERED COMPANY)

AMBIENT AIR QUALITY

Project	:	Rough Stone and Gravel Quarry Of Thiru. S. Balakrishnan
Name of the Location	:	Kundampatti Village
Station Code	:	A4

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	06.03.2025	59.4	28.7	6.9	9.6
2	07.03.2025	56.0	27.0	6.3	9.1
3	13.03.2025	49.6	24.0	5.3	8.1
4	14.03.2025	51.0	24.6	5.5	8.3
5	20.03.2025	45.4	21.9	4.6	7.4
6	21.03.2025	53.1	25.6	5.9	8.6
7	27.03.2025	58.7	28.3	6.7	9.5
8	28.03.2025	51.7	25.0	5.6	8.4
9	03.04.2025	46.9	22.7	4.9	7.6
10	04.04.2025	52.4	25.3	5.7	8.5
11	10.04.2025	62.2	30.0	7.3	10.5
12	11.04.2025	58.0	28.0	6.6	9.4
13	17.04.2025	47.5	23.0	5.0	7.8
14	18.04.2025	54.2	26.2	6.0	8.8
15	24.04.2025	46.1	22.3	4.7	7.5
16	25.04.2025	50.3	24.3	5.4	8.2
17	01.05.2025	60.1	29.0	7.0	9.9
18	02.05.2025	56.6	27.3	6.4	9.2
19	08.05.2025	48.2	23.3	5.1	7.9
20	09.05.2025	54.5	26.3	6.1	8.9
21	15.05.2025	49.0	23.7	5.2	8.0
22	16.05.2025	55.3	26.7	6.2	9.0
23	22.05.2025	61.5	29.7	7.2	10.3
24	23.05.2025	57.3	27.7	6.5	9.3
	MIN	45.4	21.9	4.6	7.4
	AVE	53.5	25.9	5.9	8.7
	MAX	62.2	30.0	7.3	10.5

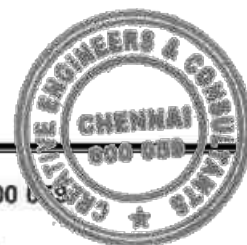
Note: BDL – Below Detectable Limit, DL: Detectable Limit.

Prepared by

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DEPARTMENT OF INDUSTRIES AND COMMERCE REGISTERED COMPANY)

AMBIENT AIR QUALITY

Project	:	Rough Stone and Gravel Quarry Of Thiru. S. Balakrishnan
Name of the Location	:	Ammiyarpatti Village
Station Code	:	A5

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	08.03.2025	47.5	22.7	5.6	8.0
2	09.03.2025	51.7	25.0	6.4	8.8
3	11.03.2025	55.4	27.2	7.0	10.3
4	12.03.2025	51.1	24.8	6.3	8.6
5	22.03.2025	42.7	20.4	4.7	7.1
6	23.03.2025	45.1	21.7	5.2	7.5
7	25.03.2025	53.0	25.6	6.7	9.0
8	26.03.2025	43.9	21.0	5.0	7.3
9	05.04.2025	41.1	19.8	4.4	6.8
10	06.04.2025	45.7	22.0	5.3	7.6
11	08.04.2025	41.5	19.8	4.4	6.9
12	09.04.2025	46.9	22.4	5.5	7.9
13	19.04.2025	43.3	20.7	4.9	7.2
14	20.04.2025	48.1	23.0	5.7	8.1
15	22.04.2025	46.4	22.2	5.4	7.8
16	23.04.2025	50.5	24.4	6.2	8.5
17	03.05.2025	42.1	20.2	4.6	7.0
18	04.05.2025	48.7	23.3	6.1	8.2
19	06.05.2025	53.5	25.8	6.7	9.1
20	07.05.2025	49.3	23.6	6.0	8.3
21	17.05.2025	44.5	21.4	5.1	7.4
22	18.05.2025	52.3	25.3	6.5	8.9
23	20.05.2025	54.1	26.5	7.0	9.9
24	21.05.2025	49.9	23.8	6.1	8.4
	MIN	41.1	19.8	4.4	6.8
	AVE	47.8	23.0	5.7	8.1
	MAX	55.4	27.2	7.0	10.3

Note: BDL – Below Detectable Limit, DL: Detectable Limit.

Prepared by

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AMBIENT AIR QUALITY

Project	:	Rough Stone and Gravel Quarry Of Thiru. S. Balakrishnan
Name of the Location	:	Avudaiyarpuram Village
Station Code	:	A6

SL.NO	DATE	PM10	PM2.5	SO2	NO2
1	08.03.2025	47.9	22.2	5.6	8.8
2	09.03.2025	50.7	23.4	6.2	9.3
3	11.03.2025	42.0	19.4	4.0	7.1
4	12.03.2025	43.9	20.3	4.5	7.6
5	22.03.2025	51.0	23.6	6.5	9.5
6	23.03.2025	47.5	22.0	5.5	8.6
7	25.03.2025	42.3	19.6	4.1	7.2
8	26.03.2025	45.5	21.1	5.1	8.1
9	05.04.2025	48.7	22.5	5.9	9.2
10	06.04.2025	43.5	20.2	4.4	7.5
11	08.04.2025	41.5	19.2	3.9	7.1
12	09.04.2025	45.1	20.9	4.9	8.0
13	19.04.2025	49.5	22.9	6.0	9.1
14	20.04.2025	46.7	21.6	5.3	8.4
15	22.04.2025	42.7	19.8	4.2	7.3
16	23.04.2025	46.3	21.4	5.2	8.3
17	03.05.2025	51.9	24.1	6.7	9.6
18	04.05.2025	48.3	22.3	5.7	8.9
19	06.05.2025	44.3	20.5	4.6	7.8
20	07.05.2025	45.9	21.2	5.1	8.2
21	17.05.2025	43.1	19.9	4.3	7.4
22	18.05.2025	44.7	20.7	4.7	7.9
23	20.05.2025	50.3	23.3	6.1	9.2
24	21.05.2025	47.1	21.8	5.4	8.5
	MIN	41.5	19.2	3.9	7.1
	AVE	46.3	21.4	5.2	8.3
	MAX	51.9	24.1	6.7	9.6

Note: BDL – Below Detectable Limit, DL: Detectable Limit.

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WATER QUALITY DATA

Project Name	:	Rough Stone and Gravel Quarry Of Thiru. S. Balakrishnan	
Location Name	:		

S. No.	Parameter	Unit	W1	W 2	W 3	W 4	W 5	W 6	*Permissible Limits
1	pH	-	7.56	7.34	7.25	7.52	7.67	7.32	6.5-8.5
2	Electrical Conductivity	µmhos/cm	984.5	936.2	564.8	812.2	497.6	920.6	-
3	Odor	-	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE	AGREEABLE
4	Turbidity	NTU	<1	<1	<1	<1	<1	<1	5.0
5	Total Hardness as CaCO ₃	mg/L	322	396	208	286	194	378	600
6	Calcium Hardness CaCO ₃	mg/L	179	212	70.5	168	102	260	-
7	Magnesium Hardness CaCO ₃	mg/L	143	184	138	118	92.0	118	-
8	Calcium Ca	mg/L	71.6	84.8	28.2	67.2	40.8	104	200
9	Magnesium	mg/L	34.3	44.2	33.0	28.3	22.1	28.3	100

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S. No.	Parameter	Unit	W1	W 2	W 3	W 4	W 5	W 6	*Permissible Limits
	Mg								
10	Alkalinity CaCO ₃	mg/L	287	310	296	302	284	279	600
11	Chloride Cl ⁻	mg/L	78.6	159	90.5	114	39.5	164	1000
12	Sulphate SO ₄ ²⁻	mg/L	25.5	23.5	19.7	20.5	16.2	36.5	400
13	Iron Fe	mg/L	0.09	0.04	0.03	0.05	BDL(D.L - 0.01)	0.08	0.3
14	Nitrate NO ₃	mg/L	5.32	1.95	1.47	1.65	BDL(D.L – 1.0)	1.44	45
15	Fluoride F	mg/L	0.52	0.48	0.23	0.38	BDL(D.L – 0.1)	0.41	1.5
16	Total Dissolved Solids	mg/L	590.7	561.72	338.88	487.32	298.56	552.36	2000
17	Free Residual Chlorine Cl ⁻	mg/L	BDL (D.L-0.2)	BDL (D.L-0.2)	BDL (D.L-0.2)	BDL(D.L-0.2)	BDL(D.L-0.2)	BDL(D.L-0.2)	1.0
18	Manganese Mn	mg/L	BDL (D.L-0.05)	BDL (D.L-0.05)	BDL (D.L-0.05)	BDL (D.L-0.05)	BDL (D.L-0.05)	BDL (D.L-0.05)	0.3

Note: * The water quality of the collected ground water samples were found to be within the prescribed permissible limits of IS: 10500:2012 Norms for Drinking in the absence of an alternative source.

Prepared by



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LAND USE PATTERN OF THE STUDY AREA WITHIN 10 KM RADIUS AROUND THE PROPOSED PROJECT AREA

Sl.No	No. of Villages	Name of village	Total Geographical Area (in Hectares)	Forest Area (in Hectares)	Area under Non-Agricultural Uses (in Hectares)	Barren & Un-cultivable Land Area (in Hectares)	Permanent Pastures and Other Grazing Land Area (in Hectares)	Land Under Miscellaneous Tree Crops etc. Area (in Hectares)	Culturable Waste Land Area (in Hectares)	Fallows Land other than Current Fallows Area (in Hectares)	Current Fallows Area (in Hectares)	Total Unirrigated Land Area (in Hectares)	Area Irrigated by Source (in Hectares)
0-2 km,Sivakasi Sub-District, Virudhunagar District													
1	1	Appanayakkanpatti	1582.78	0	206.49	14.57	4.18	0	3.88	0	633.33	416.45	303.88
		total (A)	1582.78	0	206.49	14.57	4.18	0	3.88	0	633.33	416.45	303.88
2-5 km,Sivakasi Sub-District, Virudhunagar District													
2	1	Kilanmarinadu	2765	0	586.05	0	6	20	5.8	1764.53	76.3	277.7	28.62
Sattur Sub-District, Virudhunagar District													
3	1	Sevalpatti	1163.3	0	249.2	0	0	0	719	0	0	114.9	80.2
4	2	Kuganparai	430.5	0	107.4	0	0	0	213.4	0	0	98.9	10.8
Sankarankoil Sub-District,Tirunelveli District													
5	1	Chattrappatti	599.1	0	134.35	0	0	0	0	172.47	11.61	35.48	245.19
6	2	Varaganur	1402.4	0	102.92	0.74	0	0	0	439.68	0	830.37	28.69
		total (B)	6360.3	0	1179.92	0.74	6	20	938.2	2376.68	87.91	1357.35	393.5
5-10 km,Rajapalayam Sub-District, Virudhunagar District													
7	1	Gopalapuram	1088.78	0	57.46	0	0	265.35	0.94	262.91	190.15	163.72	148.25
8	2	Vadagarai	929.81	0	246.54	0	0	0	0.06	275.33	139.89	28.14	239.85
Sivakasi Sub-District, Virudhunagar District													
9	1	Edirkottai	1916	0	151.39	0	1.8	8.81	9.1	1459.59	68.06	188.48	28.77
10	2	Kongankulam	128.59	0	5.81	0	0	0.01	0.51	16.29	27.43	65.95	12.59
11	3	Alangulam (Part)	1491.2	0	102.14	20	3.4	38.05	5.21	944.23	157.45	196.89	23.83
12	4	Kundayiruppu	1464.07	0	225.42	0	3.09	15	2	768.64	205.16	205.59	39.17
13	5	Kangaraseval	943.49	0	66.79	0	0	0	2.13	0	711.22	85.1	78.25
14	6	Vembakottai	1481.07	0	466.31	0	0	0	0	0	862.39	92.87	59.5
15	7	Surarpatti	486.8	0	75.29	0	4.7	21.1	3.04	317.57	13.25	47.85	4
16	8	Lakshmpuram	2000.71	0	200.63	85.04	1.9	39.66	3.5	1229.55	61.7	314.18	64.55
Sattur Sub-District, Virudhunagar District													
17	1	Sankarapandiyapuram	1061.43	0	206.59	20.01	3	90.34	211	382.24	20.2	125.84	2.21

18	2	Thlukkankurichchi	1168.81	0	293.08	0	60	60.1	221.84	266.93	0	257.35	9.51
19	3	Sippipparai	898.1	0	65.7	0	0	0	262.2	0	0	550.9	19.3
Sankarankoil Sub-District,Tirunelveli District													
20	1	Kalingappatti	2766.17	0	249.47	0	0	14.72	145.2	10.25	989.89	1221.11	135.53
21	2	Subbiahpuram	22.72	0	0.62	0	0	0	0	0	0.07	22.03	0
22	3	Naduvappatti	789.29	0	72.93	0	0	0	0	68.32	45.01	599.78	3.25
23	4	Maipparai	1024.54	0	165.17	0	0	0	0	34.68	35.32	783.97	5.4
24	5	Sangupatti	792.05	0	40.58	0.53	0	0	0.53	97.52	4.73	617.62	30.54
25	6	Vellakulam	1524.27	0	179.05	2.25	0	29	187	441.19	50.33	480.96	154.49
26	7	A.Karisalkulam	1894.12	0	248.15	0.39	0	34	2.07	391.28	309.46	763.48	145.29
27	8	Kulasekarapperi	28.49	0	5.72	0	0	0	0	4.04	0.74	17.99	0
28	9	Kurunjakulam	753.22	0	88.28	0	0	0	0.3	104.48	40.6	486.29	33.27
29	10	Sundaresapuram	269.2	0	9.77	0	0	0	0	0	28.59	230.84	0
30	11	Kulakkattakurichi	444.87	0	31.71	0	0	0	0	10.6	42.54	357.56	2.46
Kovilpatti Sub-District,Thoothukkudi District													
31	1	Sundaresapuram	611.04	0	60.74	0	0	5.95	12.53	132.43	42.11	329.18	28.1
32	2	Kuruvinatham	681.36	0	67.36	22	0	5.11	24.85	83.48	11.43	411.22	55.91
33	3	Mukkuttumalai	811.62	0	137.11	20.97	0	0	0	244.19	0	402.31	7.04
34	4	Lakshmiammalpuram	343.01	0	35.26	0	0	0	0	257.12	4.03	44	2.6
35	5	Nakkalamuthanpatti	630.65	0	45.99	3	0	0	0.07	230.22	0	351.17	0.2
36	6	Vadakkuppatti	574.47	0	42.23	2.5	0	0	0	9.49	131.87	378.04	10.34
		total (C)	29019.95	0	3643.29	176.69	77.89	627.2	1094.08	8042.57	4193.62	9820.41	1344.2
		Grand Total (A+B+C)	36963.03	0	5029.7	192	88.07	647.2	2036.16	10419.25	4914.86	11594.21	2041.58

*Source: District Primary Cences Absract, Virudhunagar, Tirunelveli, ThoothukkudiDistrict of Tamilnadu State-2011

SEAL COPY

**MINING PLAN AND ENVIRONMENT
MANAGEMENT PLAN FOR QUARRYING
ROUGHSTONE & GRAVEL**

PREPARED UNDER RULE 19 (1) & 20 and as per Amendment under rule no 41 & 42
TAMILNADU MINOR MINERAL CONCESSION RULES, 1959

For Obtaining Environmental Clearance from State Level Environment Impact
Assessment Authority

(Lease Period – Ten years)

IN

LOCATION OF THE QUARRY LEASE APPLIED AREA

EXTENT	:	1.60.50 Hectares
SURVEY No.	:	203/7
VILLAGE	:	APPAYYANAYAKKANPATTI
TALUK	:	VENBAKOTTAI
DISTRICT	:	VIRUDHUNAGAR

FOR APPLICANT :

**S. BALAKRISHNAN,
S/o. Shri. Sankappan,
No.1/105, West Street,
Vellur, Virudhunagar Taluk,
Virudhunagar District.**

PREPARED BY

**M.DHARMALINGAM,
M.Sc.,(Geol.),FCC(Mining)**

Qualified Person

Registration No. **RQP/MAS/260/2014/A**,
No.28, Polpettai,

Thoothukudi – 628002. Cell: 9952808328

S. BALAKRISHNAN,
S/o. Shri. Sankappan,
No.1/105, West Street,
Vellur, Virudhunagar Taluk,
Virudhunagar District.
Mobile No. 97879 69094



CONSENT LETTER FROM THE APPLICANT

I, hereby give my consent to prepare the Mining Plan for the quarry lease approval of Rough stone & Gravel over an extent of 1.60.50 Hectares in S.F.No: 203/7 of Appayanayakkanpatti Village, Vembakottai Taluk, Virudhunagar District, vide The Assistant Director, Geology and Mining, Virudhunagar, Letter No. KV1/717/2024 - dated 24.12.2024 and submit by

Sri. M. Dharmalingam,
M.Sc(Geol.), FCC(Mining),
Qualified Person,,

I request the Assistant director, Geology & Mining, Virudhunagar to make further correspondence regarding the modification of the Mining Plan with said Recognized Qualified Person at his following address:

Shri. M. Dharmalingam,
M.Sc.,(Geol.), FCC(Mining),
No.28, Pol Pettai,
Thoothukudi – 628002.
Cell : 9952808328

I hereby undertake that all the modifications, if any made in the mining plan by the Recognized 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 respect.

Place :Virudhunagar
Date :

Signature of the Applicant.

S. Balakrishnan

(S. Balakrishnan)

S. BALAKRISHNAN,
S/o. Shri. Sankappan,
No.1/105, West Street,
Vellur, Virudhunagar Taluk,
Virudhunagar District.
Mobile No. 97879 69094



DECLARATION OF THE APPLICANT

The Mining Plan in respect of the quarry lease approval of **Rough stone & Gravel** over an extent of **1.60.50 Hectares** in **S.F.No: 203/7 of Appayanayakkanpatti Village, Vembakottai Taluk, Virudhunagar District** has been prepared in full consultation with me.

I have understood its contents and agree to implement the same in accordance with Laws, Rules and Act applicable to quarry.

Place : Virudhunagar
Date :

Signature of the Applicant.


(S. Balakrishnan)

Shri. M. DHARMALINGAM,
M.Sc.,(Geol.), FCC(Mining),
Qualified Person,
Reg. No. RQP/MAS/260/2014/A
No.28, Pol Pettai,
Thoothukudi – 628 002.
Cell :99528 08328



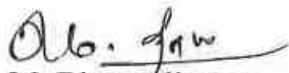
CERTIFICATE FROM THE RECOGNIZED QUALIFIED PERSON

This is to certify that the provisions of the Mines Act, Rules and Regulations, Minor Mineral Conservation and Development Rules, 2010 & as per Amendment Rules under Tamil Nadu Minor Mineral Concession Rules, 1959etc., made there under have been observed in the preparation of Mining Plan for Rough stone and Gravel quarry for **Thiru. S. Balakrishnan, S/o. Shri. Sankappan** over an extent of **1.60.50 Hectares** in **S.F.No: 203/7 of Appayanaickkanpatti Village, Vembakottai Taluk, Virudhunagar District.**

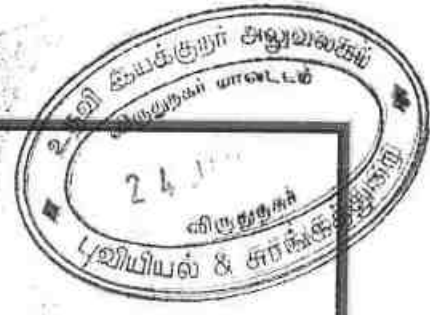
Where ever the necessary permissions / exemptions / relaxations and approvals are required, the applicant would approach the concerned authorities of State and Central Governments for granting such permissions etc..

Place : Thoothukudi

Date : 28/12/2024


M. Dharmalingam,
M.Sc.,(Geol.), FCC(Mining),
Qualified Person.

M. DHARMALINGAM
M.Sc.,(Geol.) FCC.,(Mining)
Qualified Person
RQP / MAS / 260 / 2014 / A



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11.0	Mine Closure Plan	30
12.0	Any other Information	31



LIST OF ANNEXURES

Sl.No.	DESCRIPTION	ANNEXURE
1	Copy of Precise area Communication	I
2	I.D. Proof of the applicant (Aadhar & Pan Card Copies)	II
3	Hydrogeological Report	III
4	Copy of Qualified Person Certificates	IV
5	Copies of FMB & Village map	V
6	Field photographs attested by VAO & VAO Certificate	VI
7	Copies of Patta, 10-1 Adangal and A-register	VII
8	Land Agreement & Land Document copies	VIII
9	RDO, Tasildar, R.I., V.A.O. Report & A1- Notice	IX
10	Explosive Licence agreement and Licence copies	X

LIST OF PLATES

S.NO	DESCRIPTION	PLATE No.	SCALE
1	LOCATION PLAN	I	Not to Scale
2	ROUTE MAP	I A	Not to Scale
3	TOPOSKETCH 10KM RADIUS	II	1:100000
4	LEASE PLAN	III	1 : 1000
5	SURFACE CUM GEOLOGICAL PLAN & SECTIONS	IV	1 : 2000
6	LAND USE CUM YEARWISE PRODUCTION PLAN & SECTIONS	V	1 : 2000
7	CONCEPTUAL MINING PLAN & SECTIONS	VI	1 : 2000
8	ENVIRNMENT CUM SATILITE IMAGERY PLAN	VII	1 : 5000
9	VILLAGE MAP	VII-A	1 : 5000
10	PROGRESSIVE MINE CLOSURE PLAN	VIII	1 : 2000

**MINING PLAN INCLUDING ENVIRONMENT MANAGEMENT
ROUGH STONE & GRAVEL QUARRY OVER AN EXTENT OF 1-60.50 Ha IN
APPAYYANAICKKANPATTI VILLAGE, VEMBAKOTTAI TALUK,
VIRUDHUNAGAR DISTRICT, TAMILNADU**

(Prepared Under Rule 19 (1) and as per Amendment under rule no 41& 42
Tamilnadu Minor Mineral Concession Rules, 1959)

1.0 Introduction and Executive Summary:

2. The present mining plan is prepared for **Thiru. S. Balakrishnan, S/o. Shri. Sangappan**, residing at 1/105, West Street, Vellur, Virudhunagar Taluk, Virudhunagar District.
3. The application was processed by The Assistant Director, Department of Geology and Mining, Virudhunagar, Letter.No. KV1/717/2024 - dated 24.12.2024 directing the applicant to produce approved Mining Plan and Environmental Clearance certificate from the State Level Environmental Impact Assessment Authority(SEIAA)for the grant of quarry lease to quarry **Rough Stone & Gravel** over an extent **1.60.50 Hectares** of patta lands in S.F.No. 203/7 of **Appayanayyakanpatti Village, Vembakottai Taluk, Virudhunagar District** of **Tamil Nadu State** for a period of **Ten years**.
4. Accordingly, Mining Plan is prepared under the provisions of rule 19(1) &41, 42 as per the amendments under TamilNadu Minor Mineral Concession Rules, 1959 by incorporating the conditions imposed in the precise area communication letter.
5. Geological Resources is estimated at **6,11,800m³** of **Rough Stone**, **16,100m³** **Gravel** and Mineable Reserves is estimated at **1,85,232m³** of **Rough Stone**, **11,834m³** of **Gravel** after leaving necessary safety distance from the lease boundary as indicated in the precise area letter and relevant mining laws in force.

6. Production Schedule is proposed for the ten year mining plan about **1,83,232m³ of Rough Stone, 11,834m³ of Gravel.**

7. Environmental parameters,

- i) The area does not attract the Forest Conservation Act, 1980 as there is no forest around 1 Km radius.
- ii) There is no interstate boundary around 10Kms radius.
- iii) There is no wild life animal sanctuary / Eco sensitive zone within 1 Kms radius from the project site area under the Wildlife (Protection) Act, 1972.
- iv) There is no approved habitation within 300m radius

Therefore the project seeks clearance only from State Level Environmental Impact Assessment Authority (SEIAA).

8. Environmental measures to be adopted shall be,

- i) Dust Control at source while drilling and blasting,
- ii) Dust suppression at loading point and transport haul roads,
- iii) Noise Control in blasting, control of fly rock missiles and vibration by doing peak particle velocity with in standard as prescribed by the DGMS and MOEF.
- iv) Unnecessary land degradation should be avoided or damaged land should be reclaimed or rehabilitated.
- v) Avoid uneven rat hole mining and follow scientific and systematic mining by safe bench system of open cast mining.
- vi) Mining near major fracture zones if any should be avoided to control ground water fluctuation in the adjacent agricultural lands.
- vii) Emission test of vehicles should be in tact to maintain minimum emission level of flue gases.
- viii) Noise level should not exceed 80db and the vehicles should use only permitted Air Horn while on road near residential areas.

- ix) Safety zones as prescribed by the Department of Geology and Mining from adjacent infrastructures should be strictly adhere to.
- x) And any other conditions as stipulated by the concerned authorities should be followed to protect the environment.

EXECUTIVE SUMMARY:

a.	Name of the Village Panchayat	:	Appayyanayakkanpatti
b.	Name of the Panchayat Union	:	Vembakottai
c.	The proposed total Mineable Reserves	:	1,85,232m ³ of Rough Stone and 11.834m ³ of Gravel
d.	The proposed quantity of reserves (level of production) for ten years to be mined is (Recoverable reserves)	:	1,85,232m ³ of Rough Stone and 11.834m ³ of Gravel
e.	Total extent of the area	:	1-60.50 Ha
f.	Proposed Period of mining	:	Ten years
g.	Existing depth	:	New quarry
h.	Proposed Depth of mining	:	39m Below Ground Level
i.	Method of mining / level of mechanization	:	Opencast, Semi-mechanized Mining with a bench height of 5m and bench width of 6m is proposed.
j.	Types of Machineries used in the quarry	:	Machineries like Tractor mounted compressor attached with Jack hammers, Excavators are proposed to deploy for quarrying operation.
k.	Cost of the Project		
	A. Fixed Assets Cost		Rs. 10,18,700/- (7,93,700+2,25,000)
	B. Operational Cost		Rs. 24,00,000/-
	C. EMP Cost		Rs. 5,70,000/-
	D. Total Projectcost (A+B+C)		= Rs. 39,88,700/-

1. The area applied for lease is bounded by eight corners and the coordinates are clearly marked in plate no III.

Corners	Co- ordinates		Distance between the corners
	Latitude	Longitude	
1	9°17'43.89"N	77°41'36.40"E	1-2= 67.2m
2	9°17'44.71"N	77°41'38.45"E	2-3 = 67.6m
3	9°17'44.55"N	77°41'40.65"E	3-4= 107.0m
4	9°17'41.20"N	77°41'41.60"E	4-5= 12.6m
5	9°17'40.76"N	77°41'41.56"E	5-6= 79.6m
6	9°17'40.84"N	77°41'38.78"E	6-7= 52.6m
7	9°17'40.72"N	77°41'37.22"E	7-8= 26.6m
8	9°17'40.80"N	77°41'36.40"E	8-1= 94.4m

2.0 General Information:

2.1	a.	Name of the Applicant	:	Thiru. S. Balakrishnan
	b.	Address of the Applicant with phone No and e-mail id if any	:	S. Balakrishnan, S/o. Shri. Sankappan, 1/105, West Street, Vellur, Virudhunagar Taluk, Virudhunagar District – 626 005. Mobile No.: 97879 69094
	c.	Status of the Applicant	:	Individual
2.2	a.	Mineral Which the applicant intends to mine	:	Rough Stone & Gravel.
	b.	Precise area communication letter No.	:	Precise area communication letter received from The Assistant Director, Geology and Mining letter vide No. KV1/717/2024 - dated 24.12.2024.
	c.	Period of permission / lease granted	:	The grant of lease period is Ten years.

b. Mineable Reserve

The available mineable reserves are calculated entire life of the mine by leaving 10m safety distance from north and eastern side car track and 7.5 m safety distance from all remaining sides of applied lease area and bench loss.

Table No.-2

Section	Bench	Length (m)(P-Q)	Width (m)(A-B)	Depth (m)	Roughstone (cum)	Gravel (cum)
PQ-AB	I	122	97	1.0	-	11,834
	II	118	93	5.0	54,870	
	III	106	81	5.0	42,930	
	IV	94	69	5.0	32,430	
	V	82	57	5.0	23,370	
	VI	70	45	5.0	15,750	
	VII	58	33	5.0	9,570	
	VIII	46	21	5.0	4,830	
	IX	38	13	3.0	1,482	
Total Movable reserves					1,85,232	11,834

The mineable reserve is computed as 1,85,232m³ of Rough Stone and 11,834m³ of Gravel for the below ground level up to a depth of 39m.

5.0 Mining:

5.1	Method of Mining	of :	1. Opencast method of semi mechanized mining with 5.0m height bench and width of 6m. 2. However, as far as the quarrying of Rough stone is concerned, observance of the provisions of Regulation 106(2) (b) as above is seldom possible due to various inherent petro genetic factors coupled with mining difficulties. Hence it is proposed to obtain relaxation to the provisions of the above regulation from the Director of mines safety for which necessary provision is available with the regulation 106 (2) (b) of MMR-1961, under Mine Act-1952.

The Yearwise Production and Development

Table No 3

First Five year workings (I to V Year)

Section	Bench	Length (m) (P-Q)	Width (m) (A-B)	Depth (m)	PRODUCTION	
					Roughstone (cum)	Gravel (cum)
PQ-AB	I	32	97	1.0	-	3,104
	II	30	93	5.0	13,950	
	III	24	81	5.0	9,720	
I YEAR EXCAVATION					23,670	3,104
PQ-AB	I	28	97	1.0	-	2,716
	II	28	93	5.0	13,020	
	III	28	81	5.0	11,340	
II YEAR EXCAVATION					24,360	2,716
PQ-AB	I	28	97	1.0	-	2,716
	II	28	93	5.0	13,020	
	III	28	81	5.0	11,340	
III YEAR EXCAVATION					24,360	2,716
PQ-AB	I	34	97	1.0	-	3,298
	II	32	93	5.0	14,880	
	III	26	81	5.0	10,530	
IV YEAR EXCAVATION					25,410	3,298
PQ-AB	IV	40	69	5.0	13,800	-
	V	34	57	5.0	9,690	
	VI	28	45	5.0	6,300	
V YEAR EXCAVATION					29,790	-
FIRST FIVE YEARS PRODUCTION					1,27,590	11,834

Second Five year workings (VI to X Year)

Section	Bench	Length (m) (P-Q)	Width (m) (A-B)	Depth (m)	PRODUCTION	
					Roughstone (cum)	Gravel (cum)
PQ-AB	IV	35	69	5.0	12,075	-
VI YEAR EXCAVATION					12,075	-
PQ-AB	IV	19	69	5.0	6,555	-
	V	18	57	5.0	5,130	-
VII YEAR EXCAVATION					11,685	-
PQ-AB	V	30	57	5.0	8,550	-
	VI	12	45	5.0	2,700	-
VIII YEAR EXCAVATION					11,250	-
PQ-AB	VI	30	45	5.0	6,750	-
	VII	27	33	5.0	4,455	-
IX YEAR EXCAVATION					11,205	-
PQ-AB	VII	31	33	5.0	5,115	-
	VIII	46	21	5.0	4,830	-
	IX	38	13	3.0	1,482	-
X YEAR EXCAVATION					11,427	-
SECOND FIVE YEARS PRODUCTION					57,642	-
Total Ten Years Production					1,85,232	11,834

The applicant has proposed to carry out 1,85,232m³ of Rough Stone and 11,834m³ Gravel up to a depth of 39m below ground level for the period of Ten years.

5.5		Machineries to be used													
	a.	Mining	: It is proposed to use following machineries for quarrying rough stone 1) Tractor mounted compressor with jack hammer 2) Excavator of 1m ³ bucket capacity (with Rock breaker attachment).												
	b.	Loading	: Excavator of 1m ³ bucket capacity (with Rock breaker attachment).												
	c.	Transportation	: Tipper 4Nos 5/10Ts capacity												
5.6		Disposal of Overburden	: The entire overburden anticipated during rough stone quarrying operation has been sold out.												
5.7		Brief Note on Conceptual Mining Plan for the entire lease period	: Conceptual Mining Plan is prepared with an object of ten years of systematic development of bench lay outs, selection of ultimate pit limit, depth of quarrying, ultimate pit slope, selection of sites for construction of infrastructures etc. Ultimate pit size is designed based on certain practical factors such as the economical depth of mining, safety zones, permissible areas etc. Ultimate Pit dimension is given as under, <table><tr><th>Description</th><th>Length (Max) (m)</th><th>Width (Max) (m)</th><th>Depth (m)</th></tr><tr><td>End of the lease period</td><td></td><td></td><td></td></tr><tr><td>PQ – AB</td><td>122</td><td>97</td><td>39</td></tr></table>	Description	Length (Max) (m)	Width (Max) (m)	Depth (m)	End of the lease period				PQ – AB	122	97	39
Description	Length (Max) (m)	Width (Max) (m)	Depth (m)												
End of the lease period															
PQ – AB	122	97	39												

6.2	Types of Explosives	: Small dia, 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Roughstone. No deep hole drilling or primary blasting is proposed.															
6.3	Measures proposed to minimize ground vibration due to blasting	: Controlled blasting measures will be adopted for minimizing ground vibration and fly rock. Shallow depths jackhammer drilling and blasting is proposed to be carried out with minimum use of explosive mainly to give shattering effect in rough stone for easy excavation and to control fly rock. <table border="1"> <tr> <td>Number of holes</td><td>:</td><td>50</td></tr> <tr> <td>Powder factor</td><td>:</td><td>6Ts/Kg of explosives</td></tr> <tr> <td>Total explosive required</td><td>:</td><td>25Kg slurry explosives</td></tr> <tr> <td>Charge / hole</td><td>:</td><td>0.5Kg</td></tr> <tr> <td>Blasting time</td><td>:</td><td>12-2 Pm</td></tr> </table>	Number of holes	:	50	Powder factor	:	6Ts/Kg of explosives	Total explosive required	:	25Kg slurry explosives	Charge / hole	:	0.5Kg	Blasting time	:	12-2 Pm
Number of holes	:	50															
Powder factor	:	6Ts/Kg of explosives															
Total explosive required	:	25Kg slurry explosives															
Charge / hole	:	0.5Kg															
Blasting time	:	12-2 Pm															
6.4	Storage of Explosives and safety measures to be taken while blasting.	: The applicant will engage an authorized explosive agency to carry out the small amount of blasting and it will be supervised by competent and statutory foreman/ mines manager. (Agreement with explosive dealer for blasting is enclosed).															

7.0 Mine Drainage:

7.1	Depth of Water table	: The quarry operation is up to a depth of 39m below the ground level. The water table is at 55m BGL in rainy season and 60m BGL in summer season which is observed from the nearby wells and the data obtained from existing Government and private boreholes. Hence the ground water will not be affected in any manner due to the quarrying operation during the entire life period.

8.8	Any Interstate Border, Protected areas under the Wild Life (Protection) Act, 1972, Critically Polluted Areas as Identified by Central Pollution Control Board and Notified Eco sensitive areas	:	There are No inter State border within a radius of 10km.
8.9	Any Other Structures	:	Nil

8.10 . External infrastructures

Sl. No	Name of infrastructure	Name of village	Distance from area applied for M.L
1	Nearest Post office	Appayyanayakkanpatti	3Km
2	Nearest School	Sevalpatti	4Km
3	Nearest Dispensary	Thiruvengadam	2.5Km
4	Nearest Town	Thiruvengadam	5Km
5	Nearest Police station	Alangulam	10Km
6	Nearest Hospital	Thiruvengadam	5Km
7	Nearest DSP office	Sattur	30Km
8	Nearest Railway station	Sivakasi	25Km
9	Nearest Airport	Madurai	100 km
10	Nearest Sea Port	Thoothukudi	70 km
11	District Head Quarters	Virudhunagar	48Km

8.11. Details of Quarry situated within 500 meters radius from the applied area

S. No	Quarry details	Taluk & Village	S.F.No & Extent (Hect.)	Proceeding No & Lease period
I	Existing Quarries			
	Nil	---	---	---
II	Abandoned Quarries			
1	G. Ravikumar	Vembakottai & Appayanayakkanpatti	276,278, etc., (3.85.50 Hects)	KV1/938/2017 Dated : 13.12.2018
2	S. Subburaj	Vembakottai & Appayanayakkanpatti	44,46/1 (2.20.50 Hects)	KV1/7441/2017 Dated : 01.02.2019
3	P. Shunmugaraj	Vembakottai & Appayanayakkanpatti	207/2A,2B (1.91.50 Hects)	KV1/202/2018 Dated : 01.02.2019
4	Govt. Pit	Vembakottai & Appayanayakkanpatti	50 (----- Hects)	Perior - 2012
5	G. Ramasamy	Vembakottai & Appayanayakkanpatti	211/1A1,1A2,2A,etc., (0.93.00 Hects)	KV1/24590/2015 Dated : 01.02.2019
6	G. Ramasamy	Vembakottai & Appayanayakkanpatti	208/1,2,3& 214/1 (1.98.00 Hects)	KV1/1227/2014 Dated : 03.03.2016
7	S. Sivaraman	Vembakottai & Appayanayakkanpatti	39/3 (0.96.50 Hects)	KV1/788/2018 Dated : 17.09.2018
8	P. Shunmugaraj	Vembakottai & Appayanayakkanpatti	38/6A,41/2,43/3,6&48 (2.74.50 Hects)	KV1/27945/2014 Dated : 08.05.2017
9	S. Ramraj	Vembakottai & Appayanayakkanpatti	196/1A,197/1,etc., (2.88.00 Hects)	KV1/21616/2014 Dated : 09.02.2018
		Total	17.47.50 Hects	
III	Proposal Quarries			
1	R. Gopalakrishnan	Vembakottai & Appayanayakkanpatti	199/6A (1.08.00 Hects)	KV1/221/2022 Dated : 26.04.2022
2	S. Ragupathi	Vembakottai & Appayanayakkanpatti	196/2A,3,4&49 (1.86.50 Hects)	KV1/390/2019 Dated : 18.12.2020
3	R. Gayathri	Vembakottai & Appayanayakkanpatti	39/1A,1B2A&49 (2.30.20 Hects)	KV1/572/2019 Dated : 11.12.2019
4	S. Ramraj	Vembakottai & Appayanayakkanpatti	207/3A,3B, etc., (1.28.50 Hects)	KV1/638/2021 Dated : 01.09.2021
5	S. Subburaj	Vembakottai & Appayanayakkanpatti	43/1A,1B(p),45/1A1, (1.58.00 Hects)	KV1/523/2019 Dated : 12.05.2022
6	P. Shunmugaraj	Vembakottai & Appayanayakkanpatti	199/6B & 8 (1.08.00 Hects)	KV1/712/2022 Dated : 02.01.2023
7	G. Kaniraj	Vembakottai & Appayanayakkanpatti	202/1A2 (1.21.50 Hects)	KV1/158/2021 Dated : 13.08.2021
IV	Present Proposed Quarry			
1	S. Balakrishnan	Vembakottai & Appayanayakkanpatti	203/7 (1.60.50 Hects)	KV1/717/2024 Dated : 24.12.2024
		Total	12.01.20 Hects	

9.0 Employment Potential & Welfare Measures:



9.1	Employment Potential (Management & Supervisory personal)	:	1.	Skilled	Operator	2No.	
					Mechanic	1 No.	
					Mines manager /Mate	1 No.	
			2.	Semi – skilled	Driver	2 No	
			3.	Unskilled	Muzdoor / Labours	4 Nos	
				Total =			10 Nos
Allowing 10% absenteeism, the no. of men of roll will be around 9. The above man power is adequate to meet out the production schedule and the machinery strength envisaged in the mining plan and to comply the statutory provisions of Mines Safety Regulations. It is being ensured that, child labours under 18 years of age will not be engaged for quarrying operation. Necessary life insurance policies will be taken by the applicant to all the employees up to the end of the lease period.							
9.2	Welfare Measures						
	a.	Drinking Water	:	Packaged drinking water is available from the nearby approved water vendors.			
	b.	Sanitary facilities	:	Semi permanent latrines & urinals shall be maintained at convenient places for use of labours as per the provisions of Rule (33) of the Mines Rules, 1925 separately for males and females. Washing facilities shall also be arranged as per rule (36) of the Mines Rules, 1925.			

	c. First Aid Facility	: First aid kits are kept in Mines office room. In case of such eventualities the victim will be given first aid immediately at the site and injured person will be taken to the hospital. Hospital is available in Thiruvengadam at distance of 5 km. The competent and Statutory foreman/ permit manager will be in charge of first aid.
	d. Labour Health	: As per Mines Rule, Periodic medical examination related to occupational health safety will be conducted to all the workers in applicants own cost.
	e. Precautionary safety measures to the Labourers	: Safety provisions like helmet, goggles, safety shoes, Dust mask, Ear muffs etc will be provided as per the circulars and amendments made for Mine labours under the guidance of DGMS being a semi-mechanized operation. Necessary training will be conducted once in a year to all the employees with the help of qualified and experienced officers to train about the safe quarrying operation.

PART – B



10.0 Environmental Management Plan:

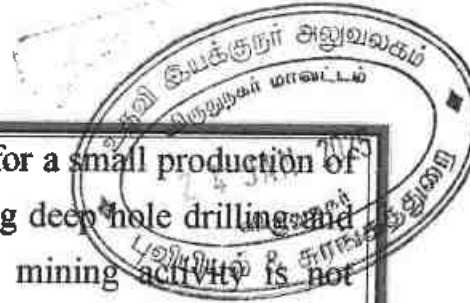
10.1	Existing Land Use Pattern	: 1. The lease applied area is plain terrain covered by massive rough stone formation. 2. Quarrying is proposed for up to a depth of 39m below ground level. 3. Fluctuation of Water table in this area is in between 55m and 60m during a year. 4. This region receives the average annual rainfall of 700mm to 800mm. The surrounding area is practiced by the seasonal cultivation. The existing land use pattern is given as under. Table No-5 <table><tr><th>Sl. No.</th><th>Land Use</th><th>Present Area (Hect)</th><th>Area in use during the quarrying period (Hect)</th></tr><tr><td>1.</td><td>Future Mining</td><td>Nil</td><td>1.18.50</td></tr><tr><td>2.</td><td>Infrastructure</td><td>Nil</td><td>0.01.00</td></tr><tr><td>3.</td><td>Roads</td><td>Nil</td><td>0.01.00</td></tr><tr><td>4.</td><td>Green Belt</td><td>Nil</td><td>0.35.00</td></tr><tr><td>5.</td><td>Fencing</td><td>Nil</td><td>0.05.00</td></tr><tr><td>6.</td><td>Unutilized</td><td>1.60.50</td><td>0.00.00</td></tr><tr><td></td><td>Total =</td><td>1.60.50</td><td>1.60.50</td></tr></table>	Sl. No.	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)	1.	Future Mining	Nil	1.18.50	2.	Infrastructure	Nil	0.01.00	3.	Roads	Nil	0.01.00	4.	Green Belt	Nil	0.35.00	5.	Fencing	Nil	0.05.00	6.	Unutilized	1.60.50	0.00.00		Total =	1.60.50	1.60.50
Sl. No.	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)																															
1.	Future Mining	Nil	1.18.50																															
2.	Infrastructure	Nil	0.01.00																															
3.	Roads	Nil	0.01.00																															
4.	Green Belt	Nil	0.35.00																															
5.	Fencing	Nil	0.05.00																															
6.	Unutilized	1.60.50	0.00.00																															
	Total =	1.60.50	1.60.50																															
10.2	Water Regime	: Water table in this area is noticed at a depth of 55m to 60m and presently, the quarrying of Rough Stone quarry is proposed up to a depth of 39m below ground level and hence, it will not affect the ground water depletion of this area.																																
10.3	Flora and Fauna	: Except Acacia bushes, no other valuable trees are noticed in the applied area. Further, neither flora of botanical interest nor fauna of zoological interest is noticed in this area.																																

* S. Manoj Kumar



10.4	Climatic conditions	: Generally subtropical climatic condition prevails throughout the year and there is no sharp variation in climate. This District receives rain both in south west and north east monsoon. The average rainfall is about 700mm to 800mm and the temperature ranges from 18°C during winter and to a maximum of 42°C during the summer.																				
10.5	Human Settlement	: The nearest habitations with the population is given as under Table No-6 <table><tr><th>DIRECT-ION</th><th>VILLAGE</th><th>POPULATION</th><th>DISTANCE</th></tr><tr><td>NE</td><td>Jakkammalpuram</td><td>200</td><td>1.00 Km</td></tr><tr><td>NW</td><td>Ramalingapuram</td><td>100</td><td>0.95 Km</td></tr><tr><td>South</td><td>Kundampatti</td><td>250</td><td>1.5 Km</td></tr><tr><td>West</td><td>Appayanayakkanpatti</td><td>600</td><td>2.0 Km</td></tr></table>	DIRECT-ION	VILLAGE	POPULATION	DISTANCE	NE	Jakkammalpuram	200	1.00 Km	NW	Ramalingapuram	100	0.95 Km	South	Kundampatti	250	1.5 Km	West	Appayanayakkanpatti	600	2.0 Km
DIRECT-ION	VILLAGE	POPULATION	DISTANCE																			
NE	Jakkammalpuram	200	1.00 Km																			
NW	Ramalingapuram	100	0.95 Km																			
South	Kundampatti	250	1.5 Km																			
West	Appayanayakkanpatti	600	2.0 Km																			
10.6	Plan for Air, Dust Suppression	: 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. Wet drilling and dust extractor arrangements will be provided to drilling units so as to control raise of dust from the site of drilling. Operators, those exposed directly to such conditions will be provide such protective equipments like mask, ear plug, helmet, gloves etc., as per the Mines Act.																				
10.7	Plan for Noise Control	: Quarrying of Rough Stone 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 to check the noise level in and around the quarry site. Nowhere the noise level should exceed the permissible limit of 80db during the quarry working hours.																				

* B. Sankar



10.8	Environmental Impact Assessment Statement Describing Impact on mining on the next five years	: The mining plan proposed is for a small production of Rough stone without involving deep hole drilling and heavy blasting. Such limited mining activity is not likely to cause any impact adversely on environment as far as pollution of air, water and noise is concerned, anyhow environmental impact studies will be conducted as per EIA notification issued by MOEF.																																				
10.9	Proposal for Waste Management	: There is no waste anticipated in this rough stone quarry operation.																																				
10.10	Proposal of Reclamation of Land affected during mining activities and at the end of mining.	: In the proposed mining plan only a maximum depth of 39m below ground level and has been envisaged as workable depth for safe & economic mining during the lease period. Hence, after quarry reaches ultimate pit limit (for this mining plan period) of 39m depth, fencing will be constructed around the quarried pits to prevent inherent entry of the public and cattle.																																				
10.11	Program for Afforestation	: The 7.5m, safety distance along the lease boundary has been identified to be utilized for afforestation. Appropriate native species of neem trees will be planted in a phased manner as described below. <u>Table – 7</u> <table border="1"> <thead> <tr> <th>Year</th> <th>No. of trees proposed to be planted</th> <th>Area to be covered in Sq.m</th> <th>Name of the species</th> </tr> </thead> <tbody> <tr> <td>I</td> <td>40</td> <td>350</td> <td rowspan="5">Neem & other Natural species</td> </tr> <tr> <td>II</td> <td>40</td> <td>350</td> </tr> <tr> <td>III</td> <td>40</td> <td>350</td> </tr> <tr> <td>IV</td> <td>40</td> <td>350</td> </tr> <tr> <td>V</td> <td>40</td> <td>350</td> </tr> <tr> <td>VI</td> <td>40</td> <td>350</td> <td rowspan="5">Neem & other Natural species</td> </tr> <tr> <td>VII</td> <td>40</td> <td>350</td> </tr> <tr> <td>VIII</td> <td>40</td> <td>350</td> </tr> <tr> <td>IX</td> <td>40</td> <td>350</td> </tr> <tr> <td>X</td> <td>40</td> <td>350</td> </tr> </tbody> </table> Nearly 3500 Sqm area is proposed to use under afforestation by planting 400 nos. of Neem & other Natural species trees. The Quarry land use, layout and afforestation plan is shown in Plate No.V, VIII.	Year	No. of trees proposed to be planted	Area to be covered in Sq.m	Name of the species	I	40	350	Neem & other Natural species	II	40	350	III	40	350	IV	40	350	V	40	350	VI	40	350	Neem & other Natural species	VII	40	350	VIII	40	350	IX	40	350	X	40	350
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VIII	40	350																																				
IX	40	350																																				
X	40	350																																				

* S. Lakshmi Narayanan



11.0 Mine Closure Plan:

11.1	Steps proposed for phased restoration, reclamation of already mined out area.	:	There is no proposal for back filling, reclamation and rehabilitation. The quarried pits after the end of the life of lease will be fenced to prevent inherent entry of public and cattle.
11.2	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 using Barbed wire fencing to prevent inherent entry of public and cattle.
11.3	Mitigation measures to be undertaken for safety and restoration/ reclamation of the already mined out area	:	Mitigation measures: Drilling will be carried out by wet drilling mode to control the dust propagation into the air. Blasting will be carried out on limited scale. Mist Water spraying on haul road is proposed to prevent the dust propagation into the air.

- * S. Vengal Rao



आयकर विभाग

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GOVT. OF INDIA

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ANAPPAN

3/04/1963

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ANNEXURE - III

Hydrogeological Report for Appayanaickenpatti

Roughstone and Gravel Quarry

1. INTRODUCTION:

DETAILS OF APPLICANT

Applicant's Name : Thiru. S. Balakrishnan,
Address : S/o. Sri. Sankappan,
1/105, West Street,
Vellur, Virudhunagar Taluk,
Virudhunagar District - 626 005.
State : Tamilnadu
Mobile : 97879 69094

DETAILS OF THE AREA

Type of Lnad : Patta Land
Survey No. : 203/7
Extent : 1-60.50 Hectares
Village : Appayanayakkanpatti
Taluk : Vembakottai
District : Virudhunagar

2. SCOPE AND OBJECTIVE:

The client requires information on the qualitative and quantitative appraisal of the ground water in the proposed project site for rough stone mining. The study involves geological, geomorphologic and geo-hydrological investigations in and around the proposed mining site to identity and evaluate the aquifers with respect to their depth, yield and quantity. The data sources comprise of reports of Geological Survey of India (GSI), Central Ground water Board (CGWB) and State Government organizations such as Public Work Department (PWD) and Tamilnadu Water Supply and drainage board. In addition, repeated field visits and interaction with locals will provide inputs regarding depth to water table, bore holes drilled, their success rate and the sources of ground water recharge. Geophysical surveys carried at in the site will help in delineating potential ground water zones at depth. All these geological data collected, analyzed, and interpreted to evaluate the ground water potential in and round the mining site. The main objective is to assess the ground water resources of the area and to examine whether the quarrying operations will result in any adverse impact on the ground water reign.



புவியியல் மற்றும் சுரங்கத்துறை

ந.க.எண்:கேவி1/717/2024

உதவி இயக்குநர் அலுவலகம்
மாவட்ட ஆட்சியர் அலுவலக வளாகம்
விருதுநகர்.

நாள்:24.12.2024.

குறிப்பாணை

பொருள்: கனிமங்களும் குவாரிகளும் - விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண். 203/7 விஸ்தீரணம் 1.60.50 ஹெக்டேர் பரப்பில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி திரு.பாலகிருஷ்ணன் என்பவருக்கு உரிமம் வழங்கல் - உகந்த பரப்பு (Precise Area) தேர்வு செய்யப்பட்டது - சுரங்கத்திட்டம் மற்றும் மாநில அளவிலான சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் இசைவினைப் பெற்று சமர்ப்பிக்க கோருவது - தொடர்பாக.

- பார்வை:**
1. திரு.பாலகிருஷ்ணன் , க.எண்.1/172 , மேற்கு தெரு வெள்ளூர் கிராமம், விருதுநகர் மாவட்டம் , விண்ணப்பம் நாள்:28.06.2024.
 2. இவ்வலுவலக கடிதம் எண் ந.க.கேவி1/717/2024, நாள்: 04.07.2024 (வருவாய் கோட்டாட்சியர், சாத்தூர் அவர்களுக்கு முகவரியிட்டது).
 3. சாத்தூர், வருவாய் கோட்டாட்சியர் கடித எண் மூ.மு.அ2/3507/2024, நாள்: 14.10.2024.
 4. உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை அவர்களின் புலத்தணிக்கை அறிக்கை நாள்: 10.12.2024.
 5. 1959 -ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 41 மற்றும் 42.
 6. அரசாணை எண்.169 தொழில் (எம்.எம்.சி.1) துறை, நாள்: 04.08.2020.
 7. தொடர்புடைய ஆவணங்கள்.

விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண். 203/7 விஸ்தீரணம் 1.60.50 ஹெக்டேர் பரப்பில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் வழங்கக்கோரி விருதுநகர் மாவட்டம் மற்றும் வட்டம், வெள்ளூர் கிராமம், மேற்கு தெரு , க.எண்.1/172 என்ற முகவரியில் வசித்து வரும் திரு.பாலகிருஷ்ணன் என்பவர் பார்வை 1-ல் காணும் விண்ணப்பத்தினை உரிய ஆவணங்களுடன் சமர்ப்பித்துள்ளார்.

S. M. R. S. R. S. R.



உரிமம் கோரும் புலத்திற்கு சுமார் 300 மீட்டர் இடைவெளியில் புல எண் 39/1ஏ, 1பி, 2ஏ, 32/4, 38/3ஏ2, 3பி, 4, 5, 8, 9ஏ ஆகிய புலங்களில் திரு.ரகுபதி என்பவரின் செயல்படும் குவாரியும், 41/2, 42, 43/3, 6, 38/6ஏ ஆகிய புலங்களில் திரு.ராஜேந்திரன் என்பவரின் செயல்படும் குவாரியும் அமைந்துள்ளது. மனுதாரர் உரிமம் கோரும் புலமானது கண்டிசன் ஜாரி பஞ்சமர் கண்டிஷன் ஜாரி போன்ற நிலங்கள் இல்லை. தடை ஆணைப்படுத்தத்திலும் இடம்பெறவில்லை. உரிமம் வழங்கக் கோரிய புலத்தில் இதுவரையிலும் குவாரி பணி ஏதுவும் செய்யப்படவில்லை. உரிமம் கோரும் புலத்திற்கு வடக்கு மற்றும் கிழக்குப் பகுதியை ஒட்டியவாறு அரசு புறம்போக்கு வண்டிப்பாதை செல்கிறது. ஊரிமம் கோரும் புலத்திலிருந்து பாதுகாக்கப்பட்ட இடைவெளியில் வனப்பகுதி, வன விலங்குகள் மற்றும் மான் சரணாலயம் ஏதுமில்லை. மேற்படி நிலம் தொடர்பாக அரசுக்கு செலுத்த வேண்டிய நிலவரி பாக்கி நிறுவன இனங்கள் ஏதுமில்லை. பிரஸ்தாப புலத்தில் உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்குவது தொடர்பாக பொதுமக்களிடம் அ1 நோட்டீஸ் விளம்பரம் செய்யப்பட்டதில் நாளது தேதிவரை ஆட்சேபணை ஏதும் வரப்பெறவில்லை. குவாரி உரிமம் கோரும் புலமானது வெம்பக்கோட்டை ஊராட்சி ஒன்றியத்தையும், அப்பையநாயக்கன்பட்டி ஊராட்சிக்கு உட்பட்டதாகும் எனவும்,

எனவே, விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண். 203/7 விஸ்தீரணம் 1.60.50 ஹெக்டேர் பரப்பில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் திரு.பாலகிருஷ்ணன், த/பெ. சங்கப்பன் என்பவருக்கு தமிழ்நாடு சிறுகனிம விதிகளின்படி வழங்க என்பவருக்கு உரிமம் வழங்க வருவாய் கோட்டாட்சியர் பரிந்துரை செய்கிறேன் என தெரிவித்துள்ளார்.

உதவி புவியியலாளர் புவியியல் மற்றும் சரங்கத்துறை, அவர்களின் அறிக்கையில் விண்ணப்பிக்கப்பட்ட புலங்கள் புஞ்சை வகைப்பாடுடைய தரிசு நிலங்களாகும். புலங்களின் மேற்பரப்பு சமதளமாகவும், விவசாய பணிகள் ஏதுமின்றி தரிசாக உள்ளது. புலங்களின் மேற்பரப்பில் காணப்படும் மண், சிதைந்த பாறைகளை (Weathered Rock), தொடர்ந்து சார்னகைட் (Charnockite) எனப்படும் கடின பாறைகள் (Hard rock) உள்ளது அருகில் உள்ள குவாரியில் ஆய்வு செய்ததில் தெரியவருகிறது. கடின பாறைகளில் காணப்படும் வேறுபட்ட நிறங்கள் (Different in colours), இணைப்புகள் (Joints), பிளவுகள், கீரல்கள் (Cracks) வெடிப்புகள் மற்றும் மாறுபட்ட அளவு கொண்ட கனிமங்கள் காரணமாக இப்பாறைகளில் மெருகேற்றக் கூடிய வண்ண கற்களை (Polished Granite / Blocks) உற்பத்தி செய்ய இயலாது. இவ்வகை பாறைகளில் இருந்து கட்டிடப்பணிகள் மற்றும் சாலை / இரயில்வே பணிகளுக்கு தேவைப்படும் கற்கள், ஜல்லிகள் மற்றும் எம்-சாண்ட் ஆகியவற்றை உற்பத்தி செய்ய இயலும்.

ச. பாலகிருஷ்ணன்

7. கனிமங்களை வாகனங்களில் கொண்டு செல்லும் போது பாதசாரிகள், பொது மக்கள் மற்றும் பிற வாகனங்கள் பாதிக்காதவண்ணம் தார்பாய்கள் கொண்டு மூடி எடுத்துச் செல்ல வேண்டும்.

எனவே, ஐருவாய் கோட்டாட்சியர், உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை அலுவலர்களின் பரிந்துரையினை ஏற்றும் நிபந்தனைகளுக்கு உட்பட்டும், விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண். 203/7 விஸ்தீரணம் 1.60.50 ஹெக்டேர் பரப்பில் 1959 -ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதி எண்: 19 (1) மற்றும் 20 -ன் படி 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்க தகுதி வாய்ந்த நிலப்பரப்பாக (Precise Area) கருதப்படுகிறது.

எனவே, தமிழ்நாடு சிறுகனிம சலுகை விதிகள்-1959 விதி எண்:41-ன்படி குவாரி பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்கத் திட்டத்தினை (Mining Plan) 90 தினங்களுக்குள்ளும் விதி எண்:42-ன்படி மாநில அளவிலான சுற்றுசூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் (State Level Environmental Impact Assessment Authority) இசைவினைப் பெற்று சமர்ப்பிக்குமாறும் மனுதாரர் திரு.பாலகிருஷ்ணன் என்பவர் கேட்டுக் கொள்ளப்படுகிறார்.

உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
விருதுநகர்.

பெற்றநர்
திரு.பாலகிருஷ்ணன்,
க.எண்.1/172,
மேற்கு தெரு,
வெள்ளூர் கிராமம்,
விருதுநகர் மாவட்டம்,

நகல்
உறுப்பினர் செயலர்,
மாநில சுற்றுசூழல் தாக்க மதிப்பீட்டு ஆணையம் (SEIAA),
சென்னை.

திரு. பாலகிருஷ்ணன்

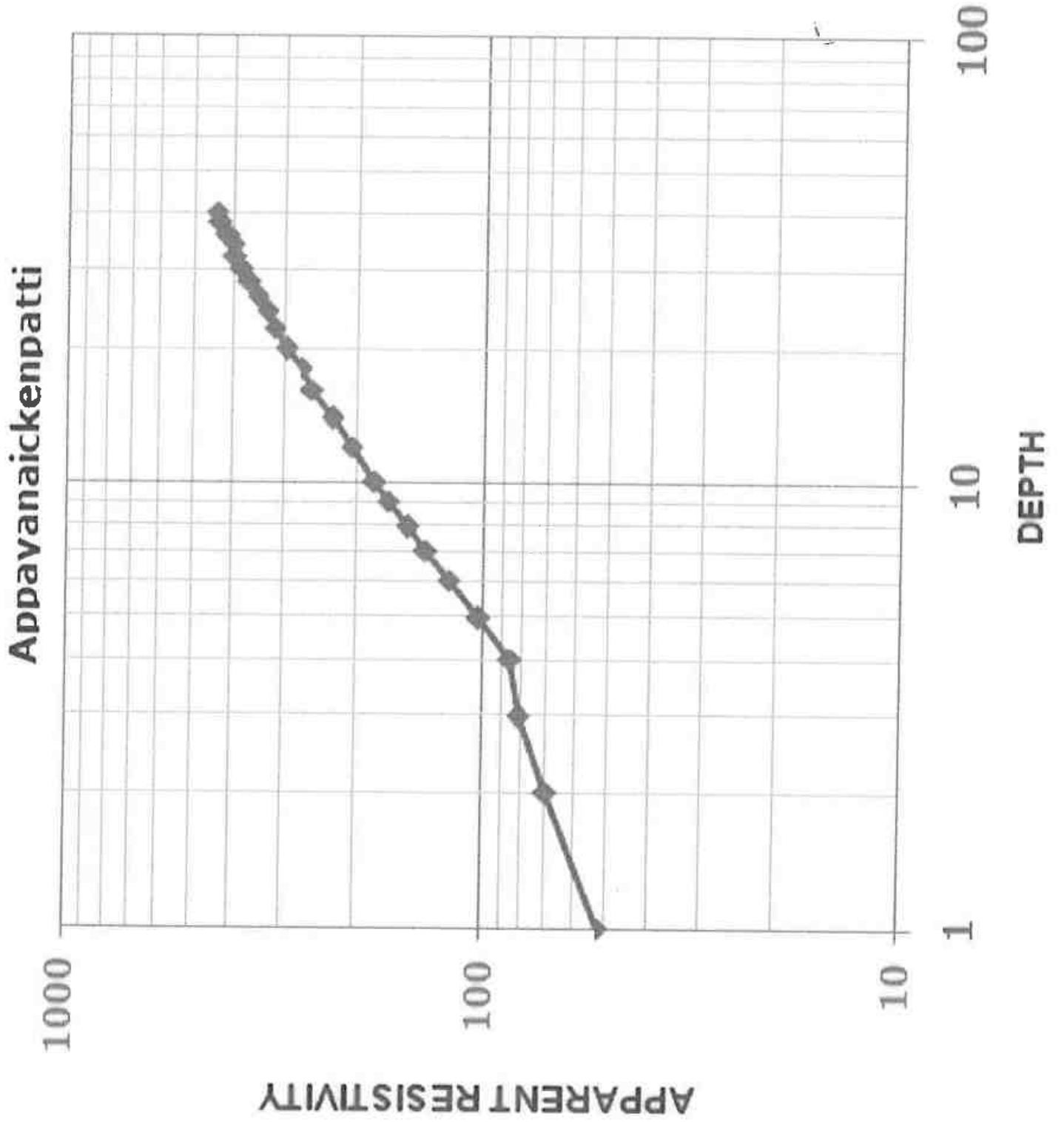
Location
Panchayat
Taluk
District

: Appayanaickenpatti
: Appayanaickenpatti
: Vembakottai
: Virudhunagar



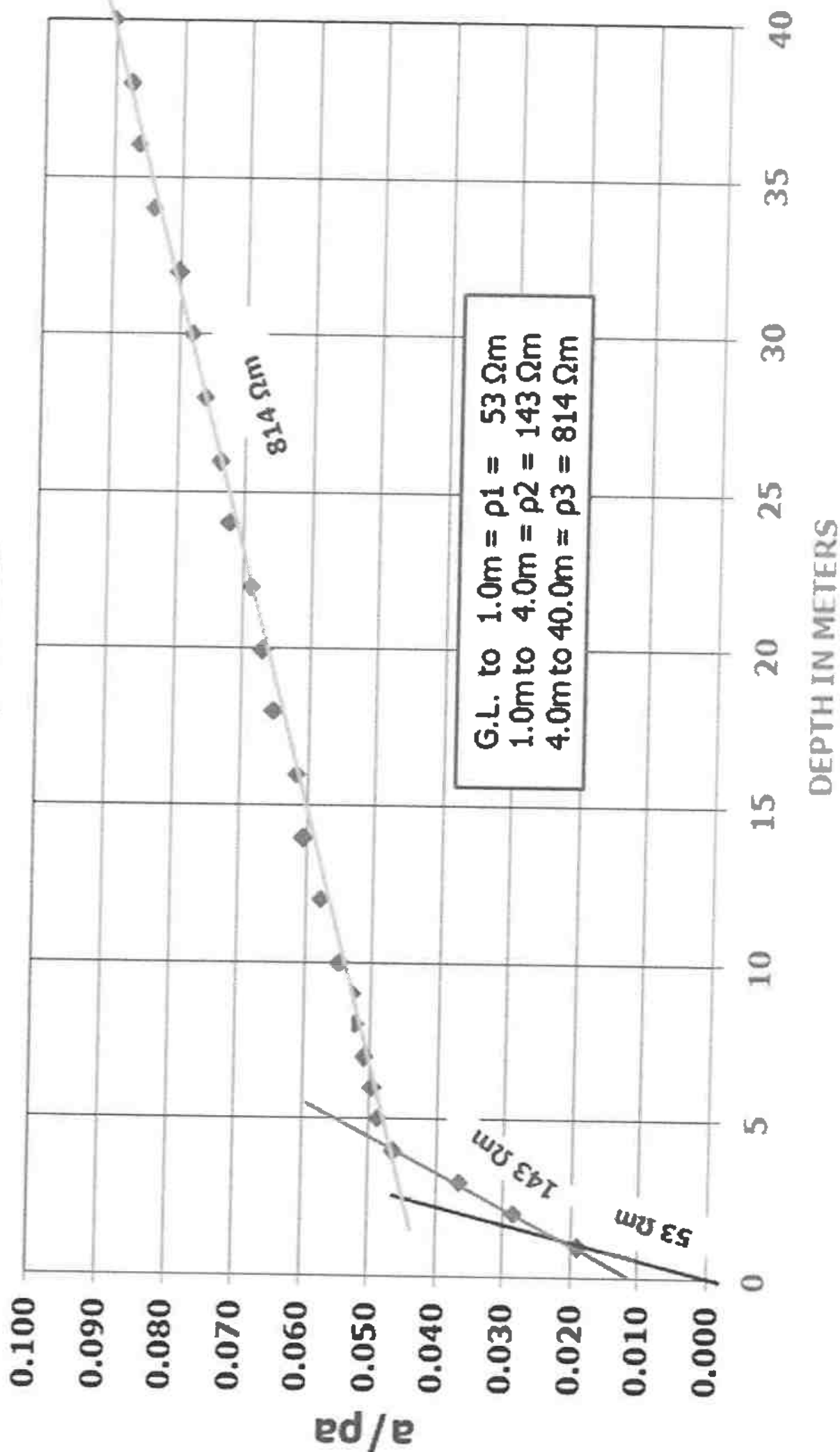
D.P. No.1

a	r	pa	a/pa
1	8.335	52.34	0.019
2	5.568	69.93	0.029
3	4.342	81.80	0.037
4	3.419	85.89	0.047
5	3.254	102.18	0.049
6	3.212	121.03	0.050
7	3.125	137.38	0.051
8	3.043	152.88	0.052
9	3.010	170.13	0.053
10	2.912	182.87	0.055
12	2.755	207.62	0.058
14	2.640	232.11	0.060
16	2.580	259.24	0.062
18	2.445	276.38	0.065
20	2.380	298.93	0.067
22	2.310	319.15	0.069
24	2.214	333.69	0.072
26	2.164	353.34	0.074
28	2.095	368.38	0.076
30	2.038	383.96	0.078
32	1.991	400.11	0.080
34	1.895	404.62	0.084
36	1.842	416.44	0.086
38	1.816	433.37	0.088
40	1.765	443.37	0.090



ச. பாலசுப்பிரமணியன்

Appayanaickenpatti - Inverse Slope Method



भारत सरकार / GOVERNMENT OF INDIA
खान मंत्रालय / MINISTRY OF MINES
भारतीय खान ब्यूरो / INDIAN BUREAU OF MINES

ANNEXURE IV



अर्हता प्राप्त व्यक्ति के रूप में मान्यता प्रमाण पत्र
(खनिज रियायत नियमावली, 1960 के नियम 22सी के तहत)
CERTIFICATE OF RECOGNITION AS QUALIFIED PERSON
(Under Rule 22C of Mineral Concession Rules, 1960)

श्री एम. धरमलिंगम, नं.28, पोलपट्टी, टूटीकोरिन- 628 002, तमिलनाडू, जिनका फोटो और हस्ताक्षर ऊपर दिया हुआ है, तथा जिनहोंने अपनी अर्हता और अनुभव का संतोषजनक साक्ष्य दिया है, को खनन योजना तैयार करने हेतु खनि जरियायत नियमावली 1960 के नियम 22सी के तहत अर्हता प्राप्त व्यक्ति के रूप में मान्यता प्रदान की जाती है ।

Shri M. Dharmalingam, No.28, Polpettai, Tuticorin - 628 002, Tamilnadu State, whose Photograph and signature is affixed herein above, having given satisfactory evidence of his qualifications & experience is hereby **RECOGNISED** under Rule 22C of the Mineral Concession Rule, 1960 as a Qualified Person to prepare Mining Plans.

उनकीपंजीयनसंख्या है
His registration number is

RQP /MAS/ 260/2014/A

यहमान्यता 10 वर्षों की अवधि के लिए मान्यताहैजोदिनांक13.11.2024 कोसमाप्तहोगी।
This recognition is valid for a period of 10 years ending on 13.11.2024

उनके द्वारा प्रस्तुत खनन योजना में गलत जानकारी / दस्तावेज पाए जाने की स्थिति में यह प्रमाण पत्र वापस लिया जाएगा / निरस्त किया जाएगा।
This certificate will liable to be withdrawn / cancelled in the event of furnishing the wrong information / documents in the Mining Plan submitted by him.

स्थान/ Place : Chennai
दिनांक/ Date : 14.11.2014

Signature
25/12/2024

M. DHARMALINGAM
M.Sc.,(Geol.) FCC.,(Mining)
Qualified Person
RQP /MAS/ 260 /2014 /A

क्षेत्रीय खाननियंत्रक / Regional Controller of Mines
भारतीय खानब्यूरो/ Indian Bureau of Mines
चेन्नई क्षेत्र / Chennai Region
145

Signature



The Senate of the Annamalai University hereby makes known that M. Dharmalingam has been admitted to the Degree of Master of Science in Geology. he having been certified by duly appointed Examiners at the examination held in April, 1972 to be qualified to receive the same, and that he was placed in the First Class.

Given under the seal of the University.

Annamalainagar

16 November 1979.

Thurman
Vice-Chancellor

Cert No. FMR / 2266



सत्यमेव जयते

भारत सरकार/Government of India

खान अधिनियम, 1952/Mines Act, 1952

खनन परीक्षा बोर्ड/Board of Mining Examinations

प्रथम श्रेणी प्रबंधक सक्षमता प्रमाण-पत्र

FIRST CLASS MANAGER'S CERTIFICATE OF COMPETENCY

(केवल ओपेनकास्ट खानों तक सीमित)

(Restricted to mines having opencast workings only)

(धात्विकीय खान विनियम, 1961 के अन्तर्गत)

(Under the Metalliferous Mines Regulations, 1961)



श्री एम. धर्मलिंगम

सुपुत्र वी. मेवेल

जिनकी जन्म तिथि

09.03.1956

है, को विहित अर्हताएं एवं अनुभव

प्राप्त करने का सन्तोषजनक प्रमाण प्रस्तुत करने एवं अक्टूबर, 2009 में आयोजित विहित परीक्षा में उत्तीर्ण होने पर एतद्वारा ओपेनकास्ट धात्विकीय खानों के प्रबंध हेतु प्रथम श्रेणी प्रबंधक सक्षमता प्रमाण-पत्र प्रदान किया जाता है। यह प्रमाण-पत्र 05.04.2010 से प्रभावी है।

Shri Mr. Dharmalingam

son of Mr. Meivel

born on

09 th March, 1956

having given satisfactory evidence of

possessing the prescribed qualifications and experience and having passed the examination held in

October, 2009 is hereby granted FIRST CLASS MANAGER'S CERTIFICATE OF

COMPETENCY to manage the metalliferous mines having opencast workings only. This

certificate is effective from. 05.04.2010

ए.के. अडे

सचिव

खनन परीक्षा बोर्ड

Secretary
Board of Mining
Examinations

Shri

अध्यक्ष

खनन परीक्षा बोर्ड

Chairman
Board of Mining
Examinations

Signed and Sealed

Date 02.07.11

२३.५७५४५०००

ANNEK...
செய்தது
2-9-24
24 JAN 2025
புவியியல் & சார்புத் துறை

District : Virudhunagar

Taluk : Vembakkottai

Village : Appayyanayakkanpatti [16]

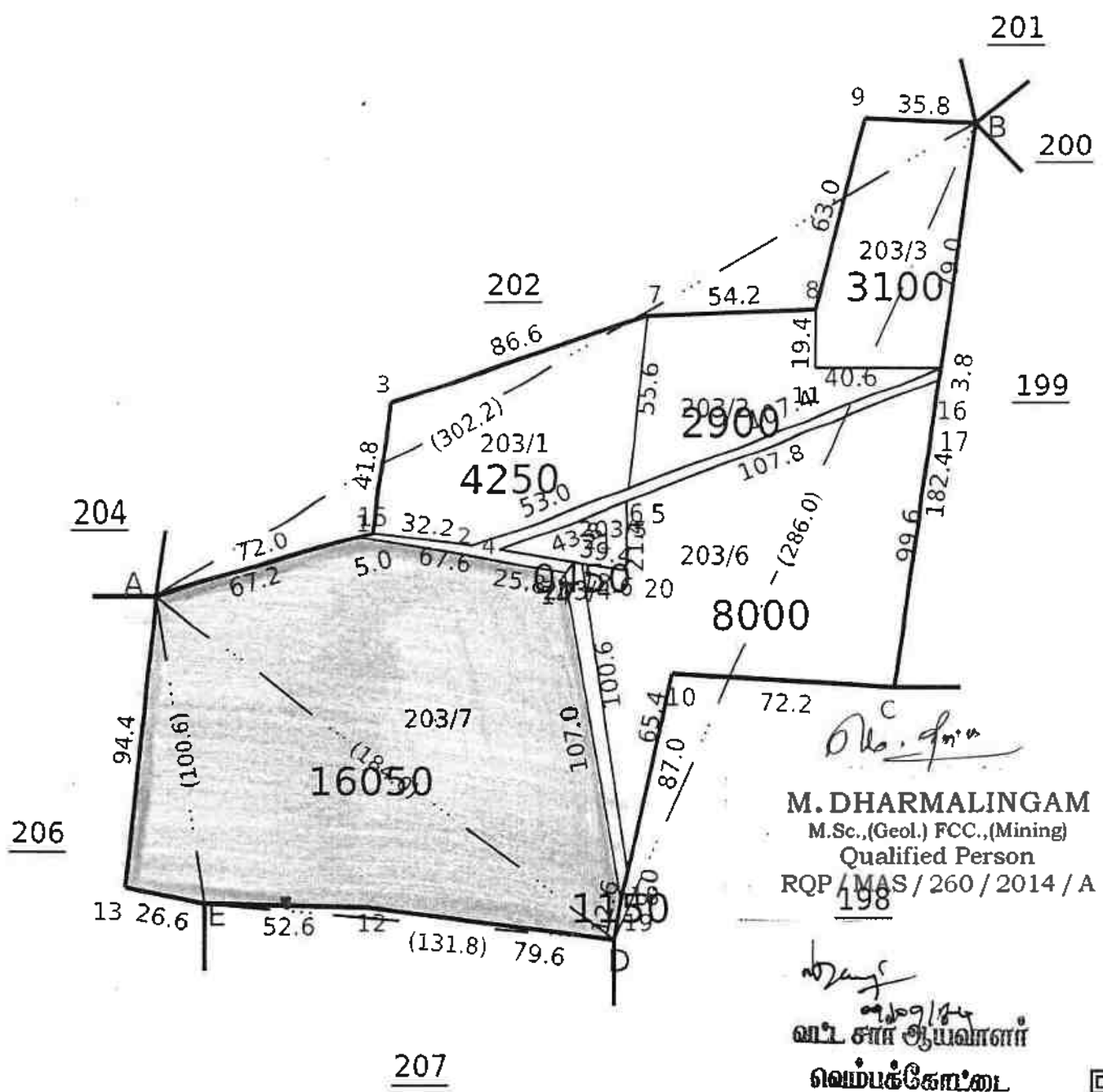


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Area : Hect 03 Ares 59.00

Scale : 1 : 2000

LEASE AREA



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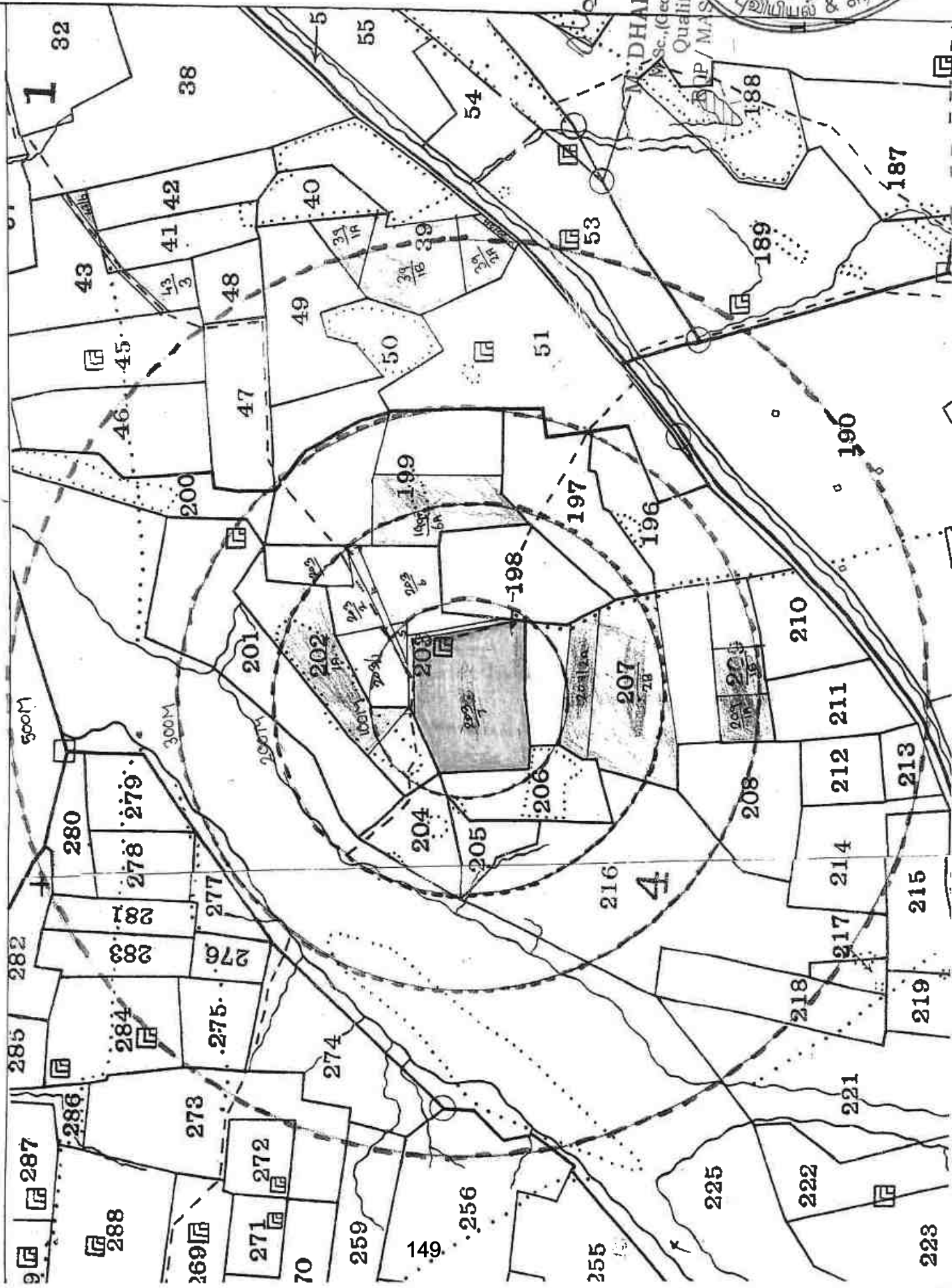
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பட்டம் : வட்டிபக்களபடை

புறம் : கட்டா வட்டியம்

புறம் : 16

புறம் : அட்டாபட்டாபட்டாபட்டாபட்டா



LEASE AREA

- உரிமை வட்டம் (200/1)

- உரிமை வட்டம் (200/1)

- உரிமை வட்டம் (200/1)

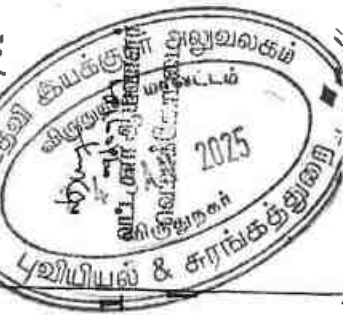
- உரிமை வட்டம் (200/1)

M. DHARMALINGAM

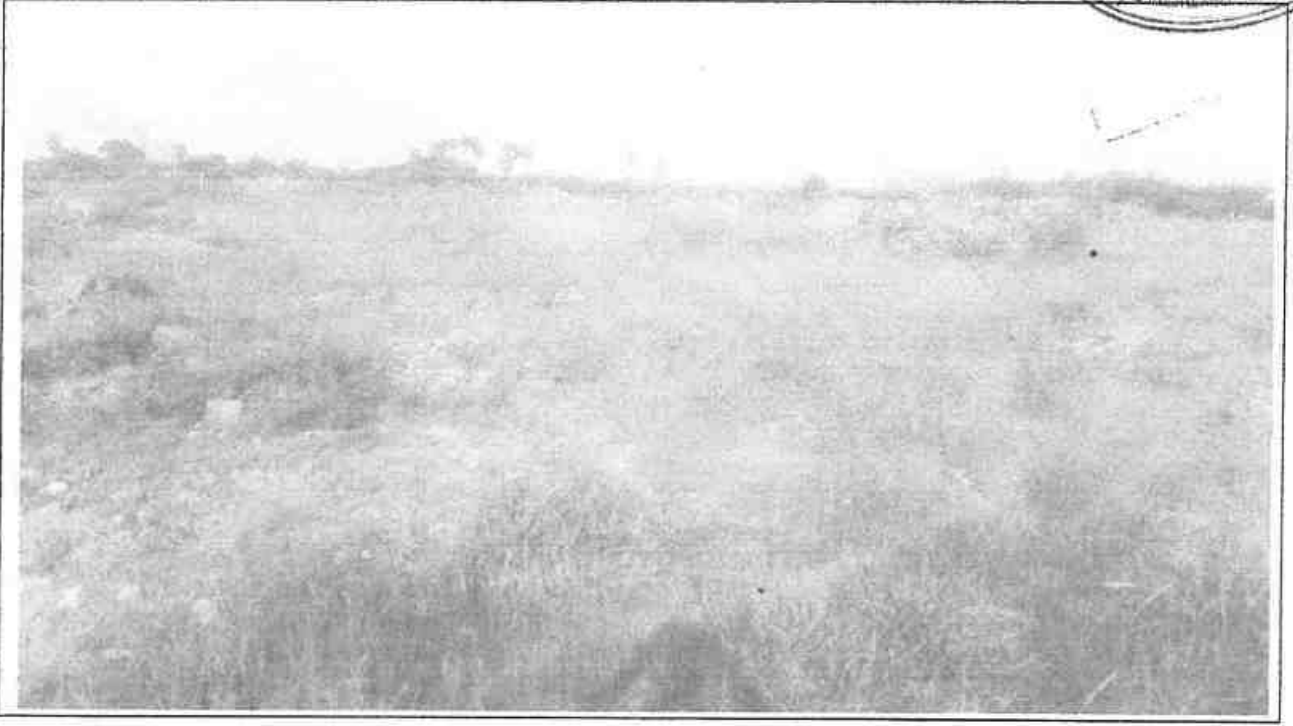
M.Sc., (Geol.) FCC., (Mining)

Qualified Person

DP/MAS/260/22014/A



MINES LAND PHOTO



விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம் புன்செய் புலஎண். 203/7 விஸ்தீரணம் 1-60.50 ஹெக்டேரில் மட்டும் 10 வருடங்களுக்கு உதவிஇயக்குனர், புவியியல் மற்றும் சுரங்கத்துறை, விருதுநகர் மாவட்ட ஆட்சியர் அலுவலக வளாகம், விருதுநகர் அவர்களின் செயல்முறை ஆணை எண்.கே.வி.1/717/2024 நாள் 24.12.2024ன் படி திரு. S. பாலகிருஷ்ணன், த/பெ. சங்கப்பன், 1/105, மேற்குதெரு, வெள்ளூர், விருதுநகர் மாவட்டம் அவர்களுக்கு உடைகல் மற்றும் கிராவல் வெட்டி எடுப்பதற்கு அங்கீகரிக்கப்பட்ட இடம் என்பதை இதன் மூலம் சான்றளிக்கிறேன்.

மேற்படி இடத்திற்கு செல்வதற்கு அணுகுபாதை வசதி உள்ளது என்றும் சான்றளிக்கிறேன்.

இடம்: அப்பையநாயக்கன்பட்டி

நாள்: 30.12.2024.

மனுதாரர் கையெழுப்பம்

S. பாலகிருஷ்ணன்

30/12/2024
கிராம நிர்வாக அலுவலர்
APPAYANAICKENPATTI VILLAGE,
VEMBAKOTTAI (T.K.)
VIRUDHUNAGAR (DI..)

S. பாலகிருஷ்ணன்

கிராம நிர்வாக அலுவலரின் சான்று



விருதுநகர் மாவட்டம், வெம்பக்கோட்டை

அப்பையநாயக்கன்பட்டி கிராமம் புன்செய் புலஎண். 203/7 விஸ்தீரணம் 1-60.50 ஹெக்டேரில் மட்டும் 10 வருடங்களுக்கு உதவிஇயக்குனர், புவியியல் மற்றும் சுரங்கத்துறை, விருதுநகர் மாவட்ட ஆட்சியர் அலுவலக வளாகம், விருதுநகர் அவர்களின் செயல்முறை ஆணை எண். கே.வி.1/717/2024 நாள் 24.12.2024ன் படி திரு. S. பாலகிருஷ்ணன், த/பெ. சங்கப்பன், 1/105, மேற்குதெரு, வெள்ளூர், விருதுநகர் மாவட்டம் அவர்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி செய்ய தகுதி வாய்ந்த பரப்பாக குறிப்பானை வழங்கப்பட்டுள்ளது.

மேலும் குவாரி அமைய உள்ள இடத்த சுற்றிலும் 300 மீட்டர் சுற்றளவில் குடியிருப்புகள், கோயில்கள், புராதான சின்னங்கள் ஏதும் இல்லை. மேற்படி புல எண்கள். கிராம கணக்கு தடை ஆணை புத்தகத்தில் இடம் பெறவில்லை. குவாரி அமைய உள்ள இடத்திற்கு செல்ல போதிய அணுகுபாதை வசதி உள்ளது.

30/12/2024
VILLAGE ADMINISTRATIVE OFFICER
கிராம நிர்வாக அலுவலர்
VEMBAKOTTAI (T.K)
VIRUDHUNAGAR (Dt.,)

* S. பாலகிருஷ்ணன்



புவியியல் மற்றும் சுரங்கத்துறை

ந.க.எண்:கேவி1/717/2024

உதவி இயக்குநர் அலுவலகம்
மாவட்ட ஆட்சியர் அலுவலக வளாகம்
விருதுநகர்.

நாள்:24.12.2024.

குறிப்பாணை

பொருள்: கனிமங்களும் குவாரிகளும் - விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண். 203/7 விஸ்தீரணம் 1.60.50 ஹெக்டேர் பரப்பில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி திரு.பாலகிருஷ்ணன் என்பவருக்கு உரிமம் வழங்கல் - உகந்த பரப்பு (Precise Area) தேர்வு செய்யப்பட்டது - சுரங்கத்திட்டம் மற்றும் மாநில அளவிலான சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் இசைவினைப் பெற்று சமர்ப்பிக்க கோருவது - தொடர்பாக.

- பார்வை:**
1. திரு.பாலகிருஷ்ணன் , க.எண்.1/172 , மேற்கு தெரு வெள்ளூர் கிராமம், விருதுநகர் மாவட்டம் , விண்ணப்பம் நாள்:28.06.2024.
 2. இவ்வலுவலக கடிதம் எண் ந.க.கேவி1/717/2024, நாள்: 04.07.2024 (வருவாய் கோட்டாட்சியர், சாத்தூர் அவர்களுக்கு முகவரியிட்டது).
 3. சாத்தூர், வருவாய் கோட்டாட்சியர் கடித எண் மூ.மு.அ2/3507/2024, நாள்: 14.10.2024.
 4. உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை அவர்களின் புலத்தணிக்கை அறிக்கை நாள்: 10.12.2024.
 5. 1959 -ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 41 மற்றும் 42.
 6. அரசாணை எண்.169 தொழில் (எம்.எம்.சி.1) துறை, நாள்: 04.08.2020.
 7. தொடர்புடைய ஆவணங்கள்.

விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண். 203/7 விஸ்தீரணம் 1.60.50 ஹெக்டேர் பரப்பில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் வழங்கக்கோரி விருதுநகர் மாவட்டம் மற்றும் வட்டம், வெள்ளூர் கிராமம், மேற்கு தெரு , க.எண்.1/172 என்ற முகவரியில் வசித்து வரும் திரு.பாலகிருஷ்ணன் என்பவர் பார்வை 1-ல் காணும் விண்ணப்பத்தினை உரிய ஆவணங்களுடன் சமர்ப்பித்துள்ளார்.

S. P. 15/12/2024

சாத்தூர், வருவாய் கோட்டாட்சியர், அவர்களின் அறிக்கையில் குவாரி உரிமம் வழங்கக் கோரிய விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண். 203/7 விஸ்தீரணம் 1.60.50 ஹெக்டேர் பரப்பில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் கோரிய புல எண்.203/7 பரப்பு 1.60.50 ஹெக்டேர் பட்டா எண்.2213-ல் சுப்பாரெட்டியார் மகன் ராஜேந்திரன் என்பவர் பெயரில் கிராமக் கணக்கில் தாக்கலாகியுள்ளது.மேற்படி புலத்தின் உரிமையாளர் ராஜேந்திரன் என்பவரால் உரிமம் கோரும் நபரான ச.பாலகிருஷ்ணன் என்பவருக்கு நோட்டரி பப்ளிக் முன்னிலையில் ஒப்பந்த பத்திரம் செய்து கொடுக்கப்பட்டுள்ளது எனவும்,

குவாரி உரிமம் கோரும் புலத்தின் நான்குமால் விபரம்:-

வடக்கு - புல எண்.202/3 - கடற்கரை புஞ்சை நிலம், 202/2 - அரசு புறம்போக்கு வண்டிப்பாதை,

தெற்கு - புல எண்.207/1 - ராமராஜ் புஞ்சை நிலம்,

கிழக்கு - புல எண்.203/4 - அரசு புறம்போக்கு வண்டிப்பாதை,

மேற்கு - புல எண்.206 - ராமராஜ் புஞ்சை நிலம்,

உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கக் கொரும் புலத்திலிருந்து 300 மீட்டர் சுற்றளவில் குடியிருப்புகள் ஏதுமில்லை. மேலும் 50 மீட்டர் சுற்றளவில் கோவில், மசூதி, நினைவுச் சின்னங்கள், உயர் மின்னழுத்த கம்பி பாதைகள் மற்றும் இடுகாடு ஏதுமில்லை. 500 மீட்டர் சுற்றளவில் புராதானச் சின்னங்கள் மற்றும் பழமையான கல்வெட்டுகள் ஏதுமில்லை. மனுதாரர் உரிமம் கோரும் புலத்திற்கு 50 மீட்டர் சுற்றளவில் இருப்புப்பாதை, சாலை, மின் இணைப்புகள், குளம், ஓடை மற்றும் கால்வாய் போன்ற நீர்நிலைகள் ஏதுவும் கிடையாது. பிரஸ்தா புலத்திற்கு செல்வதற்கு பாதை வசதியானது புல எண்.225/3 திரு.இராஜேந்திரன் என்பவரின் நிலத்தின் வழியாகவும், புல எண்.216/1, 216/3 அரசு மேய்க்காங் வழியாகவும், புல எண்.205 திரு.இராஜேந்திரன், புல எண்.206 - திரு.ராமராஜ் என்பவரின் நிலத்தின் வழியாகவும் செல்கிறது. மேற்படி பாதை செல்லும் நிலத்தின் உரிமையாளர்களிடமிருந்து சம்மதக்கடிதம் பெறப்பட்டுள்ளது. உரிமம் கோரும் புலத்திற்கு தெற்கில் சுமார் 50 மீட்டர் இடைவெளியில் புல எண்.207/2ஏ, 2டி-ல் திரு.ராஜேந்திரன் என்பவரின் முடிவற்ற குவாரியும், 206 மற்றும் 207/1 புலங்களில் திரு.ராமராஜ் என்பவரின் செயல்படாத குவாரியும் சுமார் 100 மீட்டருக்குள் அமைந்துள்ளது. அதேபோன்று வடக்குப் பகுதியில் 50 மீட்டர் சுற்றளவில் புல எண்.202/1ஏ2 மற்றும் 202/1பி-ல் திரு.கனிராஜ் என்பவரின் முடிவற்ற குவாரி உள்ளது. மேலும் கிழக்குப் பகுதியில் புல எண்.198/4, 197/1, 196/1ஏ-ல் திரு.சுப்புராஜ் மற்றும் புல எண்.199/6ஏ-ல் கோபாலகிருஷ்ணன் என்பவர்களின் செயல்படாத குவாரியும் 200 மீட்டர் இடைவெளியில் அமைந்துள்ளது எனவும்,

ச. பாலகிருஷ்ணன்

விண்ணமிக்கப்பட்ட புலங்களை சுற்றிலும் 300 மீட்டர் சுற்றளவில் குடியிருப்புகள், பள்ளிகள், கோயில்கள், மசூதிகள், சுடுகாடு ஏதும் இல்லை. 50 மீட்டர் சுற்றளவில் தேசிய / மாநில நெடுஞ்சாலைகள், ஆறுகள், கட்டிடங்கள், உயர் /தாழ்வழுத்த மின்கம்பிகள் இல்லை. உயர்வகை மரங்கள் ஏதுவும் இல்லை. வனத்துறையால் பாதுகாக்கப்பட்ட பகுதியாக அறிவிக்கப்பட்ட சரணாலயங்கள், தேசிய பூங்காக்கள் சுற்றுச்சூழல் உணர் திறன் மிக்க பகுதிகள் (ECO-SENSITIVE ZONE), 1 கிமீட்டர் சுற்றளவில் காடுகள், 500 மீட்டர் சுற்றளவில் அருங்காட்சியக துறையின் மூலம் பாதுகாக்கப்பட்ட பகுதிகளாக அறிவிக்கப்பட்ட இடங்கள் மற்றும் வரலாற்று சின்னங்கள் எதும் இல்லை எனவும், மேற்படி, நிலங்களில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி அமையவுள்ள இடத்தின் நான்குமால் வடக்கு - புல எண்.202/3 - கடற்கரை புஞ்சை நிலம், 202/2 - அரசு புறம்போக்கு வண்டிப்பாதை, தெற்கு - புல எண்.207/1 - ராமராஜ் புஞ்சை நிலம், கிழக்கு - புல எண்.203/4 - அரசு புறம்போக்கு வண்டிப்பாதை, மேற்கு - புல எண்.206 - ராமராஜ் புஞ்சை நிலம் அமைந்துள்ளது எனவும் ,

எனவே, விண்ணப்பதாரர் திரு.பாலகிருஷ்ணன் என்பவரின் கோரிக்கையினை ஏற்று விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண். 203/7 விஸ்தீரணம் 1.60.50 ஹெக்டேர் பரப்பில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதிஎண்.19 மற்றும் 20-ன் படி பின்வரும் நிபந்தனைகளுக்குட்பட்டு வழங்க பரிந்துரை செய்கிறேன் என தெரிவித்துள்ளார்.

நிபந்தனைகள்:

1. அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீ பாதுகாப்பு இடைவெளி விடுத்து குவாரி செய்தல் வேண்டும்.
2. புல எண்.202/2, 203/4-ல் செல்லும் வண்டிப்பாதைக்கு பாதிப்பு ஏற்படுத்தாதவாறு 10 மீ பாதுகாப்பு இடைவெளி விடுத்து குவாரி பணிகள் செய்தல் வேண்டும்.
3. பொதுமக்கள் / விவசாய நிலங்களுக்கு பாதிப்பு ஏற்படாத வகையில் தகுதி வாய்ந்த அங்கீகரிக்கப்பட்ட நபர்கள் மூலம் வெடிமருந்துகள் சேமிக்கப்பட்டு குவாரியில் வெடித்தல் வேண்டும். குவாரியில் குறைந்த சக்தி கொண்ட வெடி மருந்துகளை பயன்படுத்தல் வேண்டும்.
4. சுரங்கத்திட்டம் மற்றும் சுற்றுச்சூழல் தடையில்லாச் சான்று குத்தகை உரிமம் வழங்குவதற்கு முன் சமர்ப்பிக்க வேண்டும்.
5. குவாரியில் வேலை செய்யும் தொழிலாளர்கள் தொழிலாளர் நலவாரியம் மற்றும் காப்பீடு திட்டத்தில் பதிவு செய்து தொழிலாளர் நலன் பேண்பட வேண்டும்.
6. குழந்தை தொழிலாளர்களை குவாரி பணியில் அமர்த்தக் கூடாது.

S. Ramesh

7. கனிமங்களை வாகனங்களில் கொண்டு செல்லும் போது பாதசாரிகள், பொது மக்கள் மற்றும் பிற வாகனங்கள் பாதிக்காதவண்ணம் தார்பாய்கள் கொண்டு மூடி எடுத்துச் செல்ல வேண்டும்.

எனவே, ஸ்ரவாய் கோட்டாட்சியர், உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை அலுவலர்களின் பரிந்துரையினை ஏற்றும் நிபந்தனைகளுக்கு உட்பட்டும், விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண். 203/7 விஸ்தீரணம் 1.60.50 ஹெக்டேர் பரப்பில் 1959 -ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள் விதி எண்: 19 (1) மற்றும் 20 -ன் படி 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்க தகுதி வாய்ந்த நிலப்பரப்பாக (Precise Area) கருதப்படுகிறது.

எனவே, தமிழ்நாடு சிறுகனிம சலுகை விதிகள்-1959 விதி எண்:41-ன்படி குவாரி பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்கத் திட்டத்தினை (Mining Plan) 90 தினங்களுக்குள்ளும் விதி எண்:42-ன்படி மாநில அளவிலான சுற்றுசூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் (State Level Environmental Impact Assessment Authority) இசைவினைப் பெற்று சமர்ப்பிக்குமாறும் மனுதாரர் திரு.பாலகிருஷ்ணன் என்பவர் கேட்டுக் கொள்ளப்படுகிறார்.

உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
விருதுநகர்.

பெற்றநர்
திரு.பாலகிருஷ்ணன்,
க.எண்.1/172,
மேற்கு தெரு,
வெள்ளூர் கிராமம்,
விருதுநகர் மாவட்டம்,

நகல்
உறுப்பினர் செயலர்,
மாநில சுற்றுசூழல் தாக்க மதிப்பீட்டு ஆணையம் (SEIAA),
சென்னை.

தி. பாலகிருஷ்ணன்

From

Dr.S.Suhatharahima, M.Sc.,Ph.D.,
Assistant Director,
Geology and Mining,
Virudhunagar.

To

Thiru.S.Balakrishnan,
S/o Sri.Sankappan,
D.No: 1/105, West Street,
Virudhunagar Taluk,
Virudhunagar District-626 005.

Roc.No:KV1/717/2024, Dated:24.01.2025.

Sir,

Sub: Mines and Minerals - Minor Mineral - Virudhunagar District - Vembakkottai Taluk - Appayyanayakkanpatti Village - Patta Land - S.F.Nos: 203/7 Extent 1.60.50 Hectares - Quarry lease application preferred by Thiru.S.Balakrishnan, S/o.Sri.Sankappan, for quarrying Rough Stone and Gravel - Approval of Mining Plan - Regarding.

Ref: 1. Quarry lease application received from Thiru. S.Balakrishnan dated: 28.06.2024.
2. The Assistant Director, Geology and Mining, Virudhunagar Rc.No.KV1/717/2024, Dated: 24.12.2024.
3. Thiru. S.Balakrishnan S/O Sri.Sankappan letter, dated: 24.01.2025.

Thiru. S.Balakrishnan, S/o Sri.Sankappan, has preferred an application for the grant of quarrying lease to quarry Rough Stone and Gravel over an extent of 1.60.50 Hectares of Patta Land in S.F.Nos: 203/7 of Appayyanayakkanpatti Village, Vembakkottai Taluk & Virudhunagar District for a period of 10 (Ten) Years Under Rule 19 of Tamil Nadu Minor Mineral Concession Rules 1959.

2) The application was examined and consented to grant lease to quarrying Rough Stone and Gravel over an extent of 1.60.50 Hectares of Patta Land in S.F.No: 203/7 for a period of 10 (Ten) years subject to produce Mining Plan for approval and to obtain Environment Clearance from SEIAA in the reference 2nd cited.

3) The applicant has submitted the Mining Plan, prepared as per the guidelines issued by the Commissioner of Geology and Mining and as per the Rules and Acts. The Geological reserves, Mineable reserves and yearwise production are discussed in Table 1, 2 & 3 of the mining plan. The Geological reserves is estimated as 6,11,800 cbm Roughstone and 16,100 cbm of Gravel. The mineable reserves is estimated as 1,85,232 cbm Roughstone and 11,834 cbm of Gravel upto a depth of 39 m below ground level for the period of Ten years.

* S. Sankappan

The yearwise production of roughstone and gravel are furnished in Annexure II of the mining plan as detailed below.

The Yearwise Production and Development

Table No 3

First Five year workings (I to V Year)

Section	Bench	Length (m) (P-Q)	Width (m) (A-B)	Depth (m)	PRODUCTION	
					Roughstone (cum)	Gravel (cum)
PQ-AB	I	32	97	1.0	-	3,104
	II	30	93	5.0	13,950	
	III	24	81	5.0	9,720	
I YEAR EXCAVATION					23,670	3,104
PQ-AB	I	28	97	1.0	-	2,716
	II	28	93	5.0	13,020	
	III	28	81	5.0	11,340	
II YEAR EXCAVATION					24,360	2,716
PQ-AB	I	28	97	1.0	-	2,716
	II	28	93	5.0	13,020	
	III	28	81	5.0	11,340	
III YEAR EXCAVATION					24,360	2,716
PQ-AB	I	34	97	1.0	-	3,298
	II	32	93	5.0	14,880	
	III	26	81	5.0	10,530	
IV YEAR EXCAVATION					25,410	3,298
PQ-AB	IV	40	69	5.0	13,800	-
	V	34	57	5.0	9,690	
	VI	28	45	5.0	6,300	
V YEAR EXCAVATION					29,790	-
FIRST FIVE YEARS PRODUCTION					1,27,590	11,834

Second Five year workings (VI to X Year)

Section	Bench	Length (m) (P-Q)	Width (m) (A-B)	Depth (m)	PRODUCTION	
					Roughstone (cum)	Gravel (cum)
PQ-AB	IV	35	69	5.0	12,075	-
VI YEAR EXCAVATION					12,075	-
PQ-AB	IV	19	69	5.0	6,555	-
	V	18	57	5.0	5,130	-
VII YEAR EXCAVATION					11,685	-
PQ-AB	V	30	57	5.0	8,550	-
	VI	12	45	5.0	2,700	-
VIII YEAR EXCAVATION					11,250	-
PQ-AB	VI	30	45	5.0	6,750	-
	VII	27	33	5.0	4,455	-
IX YEAR EXCAVATION					11,205	-
PQ-AB	VII	31	33	5.0	5,115	-
	VIII	46	21	5.0	4,830	-
	IX	38	13	3.0	1,482	-
X YEAR EXCAVATION					11,427	-
SECOND FIVE YEARS PRODUCTION					57,642	-
Total Ten Years Production					1,85,232	11,834

* S. Lakshminarayana

The Environmental Management Plan and Mine Closure plan are discussed in Part - B (10) and all conditions have been incorporated in the Mining Plan as laid down by the authorities.

4) In view of the above, in exercise of the powers delegated under Rule 41 of Tamil Nadu Minor Mineral Concession Rules, 1959, I hereby approve the Mining Plan submitted by Thiru. S.Balakrishnan S/o Sri.Sankappan, for quarrying Rough Stone and Gravel over an extent of 1.60.50 Hectares of Patta Land in S.F.Nos: 203/7 of Appayyanayakkanpatti Village, Vembakkottai Taluk & Virudhunagar District for a period of 10 (Ten) to obtain Environment Clearance from SEIAA, Chennai subject to the following conditions:

1. The Mining Plan is approved without prejudice to any other law applicable to the quarry permission from time to time where such Laws are made by the State Government or any other authority.
2. This approval of the Mining Plan does not in any way imply the approval of the Government in terms of any other provisions of the Tamil Nadu Minor Mineral Concession Rules, 1959.
3. The Mining Plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
4. The approval of the Mining Plan does not in any way imply the approval of the Government in terms of any other provisions of the Mines and Minerals (Development and Regulation) Amendment Act, 2015 or any other connected Laws including, Environment Protection.
5. Act, 1986, and the Rules made there under in Tamil Nadu Minor Mineral Concession Rules, 1959.

Encl: Two copies of Mining Plan.


24/11/15
Assistant Director,
Geology and Mining,
Virudhunagar.

Copy to:
The Member Secretary,
State Level Environmental Impact
Assessment Authority,
Panagal Maligai,
No. 1 Jeenis Road,
Saidapet, Chennai-15.

S. S. Sankar

From

Dr.S.Suhatharahima, M.Sc.,Ph.D.,
Assistant Director,
Geology and Mining,
Virudhunagar.

To

To
Thiru.S.Balakrishnan,
S/o Sri.Sankappan,
D.No: 1/105, West Street,
Virudhunagar Taluk,
Virudhunagar District-626 005.

Roc.No:KV1/717/2024, Dated:24.01.2025

Sir,

Sub: Mines and Minerals - Minor Mineral -
Virudhunagar District - Vembakkottai Taluk -
Appayyanayakanpatti Village - Patta Land -
S.F.Nos: 203/7 Extent 1.60.50Hectares - Quarry
lease application preferred by Thiru.
S.Balakrishnan S/o Sri.Sankappan, for quarrying
Rough Stone and Gravel -Details of quarries in 500
meter radius - Regarding.

Ref: 1. Quarry lease application received from Thiru.
S.Balakrishnan dated: 28.06.2024.
2. The Assistant Director, Geology and Mining,
Virudhunagar Rc.No.KV1/717/2024, Dated:
24.12.2024.
3. Thiru. S.Balakrishnan S/O Sri.Sankappan
letter, dated: 24.01.2025.

Thiru. S.Balakrishnan has preferred an application for the grant of quarrying lease to quarry Rough Stone and Gravel over an extent of 1.60.50 Hectares of Patta Land in S.F.Nos: 203/7 of Appayyanayakanpatti Village, Virudhunagr Taluk & Virudhunagar District for a period of 10 (Ten) Years Under Rule 19 of Tamil Nadu Minor Mineral Concession Rules 1959.

2) The application was examined and consented to grant lease to quarrying Rough Stone and Gravel over an extent of 1.60.50 Hectares of Patta Land in S.F.No: 203/7 for a period of 10 (Ten) years subject to produce Mining Plan for approval and to obtain Environment Clearance from SEIAA in the reference 2nd cited.

3) The applicant has submitted the Mining Plan, prepared as per the guidelines issued by the Commissioner of Geology and Mining and as per the Rules and Acts. The Geological reserves, Mineable reserves and yearwise production are discussed in Table 1, 2 & 3 of

S. Sankappan

the mining plan. The Geological reserves is estimated as 6,11,800 cbm Roughstone and 16,100 cbm of Gravel. The mineable reserves is estimated as 1,85,232 cbm Roughstone and 11,834 cbm of Gravel upto a depth of 39 m below ground level for the period of Ten years.

4) The applicant Thiru. S.Balakrishnan, S/o. Sri.Sankappan in the reference 3rd cited has requested to furnish details of quarries situated within 500 m radial distance from the applied area.

5) As per his request and based on the Village Administration Officer report Submitted, the details of quarry situated within 500 meter radius from the proposed area for obtaining Environmental Clearance as detailed below:

Details of quarry situated within 500 meters radius from the applied area

S. No	Quarry detail	Taluk & Village	S.F. No.& Extent (Hect)	Proceedings No. & Lease Period
I	Existing Quarries: NIL			
II	Abandoned Quarry :			
1	G. Ravikumar	Vembakottai & Appayanayakkanpatti	276,278, etc., (3.85.50 Hects)	KV1/938/2017 Dated : 13.12.2018 20.01.2018 to 19.12.2023
2	S. Subburaj	Vembakottai & Appayanayakkanpatti	44,46/1 (2.20.50 Hects)	KV1/7441/2017 Dated : 01.02.2019 25.02.2019 to 24.02.2024
3	P. Shunmugaraj	Vembakottai & Appayanayakkanpatti	207/2A,2B (1.91.50 Hects)	KV1/202/2018 Dated : 01.02.2019 25.02.2019 to 24.02.2024
4	G. Ramasamy	Vembakottai & Appayanayakkanpatti	211/1A1,1A2, 2A,etc., (0.93.00 Hects)	KV1/24590/2015 Dated : 01.02.2019 25.02.2019 to 24.02.2024
5	G. Ramasamy	Vembakottai & Appayanayakkanpatti	208/1,2,3& 214/1 (1.98.00 Hects)	KV1/1227/2014 Dated : 03.03.2016 27.05.2016 to 26.05.2019
6	S. Sivaraman	Vembakottai & Appayanayakkanpatti	39/3 (0.96.50 Hects)	KV1/788/2018 Dated : 17.09.2018 28.09.2018 to 27.09.2020
7	P. Shunmugaraj	Vembakottai & Appayanayakkanpatti	38/6A,41/2,43 /3,6&48 (2.74.50 Hects)	KV1/27945/2014 Dated : 08.05.2017 22.05.2017 to 21.05.2022
8	S. Ramraj	Vembakottai & Appayanayakkanpatti	196/1A,197/1, etc., (2.88.00 Hects)	KV1/21616/2014 Dated : 09.02.2018 26.02.2018 to 25.02.2023

* S. Sankappan

III	Present Proposed Quarry :			
1	R. Gopalakrishnan	Vembakottai & Appayanayakkanpatti	199/6A (1.08.00 Hects)	KV1/221/2022 Dated : 26.04.2022
2	S. Ragupathi	Vembakottai & Appayanayakkanpatti	196/2A,3,4& 49 (1.86.50 Hects)	KV1/390/2019 Dated : 18.12.2020
3	R. Gayathri	Vembakottai & Appayanayakkanpatti	39/1A,1B2A& 49 (2.30.20 Hects)	KV1/572/2019 Dated : 11.12.2019
4	S. Ramraj	Vembakottai & Appayanayakkanpatti	207/3A,3B, etc., (1.28.50 Hects)	KV1/638/2021 Dated : 01.09.2021
5	S. Subburaj	Vembakottai & Appayanayakkanpatti	43/1A,1B(p),4 5/1A1, (1.58.00 Hects)	KV1/523/2019 Dated : 12.05.2022
6	P. Shunmugaraj	Vembakottai & Appayanayakkanpatti	199/6B & 8 (1.08.00 Hects)	KV1/712/2022 Dated : 02.01.2023
7	G. Kaniraj	Vembakottai & Appayanayakkanpatti	202/1A2 (1.21.50 Hects)	KV1/158/2021 Dated : 13.08.2021
8.	S. Balakrishnan	Vembakottai & Appayanayakkanpatti	203/7 (1.60.50 Hects)	KV1/717/2024 Dated : 24.12.2024
		TOTAL	29.48.7 (Hect)	

**Assistant Director,
Geology and Mining,
Virudhunagar.**

Copy to :

State Level Environmental Impact
Assessment Authority,
Panagal Maligai,
No. 1 Jeenis Road,
Saidapet, Chennai-15.

• S. 157022 ଅନୁସନ୍ଧ



தமிழ்நாடு அரசு

வருவாய்த் துறை

நில உரிமை விபரங்கள் : இ. எண் 10(1) பிரிவு

மாவட்டம் : விருதுநகர்

வட்டம் : வெம்பக்கோட்டை

வருவாய் இராமம் : அப்பையநாயக்கனாபட்டி

பட்டா எண் : 2213

உரிமையாளர்கள் பெயர்

1. சுப்பாரெட்டியார்

மகன்

இராஜேந்திரன்

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
203	2	0 - 29.00	0.58	--	--	--	--	2016/0103/26/012603- -- ----- 11-11-2016
203	6	0 - 80.00	1.60	--	--	--	--	2016/0103/26/012603- -- ----- 11-11-2016
203	7	1 - 60.50	3.26	--	--	--	--	2016/0103/26/012603- -- ----- 11-11-2016
205	-	0 - 39.50	0.81	--	--	--	--	2016/0103/26/012603- -- ----- 11-11-2016
		3 - 9.00	6.25					

குறிப்பு :



மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து

1. பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 26/09/016/02213/100628 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

2. இத் தகவல்கள் 30-06-2024 அன்று 08:02:06 PM நேரத்தில் அச்சடிக்கப்பட்டது.

3. கைப்பேசி கேமராவின் 2D barcode படப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

* S. Manojkumar

DISTRICT - VIRUDHUNAGAR TALUK - VEMBAKKOTTAI VILLAGE - APPAYYANAYA



18	282-18	P	4	8-2	4	2	00	0	6.00	0	13	2081-காரிராஜ்
2	282-2	P	4	8-0	0	0	00	0	8.00	0	00	
2	282-2	P	4	8-0	0	0	00	0	8.00	0	00	
3	282-3	P	4	8-2	4	2	00	0	11.50	0	24	195-கடற்கரை
TOTAL FOR SURVEY NUMBER- 282								1	77.00	2	84	
1	283-1	P	4	8-2	4	2	00	0	12.50	0	85	1899-ராமசாமி தாயுதர்
2	283-2	P	4	8-2	4	2	00	0	19.00	0	50	2213-இராஜேந்திரன்
3	283-3	P	4	8-2	4	2	00	0	31.00	0	62	513-வடகமண தாயக்கர் மற்றும் 2 தபர்(கள்)
4	283-4	P	4	8-0	0	0	00	0	11.50	0	00	
4	283-4	P	4	8-0	0	0	00	0	11.50	0	00	
5	283-5	P	4	8-2	4	2	00	0	4.50	0	09	1899-ராமசாமி தாயுதர்
6	283-6	P	4	8-2	4	2	00	0	00.00	1	60	2213-இராஜேந்திரன்
7	283-7	P	4	8-2	4	2	00	1	40.50	1	24	2213-இராஜேந்திரன்
TOTAL FOR SURVEY NUMBER- 283								3	70.50	7	00	
1	284-1	P	4	8-2	4	2	00	0	63.00	1	26	2180-சப்புராஜ்
2	284-2	P	4	8-0	0	0	00	0	3.50	0	00	
2	284-2	P	4	8-0	0	0	00	0	3.50	0	00	
TOTAL FOR SURVEY NUMBER- 284								0	70.00	1	26	
	285	P	4	8-2	4	2	00	0	39.50	0	01	2213-இராஜேந்திரன்
	286	P	4	8-2	4	2	00	1	4.50	2	13	1122-ராமராஜ்
1	287-1	P	4	8-2	4	2	00	0	53.50	1	07	1454-சப்பக்குடும்பன் மற்றும் 4 தபர்(கள்)
2A	287-2	P	4	8-2	4	2	00	0	40.50	0	05	2230-ராஜேந்திரன்
2B	287-2	P	4	8-2	4	2	00	1	51.00	3	05	2230-ராஜேந்திரன்

தொடங்கு தொழில்நுட்பம்

8. प्रमाणित करने के लिए



தமிழ்நாடு தமிழ்நாடு TAMILNADU

EA 810293

E. K. Sivaraj

S. Bala Krishnan
virudhunagar.

E.K.சிவகுருநாதன்
முத்திரைத்தாள் விற்பனையாளர்
ஸ்ரீவில்லிபுத்தூர், தமிழ்நாடு.
உரிமம் எண்: R.O.C. 12517170

குத்தகை ஒப்பந்த பத்திரம்

தென்காசி மாவட்டம், திருவேங்கடம் வட்டம், திருவேங்கடம் கமுகுமலை ரோடு, கதவு எண் 44, என்ற முகவரியில் வசித்து வரும் சுப்பா ரெட்டியார் மகன் S.ராஜேந்திரன் ஆகிய நான் 1-வது பார்ட்டியாகவும்

விருதுநகர் மாவட்டம் விருதுநகர் தாலுகா வெள்ளூர், மேற்கு வீதி கதவு எண் 1/105 என்ற முகவரியில் வசித்து வரும் சங்கப்பன் மகனாகிய S. பாலகிருஷ்ணன் ஆகிய நான் 2-வது பார்ட்டியாகவும்

1. S.ராஜேந்திரன்

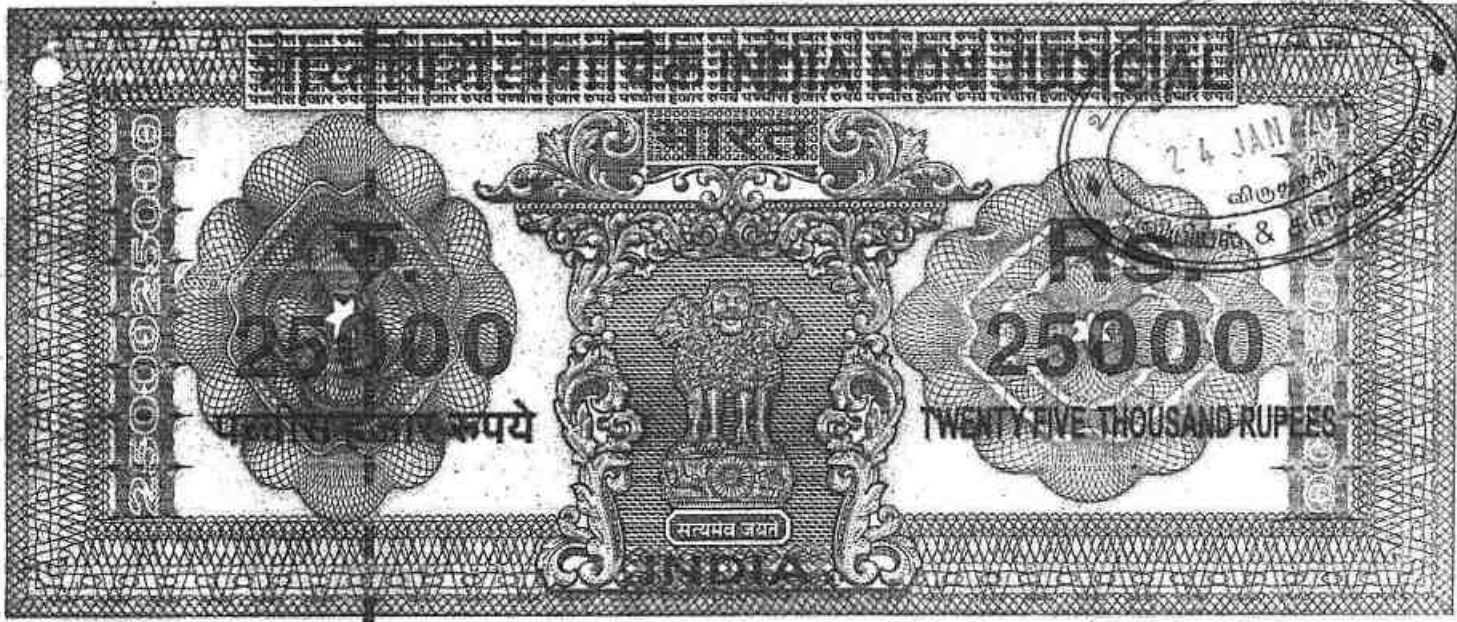
S. Rajendran

2. S. பாலகிருஷ்ணன்

S. Balakrishnan



S. Bala Krishnan
34434 16366
Advocate & Notary
7, South Car Street
Virudhunagar - 626 125
Virudhunagar District



தமிழ்நாடு தமிழ்நாடு TAMILNADU

B 689151

3. குமாரசாமி
முத்திரைத்தான் விற்பனையாளர்
முநிலில்லிபுத்தூர். தமிழ்நாடு.
உரிம்துறை : 5730/ஆ 1/2010-7

4719
1.7.15

இவர்களுடன்
அருவங்கடம்

ஆவண 2208
எண் : 2015
ஆண்டு :
பக்க எண் : 1
பொது :
பக்கம் : 13

கிரையம் ரூபாய் 6,00,000/-

மார்க்கெட் நிதிப்பு ரூபாய் 6,87,526/-

2015-ம் வருஷம் ஜூலை மாதம் 02-ம் தேதி

தமிழ் மன்மத வருஷம் ஆனி மாதம் 17-ம் தேதி

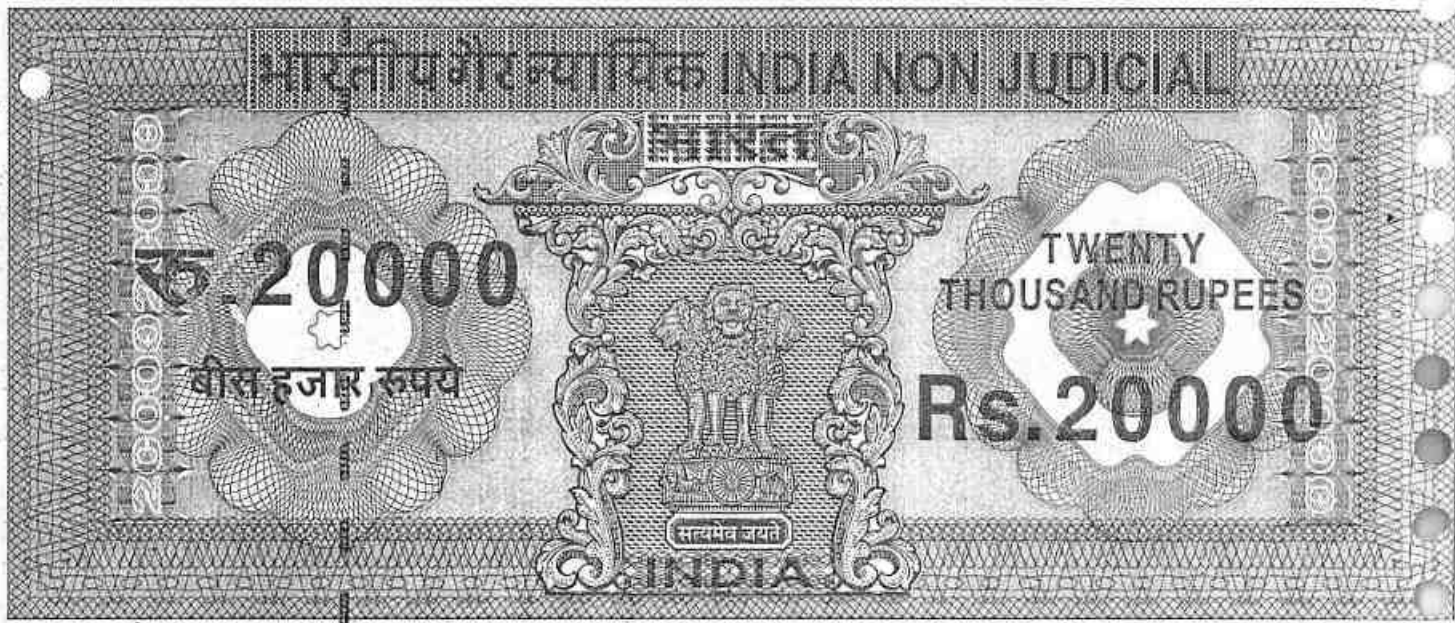
திருநெல்வேலி மாவட்டம் சங்கரன்கோவில் வட்டம் திருவேங்கடம்
பேருராட்சி குருவிகுளம் ரோடு புதிய கதவு எண்.44ல் வசித்து வரும்
சுப்பாரெட்டியார் அவர்கள் குமாரர் க.இராஜேந்திரன் (வருமான வரித்துரை
நிரந்தர கணக்கு எண்.ABMPR4211M) அவர்களுக்கு

சுப்பாரெட்டியார்

S. A. S.

T. K. S.

சுப்பாரெட்டியார்



தமிழ்நாடு தமிழ்நாடு TAMILNADU

4720

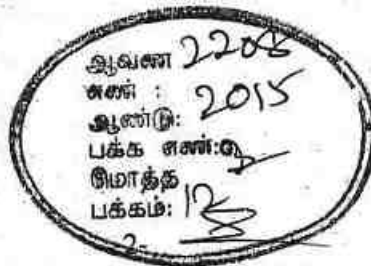
B 230270

1.7.15

அகஸ்துரன்
விவசாயம்

S. குமாரசாமி

முத்திரைத்தாள் விற்பனையாளர்
ஸ்ரீவில்லிபுத்தூர். தமிழ்நாடு.
உரிமம் எண்: 5730/ஆ 1/2010-7



திருநெல்வேலி மாவட்டம் சிவகிரி வட்டம் புளியங்குடி நகராட்சி
புளியங்குடி நகர் பகுதியில் R.S.K.P.சாலை கதவு எண்.48Aல் வசித்து வரும்
சப்பையா அவர்கள் குமாரர் S.ஆறுமுகம் (வருமான வரித்துறை நிரந்தர
கணக்கு எண்.AHCPA2180J) 1, லை R.S.K.P.சாலை கதவு எண்.47Aல்
வசித்து வரும் திருமலைசெட்டியார் அவர்கள் குமாரர் T.கருப்பையா
(வருமான வரித்துறை நிரந்தர கணக்கு எண்.AKVPK4246R) 2 ஆகிய
நாங்கள் எழுதிக் கொடுத்த கிரையப்பத்திரம்.

S. A. M.

S. A. M.

T. K. R. P.

S. A. M.



தமிழ்நாடு தமிழ்நாடு TAMILNADU

8649
1.7.15

Y 915433

E. K. Sivanthirapada
E.K. சிவகுருநாதன்
முத்திரைத்தாள் சிறப்பகையான்
முனியில்லியத்தூர், தமிழ்நாடு.
உரிமம் எண்: R.O.C. 12617/70

சிவகுருநாதன்
சிவகுருநாதன்

ஆவணம் 2208
எண்: 2015
ஆண்டு: 2015
பக்க எண்: 3
மொத்த பக்கம்: 128

என்னவென்றால், இதன் தபசில் கண்ட சொத்தானது எங்கள் இருவருக்கும் கீழராஜகுலராமன் சார்பதிவகம் 1 புத்தகம் 3547/2010 நிர் கிரைய ஆவணம் மூலம் கூட்டாகப் பாத்தியப்பட்டு, எங்கள் பெயரில் பட்டா எண்.1925 மூலம் பட்டா கண்டு, நாளது தேதி வரை எவ்வித வில்லங்கமின்றி நாங்கள் கூட்டாக அனுபவித்து வரும் சொத்தாகும். தபசில் சொத்தை நாங்கள் தங்களுக்கு நாளது தேதியில் கிரையம் செய்து கொடுத்தது ரூ.6,00,000/-. இந்த ரூபாய் ஆறு லட்சமும் எங்கள் குடும்ப நன்மைக்காக

S. Anand

S. Anand

T. K. Sivanthirapada

S. Sivanthirapada



தமிழ்நாடு தமிழ்நாடு TAMILNADU

8650
1.7.15

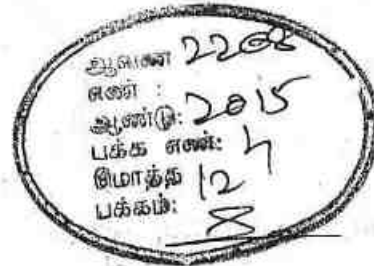
Y 915434



E.K. Sivanthirapada

E.K. சிவகுருநாதன்
முக்கிரைத்தான். திப்பையாபாளி
மூலிக்லிபுத்தூர். தமிழ்நாடு.
உரிமம் எண்: R.O.C. 12517 / 70

சுபாஷ்
சுபாஷ்



-4-

இதுமுன் நாங்கள் தங்களிடம் நேரில் ரொக்கம் பெற்றுக் கொண்டபடியால் தபசில் கண்ட சொத்தைத் தாங்கள் நாளை. தேதி முதல் கிரையப் பாத்தியமாகவும், சர்வ சுதந்திரப் பாத்தியமாகவும், சந்ததி பரம்பரையாகவும், தானாதி விநியோக விற்கிரையங்களுக்கு யோக்கியமாகவும், ஆண்டு அனுபவித்துக் கொள்வீர்களாகவும். தபசில் சொத்தின் பேரில் எவ்வித வில்லங்கம் இல்லையென்று உறுதி கூறுகிறோம். ஏதேனும் வில்லங்கம்

S. A. V.

S. A. V.

T. K. S.

ச. பாலகிருஷ்ணன்



தமிழ்நாடு தமிழ்நாடு TAMILNADU

8651
1.7.15

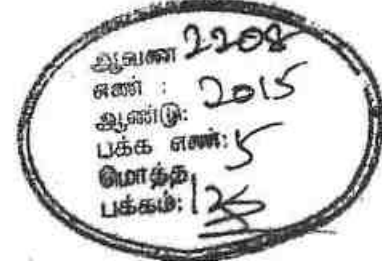
Y 915435



E.K. சிவகுருநாதன்

E.K. சிவகுருநாதன்
மத்தியத்தான் விற்பனையாளர்
முகவிலிபுத்தூர், தமிழ்நாடு.
பரிமல் எண்: H.O.C. 12517/79

திரு. சிவகுருநாதன்
சென்னை



விவகாரமிருந்து பின்னர் வெளிப்பட்டால் எங்களுக்குப் பாத்தியப்பட்ட வேறு இதர சொத்துக்களில் இருந்து நிவர்த்தி செய்து கொடுப்போமாகவும். தபசில் சொத்து தங்கள் பெயருக்கு பட்டா மாறுதல் ஆவதற்கு இத்துடன் புள்ளி மனுவும் கையொப்பம் செய்து கொடுத்து விட்டோம். தபசில் சொத்தை இன்றே தங்கள் சுவாதீன அனுபவத்திற்கு விட்டு விட்டோம்.

சொத்து விபரம்

விருதுநகர் மாவட்டம் விருதுநகர் பதிவு மாவட்டம் கீழராஜகுலராசன் சார்பதிவு சரகம் சிவகாசி வட்டம் அப்பையநாயக்கன்பட்டி கிராமம் பட்டா எண்.192ல் கண்ட அயன் புஞ்சை சர்வே எண்களில்

Sign.

S. A. V.
T. K. S. S.

ச. பாலகிருஷ்ணன்



தமிழ்நாடு தமிழ்நாடு TAMILNADU

8653
1.7.15

AZ 294179



E.K. சிவகுருநாதன்
முத்திரைத்தாள் விற்பனையாளர்
ஸ்ரீவில்லிபுத்தூர். தமிழ்நாடு.
உரிமம் எண் : R.O.C. 12517170

சுரேஷ்
சுரேஷ்

-6-

- 1) சர்வே 203/2 நிர் ஹெக்டேர் 0.29.0க்கு செண்டு 72 பூராவும்
- 2) சர்வே 203/6 நிர் ஹெக்டேர் 0.80.0க்கு ஏக்கர் 1 செண்டு 98 பூராவும்
- 3) சர்வே 203/7 நிர் ஹெக்டேர் 1.60.5க்கு ஏக்கர் 3 செண்டு 96 பூராவும்
- 4) சர்வே 205 நிர் ஹெக்டேர் 0.39.5க்கு செண்டு 98 பூராவும்

ஆக மொத்த விஸ்தீரணம் ஏக்கர் 7 செண்டு 64 பூராவும் தபசில் சரி.

S. Anand



S. Anand

T. K. S. S. S.

S. Anand



தமிழ்நாடு தமில்நாடு TAMILNADU

8654
1.7.15

AZ 294180



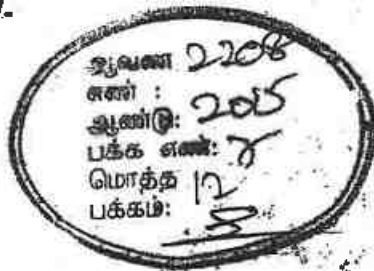
E.K. Sivakumar
E.K. சிவகுருநாதன்
முத்திரைத்தாள் விற்பனையாளர்
முகேவில்லிபுத்தூர், தமிழ்நாடு.
பரிமல் எண் : R.Q.C. 12517 / 79

செவ்வகம்
செவ்வகம்

-7-

தபசில் சொத்து அப்பையநாயக்கன்பட்டி பஞ்சாயத்து வெம்பக்கோட்டை
பஞ்சாயத்து யூனியனைச் சார்ந்தது. தபசில் சொத்தின் தற்கால மார்க்கெட்
மதிப்பு ரூபாய் 6,87,526/-

S. Anand



S. Anand

T. Muthukumaresan

சாட்சிகள்

1. *Assen. S/o Tharmar* *Kundan patti*

2. *மா. திராமன் S/o மா. திராமன் பத்திரகாரன்* *சாட்சியாக பத்திரகாரன்*
வரைவு செய்தவர்

M. Muthukumaresan B.B.A., M.com, B.L.,
ADVOCATE
Roll No. MS 3881/2011

செவ்வகம்

S. Muthukumaresan

1968ம் வருட முத்திரைச் சட்டம் முத்திரைக் குறைப்பு தடுப்புச் சட்டம்

விதி 3(1)ன் படி அறிக்கை

கிராமம் : அப்பையநாயக்கன்பட்டி

வரிசை நிர்	சர்வே நிர் டெட்டர்	விஸ்திரணம் ஹெக்டேர்	சொத்தின் தன்மை	மார்க்கெட் மதிப்பு (ரூ)
1.	203/2	0.29.0	பஞ்சை	ரூ. 64,525.00
2.	203/6	0.80.0	பஞ்சை	ரூ.1,78,000.00
3.	203/7	1.60.5	பஞ்சை	ரூ.3,57,113.00
4.	205	0.39.5	பஞ்சை	ரூ. 87,888.00
ஆக மொத்த மதிப்பு				ரூ.6,87,526.00

Sign-



S. A. M.

T. K. M.

S. M. N. S. S. S.



KeethaRajakularaman சார்பதிவாளர் அலுவலகத்தில் 02/07/2015 அன்று/ மணிகளுக்கிடையில் தாக்கல் செய்து
கட்டணம் ரூ 7030 செலுத்தியவர்

1 இடது பெரு விரல்



Signature

மேல் விவரம் ஆவண வாசகப்படி

எழுதிக் கொடுத்ததாக ஒப்புக்கொண்டவர்

1 இடது பெரு விரல்



Signature

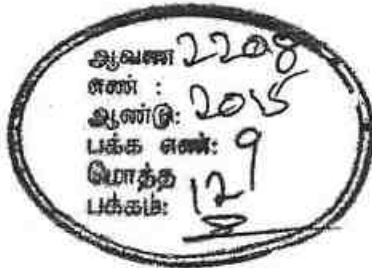
மேல் விவரம் ஆவண வாசகப்படி

2 இடது பெரு விரல்



Signature

மேல் விவரம் ஆவண வாசகப்படி



Sheet no. 1 of 2

Signature

இடது பெரு விரல்



Signature

மேல் விவரம் ஆவண வாசகப்படி

இன்னாரென்றிருபித்தவர்

1. ~~சுஜன்~~ பெயர் : T. Seenivasan த/பெ S/o Thosmay Kundam Patti

2. ~~சுஜன்~~ பெயர் : ~~சு. சுஜன்~~ த/பெ ~~சு. சுஜன்~~ கி.பெ. ~~சு. சுஜன்~~ கி.பெ.

2015.ம் ஆண்டு ஜூலை திங்கள் 2 ம் நாள்

சார்பதிவாளர் KeelaRajakularaman

1 புத்தகம் 2015 ம் ஆண்டு 2208 ம் எண்ணாக பதிவு செய்யப்பட்டது

நாள் : 02/07/2015

சார்பதிவாளர்
KeelaRajakularaman
6.042 2015



Sheet no. 2 of 2

சு. சுஜன்

உதவி இயக்குநர் அலுவலகம்
 விருதுநகர் மாவட்டம்
 24 JAN 2025
 விருதுநகர்
 ராஜ்யம் & சுரங்கத்துறை

பெரும்பாலான கார்ட் / PERMANENT ACCOUNT NUMBER
ABMPR4211M
 பெயர் / NAME
SUBBA REDDIAR RAJENDRAN
 தந்தை பெயர் / FATHER'S NAME
SUBBA REDDIAR SUBBA REDDIAR



இந்த அட்டை, கிடைத்தால், கீழ்க்கண்ட விவரங்களை அறிவித்து தகவல் அளிப்பது அவசியம். இல்லாவிட்டால், கார்ட் கிடைத்தால், கீழ்க்கண்ட விவரங்களை அறிவித்து தகவல் அளிப்பது அவசியம்.
 மதுரை - 625 002

பிறந்த தேதி / DATE OF BIRTH
03-08-1957

கையொப்பம் / SIGNATURE

கருமரவரர் ஆ. ராஜபதி, மதுரை
 COMMISSIONER OF INCOME-TAX, MADURAI

In case this card is lost/found, kindly inform/return to the issuing authority :
 Commissioner of Income-Tax,
 Central Revenue Division,
 V. P. Ratnasamy Nader Road,
 Virudhunagar, Madurai - 625 002.

சுப்பிரமணியம்
 SUBBAPRATHAM
 07/06/1970
 07/06/1970
 AKMPA210J
 Signature

In case this card is lost / found, kindly inform / return to :
 Income Tax PAN Services Unit, ITD-123
 Plot No. 3, Sector 11, CHB Nagar,
 New Mumbai - 400 614.
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10/3/2015

பக்கம் நெ. : 1 of 1



நில அளவை ஆவணம் - பட்டா

1721/15

இ.எண் 10(1) பீரிவு

வருவாய்த்துறை, விருதுநகர் மாவட்டம்

வட்டம் : சிவகாசி

கிராமம் : அப்பையநாயக்கன்பட்டி

பட்டா எண் 1925

உரிமையாளர்கள் பெயர்

I சுப்பையா

மகன்

ஆறுமுகம்

2 திருமலைசெட்டியார்

மகன்

கருப்பையா

புல எண்ணும் உட்பிரிவும்	நன்செய்		புன்செய்		மற்றவை	
	பரப்பு ஹெக்டேர் - ஏர்	தீர்வை ரூ - பை	பரப்பு ஹெக்டேர் - ஏர்	தீர்வை ரூ - பை	பரப்பு ஹெக்டேர் - ஏர்	தீர்வை ரூ - பை
203 2	-	-	- 29.00	0.58	-	-
203 6	-	-	- 80.00	1.60	-	-
203 7	-	-	1 - 60.50	3.26	-	-
205	-	-	- 39.50	0.81	-	-
223 1	-	-	- 66.50	1.31	-	-
223 2	-	-	1 - 0.50	2.06	-	-
223 3	-	-	1 - 0.50	2.00	-	-
225 3	-	-	1 - 9.50	2.19	-	-
	-	-	6 - 66.00	13.81	-	-



04/038/1,925,00/2.1 10/03/2015 3:29:21P

தலைமையிடத்துறை, துணை வட்டாட்சியுள்
சிவகாசி

S. Anand

10/3/15

S. Anand

T. Anand

* S. Anand 7/3/15

1126

அனுப்பநர்:

திரு. முசிவகுமார்., பி.எஸ்.சி.,
வருவாய் கோட்டாட்சியர்,
சாத்தூர்.

பெறுநர்:

மாவட்ட ஆட்சியர்,
விருதுநகர்.

செ.எ.எ.எ. / 2507 / 2024, நாள்: 14.10.2024

நியா,

பொருள் :

கனிமங்களும் சுரங்கங்களும் - சிறுகனிமம் - உடைகல் மற்றும் கிராவல் - விருதுநகர் மாவட்டம் - வெம்பக்கோட்டை வட்டம் - அப்பையநாயக்கன்பட்டி கிராமம் - புல எண்.203/7 விஸ்தீரணம் 1.80.50 ஹெக்டேர் பரப்பில் - 10 (பத்து) ஆண்டுகளுக்கு உடைகல் மற்றும் கிராவல் குவாரி உரிமம் கோரி - திருபாலகிருஷ்ணன் என்பவர் மனு செய்தது - அறிக்கை கோரியது - அறிக்கை அனுப்பதல் - தொடர்பாக.



பார்வை:

1. உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, விருதுநகர் கட்டம் எண்.ந.க.கே.வி1/717/2024, நாள்: 04.07.2024.
2. கனிமப்பராமரிப்பு - வருவாய் வட்டாட்சியாள் கட்டம் எண்.ந.க.ஆ1/2800/2024, நாள்: 30.09.2024.

விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண். 203/7 விஸ்தீரணம் 1.60.50 ஹெக்டேர் பரப்பில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் கோரி திருபாலகிருஷ்ணன், த/பெ. சங்கப்பன் என்பவர் மனு செய்தது தொடர்பாக, புலத்தணிக்கை செய்து எனத்தறிக்கையினை கீழ்க்கண்டவாறு சமர்ப்பிக்கிறேன்.

மனுதாரர் உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கக் கொடும் வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண்.203/7 பரப்பு 1.60.50 ஹெக்டேர் பட்டா எண்.2213-ல் சுப்பாரெட்டியார் மகன் ராஜேந்திரன் என்பவர் பெயரில் கிராமக் கணக்கில் தாக்கலாகியுள்ளது.

மேற்படி புலத்தின் உரிமையாளர் ராஜேந்திரன் என்பவரால் உரிமம் கொடும் நபரான ச.பாலகிருஷ்ணன் என்பவருக்கு நோட்டரி பன்னிக் முன்னிலையில் ஒப்பந்த பத்திரம் செய்து கொடுக்கப்பட்டுள்ளது.

குவாரி உரிமம் கொடும் புலத்தின் நான்குமால் விபரம்:-

- வடக்கு - புல எண்.202/3 - கடற்கரை புஞ்சை நிலம், 202/2 - அரசு புறம்போக்கு வண்டிப்பாதை,
- தெற்கு - புல எண்.207/1 - ராமராஜ் புஞ்சை நிலம்,
- கிழக்கு - புல எண்.203/4 - அரசு புறம்போக்கு வண்டிப்பாதை,
- மேற்கு - புல எண்.206 - ராமராஜ் புஞ்சை நிலம்,

உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்கக் கொடும் புலத்திலிருந்து 300 மீட்டர் சுற்றளவில் குடியிருப்புகள் ஏதுமில்லை. மேலும் 50 மீட்டர் சுற்றளவில் கோவில், மசூதி, நினைவுச் சின்னங்கள், உயர் மின்னழுத்த கம்பி பாதைகள் மற்றும் இடுகாடு ஏதுமில்லை. 500 மீட்டர் சுற்றளவில் புராதானச் சின்னங்கள் மற்றும் பழமையான கல்வெட்டுகள் ஏதுமில்லை. மனுதாரர் உரிமம் கொடும் புலத்திற்கு 50 மீட்டர் சுற்றளவில் இருப்புப்பாதை, சாலை, மின் இணைப்புகள், குளம், ஓடை மற்றும் கால்வாய் போன்ற நீர்நிலைகள் ஏதுவும் கிடையாது. பிரஸ்தா புலத்திற்கு செல்வதற்கு பாதை

சு. பரமசிவன்

வசதியானது புல எண்.225/3 திரு.இராஜேந்திரன் என்பவரின் நிலத்தின் வழியாகவும், புல எண்.216/1, 216/3 அரசு மேய்க்கால் வழியாகவும், புல எண்.205 திரு.இராஜேந்திரன், புல எண்.206 -திரு.ராமராஜ் என்பவரின் நிலத்தின் வழியாகவும் செல்கிறது. மேற்படி பாதை செல்லும் நிலத்தின் உரிமையாளர்களிடமிருந்து சம்மதக்கடிதம் பெறப்பட்டுள்ளது. உரிமம் கோரும் புலத்திற்கு தெற்கில் சுமார் 50 மீட்டர் இடைவெளியில் புல எண்.207/2ஏ, 207-ல் திரு.ராஜேந்திரன் என்பவரின் முடிவற்ற குவாரியும், 206 மற்றும் 207/1 புலங்களில் திரு.ராமராஜ் என்பவரின் செயல்படாத குவாரியும் சுமார் 100 மீட்டருக்குள் அமைந்துள்ளது. அதேபோன்று வடக்குப் பகுதியில் 50 மீட்டர் சுற்றளவில் புல எண்.202/1ஏ2 மற்றும் 202/1பி-ல் திரு.கனிராஜ் என்பவரின் முடிவற்ற குவாரி உள்ளது. மேலும் கிழக்குப் பகுதியில் புல எண்.198/4, 197/1, 196/1ஏ-ல் திரு.சுப்புராஜ் மற்றும் புல எண்.199/6ஏ-ல் கோபாலகிருஷ்ணன் என்பவர்களின் செயல்படாத குவாரியும் 200 மீட்டர் இடைவெளியில் அமைந்துள்ளது.

உரிமம் கோரும் புலத்திற்கு சுமார் 300 மீட்டர் இடைவெளியில் புல எண்.39/1ஏ, 1பி, 2ஏ, 32/4, 38/3ஏ2, 3பி, 4, 5, 8, 9ஏ ஆகிய புலங்களில் திரு.ரகுபதி என்பவரின் செயல்படும் குவாரியும், 41/2, 42, 43/3, 6, 38/6ஏ ஆகிய புலங்களில் திரு.ராஜேந்திரன் என்பவரின் செயல்படும் குவாரியும் அமைந்துள்ளது. மனுதாரர் உரிமம் கோரும் புலமானது கள்ளர் கண்டிசன் ஐரி பஞ்சவர் கண்டிஷன் ஐரி போன்ற நிலங்கள் இல்லை. தடை ஆணைப்பத்தகத்திலும் இடம்பெறவில்லை. உரிமம் வழங்கக் கோரிய புலத்தில் இதுவரையிலும் குவாரி பணி ஏதுவும் செய்யப்படவில்லை. உரிமம் கோரும் புலத்திற்கு வடக்கு மற்றும் கிழக்குப் பகுதியை ஒட்டியவாறு அரசு புறம்போக்கு வண்டிப்பாதை செல்கிறது. ஊரிமம் கோரும் புலத்திலிருந்து பாதுகாக்கப்பட்ட இடைவெளியில் வண்டிப்பாதை, வண்டிவண்டிகள் மற்றும் மண் சரணாலயம் ஏதுமில்லை. மேற்படி நிலம் தொடர்பாக அரசுக்கு செலுத்த வேண்டிய நிலவரி பாக்கி நிலுவை இனங்கள் ஏதுமில்லை. பிரஸ்தாப புலத்தில் உடைகல் மற்றும் கிராவல் குவாரி உரிமம் வழங்குவது தொடர்பாக பொதுமக்களிடம் அ1 நோட்டீஸ் விளம்பரம் செய்யப்பட்டதில் நாளது தேதிவரை ஆட்சேபணை ஏதும் வரப்பெறவில்லை. குவாரி உரிமம் கோரும் புலமானது வெம்பக்கோட்டை ஊராட்சி ஒன்றியத்துட்பட, அமைப்பதற்கான அனுமதி பெறப்பட்டு உள்ளதால் உரிமம் வழங்கப்படும்.

எனவே, விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண். 203/7 விஸ்தீர்ணம் 1.60.50 ஹெக்டேர் பரப்பில் 10 வகுப்புகளுக்கு உடைகல் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் திரு.பாலகிருஷ்ணன், த/பெ. சங்கப்பன் என்பவருக்கு தமிழ்நாடு சிறுகனிம விதிகளின்படி வழங்க பரிந்துரை செய்கிறேன் என்பதைப் பணிவுடன் தெரிவித்துக்கொள்கிறேன். இணைப்பு: மேற்கண்டவாறு.

ஒம்/ மு.சிவசுமார்,
வருவாய் கோட்டாட்சியர்,
விருதுநகர்.

/உத்தரவு/24/15/1024

15/10/24
நேமுக உதவியாளர்

215/1024

புலத்தணிக்கைக்குறிப்பு



புலத்தணிக்கை அலுவலர் பெயர் மற்றும் பதவி	திரு. மு.சிவகுமார், பி.எஸ்.சி., மதுரை மாவட்டம், சாலைநகர்,
தணிக்கை செய்த இடம்	வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம்
புல எண்கள்	புல எண்கள். 203/7 விஸ்தீரணம் 1.60.50 ஹெக்டேர்
தணிக்கை நாள்	08.10.2024
புலத்தணிக்கையின் நோக்கம்	10 வருடங்களுக்கு உடைகல் மற்றும் கிராமல் குவாரி உரிமம் வழங்கக் கோரி கோரியது - தொடர்பாக.

விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண். 203/7 விஸ்தீரணம் 1.60.50 ஹெக்டேர் பரப்பில் 10 வருடங்களுக்கு உடைகல் மற்றும் கிராமல் குவாரி குத்தகை உரிமம் கோரி திரு.பாலகிருஷ்ணன், த/பெ. சங்கப்பன் என்பவர் மனு செய்தது தொடர்பாக, இன்று (08.10.2024) புலத்தணிக்கை மேற்கொள்ளப்பட்டது. புலத்தணிக்கையின்போது வெம்பக்கோட்டை வட்டாட்சியர், மண்டல துணை வட்டாட்சியர், வருவாய் ஆய்வாளர், குறுவட்ட அளவர் மற்றும் கிராம நிர்வாக அலுவலர் ஆகியோர் உடனிருந்தனர்.

மனுதாரர் உடைகல் மற்றும் கிராமல் குவாரி உரிமம் வழங்கக் கோரும் வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி கிராமம், புல எண்.203/7 பரப்பு 1.60.50 ஹெக்டேர் மட்டா எண்.2213-ல் சுப்பாரெட்டியார் மகன் ராஜேந்திரன் என்பவர் பெயரில் கிராமக் கணக்கில் தாக்கவாகியுள்ளது.

மேற்படி புலத்தின் உரிமையாளர் ராஜேந்திரன் என்பவரால் உரிமம் கோரும் நபரான ச.பாலகிருஷ்ணன் என்பவருக்கு நோட்டரி பப்ளிக் முன்னிலையில் ஒப்பந்த பத்திரம் செய்து கொடுக்கப்பட்டுள்ளது.

குவாரி உரிமம் கோரும் புலத்தின் நான்குபாக வியாபம்:-

- வடக்கு - புல எண்.202/3 - கடற்கரை புஞ்சை நிலம், 202/2 - அரசு புறம்போக்கு வண்டிப்பாதை,
- தெற்கு - புல எண்.207/1 - ராமராஜ் புஞ்சை நிலம்,
- கிழக்கு - புல எண்.203/4 - அரசு புறம்போக்கு வண்டிப்பாதை,
- மேற்கு - புல எண்.206 - ராமராஜ் புஞ்சை நிலம்,

உடைகல் மற்றும் கிராமல் குவாரி உரிமம் வழங்கக் கொரும் புலத்திலிருந்து 300 மீட்டர் சுற்றளவில் குடியிருப்புகள் ஏதுமில்லை. மேலும் 50 மீட்டர் சுற்றளவில் கோவில், மததி, நினைவுச் சின்னங்கள், உயர் மின்னழுத்த கம்பி பாதைகள் மற்றும் இடுகாடு ஏதுமில்லை. 500 மீட்டர் சுற்றளவில் புராதானச் சின்னங்கள் மற்றும் பழமையான கல்வெட்டுகள் ஏதுமில்லை. மனுதாரர் உரிமம் கோரும் புலத்திற்கு 50 மீட்டர் சுற்றளவில் இருப்பப்பாதை, சாலை, மின் இணைப்புகள், குளம், ஓடை மற்றும் கால்வாய் போன்ற நிநிலைகள் ஏதுவும் கிடையாது. பிரஸ்தா புலத்திற்கு செல்வதற்கு பாதை வசதியானது புல எண்.225/3 திரு.இராஜேந்திரன் என்பவரின் நிலத்தின் வழியாகவும், புல எண்.216/1,

S. V. ரெவின்யூ

அனுப்பநர்

திரு.ந.கலைவாணிபிகளம்,
வருவாய் கோட்டாட்சியர்,
விருதுநகர் மாவட்டம்,
காசிதா.

பெறுநர்

வருவாய் கோட்டாட்சியர்,
சாத்தூர் வருவாய் கோட்டம்,
சாத்தூர்.

ந.க.அ.1/2800/2024 நாள்:30.09.2024.



கனியங்கடும் கரங்கங்கடும் - சிறுகனிமம் - உடைகல் மற்றும் கிராவல்
- விருதுநகர் மாவட்டம் - வெம்பக்கோட்டை வட்டம் -
அப்பையநாயக்கன்பட்டி வருவாய் கிராமத்தில் புல எண். 203/7
விஸ்தீரணம் (1.60.5) ஹெக்டேர் பரப்பில் - 10 (பத்து) ஆண்டுகளுக்கு உடைகல்
மற்றும் கிராவல் குவாரி குத்தகை உரிமம் கோரி திரு.ச.பாலகிருஷ்ணன் த/பெசங்கப்பன் என்பவர்
மனு செய்துள்ளதன்பேரில் பார்வை 1-ல் காணும் கடிதத்தில் விசேஷண அனுப்ப
அறிவுறுத்தப்பட்டுள்ளது. அதன்படிபடையில் அறிக்கை சமர்ப்பிக்க வேட்டதின் பேரில் பார்வை 3 முதல் 6
வரையிலான அறிக்கைகள் வரப்பெற்றன. மேற்படி மனுதாரரின் கோரிக்கை தொடர்பாக 26.09.2024
அன்று புலத்தணிக்கை செய்து எனதறிக்கையினை கீழ்க்கண்டவாறு சமர்ப்பிக்கிறேன்.

1. உதவி இயக்குநர், புலியியல் மற்றும் கரங்கத்துறை, விருதுநகர்
கடிதம் எண்.ந.க.கே.வி1/717/2024, நாள்: 04.07.2024.
2. சாத்தூர் வருவாய் கோட்டாட்சியர் அவர்களின் கடித
எண்.ந.க.அ.2/3481/2024, நாள்:08.07.2024.
3. மண்டல துணைவட்டாட்சியர் அறிக்கை நாள்: .08.2024
4. குறுவட்ட வருவாய் ஆய்வாளர், ஆலங்குளம் அறிக்கை
நாள்:09.08.2024
5. குறுவட்ட நில அளவர், ஆலங்குளம் அறிக்கை நாள்: .09.2024
6. கிராம நிர்வாக அலுவலர், நதிக்குடி அறிக்கை நாள்:
08.08.2024.

விருதுநகர் மாவட்டம், வெம்பக்கோட்டை வட்டம், அப்பையநாயக்கன்பட்டி வருவாய் கிராமத்தில்
புல எண். 203/7 விஸ்தீரணம் (1.60.5) ஹெக்டேர் பரப்பில் - 10 (பத்து) ஆண்டுகளுக்கு உடைகல்
மற்றும் கிராவல் குவாரி குத்தகை உரிமம் கோரி திரு.ச.பாலகிருஷ்ணன் த/பெசங்கப்பன் என்பவர்
மனு செய்துள்ளதன்பேரில் பார்வை 1-ல் காணும் கடிதத்தில் விசேஷண அனுப்ப
அறிவுறுத்தப்பட்டுள்ளது. அதன்படிபடையில் அறிக்கை சமர்ப்பிக்க வேட்டதின் பேரில் பார்வை 3 முதல் 6
வரையிலான அறிக்கைகள் வரப்பெற்றன. மேற்படி மனுதாரரின் கோரிக்கை தொடர்பாக 26.09.2024
அன்று புலத்தணிக்கை செய்து எனதறிக்கையினை கீழ்க்கண்டவாறு சமர்ப்பிக்கிறேன்.

மேற்படி புல எண்கள் அப்பையநாயக்கன்பட்டி, கிராமக்கணக்கில் மட்டா எண்கள்:2213-ல் புல
எண்கள்:203/7 கப்பா ரெட்டியார் மகன் ராஜேந்திரன் பெயரில் கிராமக்கணக்கில் தாக்கவாகியுள்ளது

மேற்படி புலமானது புலத்தின் உரிமையாளர் ராஜேந்திரன் என்பவரால் உரிமம் கோரும் படிபாடு

மேற்படி புலத்தின் உரிமையாளர் ராஜேந்திரன் என்பவரால் உரிமம் கோரும் படிபாடு

ச.பாலகிருஷ்ணன் என்பவருக்கு மனுட்டா படிபாடு
கொடுக்கப்பட்டுள்ளது.
குவாரி உரிமம் கோரும் புலஎண்ணின் நான்குமூல விபரம்
கீழ்க்கு
புலஎண். 203/4 - அரசு புறம்போக்கு வண்டிப்பாதை

S. 15/10/2024

202200

மேற்கு

புலஎண். 206 - ராமராஜ் புஞ்சை நிலம்

வடக்கு

புலஎண்.202/3 - கடற்கரை புஞ்சை நிலம்

புல எண்.202/2 அரசு புறம்போக்கு வண்டிப்பாதை

தெற்கு

புலஎண்.207/1 - ராமராஜ் புஞ்சை நிலம்

1. உரியம் கோரும் புல எண்.203/7, என்பது பட்டா எண்.2213-ல் சுப்பரெட்டியார் மகன் ராஜேந்திரன் பெயரில் கிராமக்கணக்கில் தாக்கலாகி உள்ளது.
2. உரியம் கோரும் புலமானது புலத்தின் உரிமையாளர் ராஜேந்திரன் என்பவரால் உரியம் கோரும் நபரான ச.பாலகிருஷ்ணன் என்பவருக்கு நோட்டரி பப்ளிக் முன்னிலையில் ஒப்பந்த பத்திரம் செய்து கொடுக்கப்பட்டுள்ளது.
3. மனுதாரர் உரியம் கோரும் கூட்டுப்புலத்திற்கு 300 மீட்டர் சுற்றளவில் குடிநீருப்புகள் ஏதுமில்லை.
4. மனுதாரர் கோரும் கூட்டுப்புலத்திற்கு 50 மீட்டர் சுற்றளவில் கோவில், மதுகி நினைவுச்சின்னங்கள், உயர் மின்னழுத்த கம்பி பாதைகள் மற்றும் இடுகாடு ஏதுமில்லை.
5. மேலும் மனுதாரர் உரியம் கோரும் கூட்டுப்புலத்திற்கு 500 மீட்டர் சுற்றளவில் புரதானசின்னங்கள் மற்றும் பழையபாண கல்வெட்டுகள் ஏதுமில்லை.
6. மனுதாரர் கோரும் கூட்டுப்புலத்திற்கு 50 மீட்டர் சுற்றளவில் இருப்புப்பாதை, சாலை, மின் இணைப்புகள் குளம், ஓடை, மற்றும் கால்வாய் போன்ற நீர்நிலைகள் என்ற ஏதுவும் கிடையாது.
7. மேலும் மனுதாரர் உரியம் கோரும் கூட்டுப்புலத்திற்குள் நீர்நிலைகள், நிலவியல் ஓடைகள் ஏதுமில்லை என்பதும் புலத்தணிக்கையில் தெரிய வருகிறது.
8. மனுதாரர் உரியம் கோரும் கூட்டுப்புலத்திற்கு பாதை வசதி என்பது சர்வே எண்.225/3 திரு.இராஜேந்திரன் என்பவரின் நிலத்தின் வழியாகவும், சர்வே எண்.216/1, 216/3 அரசு மேய்க்கால் வழியாகவும், சர்வே எண்.205 திரு.ராஜேந்திரன் சர்வே எண்.206 திரு.ராமராஜ் என்பவரின் நிலத்தின் வழியாகவும், செல்கிறது. மேற்படி பாதை செல்லும் நிலத்தின் உரிமையாளர்களிடமிருந்து சம்மதக்கூறும் பெறப்பட்டுள்ளது.
9. உரியம் புலத்திற்கு தெற்கில் சுமார் 50 மீட்டர் இடைவெளியில் சர்வே எண்.207/2ஏ, 2பி-ல் திரு.ராஜேந்திரன் என்பவரின் முடிவற்ற குவாரியும், சர்வே எண்.207/2ஏ, 2பி-ல் திரு.ராமராஜ் என்பவரின் செயல்பாடாத குவாரியும் உள்ளது. மேலும் கிழக்குப் பகுதியில் சர்வே எண்.198/4, 197/1, 196/1ஏ-ல் திரு.சுப்புராஜ் மற்றும் 199/6ஏ கோபாலகிருஷ்ணன் என்பவர்களின் செயல்பாடாத குவாரியும் 200 மீட்டர் இடைவெளியில் அமைந்துள்ளது.

சி.ப.ராமசுந்தரன்



10. உரிமம் கோரும் புலத்திற்கு சுமார் 300 மீட்டர் இடைவெளியில் சர்வே எண் 39/1ஏ, 1டி, 2ஏ, 32/4, 38/3ஏ2, 3டி, 4, 5, 8, 9ஏ ஆகிய புலங்களில் திரு.ராஜபதி என்பவரின் செயல்படும் குவாரியும், 41/2, 42, 43/31 6, 38/6ஏ ஆகிய புலங்களில் திரு.ராஜேந்திரன் என்பவரின் செயல்படும் குவாரியும் அமைந்துள்ளது.
11. மனுதாரர் உரிமம் கோரும் புலமானது கள்ளர் கண்டிசன் ஜூரி பஞ்சாயத் கண்டிசன் ஜூரி போன்ற நிலங்களாகவும், தடை ஆணைபிடிக்கத்திலும் இடம் பெறவில்லை.
12. மனுதாரர் உரிமம் கோரும் புலத்தில் இதுவரையிலும் குவாரி பணி எதுவும் செய்யப்படவில்லை.
13. மனுதாரர் உரிமம் கோரும் புலத்திற்கு வடக்கு மற்றும் கிழக்குப்பகுதியை ஒட்டியவாறு அரசு புறம்போக்கு வணங்குபாடு செல்கிறது.
14. மேற்படி உரிமம் கோரும் புலத்திலிருந்து பாதுகாக்கப்பட்ட இடைவெளியில் வணங்குபகுதி, வன விலங்குகள் மற்றும் மான் சரணாலயம் ஏதுமில்லை என்பதும் புலத்தணிக்கையில் தெரியவருகிறது.
15. மேற்படி நிலம் தொடர்பாக அரசுக்கு செலுத்த வேண்டிய நில வரி பாக்கி நிலுவை இனங்கள் ஏதுமில்லை.
16. மனுதாரர் உரிமம் கோரும் புலம் தொடர்பாக பொதுமக்களிடம் ஏ1- நோட்டீஸ் விளம்பரம் செய்யப்பட்டதில் ஆட்சேபனை ஏதும் வரப்பெறவில்லை.
17. மேலும் மனுதாரர் கோரும் கூட்டுப்புலமானது வெம்பக்கோட்டை ஊராட்சி ஒன்றியத்தைச் சேர்ந்த நிலமாக ஊராட்சிக்கு உட்பட்டது.

மேற்படி புலத்தணிக்கையின்படியும், கிராம நிர்வாக அலுவலர் அறிக்கையின்படியும், விருதுநகர் மாவட்டம், சிவகாசி வட்டம், வெள்ளூர் பேரூர் வீதி கதவு எண். 1/105 என்ற முகவரியில் வசித்து வரும் திரு.பாலகிருஷ்ணன் த/பு சங்கப்பன் என்பவர் குவாரி உரிமம் வழங்க பரிந்துரை செய்யவேண்டும் என்பதை பணியிடம் தெரிவித்துக்கொள்கிறேன்.

இணைப்பு : தொடர்புடைய ஆவணங்கள்.

(ஒ.ம்).ந.கலைவாணி
வருவாய் வட்டாட்சியர்,
வெம்பக்கோட்டை
20.1.25
வட்டாட்சியருக்காக.

30/1/25

S. P. K. K. K. K. K.



**விருதுநகர் மாவட்டம் வெம்பக்கோட்டை வருவாய் வட்டாட்சியின்
புலத்தணிக்கை அறிக்கை**

1.	குத்தகை உரிமம் கோரிய விண்ணப்பம் பெறப்பட்ட தேதி					: 29.08.2024.
2.	அ) புலத்தணிக்கை செய்த நாள்					: 26.09.2024
	ஆ) புலத்தணிக்கையின் போது உடனிடங்கை					: குலவட்ட வருவாய் அயலாளர், விருதுநகர் மாவட்டம், விருதுநகர் அலுவலர் மற்றும் உதவிப்பிரகாரி
3.	க) விண்ணப்ப செய்த நாள் காலம் விண்ணப்பம் செய்யப்பட்ட இடம் மற்றும் முகவரி					: விண்ணப்பத்தை செய்த/பெயர்க்கப்பட்ட, எண். 1/172, பெற்கு தெரு, வெள்ளூர் கிராமம், விருதுநகர் வட்டம், விருதுநகர் மாவட்டம்.
4.	குத்தகை உரிமம் கோரும் கனம்மங்களின் பெயர்					: உடைசல் மற்றும் கிராமல்
5.	குத்தகை உரிமம் கோரும் காலம்					: 12 (பன்னெட்டு) ஆண்டுகள்
6.	குத்தகை உரிமம் கோரும் இடம் அமைந்துள்ளது பற்றிய விவரம்					:
உ. எ. ண்	வட்டம்	கிராமம்	புல எண்கள்	மொத்த பரப்பு (ஹெக்டர்)	குத்தகை உரிமம் கோரும் பரப்பு (ஹெக்டர்)	வகைப்பாடு
1	வெம்பக்கோட்டை	அப்பையநாயக்க ன்பட்டி	203/7	1.60.5	1.60.5	பட்டா நிலம்
			மொத்தம்		1.60.5	
7.	அ) குத்தகை உரிமம் கோரும் புல எண்கள், விண்ணப்பதாரரின் பெயரில் பட்டா நிலங்களாக இருப்பின் அது பற்றிய விவரம்			: குலவட்ட பணி செய்யக்கோரும் புல எண்கள் அனைத்தும் அப்பையநாயக்க ன்பட்டி கிராமக்கணக்கில் பட்டா எண் 2213- இல் கப்பாபெட்டியார் மகன் ராஜேந்திரன் பெயரில் தாக்கலாகியுள்ளது		
	ஆ) பட்டாதாரரிடமிருந்து குத்தகை ஒப்பந்தம் பெறப்பட்டிருப்பின் அதுபற்றிய விவரம்			: ஆவணம் இணைக்கப்பட்டுள்ளது		

பி. பரமசிவசுந்தரன்

	இ) குத்தகை கோரும் புல எண்கள் தாழ்த்தப்பட்டோர் / பழங்குடியினருக்கு ஒதுக்கீட்டின் அடிப்படையில் பட்டா வழங்கப்பட்டிருப்பின் அதுபற்றிய விவரம்	:	இல்லை.										
8.	குத்தகை உரிமம் கோரும் புல எண்களின் நாள்கு எல்லைகள்.	:	<table border="1"> <tr> <th>புல எண்</th><th>வடக்கு</th><th>தெற்கு</th><th>கிழக்கு</th><th>மேற்கு</th></tr> <tr> <td>203/7</td><td>202/3, 202/2,</td><td>207/1</td><td>203/4</td><td>206</td></tr> </table>	புல எண்	வடக்கு	தெற்கு	கிழக்கு	மேற்கு	203/7	202/3, 202/2,	207/1	203/4	206
புல எண்	வடக்கு	தெற்கு	கிழக்கு	மேற்கு									
203/7	202/3, 202/2,	207/1	203/4	206									
9.	குத்தகை உரிமம் கோரும் புல எண்களுக்கு ஏற்கனவே குத்தகை உரிமம் வழங்கப்பட்டிருப்பின் அது பற்றிய விவரம்.	:	இல்லை.										
10.	குத்தகை உரிமம் கோரும் புல எண்களுக்கு அருகில் பாதுகாப்பு இடைவெளிக்குள் அமைந்துள்ள நிர்ந்தா அமைப்புகள் ஒதுக்கப்பட்ட வேண்டிய பாதுகாப்பு இடைவெளி பற்றிய விவரம்	:	மேற்படி புல எண்களுக்கு அருகில் உள்ள குவாரிகள், பட்டா நிலங்களுக்கு, இடைகளுக்கு போதிய பாதுகாப்பு இடைவெளி விவரம்.										
11.	அ) குத்தகை உரிமம் கோரும் புல எண்களிலிருந்து 300 மீட்டர் சுற்றளவுக்குள் குடியிருப்பு பகுதிகள் / அங்கீகரிக்கப்பட்ட வீட்டுமனைப்பிரிவுகள் மற்றும் புராதனச் சின்னங்கள் அமைந்துள்ள விவரம்	:	300 மீட்டர் சுற்றளவுக்குள் குடியிருப்பு பகுதிகள் / அங்கீகரிக்கப்பட்ட வீட்டுமனைப் பிரிவுகள் மற்றும் புராதனச் சின்னங்கள் இல்லை.										
	ஆ) குத்தகை உரிமம் கோரும் பகுதிக்கு பாசை வசதி உள்ளது பற்றிய விவரம்	:	பாசை வசதி உள்ளது.										
12.	குத்தகை உரிமம் கோரும் புல எண்கள் அமைந்துள்ள கிராமம், மலையிலை பாதுகாப்பு குழுமத்தின் கீழ் வருவது மற்றும் தடையில்லா சான்று பெற வேண்டியது பற்றிய விவரம்	:	-இல்லை-										
13.	குத்தகை உரிமம் கோரும் பகுதி வளவிலங்கு சரணாலயத்திலிருந்து அமைந்துள்ள தூரம், பெறப்பட்ட வேண்டிய தடையில்லா சான்று பற்றிய விவரம்.	:	-இல்லை-										
14.	குத்தகை கோரும் புல எண்களில் குத்தகை அமைப்புகள் அமைந்துள்ள விவரம்.	:	-இல்லை-										
15.	அ) குத்தகை உரிமம் கோரும் புலங்களின் பேரில் நிலம் கையகப்படுத்தும் நடவடிக்கைகள் இருப்பின் அது பற்றிய விவரம்.	:	-இல்லை-										

* S. M. N. S. S. S. S.



	ஆ) குத்தகை உரிமை கோரும் புல எண்களின் பேரில் நிதிமன்றத்தில் வழக்குகள் திருப்பிக் கொடுக்கப்பட்டன.		ஆதாரம்
16.	கிராம நிர்வாக அலுவலரின் வாக்குமூலம் பெறப்பட்டுள்ளதா?	:	கிராம நிர்வாக அலுவலர் வாக்குமூலம் அளித்துள்ளார்.
17.	குத்தகை உரிமை வழங்குவது தொடர்பாக "அ1" நோட்டீஸ் விளம்பரம் செய்யப்பட்டு இப்போது மக்களிடமிருந்து ஆட்சேபணைகள் வரவில்லையா?	:	"அ1" நோட்டீஸ் விளம்பரம் 25.05.2024 அன்று பிரசுரம் செய்யப்பட்டு ஆட்சேபணைகள் ஏதும் வரவில்லை.
18.	குத்தகை கோரும் கிராம புல எண்களின் பேரில் வருவாய்துறை பரிந்துரை செய்கின்றதா?	:	ஆம்

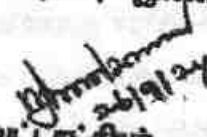
19) குத்தகை உரிமை கோரும் விண்ணப்பத்தின் பேரில் வெம்பக்கோட்டை வருவாய் வட்டாட்சியரின் அறிக்கையும் பரிந்துரையும்.

திருப்பாவிலுள்ள த/பெசங்கப்பன் என்பவர் விண்ணப்பித்துள்ள புல எண்கள் மட்டா நிலங்கள் என்ற அடிப்படையிலும் அப்படியநாயக்கன்பட்டி கிராம நிர்வாக அலுவலர், ஆலங்குளம் குறுவட்ட வருவாய் ஆய்வாளர் மற்றும் வெம்பக்கோட்டை மண்டலத் துணை வட்டாட்சியர் ஆகியோர் மனுதாரர் நிறுவனத்திற்கு உரிமை வழங்க பரிந்துரை செய்துள்ளதன் அடிப்படையிலும் மனுதாரர் நிறுவனத்தாருக்கு தமிழ்நாடு சிறுகுளி சலுகை விதிகள் 1959, விதி 19 மற்றும் 20-ன் கீழ் கீழ்க்கண்ட நிபந்தனைகளுக்கு உட்பட்டு பத்தாண்டுகளுக்கு குத்தகை உரிமை வழங்கலாம்.

1. குவாரி செய்ய அனுமதிக்கப்பட்ட குறிப்பிட்ட புல எண் மற்றும் குறிப்பிட்ட விஸ்தீரணத்திற்குள் தான் குவாரி செய்ய வேண்டும்.
2. குத்தகைதாரர் குவாரியை வேறுபாருக்கும் உள் குத்தகைக்கு விடலாகாது.
3. ஒப்பந்தப் பத்திரத்தில் கண்டுள்ள நிபந்தனைகளுக்கு அவர் கட்டுப்பட்டு நடக்க வேண்டும்.
4. குத்தகை ஒப்பந்தப் பத்திரம் நிறைவேற்றப்பட்ட பின்புதான் குவாரியில் வேலை செய்ய தொடங்க வேண்டும்.
5. குத்தகை பற்றிய முழுவிபரங்கள் அடங்கிய தகவல் பலகை ஒன்று குவாரியில் கண்டிப்பாக வைத்திருக்க வேண்டும்.
6. சொந்த செலவிலும் முயற்சியாலும் குவாரிக்குச் செல்லும் சாலைகள் மற்றும் பாதைகள் மற்றும் வசதிகள் அமைத்துக் கொள்ள வேண்டும்.

ச. ப. ரமணி

7. தன் சொந்த செலவிலேயே குவாரியில் குத்தகை வழங்கப்பட்ட விஸ்தீரணத்தை வட்ட அளவீர் மூலம் அளந்து நான்கு எல்லைக்கும் கல்தூண்கள் நட்டு அமைத்துப் பராமரித்து வா வேண்டும்.
8. குவாரிக்குரிய நடைசீட்டுகளை கண்டிப்பாக குவாரியில் இருந்து தான் வழங்க வேண்டும். நடைசீட்டுக்களின் அடிக்கட்டைகளை குவாரியில் வைத்திருக்க வேண்டும்.
9. குவாரிக்கு அருகில் வீடுகள், சாலைகள், பாதைகள், மின்சாரக் கம்பிகள், மின்சார டிரான்ஸ்பார்மர்கள் கோவில், ஓடை, குடிநீர் ஆதாரங்கள் மற்றும் சரித்திரப் புகழ் பெற்ற ஸ்தலங்கள் போன்ற அமைந்திருந்தால் அவைகளுக்கு சேதம் ஏற்படாதவாறு தேவையான அளவு பாதுகாப்பு இடைவெளி விட்டு குவாரி செய்ய வேண்டும்.
10. அனுமதிபெறாமல் குவாரியில் வெடிமருந்துகள் பயன்படுத்தக் கூடாது. வெடிமருந்துகள் சட்டம் கண்டிப்பாக கடைபிடிக்கப்பட வேண்டும். குறைந்த அழுத்தமுள்ள வெடிமருந்துகளை பயன்படுத்தி குவாரிப் பணி செய்ய வேண்டும்.
11. குவாரியில் வேலை செய்யும் தொழிலாளர்களின் நலன் பேணப்பட வேண்டும். குழந்தைத் தொழிலாளர்களை குவாரிப் பணியில் ஈடுபடுத்தக் கூடாது.
12. அருகிலுள்ள மட்டா நிலங்களுக்கு 7.5 மீ பாதுகாப்பு இடைவெளி விட வேண்டும்.
13. E.B Line மற்றும் கிணற்றுக்கு 50 மீ பாதுகாப்பு இடைவெளி விட வேண்டும்.
14. புல எண்களுக்கு அருகில் உள்ள குவாரிகளுக்கு போதிய பாதுகாப்பு தூரம் விட வேண்டும்.
15. கனிமம் எடுத்தச் செல்லும் வாகனங்களால் பொதுமக்களுக்கு எந்த ஒரு பாதிப்பும் இல்லாமல் தார்பாய் போட்டு மூடி எடுத்துச் செல்ல வேண்டும்.


 வருவாய் வட்டாட்சியர்
 வெம்பக்கோட்டை

ச. பரமசிவன்

கொம்பக்கோட்டை மணல் லாபத்தானை வட்டாட்சியர் அறிக்கை பணித்தனுப்புகிறது.

[illegible]

மேற்படி புல எண்கள் அப்படியதாய்க்கண்டப்டி, கிராமக்கணக்கில் பட்டா எண்கள் 2213-ல் புல எண்கள் 203/7 கட்டா செட்டியார் மகன் ஈரஜேத்திரன் பெயரில் கிராமக்கணக்கில் தூக்கலாகியுள்ளது மேற்படி பண்ணை புலத்தின் கிராமக்கணக்கில் தூக்கலாகியுள்ளது.

மேற்படி புலவனது புலத்தின் உரிமைபாளர் ராஜேந்திரன் என்பவரால் உரிமம் கேட்கும் நபரான ச.பாலகிருஷ்ணன் என்பவருக்கு நோட்டரி பப்ளிக் முன்னிலையில் ஒப்பந்த பத்திரம் செய்து கொடுக்கப்பட்டுள்ளது.

பிரதானம்: 202/4 • கலாநாயகர் தலைமையில் மாண்புமிகு பேரவைத் தலைவர்

புலனாய். 206 - ராமராஜ் புஞ்சை நிலம்
உட்கு

புலனாய்.202/3 - கடற்கரை புஞ்சை நிலம்

புல எண்.202/2 அரசு பூறம்போக்கு வண்டிப்பாதை
தெற்கு

புலனாய்வு-207/1 - சாமிநாதன் பஞ்சவர்ண நெயர்

1. மனுதாரர் உரிமம் கோரும் கூட்டுப்புலத்திற்கு 300 மீட்டர் சுற்றளவில் குடியிருப்புகள் ஏதுமில்லை
2. மனுதாரர் கோரும் கூட்டுப்புலத்திற்கு 50 மீட்டர் சுற்றளவில் கோவில், மதநினைவுச்சின்னங்கள், உயர் மின்னழுத்த கம்பி பாதைகள் மற்றும் இடுகாடு ஏதுமில்லை என்பதும் புலத்தணிக்கையில் தெரியவருகிறது.
3. மேலும் மனுதாரர் உரிமம் கோரும் கூட்டுப்புலத்திற்கு 500 மீட்டர் சுற்றளவில் புரதானசின்னங்கள் மற்றும் பழைமையான கல்வெட்டுகள் ஏதுமில்லை.
4. மனுதாரர் கோரும் கூட்டுப்புலத்திற்கு 50 மீட்டர் சுற்றளவில் இருப்புப்பாதை, சாலை ஏதுமில்லை
5. மனுதாரர் கோரும் கூட்டுப்புலத்திற்கு 50 மீட்டர் சுற்றளவில் இருப்புப்பாதை, சாலை, மின் இணைப்புகள் குளம், ஓடை, மற்றும் கால்வாய் போன்ற நீர்நிலைகள் என்ற ஏதுவும் கிடையாது.
6. மேலும் மனுதாரர் உரிமம் கோரும் கூட்டுப்புலத்திற்குள் நீர்நிலைகள், நிலவியல் ஓடைகள் ஏதுமில்லை என்பதும் புலத்தணிக்கையில் தெரிய வருகிறது.

S. L. S. 1000

7. மனுதாரர் உரிமம் கோரும் கூட்டுப்புலத்திலிருந்து கனிபங்கள் கொண்டு செல்ல பாதை வசதி சரியாக அமைந்துள்ளது.
8. மனுதாரர் உரிமம் கோரும் கூட்டுப்புலம் கண்டிசன் ஐளரி நிலங்களோ தடை ஆணை நிலங்களோ ஏதுமில்லை என்பதும் புலத்தணிக்கையில் தெரிய வருகிறது.
9. மனுதாரர் உரிமம் கோரும் புலத்தில் இதுவரையிலும் குவாரி பணி எதுவும் செய்யப்படவில்லை.
10. மனுதாரர் உரிமம் கோரும் புலத்திற்கு வடக்கு மற்றும் கிழக்குப்பகுதியை ஒட்டியவாறு அரசு புறம்போக்கு வண்டிப்பாதை செல்கிறது.
11. மேலும் மேற்படி உரிமம் கோரும் புலத்திலிருந்து பாதுகாக்கப்பட்ட இடைவெளியில் வளப்பகுதி, வன விளங்குகள் மற்றும் மான் சரணாலயம் ஏதுமில்லை என்பதும் புலத்தணிக்கையில் தெரியவருகிறது.
12. மேற்படி நிலம் தொடர்பாக அரசுக்கு செலுத்த வேண்டிய நில வரி பாக்கி நிலுவை இனங்கள் ஏதுமில்லை.
13. மனுதாரர் உரிமம் கோரும் புலம் தொடர்பாக பொதுமக்களிடம் விளம்பரம் செய்யப்பட்டதில் ஆட்சேபணை ஏதும் வரப்பெறவில்லை.
14. மேலும் மனுதாரர் கோரும் கூட்டுப்புலமானது வெம்பக்கோட்டை ஊராட்சி ஒன்றியத்தைச் சேர்ந்த நதிக்குடி ஊராட்சிக்கு உட்பட்டது.

மேற்படி புலத்தணிக்கையின்படிபடி, கிராம நிர்வாக அலுவலர் அறிக்கையின்படிபடி, விருதுநகர் மாவட்டம், சிவகாசி வட்டம், வெள்ளூர் மேற்கு வீதி கதவு எண்.1/105 என்ற முகவரியில் வசித்து வரும் திரு.சங்கப்பன் மகன் பாலகிருஷ்ணன் என்பவர் குவாரி உரிமம் வழங்க பரிந்துரை செய்கிறேன் என்பதை பணிபுரன் தெரிவித்துக்கொள்கிறேன்.


மண்டல துணைவட்டாட்சியர்
வெம்பக்கோட்டை

S. Ramesh

[illegible]

Dom: 18-02-2024

(9-10-57)

K. S. Narayanaiah

2 JAN 1975
மாண
விருதுநகர்

புதியியல் & சுரங்கத்

சென்னை

ကလေးများ

အလေးစားရန်



2020/02/27

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ကဲဆိပ်အုပ္ပံ

การดำเนินงาน

အိပ်ပျော်စရာ

பிழை

တစ်ခုလုံး

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சென்னை மாநகராட்சி

மாண்புமிகு நகராட்சி அமைச்சர் அலுவலகம்

தமிழ்நாடு

7 & JAN 2025

புதியியல் & சுரங்கத்துறை

சுண் : 902/14


 29/09/2017
 வா. சா. ஆய்வாளர்
 சென்னை-600001

* S. 2570667/2009

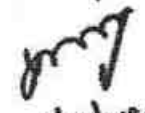
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(PTU)



12. 24-1-1964 இல் தீர்மானம் போட்டுத் தரப்படும் பணம் மீது உடனடியாக ஒரு பணம் தீர்மானம் போட்டுத் தரப்படும்.
13. 24-1-1964 இல் தீர்மானம் போட்டுத் தரப்படும் பணம் மீது உடனடியாக ஒரு பணம் தீர்மானம் போட்டுத் தரப்படும்.
14. மேற்படி 24-1-1964 இல் தீர்மானம் போட்டுத் தரப்படும் பணம் மீது உடனடியாக ஒரு பணம் தீர்மானம் போட்டுத் தரப்படும்.
15. 24-1-1964 இல் தீர்மானம் போட்டுத் தரப்படும் பணம் மீது உடனடியாக ஒரு பணம் தீர்மானம் போட்டுத் தரப்படும்.
16. 24-1-1964 இல் தீர்மானம் போட்டுத் தரப்படும் பணம் மீது உடனடியாக ஒரு பணம் தீர்மானம் போட்டுத் தரப்படும்.

மேற்படி 24-1-1964 இல் தீர்மானம் போட்டுத் தரப்படும் பணம் மீது உடனடியாக ஒரு பணம் தீர்மானம் போட்டுத் தரப்படும்.


VILLAGE ADMINISTRATIVE OFFICER
APPALAIKATTENPATTI VILLAGE,
VEMBAKOTTA (T.N.)
VIRUDHACHARI (DR.)

< S. 15/1/1964

பிரதம அமைச்சர் அவர்கள் கீழ்க்கண்ட விஷயம் குறித்து உத்தரவு பிறப்பித்தார்.

മാർഗ്ഗം : 202/3 കേന്ദ്രീകൃത ഹോസ്റ്റലിൽ
202/2 മറ്റൊരു ഹോസ്റ്റലിൽ ഉൾപ്പെടുത്തുക.

தமிழ் : 3071; எழுத்து வரிசை : 1

മുദ്ര : 203/4 - മിറ്റി 4072 ഉപയോഗിച്ച്

ಶೀರ್ಷಿಕೆ : 206/- ಇವರ ಹೆಸರು

28/8/2024
VILLAGE ADMINISTRATIVE OFFICER
APPAYANAICKENPATTI VILLAGE.
VEMBAKOTAI (T.K)
VIRUDHUNAGAR (DL.)

५३. ५७६६७०००/००१



/ நீயி கண்காது /

USE ADMINISTRATIVE OFFICER
APPAYANAICKENPATTI VILLAGE,
VEMBAKOTTAI (T.K)
VIRUDHUNAGAR (DI..)

இப்பாட்டு
Hj

R. S. Hanks



AI நோட்டீஸ்

அரசு புறம்போக்கு / பட்டா நிலத்தில் கனிம உரிமம் (கல், மண், கிராவல், கங்கர் கல், கிராண்ட்) செய்து கொள்ளும் விண்ணப்பம் குறித்து ஆட்சேபனை இல்லை என்பதற்கான அறிக்கை

!!!!

இதனால் அறிவிக்கப்படுவது என்னவென்றால்

கிராமத்தில் வசித்து வரும் துரைசாமிநாதன் / மகன் / மனைவி மனைவி கருப்பசாமி என்பவர், ரவம்பல் கிராம வட்டம், சிவசாய நாயக்கன் பட்டி கிராமத்தில்

44/1 207/1 960000 புரீஸ் -

க்கு வடக்கிலும்,

44/1 202/3 கருப்பசாமிநாதன் -

க்கு தெற்கிலும்,

44/1 202/2 சி.சி. மனாபுரம் -

க்கு கிழக்கிலும்,

44/1 206/1 960000 புரீஸ் -

க்கு மேற்கிலும்

44/1 203/4 சி.சி. மனாபுரம் -

சர்வே எண் 203/7 விஸ்தீரணம் 1.60.5 ஹெக்டேர் நிலத்தில்

கூலி

பணி செய்வது தொடர்பாக ஆட்சேபனையுடைய நபர்கள் அதன்

விபரத்தை இந்த அறிக்கை பிரசித்தம் செய்யப்படும் தேதியிலிருந்து பதினைந்து தினங்கள்

கொண்ட கால அளவிற்குள் மேற்படி கிராமத்தின் கிராம நிர்வாக அலுவலர் மற்றும்

வட்டாட்சியரிடம் தெரிவிக்க வேண்டும்.

VILLAGE ADMINISTRATIVE OFFICER
APPANATHUR VILLAGE,
VEMBAKOTTAI (T.K)
VIRUDHUNAGAR (DL.)

மேற்படி அறிக்கையானது 17-07-2024 தேதியில் தண்டோரா மூலமாகவும், கிராமச் சான்று

மற்றும் முக்கிய இடங்களிலும் பிரசித்தம் செய்யப்பட்டு கையொப்பம் பெறப்பட்டுள்ளது.

S. மனாபுரம்

1) ச. மனாபுரம்
Slo கார்டன்

2) 7.000 பசிய
சிவசாய நாயக்கன்

3) (சி.சி. மனாபுரம்)

4) B. Subramanyam

5) B. M. (B. Subramani)

6) R. L.

7) S. R. S.

8) P. S.

9) S. R. S.

A. S. S.

L. S. S.

செங்கு குற்றம் 2010-ம் ஆண்டு 40-ம் தொகுதி சிறைகளில்
செங்கு குற்றம் 2010-ம் ஆண்டு 40-ம் தொகுதி சிறைகளில்
செங்கு குற்றம்.

S. S.

8/08/2014

VILLAGE ADMINISTRATIVE OFFICES
APPAYANAKOTTA VILLAGE,
VENDAKOTTAI (T.K.)
VIRUDHUNAGAR (DI.,)

* S. Subramanyam



தமிழ்நாடு தமிழ்நாடு TAMILNADU Prince Explosives.
Value: Rs.100/-
Date: 30.12.2024
Elayiram pannai

EP 096483
சு. கார்த்திகேயன்
முத்திரைத் தாள் பிற்பாணயாளர்
சுமுகாசனம் - 628 552
உரிமம் எண். 2/2015

AGREEMENT

This is the agreement made on the day of Licence to be granted Mr. S. Balakrishnan S/o. Sankappan Door No.1/172, West Street, Vellur Village, Virudhunagar District, Tamilnadu. (herein after called the owner of quarry) and Licensee M/S PRINCE EXPLOSIVES 7/71, Middle Street, Elayriampannai, Vembakkottai Taluk, Virudhunagar District Licence No E/SC/TN/22/343(E5998) From 22 (Herein after called as Dealer of Explosives)

For Prince Explosive

J. Por - N W

S. பாலகிருஷ்ணன்

PRINCE EXPLOSIVES
ELAYIRAMPANNAI,
PIN : 33936782914
GST No: 527108 Dt 24-5-2007

S. 1205

Whereas the owner of the quarry having Licence to be granted for survey No.203/7 (1.60.50) Hectares the survey number are with 1025 in Appayanayakanpatti Village, Vembakottai Taluk, Virudhunagar District KV1/17/2024 Date : 24.12.2024



And whereas the dealer of Explosive have agree to carry out the blasting operation in skillful scientific shot firer till the valid date.

Where as the party of the second part has decided to entrust the work of conducting blasting operation in his/ her quarry work to the party of the first part on contract basic as per mutually agreed terms and conditions.

Where as the part of the first part is responsible for blasting operation and also making his own agreement for the explosive and exploding machines/ equipments required for the work, the entire blasting in the above quarry and the possession of blasting equipments will be handled by the party of the first part having valid Licence and short firer permits under the explosives Rules, 2008 issued by the Department of Explosives and hereby undertake the responsibility for the work entrusted.

Where as payments will be made periodically by the party of the second part for the quantity of Explosive used and hours and time of the exploding equipments put into use calculations will be made and element will be arrived at on the completion of blasting operations.

S. பாலகிருஷ்ணன்

Witness

For Prince Explosive

J. Por. N 2

1. J. GURUSAMY S/o. Kandasamy

2. Mr. J. J. S/o. Mr. J. J. S/o. Mr. J. J.

S. பாலகிருஷ்ணன்

PRINCE EXPLOSIVES
ELAYINAMPARAI.
TIN : 33936782014
GST No: 537106 Dt. 24-5-2007



अनुज्ञापित प्रारूप एल. ई-3 | LICENCE FORM LE-3
(विस्फोटक नियम, 2008 का अनुसूची 4 के भाग 1 के अनुच्छेद 3(क) व (ग) देखिए)
(See article 3(a) to (d) of Part 1 of Schedule IV of Explosives Rules, 2008)

(ग) उपयोग के लिए एक समय पर वर्ग 1, 2, 3, 4, 5 या वर्ग 7 के विस्फोटक या किसी मैगजीन में वर्ग 6 के विस्फोटक रख
Licence to possess : (c) for use, explosives of class 1, 2, 3, 4, 5, 6 or 7 in a magazine
अनुज्ञापित सं. (Licence No.): E/SC/TN/22/343(E5998)
वार्षिक फीस रकम (Annual Fee Rs): 6200/-

1. Licence is hereby granted to

M/s Prince Explosives (अधिभोगी / Occupier : J. Prince Nimalades), 7/71, Nadu Street, Elayirampallam Post, Sattur
(via), Town/Village - Virudhunagar, District-VIRUDHUNAGAR, State-Tamil Nadu, Pincode - 626201

को अनुज्ञापित अनुदान की जाती है।

2. अनुज्ञापितारी की प्रकृति / Status of licensee : Partnership Firm

3. अनुज्ञापित निम्नलिखित प्रयोजनों के लिए विधिमार्ग है।
Licence is valid only for the following purpose.

4. अनुज्ञापित विस्फोटकों के निम्नलिखित किस्मों, प्रकार और मात्रा के लिए विधिमार्ग है।
Licence is valid for the following kinds and quantity of explosives: - (क) (a)

Sr. No.	नाम और विवरण Name and Description	वर्ग और प्रभाग Class & Division	उप-प्रभाग Sub-division	मात्रा किसी एक समय में Quantity at any one time
1.	Nitrate Mixture	2.0	0	1500 Kgs
2.	Safety Fuse	6.1	0	20000 Mtrs
3.	Detonating Fuse	6.2	0	10000 Mtrs
4.	Electric and/or Ordinary Detonators	6.3	0	44000 Nos.

(ख) किसी एक कलेंडर मास में खरीदे जाने वाले विस्फोटक की मात्रा (अनुच्छेद 3(क) और (ग) के अधीन अनुज्ञापित के लिए)
(b) Quantity of explosives to be purchased in a calendar month (applicable for licences under article 3(b) and (g)) :

17 times
as above.

5. निम्नलिखित रेखाचित्र (देखाचित्रों) से अनुज्ञापित परिसर की पुष्टि होती है।
The licensed premises shall conform to the following drawing(s):

रेखाचित्र क्र. (Drawing No.) E/SC/TN/22/343(E5998)
दिनांक (Dated) 30/12/2004

6. अनुज्ञापित परिसर निम्नलिखित पते पर स्थित है। The licensed premises are situated at following address:
Survey No(s). 179/2, ग्राम (Town/Village) : Sankarapandiapuram Village, Sattur Taluk, District
जिला (District) : VIRUDHUNAGAR राज्य (State) : Tamil Nadu पुलिस थाना (Police Station) : Elayirampallam
दूरभाष (Phone) : पिनकोड (Pincode) : 626201 फैक्स (Fax) :

7. अनुज्ञापित परिसर में निम्नलिखित सुविधाएं अंतर्भूत हैं।
The licensed premises consist of following facilities:

A Safe Magazine Room, a lobby and a Detonator store.

8. अनुज्ञापित समय - समय पर यथासंशोधित विस्फोटक अधिनियम, 1884 और उनके अधीन विरचित विस्फोटक नियम, 2004 के उपबंधों, शर्तों और अतिरिक्त शर्तों और निम्नलिखित उपाबंधों के अधीन रहते हुए अनुदान की जाती है।
The licence is granted subject to the provision of Explosives Act 1884 as amended from time to time and the Explosives Rules, 2004 framed there under and the conditions, additional conditions and the following Annexures.

- उपबद्ध क्रम सं. 5 में यथा कथित रेखाचित्र (स्थान, संश्लेषण संबंधी और अन्य विवरण दर्शाते हुए)
Drawings (showing site, constructional and other details) as stated in serial No. 5 above.
- अनुज्ञापित प्राधिकारी द्वारा स्वीकृत हुए अनुज्ञापित की शर्तों और अतिरिक्त शर्तों।
Conditions and Additional Conditions of this licence signed by the licensing authority.
- दूरी प्रारूप DE-2 | Distance Form DE-2.

9. यह अनुज्ञापित तारीख 31 मार्च 2008 तक विधिमार्ग रहेगी। This licence shall remain valid till 31st day of March 2008.

यह अनुज्ञापित, अधिनियम या उसके अधीन विरचित नियमों या अनुसूची V के भाग 4 के प्रति निर्दिष्ट सेट-VII के अधीन तथा उपबद्धित इस अनुज्ञापित की शर्तों का अधिकतम करने या यदि अनुज्ञापित परिसर योजना या उससे संलग्न उपबंध में दर्शित विवरण के अनुरूप नहीं पाए जाने पर निलंबित या प्रतिलिखित की जा सकती है, वहां वह लागू हो।
This licence is liable to be suspended or revoked for any violation of the Act or Rules framed there under or the conditions of this licence as set forth under Set VIII, wherever applicable, referred to in Part 4 of Schedule V or if the licensed premises are not found conforming to the description shown in the plans and Annexure attached hereto.

तारीख | The Date - 30/12/2004

संयुक्त मुख्य विस्फोटक नियंत्रक | Joint Chief Controller of Explosives
South Circle, Chennai

Amendments:

- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 06/01/2010
- Change in Authorized Signatory/Owner/Partners/Directors dated : 13/10/2010
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 20/01/2011
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 12/08/2011
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 20/08/2014

नवीनीकरण के पृष्ठान के लिए स्थान
Space for Endorsement of Renewal

नवीकरण की तारीख
Date of Renewal

समाप्ति की तारीख
Date of Expiry

अनुज्ञापन प्राधिकारी के हस्ताक्षर और स्टांप
Signature of licensing authority and stamp

30/12/2020

31/03/2025

Jt. Chief Controller of Explosives, South Circle, Chennai

सावधानी चेतावनी : विस्फोटकों को गलत ढंग से रखने या उनका दुरुपयोग विधि के अधीन गंभीर दंडित अपराध होगा।
SAFETY WARNING : Mishandling and misuse of explosives shall constitute serious criminal offence under the law.

(खान अधिनियम, 1952 के अधीन न आने वाले क्षेत्र में विस्फोट करने के लिए सक्षमता प्रमाणपत्र)
(Certificate of competency to carry out blasting of explosives in area not coming under the Mines Act, 1952)



क्रमांक No.: E/SS/TN/30/306(E77559)

प्रमाणित किया जाता है कि श्री P. Manikannan S/o Perumal

जिनका जन्म 01/06/1981 को हुआ था, जो D.no.2/53 Appanampatti Muthandahpuram Post, Sattur Tk, VIRUDHUNAGAR, Tamil Nadu - 626201 के निवासी हैं ने, वेने द्वारा जारी की गई आवेदन शॉट फायर की परीक्षा की तारीख को उत्तीर्ण कर ली है और वह विस्फोटक अधिनियम, 1952 और उसके अधीन विनियमित नियमों के उपबंधों के अधीन रहते हुए खान अधिनियम, 1952 की परिधि के अधीन आने वाले क्षेत्र में नौबे तथा उत्तिष्ठित विस्फोटकों का उपयोग करते हुए विस्फोट प्रचालन करने के लिए प्राधिकृत है।

This is to certify that Shri P. Manikannan S/o Perumal,

born on 01/06/1981, resident of D.no.2/53 Appanampatti Muthandahpuram Post, Sattur Tk, VIRUDHUNAGAR, Tamil Nadu - 626201 passed the shotfiring's examination held on conducted by Sivakasi and is authorized to conduct blasting operations as mentioned below using explosives in areas other than mines coming under the purview of the Mines Act 1952, subject to the provisions of the Explosives Act, 1952 and the rules framed thereunder.

विस्फोट करने के प्राधिकृत वर्ग, प्रवर्ग और प्रकार :
वर्ग: (B), श्रेणी: सामान्य भूमि के ऊपर, भूमि के ऊपर ब्लास्टिंग ऑपरेशन

Authorized class, category and type of blasting :
Class : (B), Category : General aboveground, All phases of aboveground blasting operation
[नियम 107 का उप-नियम (5) का स्पष्टीकरण देखें | See explanation of sub-rule (5) of rule 107]

यह प्रमाणपत्र 03/09/2018 (जारी करने की तारीख से पांच वर्ष) तक विधिमन्य होगा।
This certificate shall remain valid till 03/09/2018 (five years from the date of issue)

यह प्रमाणपत्र, अधिनियम या उसके अधीन विनियमित नियमों अथवा इस प्रमाणपत्र की शर्तों का कोई अधिक्रमण करने पर या यदि आवेदक द्वारा आवेदन प्रारूप में दी गई सूचना में कोई फर्क या विचलन होता है तो निलम्बित या अभिव्यक्ति कर दिया जाएगा।
This certificate is liable to be suspended or revoked for any violation of the Act or rules framed thereunder or the conditions of this certificate or if there is any discrepancy or deviation in the information or suppression of facts furnished by the applicant in his application form.

स्थान | Place : सिवाकासी | Sivakasi
दिनांक | Date : 03/09/2018

अनुरोधित :

• Change in Postal Address/Purpose/Attached to Magazine dated : 01/01/2014

पुनर्विधिमन्यकरण के लिए पृष्ठांकन | Endorsement for revalidation

पुनर्विधिमन्यकरण की तारीख Date of Revalidation	समाप्ति की तिथि Date of Expiry	अनुमति प्राधिकारी के हस्ताक्षर Signature of licensing authority
11/09/2023	04/09/2028	A. Chief Controller of Explosives, South Circle, Chennai

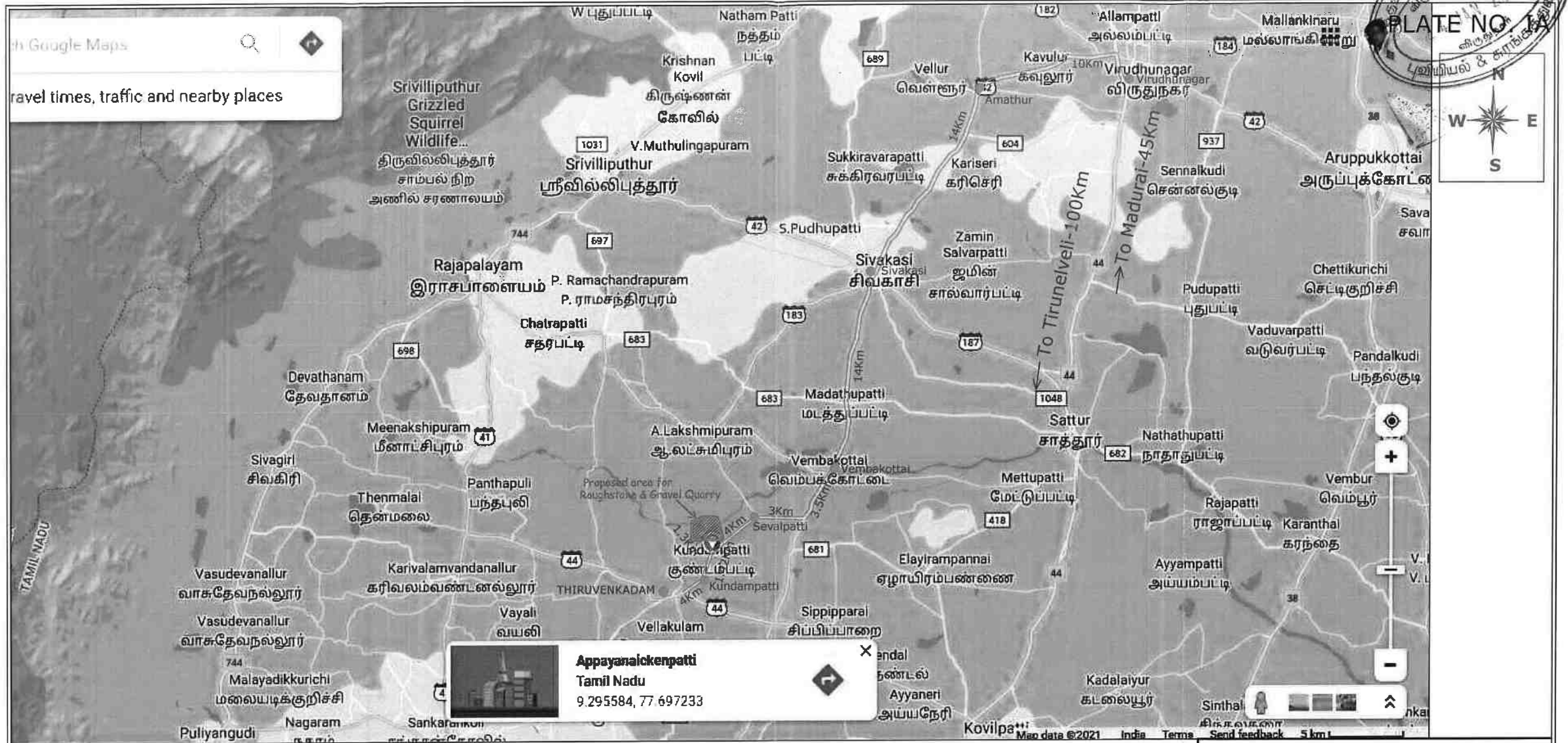
कानूनी चेतावनी : विस्फोटकों को गलत ढंग से चलाने या उनका दुरुपयोग विधि के अधीन गंभीर दण्डित अपराध होगा।
Statutory Warning : Mishandling and misuse of explosives shall constitute serious criminal offence under the law.

Note :- This is system generated document does not require physical signature. Applicant may take printout for their records.

S. Manikannan S/o Perumal



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NAME OF THE APPLICANT:

Thiru. S. Balakrishnan, S/o. Sankappan,
No.1/105, West street, Vellur,
Virudhunagar District - 626 005.

LOCATION FOR QUARRY SITE

District : Virudhunagar
Taluk : Vembakottai
Village : Appayyanayakkanpatti
S.F.No. : 203/7
Extent : 1-60.50 Hectare. (Patta land)

INDEX:-

AREA APPLIED FOR QUARRY LEASE



APPROACH ROAD



CITY / TOWN / VILLAGE



ROUGHSTONE AND GRAVEL QUARRY

ROUTE MAP

SCALE:- NOT TO SCALE

PREPARED BY:- *M. Dharmalingam*

M. DHARMALINGAM

M.Sc.,(Geol.) FCC.,(Mining)

Qualified Person

RQP / MAS / 260 / 2014 / A

S. Balakrishnan

PLATE NO. II

NAME OF THE APPLICANT:

Thiru. S. Balakrishnan, S/o. Sankappan,
No.1/105, West street, Vellur,
Virudhunagar District - 626 005.

TOPO SHEET No.58-G/11

LATITUDE : 9° 17' 40.80" To 9° 17' 44.55"
LONGITUDE : 77° 41' 36.40" To 77° 41' 40.65"

INDEX:- MINING LEASE RENEWAL AREA

WIND DIRECTION

1KM RADIUS

5KM RADIUS

10KM RADIUS

CONVENTIONAL SYMBOLS

Express highway with toll, with bridge, with distance stone	
Roads, metalled according to importance	
Roads, double cartingway according to importance	
Unmetalled road, Cart track, Pack track with pass, foot path	
Streams, with track in bed, undefined Canal	
Grass, masonry or rock-filled, earthwork, Weir	
River, dry with water channel, with island & rocks, Tidal river	
Submerged rocks, Shoal, Swamp, Reeds	
Wells lined, unlined, Tube-well, Spring, Tanks perennial, dry	
Embankments, road or rail, tank, Broken ground	
Railways, broad gauge, double, single with station, under construction	
Roadways, other gauges, double, single with distance stone, do	
Mineral line or tramway, Km. Cutting with tunnel	
Contours with sub-features, Rocky slopes, Cliffs	
Bound features (1) Bar, (2) sand-hills(permanent), (3) dunes(sandhills)	
Towns or Villages inhabited, deserted Fort	

ROUGHSTONE/JELLY/GRAVEL QUARRY

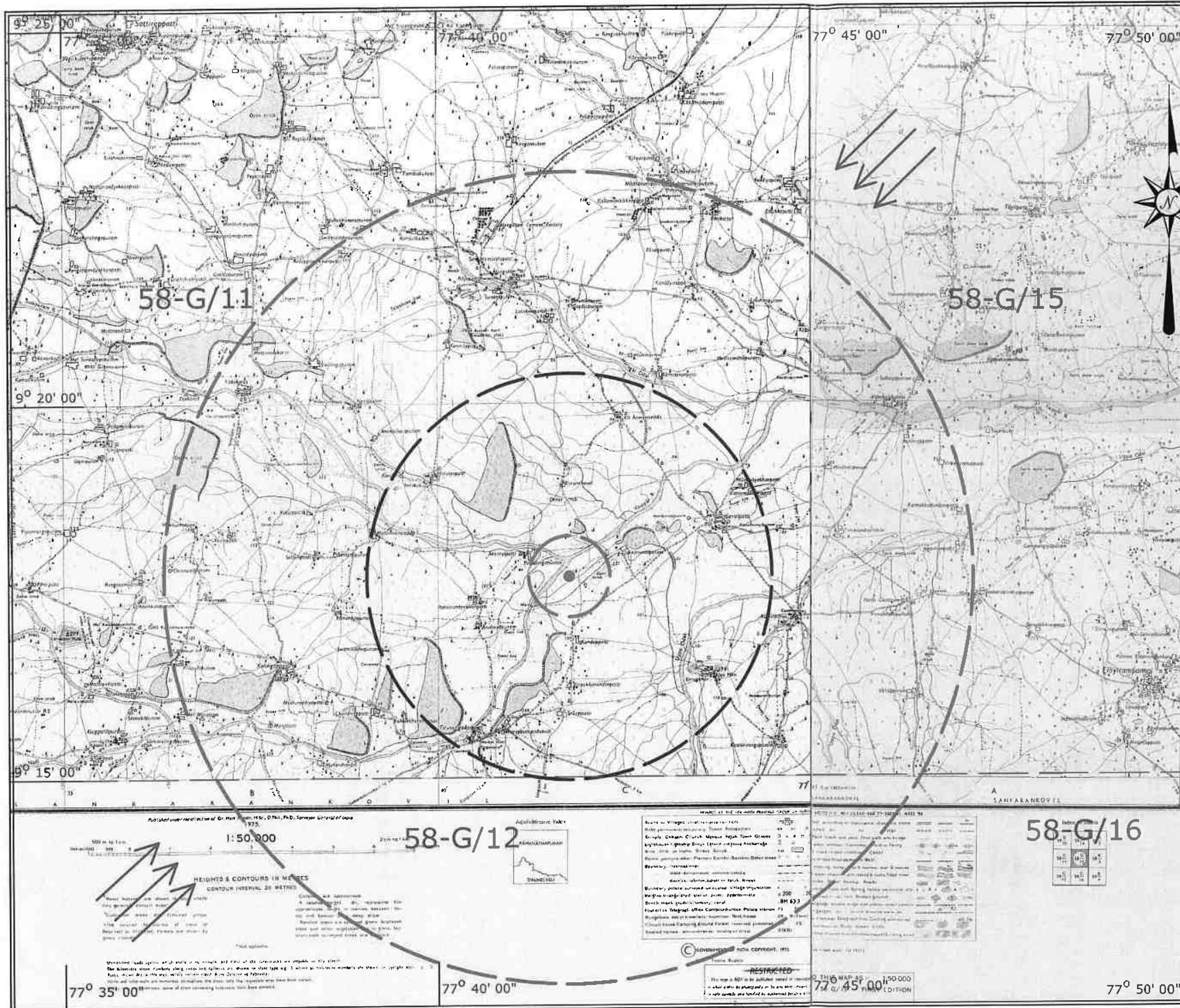
TOPO SKETCH - 10KM RADIUS

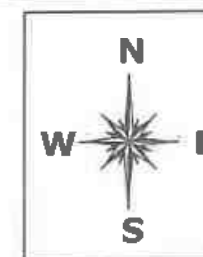
SCALE:- 1: 1,00,000

PREPARED BY:-

M. Dharmalingam

M. DHARMALINGAM
M.Sc.,(Geol.) FCC.,(Mining)
Qualified Person
RQP/MAS/260/2014/A





Thiru. S. Balakrishnan, S/o. Sankappan,
No.1/105, West street, Vellur,
Virudhunagar District - 626 005.

LOCATION OF THE AREA:

District : Virudhunagar
Taluk : Vembakottai
Village : Appayyanayakkanpatti
S.F.No. : 203/7
Extent : 1-60.50 Hectare. (Patta land)

GPS CO-ORDINATES OF BOUNDARY PILLARS

PILLAR	LATITUDE	LONGITUDE
1	9° 17' 43.89"N	77° 41' 36.40"
2	9° 17' 44.71"N	77° 41' 38.45"
3	9° 17' 44.55"N	77° 41' 40.65"
4	9° 17' 41.20"N	77° 41' 41.60"
5	9° 17' 40.76"N	77° 41' 41.56"
6	9° 17' 40.84"N	77° 41' 38.78"
7	9° 17' 40.72"N	77° 41' 37.22"
8	9° 17' 40.80"N	77° 41' 36.40"

INDEX:-

Area Applied for Quarry Lease

Safety Distance - 7.5m
& 10m from Cart track

Boundary pillers

○ 1 2 3 . .

ROUGHSTONE AND GRAVEL QUARRY

LEASE PLAN

SCALE:- 1: 1000

ALL PLANS AND SECTIONS ARE PREPARED
BASED ON THE LEASE MAP AUTHENTICATED
BY STATE GOVERNMENT.

M. DHARMALINGAM

M.Sc.,(Geol.) FCC.,(Mining)

Qualified Person

RQP / MAS / 260 / 2014 / A

* S. 1598677/2018



NAME OF THE APPLICANT:

Thiru. S. Balakrishnan, S/o. Sankappan,
No.1/105, West street, Vellur,
Virudhunagar District - 626 005.

INDEX:-

Area Applied for Quarry Lease



Safety Distance - 7.5m
& 10m from Cart track



Boundary pillars



Contours



Bench mark (M.S.L.)



Approach Road



Top soil (Black cotton soil)



Weathered Gneiss (Gravel)



Chornockite (Rough Stone)



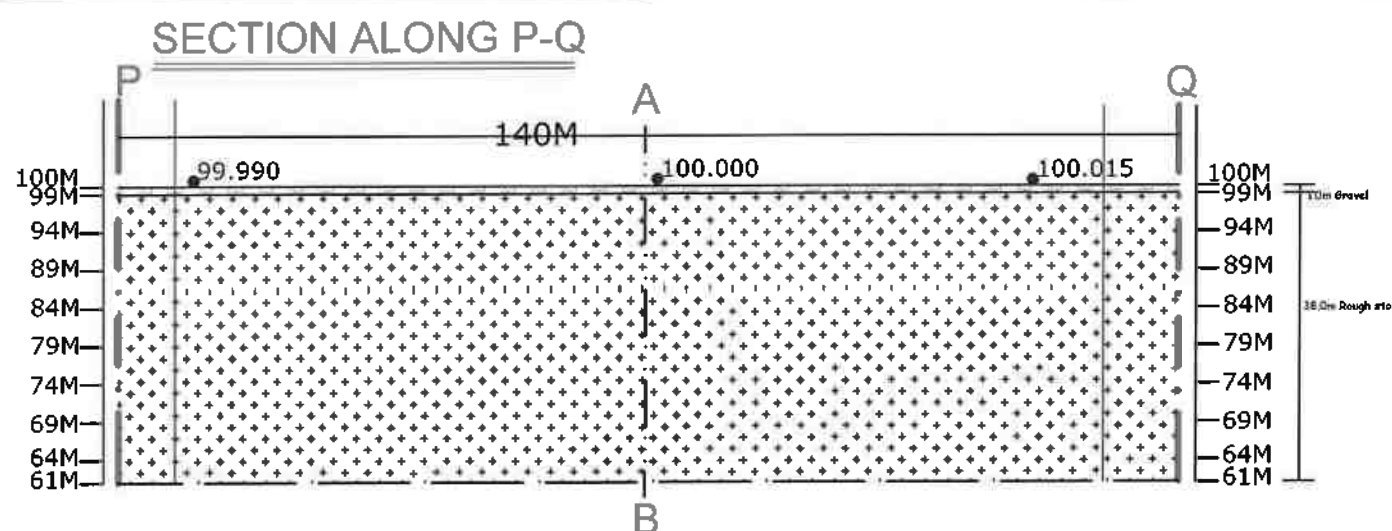
ROUGHSTONE AND GRAVEL QUARRY SURFACE CUM GEOLOGICAL PLAN & SECTIONS

PLAN SCALE:- 1: 2000

SECTION SCALE:- HOR- 1: 1000, VER- 1:1000

ALL PLANS AND SECTIONS ARE PREPARED
BASED ON THE LEASE MAP AUTHENTICATED
BY STATE GOVERNMENT.

M. Dharmalingam
M. DHARMALINGAM
M.Sc.,(Geol.) FCC.,(Mining)
Qualified Person
RQP / MAS / 260 / 2014 / A



Geological Reserves					
Section	Length [m]	Width [m]	Depth [m]	Rough Stone [Cum]	Gravel [Cum]
PQ-AB	140	115	1.0	---	16,100
PQ-AB	140	115	38.0	6,11,800	---
Total Geological Reserves				6,11,800	16,100

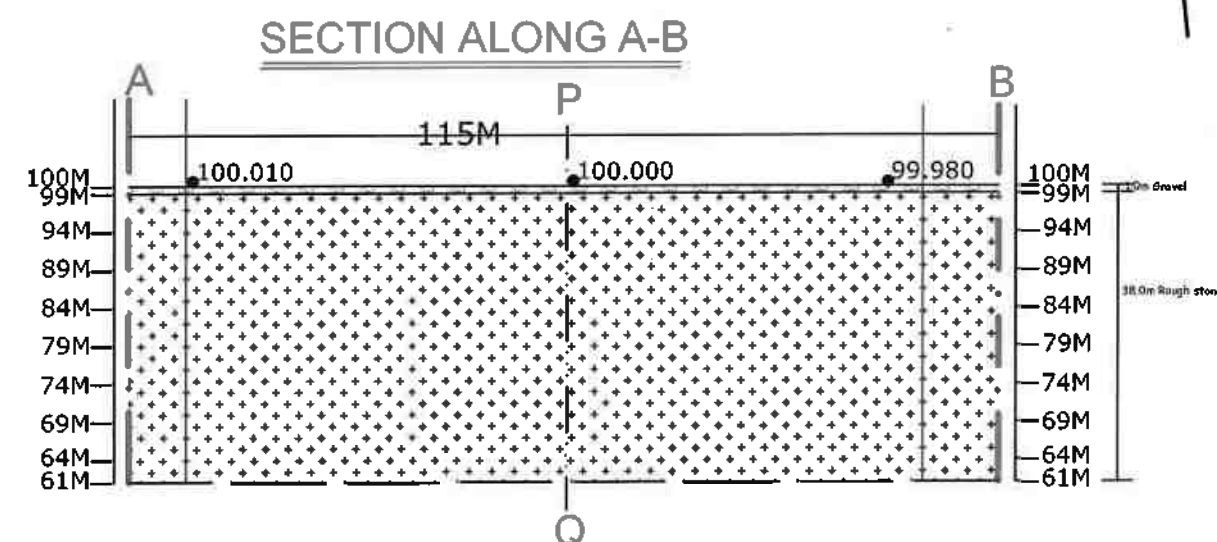
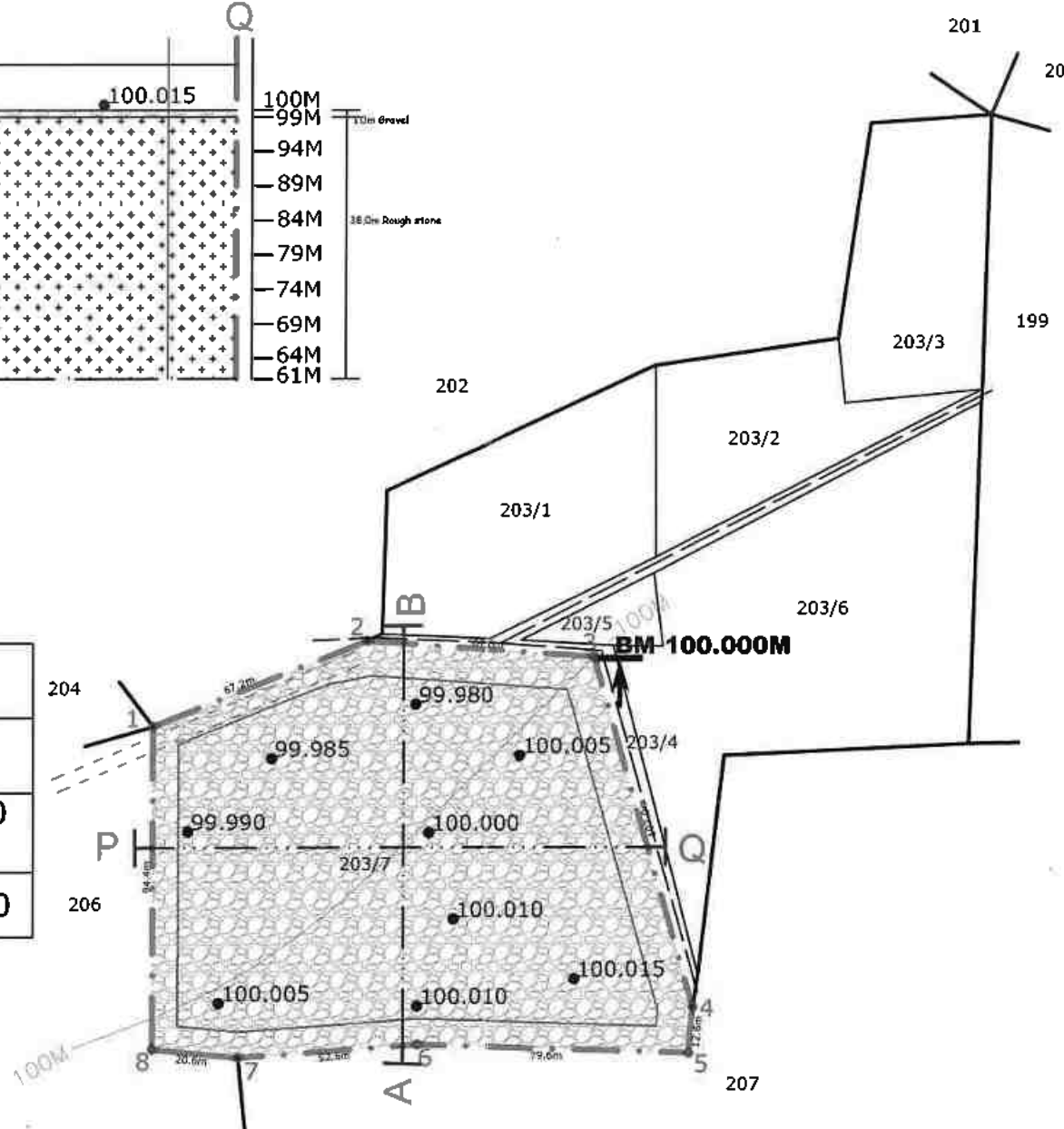
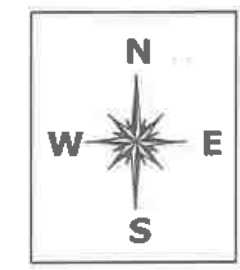
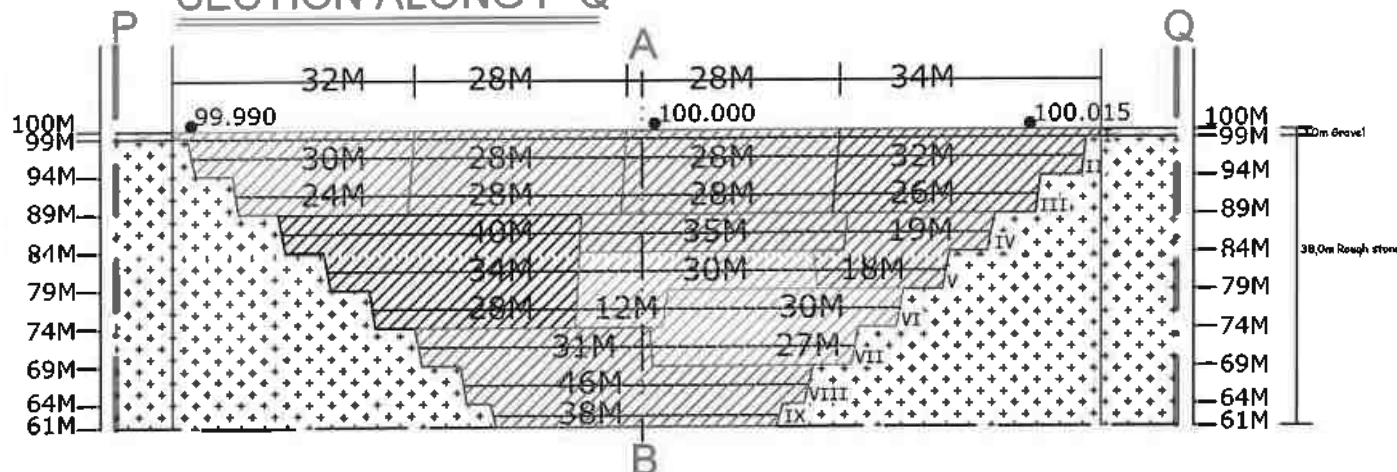




PLATE NO

SECTION ALONG P-Q



NAME OF THE APPLICANT:

Thiru. S. Balakrishnan, S/o. Sankappan,
No.1/105, West street, Vellur,
Virudhunagar District - 626 005.

INDEX:-

Area Applied for Quarry Lease	---
Safety Distance - 7.5m & 10m from Cart track	---
Ist year excavation	▨
IIInd year excavation	▨
IIIrd year excavation	▨
IVth year excavation	▨
Vth year excavation	▨
VIth year excavation	▨
VIIth year excavation	▨
VIIIth year excavation	▨
IXth year excavation	▨
Xth year excavation	▨

ROUGHSTONE AND GRAVEL QUARRY

LAND USE CUM YEARWISE

PLAN & SECTIONS

PLAN SCALE:- 1: 2000

SECTION SCALE:- HOR- 1: 1000, VER- 1:1000

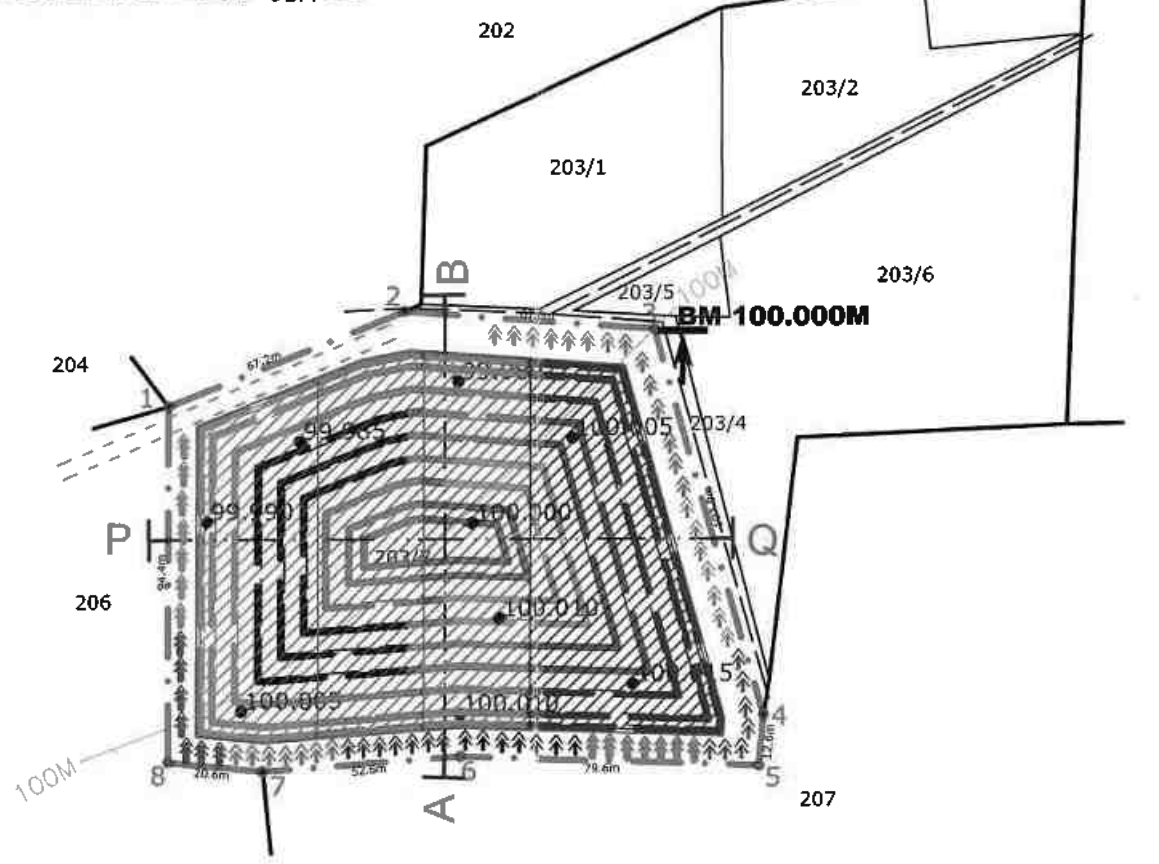
ALL PLANS AND SECTIONS ARE PREPARED
BASED ON THE LEASE MAP AUTHENTICATED
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Qualified Person
RQP/MAS/260/2014/A

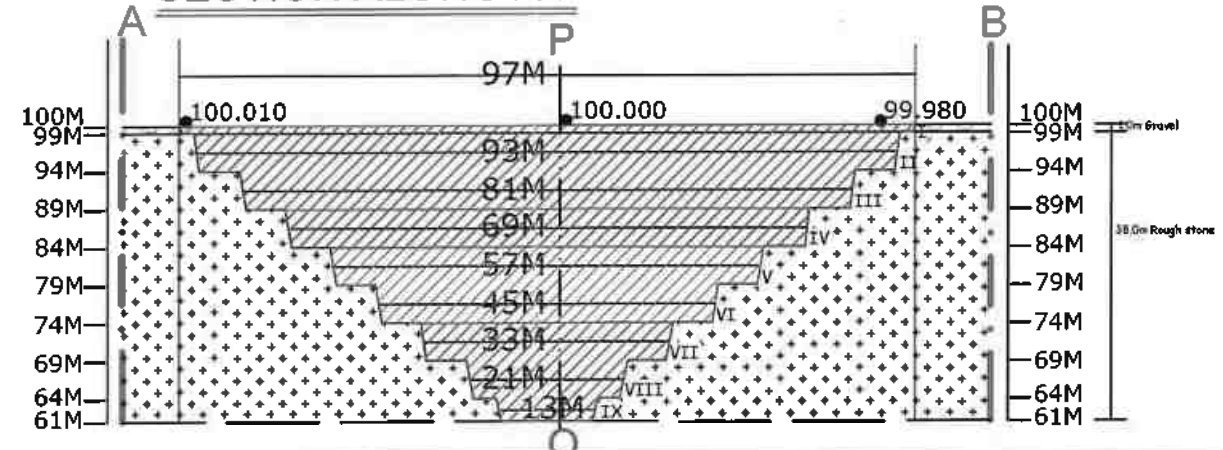
Yearwise Schedule						Production	
Year	Section	Bench	Length (m)	Width (m)	Depth (m)	Rough stone (cum)	Gravel (cum)
I - year	PQ-AB	I	32	97	1.0	---	3,104
	PQ-AB	II	30	93	5.0	13,950	---
	PQ-AB	III	24	81	5.0	9,720	---
I YEAR EXCAVATION						23,670	3,104
II - year	PQ-AB	I	28	97	1.0	---	2,716
	PQ-AB	II	28	93	5.0	13,020	---
	PQ-AB	III	28	81	5.0	11,340	---
II YEAR EXCAVATION						24,360	2,716
III - year	PQ-AB	I	28	97	1.0	---	2,716
	PQ-AB	II	28	93	5.0	13,020	---
	PQ-AB	III	28	81	5.0	11,340	---
III YEAR EXCAVATION						24,360	2,716
IV - year	PQ-AB	I	34	97	1.0	---	3,298
	PQ-AB	II	32	93	5.0	14,880	---
	PQ-AB	III	26	81	5.0	10,530	---
IV YEAR EXCAVATION						25,410	3,298
V - year	PQ-AB	IV	40	69	5.0	13,800	---
	PQ-AB	V	34	57	5.0	9,690	---
	PQ-AB	VI	28	45	5.0	6,300	---
V YEAR EXCAVATION						29,790	---
FIRST FIVE YEARS TOTAL PRODUCTION						1,27,590	11,834
VI - year	PQ-AB	IV	35	69	5.0	12,075	---
	PQ-AB	V	19	57	5.0	6,555	---
	PQ-AB	VI	18	45	5.0	5,130	---
VI YEAR EXCAVATION						12,075	---
VII - year	PQ-AB	IV	19	69	5.0	6,555	---
	PQ-AB	V	18	57	5.0	5,130	---
	PQ-AB	VI	12	45	5.0	2,700	---
VII YEAR EXCAVATION						11,685	---
VIII - year	PQ-AB	V	30	57	5.0	8,550	---
	PQ-AB	VI	12	45	5.0	2,700	---
	PQ-AB	VII	27	33	5.0	4,455	---
VIII YEAR EXCAVATION						11,250	---
IX - year	PQ-AB	VI	30	45	5.0	6,750	---
	PQ-AB	VII	27	33	5.0	4,455	---
	PQ-AB	VIII	21	21	5.0	1,482	---
IX YEAR EXCAVATION						11,205	---
X - year	PQ-AB	VII	31	33	5.0	5,115	---
	PQ-AB	VIII	46	21	5.0	4,830	---
	PQ-AB	IX	38	13	3.0	1,482	---
X YEAR EXCAVATION						11,427	---
SECOND FIVE YEARS TOTAL PRODUCTION						57,642	---
Total for Ten years						1,85,232	11,834

Afforestation Programme

Plantation year	No. of Trees proposed to be planted	Area to be covered in sq.m.	Name of the species
I - year	40	350	Neem & other Natural species
II - year	40	350	
III - year	40	350	
IV - year	40	350	
V - year	40	350	
VI - year	40	350	Neem & other Natural species
VII - year	40	350	
VIII - year	40	350	
IX - year	40	350	
X - year	40	350	
Total	400	3500	



SECTION ALONG A-B



x S. Balakrishnan



PLATE NO VI



ULTIMATE PIT SIZE			
SECTION	LENGTH[M]	WIDTH[M]	DEPTH[M]
PQ-AB	122	97	39.0

NAME OF THE APPLICANT:

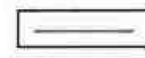
Thiru. S. Balakrishnan, S/o. Sankappan,
No.1/105, West street, Vellur,
Virudhunagar District - 626 005.

INDEX:-

Area Applied for Quarry Lease



Safety Distance - 7.5m
& 10m from Cart track



Boundary pillars



Contours



Bench mark (M.S.L.)



Approach Road



Layout of Mine Workings



Ultimate Pit Slope



ROUGHSTONE AND GRAVEL QUARRY CONCEPTUAL MINING PLAN SECTIONS

PLAN SCALE:- 1: 2000

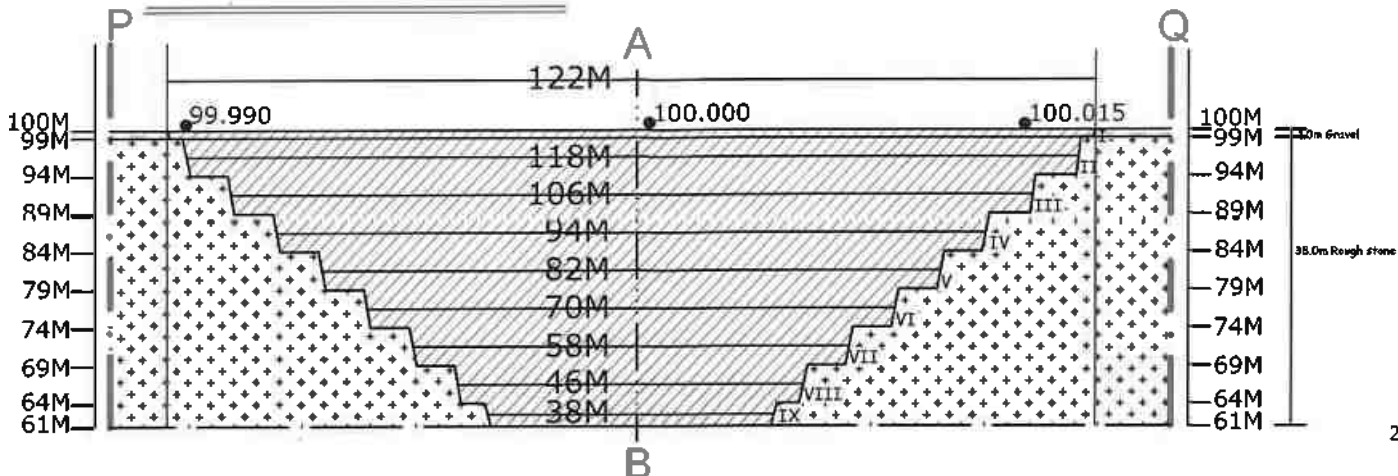
SECTION SCALE:- HOR- 1: 1000, VER- 1:1000

ALL PLANS AND SECTIONS ARE PREPARED
BASED ON THE LEASE MAP AUTHENTICATED
BY STATE GOVERNMENT.

Signature

M. DHARMALINGAM
M.Sc.,(Geol.) FCC.,(Mining)
Qualified Person
RQP / MAS / 260 / 2014 / A

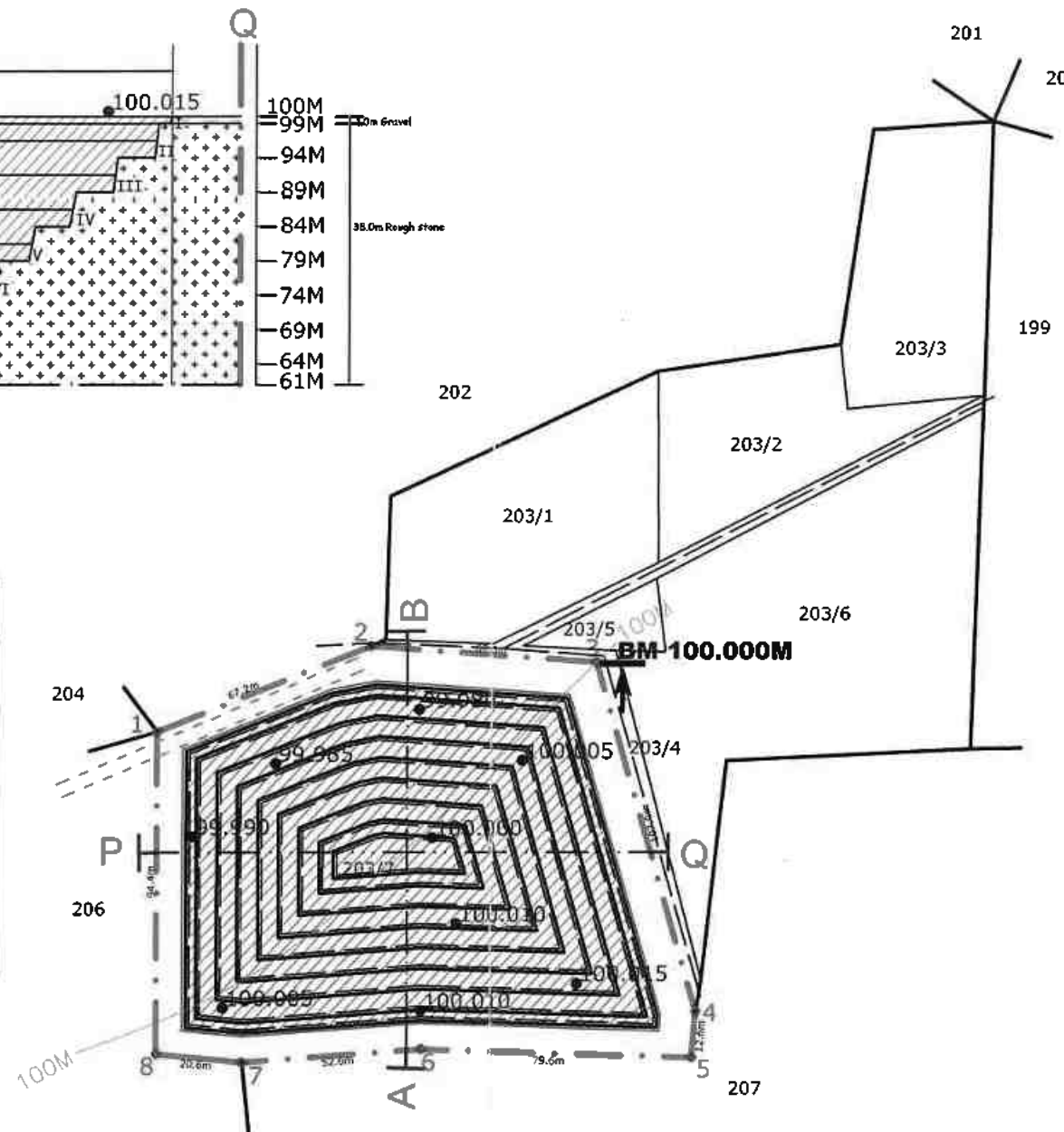
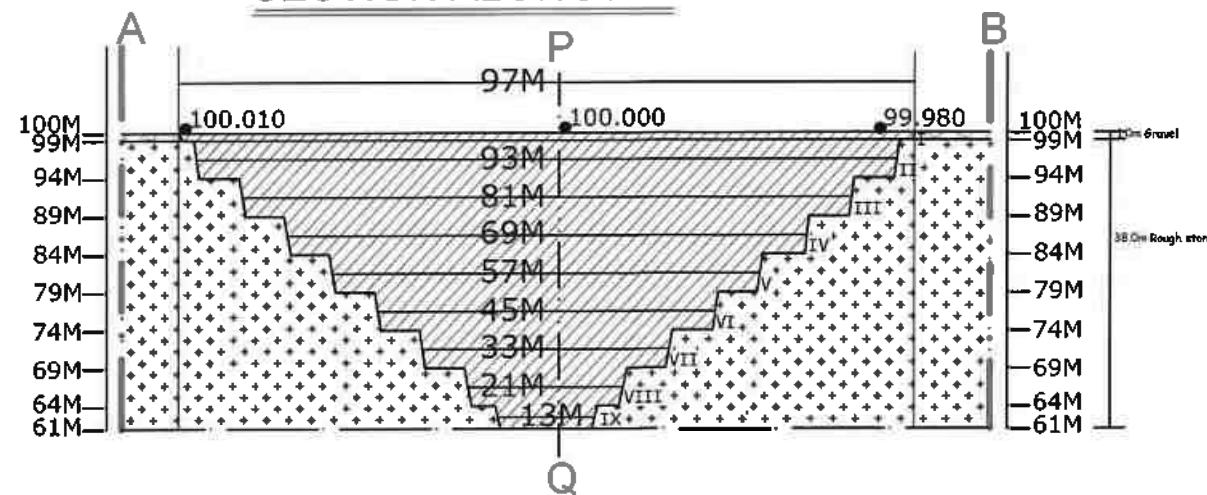
SECTION ALONG P-Q



MINEABLE RESERVES

Section	Bench	Length [m]	Width [m]	Depth [m]	Rough stone [Cum]	Gravel [Cum]
PQ - AB	I	122	97	1.0	---	11,834
	II	118	93	5.0	54,870	
	III	106	81	5.0	42,930	
	IV	94	69	5.0	32,430	
	V	82	57	5.0	23,370	
	VI	70	45	5.0	15,750	
	VII	58	33	5.0	9,570	
	VIII	46	21	5.0	4,830	
	IX	38	13	3.0	1,482	
TOTAL					1,85,232	11,834

SECTION ALONG A-B



Signature



PLATE NO. VII

NAME OF THE APPLICANT:

Thiru. S. Balakrishnan, S/o. Sankappan,
No.1/105, West street, Vellur,
Virudhunagar District - 626 005.

LOCATION OF THE AREA:

District : Virudhunagar
Taluk : Vembakottai
Village : Appayyanayakkanpatti
S.F.No. : 203/7
Extent : 1-60.50 Hectare. (Patta land)

INDEX:-

Area Applied for Quarry Lease
300m Radius line
500m Radius line
Wind direction
Approach road



Details of quarry situated within 500meters radius from the applied area

S.No.	Quarry details	S.F.Nos.	Extent(Hect.)
I Existing Quarries			
Nil			
II Abandoned Quarry			
1.	G. Ravikumar	276/278, etc.,	3.85.50
2.	S. Subburaj	44/46/1	2.20.50
3.	P. Shunmugara	207/2A, 2B	1.91.50
4.	Govt. pit	50	—
5.	G. Ramasamy	211/1A1, 1A2	0.93.00
6.	G. Ramasamy	208/1, 2, 3 & 214/1	1.98.00
7.	S. Silvaraman	39/3	0.96.50
8.	P. Shunmugara	38/6A, 41/2, 43/3, 6 & 48	2.74.50
9.	S. Ramraj	196/1A, 197/1, etc.,	2.88.00
Total			17.47.50 Hectares
III Proposal Quarry			
1.	R. Gopalakrishnan	199/6A	1.08.00
2.	S. Ragupathi	196/2A, 3, 4 & 197/2	1.86.50
3.	R. Gayathri	39/1A, 1B, 2A & 49	2.30.20
4.	S. Ramraj	207/3A, 3B, etc.,	1.28.50
5.	S. Subburaj	43/1A, 1B(P) & 45/1A1, 1A2(P)	1.58.00
6.	P. Shunmugara	199/6B&C	1.08.00
7.	G. Kaniraj	202/1A2	1.21.50
III Present Proposed Quarry			
1.	S. Balakrishnan	203/7	1.60.50
Total			12.01.20 Hectares

**ROUGHSTONE AND GRAVEL QUARRY
ENVIRONMENT CUM
SATILITE IMAGERY PLAN**

SCALE:- 1: 5000

ALL PLANS AND SECTIONS ARE PREPARED
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BY STATE GOVERNMENT.

[Signature]

M. DHARMALINGAM
M.Sc.,(Geol.) FCC.,(Mining)
Qualified Person

RQP / MAS / 260 / 2014 / A

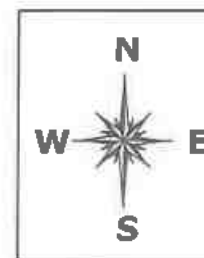
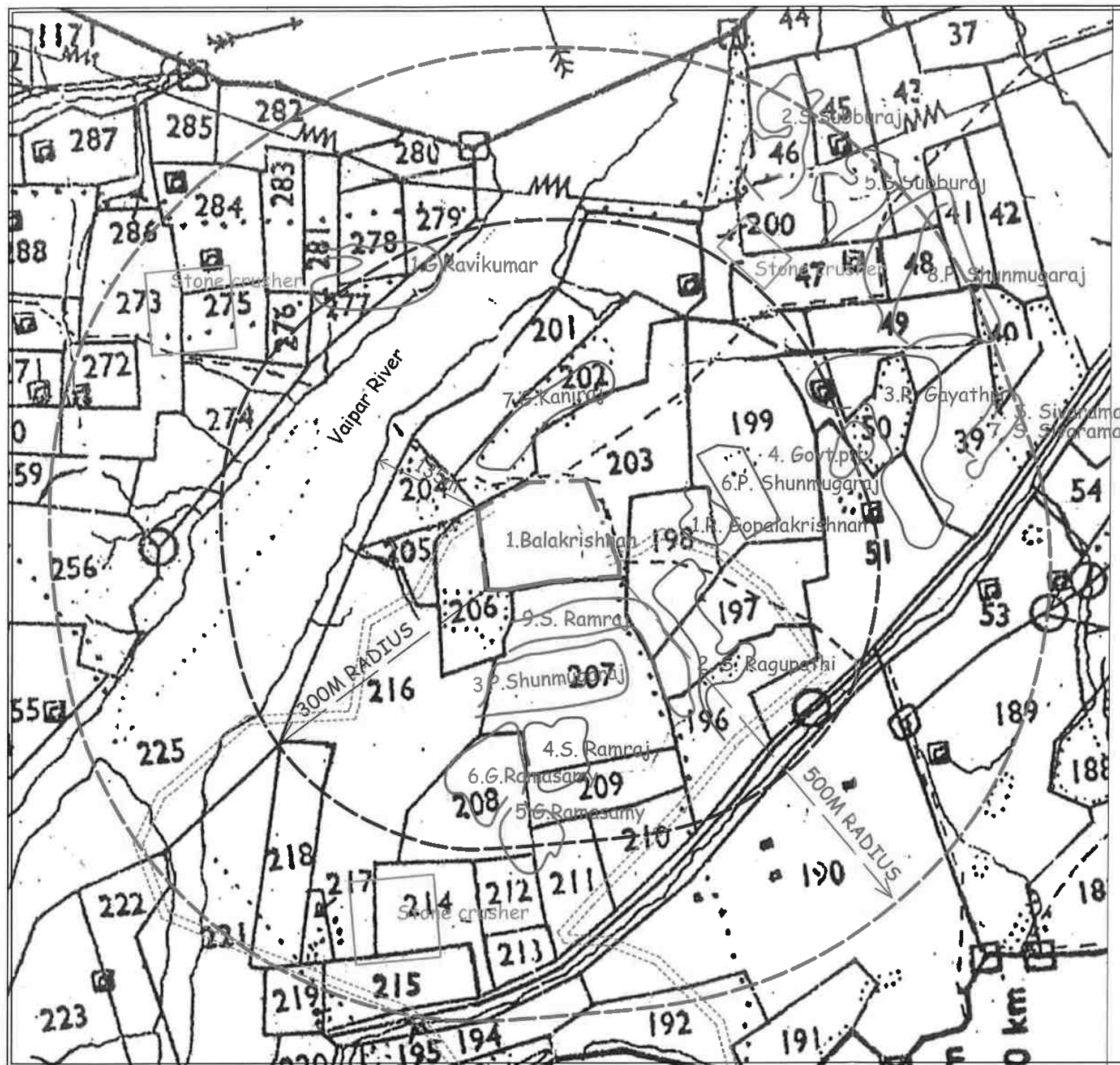


PLATE NO. VIIA

NAME OF THE APPLICANT:

Thiru. S. Balakrishnan, S/o. S. Subburaj,
No.1/105, West street, Vellur,
Virudhunagar District - 626 005.

LOCATION OF THE AREA:

District : Virudhunagar
Taluk : Vembakollai
Village : Appayyanayakanpatti
S.F.No. : 203/7
Extent : 1-60.50 Hectare. (Patta land)

INDEX:-

Static water table in winter - 55m
in summer - 60m
Area Applied for Quarry Lease
Approach road
300m Radius line
(No historical monuments)
500m Radius line
(No habitations, No temples, No working quarry with in 500m radius
& No other structures like culverts, head works, bridges etc.)

Details of quarry situated within 500meters radius from the applied area

S.No.	Quarry details	S.F.Nos.	Extent(Hect.)
I	Existing Quarries		
	Nil		
II	Abandoned Quarry		
1.	G. Ravikumar	276, 278, etc.,	3.85.50
2.	S. Subburaj	44, 46/1	2.20.50
3.	P. Shunmugaraj	207/2A, 2B	1.91.50
4.	Govt. pit	50	
5.	G. Ramasamy	211/1A1, 1A2	0.93.00
6.	G. Ramasamy	208/1, 2, 3 & 214/1	1.98.00
7.	S. Sivaraman	39/3	0.96.50
8.	P. Shunmugaraj	38/6A, 41/2, 43/3, 6 & 48	2.74.50
9.	S. Ramraj	196/1A, 197/1, etc.,	2.88.00
	Total		17.47.50 Hectares
III	Proposal Quarry		
1.	R. Gopalakrishnan	199/6A	1.08.00
2.	S. Ragupathi	196/2A, 3, 4 & 197/2	1.86.50
3.	R. Gayathri	39/1A, 1B, 2A & 49	2.30.20
4.	S. Ramraj	207/3A, 3B, etc.,	1.28.50
5.	S. Subburaj	43/1A, 1B(P) & 45/1A1, 1A2(P)	1.58.00
6.	P. Shunmugaraj	199/6B&8	1.08.00
7.	G. Kaniraj	202/1A2	1.21.50
III	Present Proposed Quarry		
1.	S. Balakrishnan	203/7	1.60.50
	Total		12.01.20 Hectares

ROUGHSTONE AND GRAVEL QUARRY

VILLAGE MAP

showing environmental features

SCALE:- 1: 10000

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[Signature]
M. DHARMALINGAM

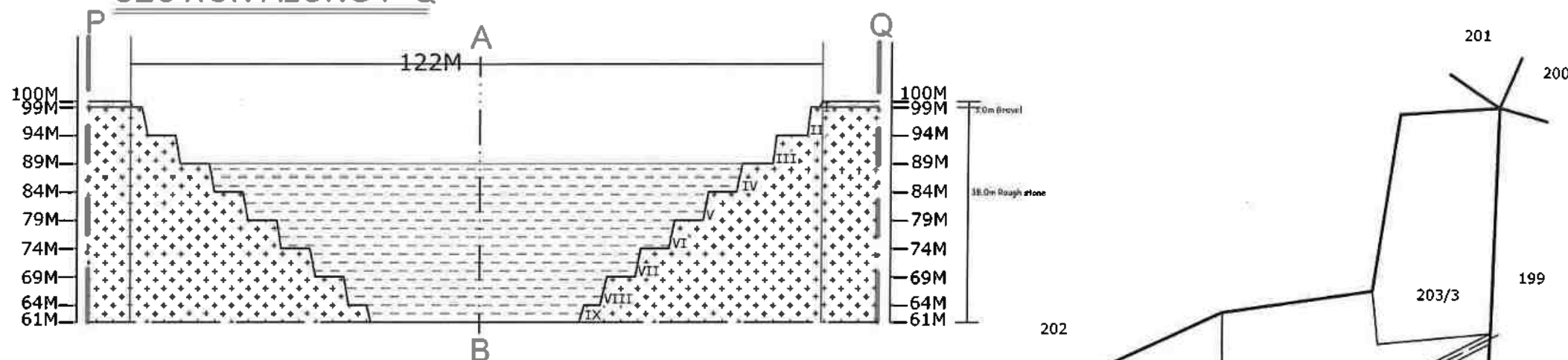
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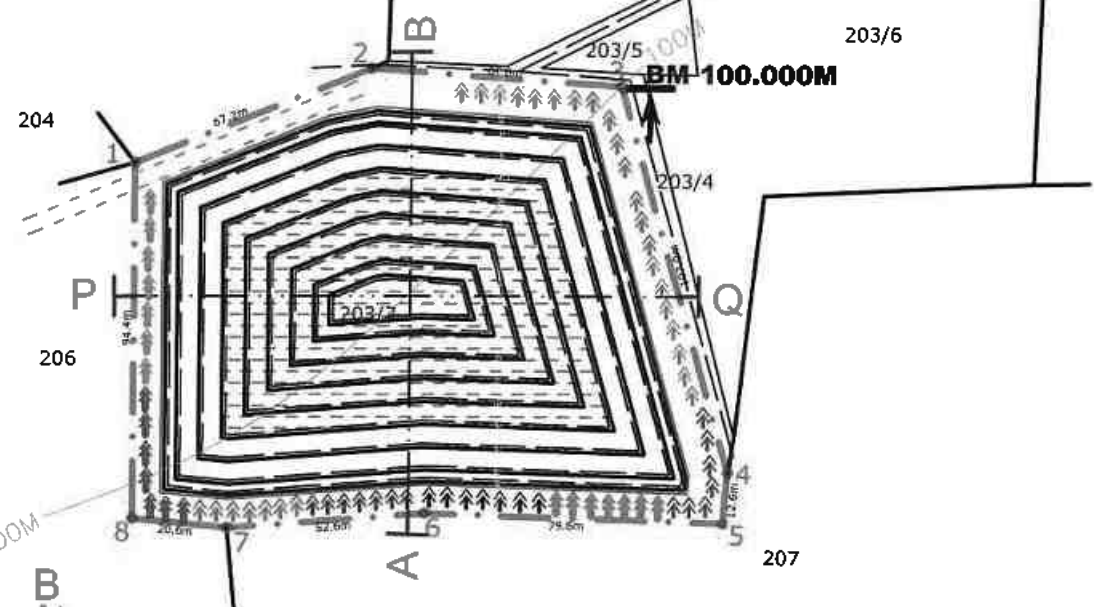
PLATE NO. VII

SECTION ALONG P-Q

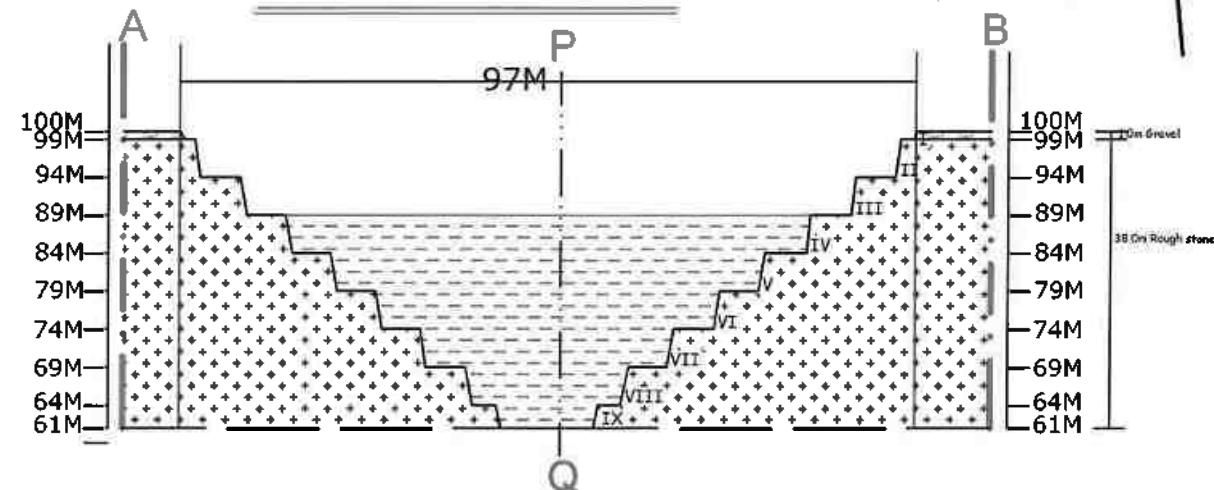


PRESENT MINING LAND USE PLANNING (BREAKUP ALONG WITH GREENBELT ETC.)

SL.No.	LAND USE CATEGORY	AT THE END OF LIFE OF MINE
1.	Area under quarrying	1-18.5 hectare
2.	Infrastructure & Road	0-02.0 hectare
3.	Fencing	0-05.0 hectare
4.	Afforestation (greenbelt & plantation)	0-35.0 hectare
5.	Unutilized area	0-00.0 hectare
TOTAL		1-60.5 Hectare.



SECTION ALONG A-B

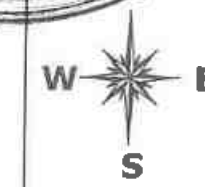


Afforestation Programme

Plantation year	No. of Trees proposed to be planted	Area to be covered in sq. m.	Name of the species
I - year	40	350	Neem & other Natural species
II - year	40	350	
III - year	40	350	
IV - year	40	350	
V - year	40	350	
VI - year	40	350	Neem & other Natural species
VII - year	40	350	
VIII - year	40	350	
IX - year	40	350	
X - year	40	350	
Total	400	3500	

ULTIMATE PIT SIZE

SECTION	LENGTH[M]	WIDTH[M]	DEPTH[M]
PQ-AB	122	97	39.0



NAME OF THE APPLICANT:

Thiru. S. Balakrishnan, S/o. Sankappan,
No.1/105, West street, Vellur,
Virudhunagar District - 626 005.

INDEX:-

- Area Applied for Quarry Lease
- Safety Distance - 7.5m & 10m from Cart track
- Boundary pillars
- Contours
- Bench mark (M.S.L.)
- Approach Road
- Layout of Mine Workings (Future Water Reservoir)

ROUGHSTONE AND GRAVEL QUARRY

PROGRESSIVE MINE CLOSURE PLAN

SCALE:- 1: 2000

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