

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT & ENVIRONMENT MANAGEMENT PLAN

FOR OBTAINING

**Environmental Clearance under EIA Notification – 2006
Schedule Sl. No. 1 (a) (i): Mining Project**

“B1” CATEGORY (Cluster) – MINOR MINERAL – CLUSTER –

PATTA LAND - FRESH QUARRY

TMT.M. SELVATHAL ROUGH STONE AND GRAVEL QUARRY

Extent – 1.13.7 Ha



Project Proponent

Tmt.M.SELVATHAL,

W/o. Meignanam,

No. 3/78, Karamadaiyan Thottam,

Periyakuyilai, Suler Taluk, Coimbatore District - 641 201.

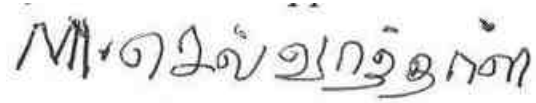
PROJECT LOCATION	PROPOSED PRODUCTION
S.F. No 279/2C1B, Pachapalayam Village, Suler Taluk, Coimbatore District.	Reserves: 1,08,990 m ³ of Rough stone, 32,592m ³ of Weathered rock & 16,296m ³ of Gravel Peak Production = 21,910m ³ of Rough Stone Proposed Depth = 41m bgl
ToR obtained vide Lr No.SEIAA-TN/F.No.9727/ToR-1431/2022 Dated: 21.04.2023	
<p style="text-align: center;">Environmental Consultant</p> <p style="text-align: center;">GEO EXPLORATION AND MINING SOLUTIONS </p> <p style="text-align: center;">Old No. 260-B, New No. 17, Advaitha Ashram Road, Alagapuram, Salem – 636 004, Tamil Nadu, India</p> <p style="text-align: center;">Accredited for sector 1 Cat ‘A’, sector 31 & 38 Cat ‘B’</p> <p style="text-align: center;">Certificate No : NABET/EIA/2225/RA 0276</p> <p style="text-align: center;">Phone: 0427-2431989, Email: infogeoexploration@gmail.com</p> <p style="text-align: center;">Web: www.gemssalem.com </p>	<p style="text-align: center;">Laboratory</p> <p style="text-align: center;">EHS 360 LABS PRIVATE LIMITED, 10/2 Ground floor, 50th street, 7th Avenue, Ashok Nagar, Chennai – 600 083.</p>
<p style="font-size: 1.2em;"><u>Baseline Monitoring Period</u></p> <p style="font-size: 1.2em;">March 2023 to May 2023</p> <p style="font-size: 1.2em;">NOVEMBER 2023</p>	

UNDERTAKING

I M.Selvathal given undertaking that this EIA & EMP report prepared for our Rough stone and Gravel quarry situated in S.F.No 279/2C1B, over an extent of 1.13.7 Ha in Pachapalayam Village, Sulur Taluk and Coimbatore District based on the ToR issued by the State Level Environmental Impact Assessment Authority (SEIAA), Tamil Nadu vide Letter No Lr No. SEIAA-TN/F.No.9727/ToR-1431/2022 Dated: 21.04.2023

I hereby assured that the Data's submitted and information given by me is true and correct to the best of my knowledge.

Signature of the Project Proponent



M.Selvathal

Place : Coimbatore

Dated :

DECLARATION

I Dr. M.Ifthikhar Ahmed – EIA Co Ordinator declare that the EIA & EMP report for the Rough stone and Gravel quarry in S.F.No 279/2C1B over over an extent of 1.13.7 Ha in Pachapalayam Village, Sulur Taluk and Coimbatore District has been prepared by Geo Exploration and Mining Solutions, Salem, Tamil Nadu.

The Data's provided in the EIA report are true and correct to the best of my knowledge.

Signature of the EIA Co Ordinator



Dr. M. Ifthikhar Ahmed

Managing Partner

M/s. Geo Exploration and Mining Solutions

Place : Salem

Dated :

For easy representation of Proposed and Existing, Expired and Abandoned Quarries in the Cluster are given unique codes and identifies and studied in this EIA/ EMP Report.

PROPOSED QUARRIES					
CODE	Name of the Owner	Village	S.F. Nos	Extent in Ha	Status
P1	Tmt.M.Selvathal	Pachapalayam	279/2C1B	1.13.70	LrNo.SEIAA-TN/F.No.9727/ToR-1431/2022 Dated: 21.04.2023.
P2	Thiru.S.A.Ganesan	Pachapalayam	273/2A & 281/2	2.03.0	Letter No.SEIAA-TN/F.No.7833/SEAC/ToR-828/2020 Dated:16.12.2020 PH -Completed
TOTAL EXTENT				3.16.70	
EXISTING QUARRIES					
CODE	Name of the Owner	Village	S.F. Nos	Extent in Ha	Status
E-1	Thiru.B.Sakthivel	Pachapalayam	281/1(P) & 280/2(P)	1.34.5	06.06.2016 to 05.06.2021
E-2	Thiru.R.S.Senthilkumar	Pachapalayam	285/3, 286/2	3.15.0	11.11.2017 to 10.11.2022
E-3	Thiru.K.Chinnasamy	Pachapalayam	282/1A & 282/1B (P)	1.73.0	06.12.2017 to 05.12.2022
E-4	Thiru.T.Ragupathi	Pachapalayam	273/1B, 273/2B, 273/3E(P), 274/1A & 274/2A	2.62.0	03.01.2019 to 02.01.2024
TOTAL EXTENT				8.84.5	
EXPIRED QUARRIES					
Ex-1	Thiru.M.Muralikrishnan	Pachapalayam	281/1 & 286/1B4	2.30.0	02.06.2014 to 01.06.2018
Ex-2	Thiru.V.Gopalakrishnan	Pachapalayam	282/2A2	1.28.5	02.06.2014 to 01.06.2018
TOTAL EXTENT				3.58.5	
ABANDONED QUARRIES					
A-1	Thiru.A.Velusamy	Pachapalayam	285/1B1	1.72.5	05.05.2010 to 04.05.2015
TOTAL EXTENT				1.72.5	
TOTAL CLUSTER EXTENT				12.01.2	

Cluster area is calculated as per MoEF & CC Notification – S.O. 2269 (E) Dated: 01.07.2016

TERMS OF REFERENCE (ToR) COMPLIANCELr.No.SEIAA-TN/F.No.9727/ToR-1431/2022 Dated: 21.04.2023

SPECIFIC CONDITIONS		
1	The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m 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.,	Structure study has been conducted covering 0-300m radius with type of Structure, number of occupants are detailed in the Chapter No.3 Page No.75
2	The PP shall provide the details of wind mills/Turbines which are located within 300m radius. Further, keeping the above windmills in mind, the PP shall carry out blast-induced vibration simulation study through any of one of the reputed scientific / academic Institutions such as CSIR-Central Institute of Mining & Fuel Research (CIMFR) / Dhanbad, NIRM/Bangalore, IIT-Madras, NIT-Dept of Mining Engg, Surathkal and Anna University - CEG Campus to predict the impacts of the blast-induced ground & air vibration and fly rock on such structures situated within 500 m distance from the quarry lease and the same shall be included in EIA Report.	Wind mill is situated about 110m from the project site. The blasting study including vibration and fly rocks will be conducted by the reputed research institute.
3	The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.	There is no wild life Sanctuary, National park within the radius of 500m. the area is devoid of major vegetation. The Bio Diversity study has been carried out by the inhouse expert (Ecology and Biodiversity) and the detailed report is given in the Chapter No.3 Page No.60 to 73
4	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.	The area has been fenced and the photographs are given in the Chapter No 2 , Figure No. 2.1 Page No.11 No trees within the proposed excavation area, No transplantation is required.
5	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 prepare and submit an "Action Plan for carrying out the realignment of the benches in the proposed quarry lease after it is approved by the concerned Asst. Director of Geology and Mining during the time of appraisal for obtaining the EC.	Not applicable, it is a fresh lease.
6	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.	Proponent given Affidavit stating that the blasting operation will be carried out by the competent person as per the MMR 1961.
7	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.	The Blasting will be carried out by controlled blasting adopting muffle blasting and line drilling. The cost for the controlled blasting is allotted in the EMP, Chapter No.10 Table No. 10.10 Page No.133

8	The EIA Coordinates shall obtain and furnish the details of quarry /quarries operated by the PP in the past, either in the same location or elsewhere in the state with video and Photographic evidences.	No other Existing, Abandoned and proposed quarries in the name of proponent.
9	What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines? a) Quantity of minerals mined out. b) Highest production achieved in any one year c) Detail of approved depth of mining. d) Actual depth of the mining achieved earlier. e) Name of the person already mined in that leases area. f) If EC and CTO already obtained, the copy of the same shall be submitted. g) Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches	Not applicable, Since it is a fresh proposal.
10	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)	Co ordinates for all the boundaries are given in the Chapter No.2 Table No.2.2 Page No.10 Satellite imagery of the project site marked with Lease boundary, Safety area
11	The PP shall carry out Drone video survey covering the cluster, Green belt, fencing etc.,	Drone video survey covering the Cluster, Greenbelt and fencing will be submitted during appraisal.
12	The PP shall furnish the revised manpower including the statutory & competent persons as required under the provisions of the MMR 1961 for the prosed quarry based on the volume of rock handled & area of excavation.	The Revised Manpower in the Employment potential is given in the Chapter No.2 Page No.27
13	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.	The area has been fenced and the photographs are given in the Chapter No.2, Figure No.2.1 Page No.11 No trees within the proposed excavation area, No transplantation is required. Water bodies near to the project site is given in the Chapter No.2 Table No.2.13 Page No.26
14	The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment and the remedial measures for the same.	The Total Mineable Reserves of Rough stone is 1,08,990 m ³ Production for the five year plan period is 1,08,990m ³ of Rough stone Peak production capacity is 21,910 m ³ of Rough stone Details of Reserves and methodology of mining is given in the Chapter No.2 Page No.19
15	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.	Noted and agreed. Detailed under Chapter 6.

16	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.	The hydro-geological study was conducted to evaluate the possible impact on the ground water table. No significant impacts are anticipated on the water bodies around the project area. Details of open wells and borewells within 1km radius along with water level is given in the Chapter No.3
17	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.	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 to assess the cumulative impact of the proposed project on the environment is prepared. The details of Baseline study is given in the Chapter No. 3.
18	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 air pollution, water pollution. & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.	The Cumulative impact study due to mining operations is explained in Chapter No.7, Page No.112 to 122
19	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	The rain water will be collected in the mine pit at the lower point later it will be utilized for the haul road maintenance, Greenbelt development etc.,
20	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 Cother ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Land use Land cover study within the radius of 10km is detailed in the Chapter No. 3 Page No.30 to 33
21	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.	Not applicable, There is no wastages anticipated, the entire quarried out Rough stone material will be utilized.
22	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.	The area is not declared as Critically polluted area, No court case pending against the project. Proponent obtained Precise area communication letter, Approval for the Mining plan. The Details are enclosed as Annexure .
23	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 collected in the pits after spell of rain will be used for greenbelt development and dust suppression.

24	Impact on local transport infrastructure due to the Project should be indicated.	There is no group of Houses, Schools in the proposed transportation route. Proposed Transportation route with mitigation measures are given in the Chapter No.2 Page No.25
25	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.	The Flora study in the core zone has been carried out and the details are given in the Chapter No.3 Page No.62
26	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	The mine closure plan is detailed in the Chapter No.4 Page No.49 The budget for the mine closure is included in the Environmental Management plan in Chapter No.10 ,Table:10.10,Page No.133
27	Public Hearing points raised and commitments 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 and to be submitted to SEIAA/SEAC with regard to the Office Memorandum of MoEF& CC accordingly.	Noted and agreed. This Draft EIA report is prepared for the Public Hearing. The Public hearing Comments along with action plan will be submitted in the Final EIA and EMP report.
28	The Public hearing advertisement shall be published in one major National daily and one most circulated vernacular daily.	Noted and agreed
29	The PP shall produce/display the EIA report, Executive summary and other related information with respect to public hearing in Tamil Language also.	Noted and Agreed
30	As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.	The Flora and Fauna study around the vicinity of the site is carried out by the Functional area experts along with Local School Students.
31	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 and local school/college authorities. 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.	The plantation in the project site will be carried out using native and mixed plantation. The recommended species for the plantation is given in the Chapter No.4 Table No.4.10Page No.76
32	Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly 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	Noted and Agreed. The plantation in the project site will be carried out using native and mixed plantation. The recommended species for the plantation is given in the Chapter No.4 Table No.4.10 Page No.95
33	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	Disaster management Plan is detailed in the Chapter No.7, Page No.110
34	A Risk Assessment and management Plan shall be prepared and included in the ELA/EMP Report.	A Risk Assessment and management Plan detailed in the Chapter No.7, Page No.108

35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Occupational Health impacts of the project with mitigation measures are detailed in the Chapter No.7, Page No.109 Details of Periodical Medical Examination given in the Chapter No.10, Page No.131
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.	The details of the population in the impact zone (within 500m radius) is detailed in the Chapter No.3, Page No.76
37	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.	Socio Economic study covering 10 km radius is detailed in the Chapter No.3 Page No.75
38	Details of litigation pending against the project, if any, with direction. /Order passed by any Court of Law against the Project should be given.	No court case and litigation pending against the project.
39	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	It is explained in Chapter -3- socio economic study
40	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.	Not applicable, the project is fresh proposal.
41	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.	The EMP has been prepared for the entire life of the mine. Proponent given affidavit stating the EMP will be submitted during the appraisal after completion of Public hearing.
42	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.	Noted & agreed.

ADDITIONAL CONDITIONS-Annexure-B		
<i>Cluster Management committee</i>		
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 chapter 7 salient features of quarry with existing 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..	Noted & agreed
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.	Noted & agreed
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.	Transport details in chapter-2
5	The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan	Noted & agreed
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.	Noted & agreed
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.	Noted & agreed
8	The committee shall furnish the Emergency Management within the cluster.	Details discussed in chapter 7.
9	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.	Details discussed in chapter 10.
10	The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.	Noted & agreed
11	The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.	Detailed discussed in chapter 7.
<i>Impact study of mining</i>		
12	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise arca communication order issued from reputed research institutions on the following a) Soil health & bio-diversity b) Climate change leading to Droughts, Floods etc. c) Pollution leading to release of Greenhouse gases (GHG), rise in Temperature' & Livelihood of the local people.	Species Recommended for Plantation in chapter 3&10.

	<p>d) Possibilities of water contamination and impact on aquatic ecosystem health'</p> <p>e) Agriculture, Forestry & Traditional practices.</p> <p>1) Hydrothermal/Geothermal effect due to destruction in the Environment'</p> <p>g) Bio-geochemical processes and its foot prints including environmental stress'</p> <p>h) Sediment geochemistry in the surface steams.</p>	
Agriculture & Agro-Biodiversity		
13	Impact on surrounding agricultural fields around the proposed mining Area.	Detailed discussed in chapter 4.
14	Impact on soil flora & vegetation around the project site.	Detailed discussed in chapter 4.
15	Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.	Details in Chapter 2,3 and 7
16	The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora. fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.	Details in Chapter 3
17	Action should specifically suggest lbr sustainable management of the area and restoration of ecosystem for flow of goods and services.	Noted & agreed
18	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands. Horticulture, Agriculture and livestock .	The project area is bounded by Existing quarries on the East and west side. Proponent proposed to erect green mesh along with fencing on the South side besides, Budgetary allocation given in the Chapter No. 10.
Forest		
19	The project proponent shall detail study on impact of mining on Reserve forests free ranging wildlife.	Noted and agreed, there is no reserve forest and wildlife in the buffer zone.
20	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	Ecology and Biodiversity environment deals in Chapter-3
21	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	Ecology and Biodiversity environment deals in Chapter-3
22	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	Anticipated Environment Impact and Mitigation measures are detailed in Chapter No.4
Water Environment		
23	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.	Hydro-geological study considering the contour map of the water table detailing Chapter-3
24	Erosion Control measures.	Noted & agreed
25	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease	Details in Chapter 2

	area on the nearby villages, water-bodies/ Rivers. & any ecological fragile areas.	
26	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.	Details in Chapter 2 and 4 impact of bio diversity
27	The project proponent shall study and furnish the details on potential fragmentation impact on natural Environment by the activities.	Noted & agreed
28	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.	Noted & agreed. Detailed under Chapter 3.
29	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil, physical, chemical components and microbial components.	Details in Chapter 3 Soil environment.
30	The Environmental impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	Nearest agriculture activity is coconut plantation located North side of the project area. Proponent erected fencing in the previous lease period. The same will be reconstructed around the quarry pits
Energy		
31	The measures taken to control Noise. Air, Water. Dust Control and steps adopted to efficiently utilize the Energy shall be furnished.	Details in Chapter 3 environmental monitoring details.
Climate Change		
32	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.	Details of carbon emission and mitigation activities are given in the Chapter No.4
33	The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.	Details in Chapter-3 for meteorological and climate/weather data representation of graphs.
Mine Closure Plan		
34	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	Details in Chapter 2 mine closure plan
EMP		
35	Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.	Detailed under Chapter 10
36	The Environmental Impact Assessment should hold detailed study on EMP with budget for green belt development and mine closure plan including disaster management plan.	Details in Green belt development in chapter 4
Risk Assessment		
37	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	Detailed under Chapter 7
Disaster Management Plan		
38	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	Details in Study 7.3 Disaster Management Plan in Chapter -7

	area communication order issued.	
Others		
39	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.,	Noted & agreed. Detailed under Chapter 4
40	As per the MoEF& CC office memorandum tr.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.	Noted and agreed
41	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.	Details of carbon emission and mitigation activities are given int the Chapter No.4
STANDARD TERMS OF REFERENCE		
1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.	Not applicable. This is not a violation category project. This proposal falls under B1 Category
2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.	The applied land for quarrying is a Patta Land. Document is enclosed along with Approved Mining Plan as Annexure Volume 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.	Noted & agreed.
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).	Map showing – Project area is with adjacent quarries details is enclosed in Figure No1.1 Project area boundary coordinates superimposed on Toposheet – Figure No. 1.1A Toposheet of the project area covering 10km radius – Figure No. 1.2 Geology map of the project area covering 10km radius - Figure No. 2.11
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.	Map showing – Geology map of the project area covering 10km radius - Figure No. 2.11 Geomorphological features are incorporated in the Toposheet map covering 10km radius around the project area Figure No. 2.12
6	Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.	The applied area was inspected by the officers of Department of Geology along with revenue officials and found that the land is fit for quarrying under the policy of State Government.
7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description	The proponent has framed their Environmental Policy and the same is discussed in the Chapter No 10.1.

	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.	It is an opencast quarrying operation proposed to operate in Mechanized method. The rough stone formation is a hard, compact and homogeneous body. The height and width of the bench will be maintained as 5m with 90 ⁰ bench angles. Quarrying activities will be carried out under the supervision of Competent Persons like Mines Manager, Mines Foreman and Mining Mate. Necessary permissions will be obtained from DGMS after obtaining Environmental Clearance.
9	The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc., should be for the life of the mine / lease period.	Noted & agreed. The study area considered for this study is 10 km radius and all data contained in the EIA report such as waste generation etc., is for the Life of the Mine / lease period.
10	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Land use and land cover of the study area is discussed in Chapter No. 3. Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Chapter No. 2, Table No 2.3
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	Not Applicable. There is no waste anticipated during this quarry operation. The entire quarried out rough stone will be transported to the needy customers. No Dumps is proposed outside the lease area.
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 Expert Appraisal Committees.	Not Applicable. There is no Forest Land involved in the proposed project area. The proposed project area is a Patta land. Approved Mining Plan is enclosed as Annexure Volume 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.	Not Applicable. The proposed project area does not involve any Forest Land.
14	Implementation status of recognition of forest rights under the Scheduled Tribes and other	Not Applicable.

	Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.	The project doesn't attract Recognition of Forest Rights Act, 2006.
15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given.	No Reserve Forest within the Study 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.	Not Applicable. There are No National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/Elephant Reserves within 10 km Radius from the periphery of the project area.
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	Not Applicable. There are no National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/Elephant Reserves within 10 km Radius from the periphery of the project area.
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.	Detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] was carried out and discussed under Chapter No. 3. There is no schedule I species of animals observed within study area as per Wildlife Protection Act 1972 as well as no species is in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.
19	Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravalli Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.	Not Applicable. Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range'.
20	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, 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. The project doesn't attract The C. R. Z. Notification, 2018.
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	Not Applicable. There are no approved habitations within a radius of 300 meters. Therefore, R&R Plan / Compensation details for the Project Affected People (PAP) is not anticipated and Not Applicable for this project.

	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.	Baseline Data were collected for Summer Season (March 2023-May 2023) as per CPCB Notification and MoEF & CC Guidelines. Details in Chapter No. 3.
23	Air quality modelling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modelling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.	Air Quality Modelling for prediction of incremental GLC's of pollutant was carried out using AERMOD Model. Details in Chapter No. 4,
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.	Total Water Requirement for this project is given in the chapter No 2, Table No 2.13.
25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	Water for dust suppression, greenbelt development and domestic use will be obtained from accumulated rainwater/seepage water in mine pits. Drinking water will be sourced from the approved water vendors, No 2, Table No 2.13.
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 collected in the pits after spell of rain will be used for greenbelt development and dust suppression.
27	Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.	Impact Studies and Mitigation Measures of Water Quality discussed in Chapter No. 4.
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	The ground water table is at 70-65m below ground level.

	will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.	The ultimate depth of this projects is 41m from the general ground profile. Maximum depth is proposed in this EIA project is 41m.
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.	Highest elevation of the project area is 415m AMSL Ultimate depth of the mine is 41m AMSL Water level in the area is 70m to 65m BGL
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.	Progressive greenbelt development plan has been prepared and discussed along with Recommended Species details are given in the Chapter 4, Table No.4.9
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.	Traffic density survey was carried out to analyse the impact of Transportation in the study area as per IRC guidelines 1961 and it is inferred that there is no much significant impact due to the proposed transportation from the project area. Details in Chapter 2.
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.	Infrastructure & other facilities will be provided to the Mine Workers after the grant of quarry lease and the same has been discussed in the Chapter No.2. .
33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	Discussed in chapter No 2.
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.	Details in Chapter 10.
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.	Details in Chapter 10.
36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the	Details in Chapter 4,

	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.	Environment Management Plan Chapter 10.
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.	The outcome of public hearing will be updated in the final EIA/EMP report
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.	No litigation is pending in any court against this 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.	The proposed capital cost for Environmental Monitoring Programme is Rs 3,80,000/- and the recurring cost is Rs 76,000/- per annum. Details in Chapter 6 .
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.	Details in Chapter 10.
42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	Details in Chapter 7.
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.	Details in Chapter.8.
44	Besides the above, the below mentioned general points are also to be followed: -	
A	Executive Summary of the EIA/EMP Report	Encloses as separate volume
B	All documents to be properly referenced with index and continuous page numbering.	All the documents are properly referenced with index and continuous page numbering.
C	Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.	List of Tables and source of the data collected are given properly.
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	Baseline monitoring reports are enclosed with mining plan
E	Where the documents provided are in a language other than English, an English translation should be provided.	Not Applicable.
F	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	Will be enclosed along with Final EIA /EMP Report.
G	While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF & CC vide O.M. No. J-11013/41/2006-IA. II(I) Dated: 4th August, 2009, which are available on the website of this Ministry, should be followed.	Instructions issued by MoEF & CC O.M. No. J-11013/41/2006-IA. II (I) Dated: 4th August, 2009 are 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	Noted & agreed.

	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.	Not 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.	Surface Plan – Figure No. 2.2. Geological Plan – Figure No 2.9. Working Plan – Figure No 2.9. Closure Plan – Figure No.2.10.

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1.INTRODUCTION

1.0 PREAMBLE

Project History:-

The project proponent Tmt. M. Selvathal applied for Rough stone and Gravel quarry over an extent of 1.13.7 Ha in S.F.No 279/2C1B, Pachapalayam Village, Sulur Taluk, Coimbatore District.

- Proponent applied for Rough stone and Gravel quarry lease on 14.12.2020
- Precise area communication letter was issued by the District Collector vide RC.No. 544/Kanimam/2020 Dated 27.01.2021
- The Mining plan has been prepared by the Qualified person and got approval vide Letter Rc. No. 544/Mines/2020 Dated 16.03.2021
- The Mining plan has been approved for the quantity of 1,08,990m³ of Rough stone, 45,200m³ of Weathered rock and 16,296m³ of Gravel upto the depth of 41m bgl for the period of five years.

As per the EIA Notification, 2006 and subsequent amendments and OM The proposal falls in the B1 Category (Cluster quarries - 2 proposal and 4 Existing quarries forming Cluster Category {Total Extent of the Cluster is 12.01.20 Ha}- Cluster area calculated as per MoEF & CC Notification S.O. 2269(E) Dated 1st July 2016).

- Proponent applied for Terms of Reference vide Proposal No. SIA/TN/MIN/413115/2023 Dated 04.01.2023 and the ToR Was Granted vide Letter No No Lr No.SEIAA-TN/F.No.9727/ToR-1431/2022 Dated: 21.04.2023

Based on the ToR Baseline Monitoring study has been carried out for one season ie., **March – May 2023** and this EIA and EMP report is prepared for considering cumulative impacts arising out of these projects, the Cumulative Environmental Impact Assessment study is undertaken, which is followed by preparation of a detailed Environmental Management Plan (EMP) to minimize those adverse impacts.

Environmental Impact Assessment (EIA) is the management tool to ensure the sustainable development and it is a process, used to identify the environmental, social and economic impacts of a project prior to decision-making. It is a decision-making tool, which guides the decision makers in taking appropriate decisions for any project. EIA systematically examines both beneficial and adverse consequences of the project and ensures that these impacts are taken into account during the project designing. It also reduces conflicts by promoting community participation, information, decision makers, and helps in developing the base for environmentally sound project.

1.1 PURPOSE OF THE REPORT

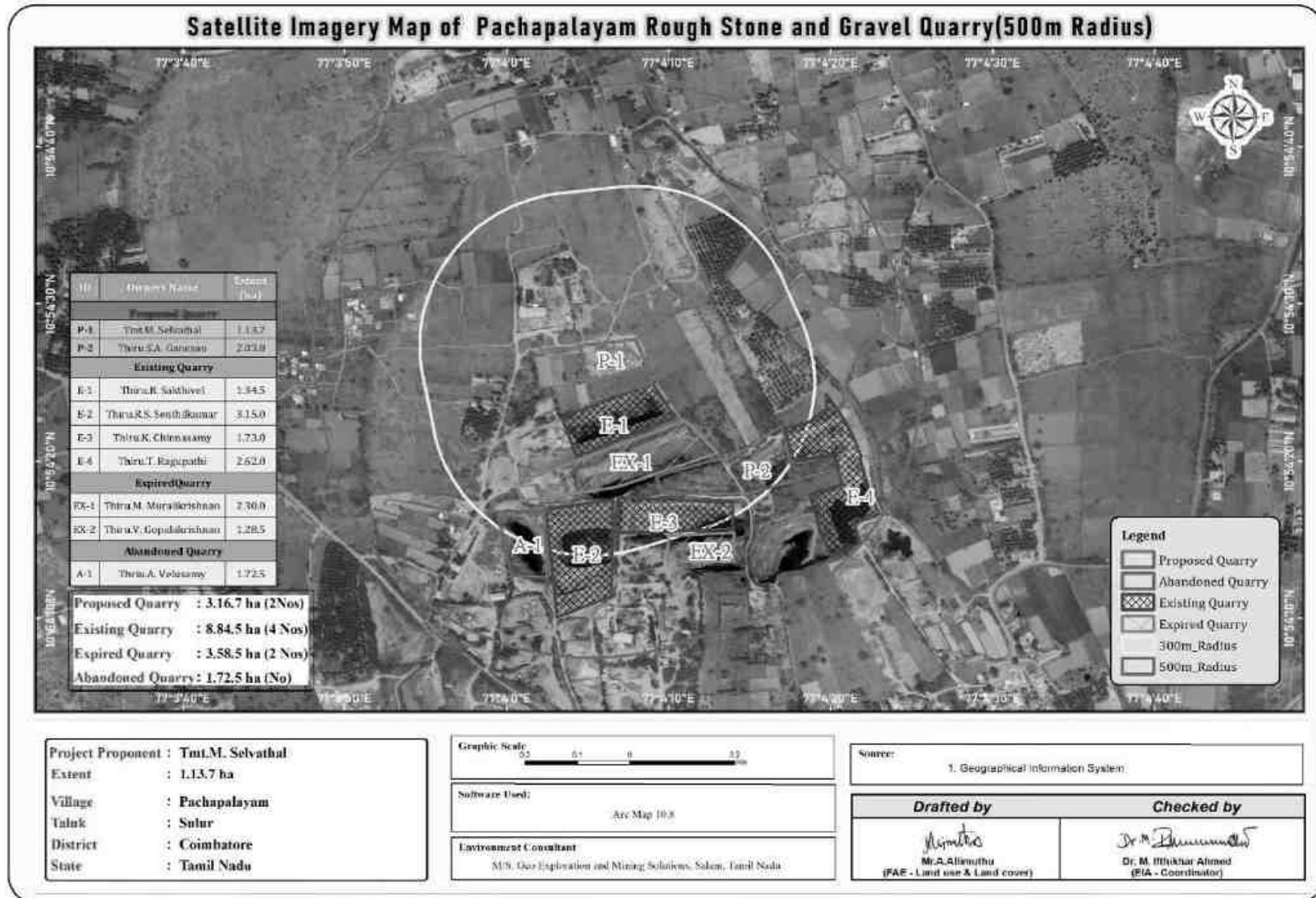
The Ministry of Environment and Forests, Govt. of India, through its EIA notification S.O. 1533(E) of 14th September 2006 and its subsequent amendments as per Gazette Notification S.O. 1889 of 20th April 2022, Mining Projects are classified under two categories i.e. A (> 250 Ha) and B (≤ 250 Ha), and Schematic Presentation of Requirements on Environmental Clearance of Minor Minerals including cluster situation in Appendix–XI.

Now, as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green Tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018 clarified the requirement for EIA, EMP and therefore, Public Consultation for all areas from 5 to 25 ha falling in Category B1 and appraised by SEAC/ SEIAA as well as for cluster situation.

The proposed projects are categorized under category “B1” Activity 1(a) (mining lease area in cluster situation) and will be considered at SEIAA – TN after conducting Public Hearing and Submission of EIA/EMP Report for Grant of Environmental Clearance.

“Draft EIA report prepared on the basis of ToR Issued for carrying out public hearing for the grant of Environmental Clearance from SEIAA, Tamil Nadu”

FIGURE 1.1 SATELLITE IMAGERY CLUSTER QUARRIES



1.2 IDENTIFICATION OF PROJECT AND PROJECT PROPONENTS

1.2.1 Identification of Project Proponent

TABLE 1.1: DETAILS OF PROJECT PROPONENT

Name of the Project Proponent	Tmt.M.Selvathal Rough stone and Gravel quarry
Address	W/o.Meignanam, residing at No. 3/78, Karamadaiyan Thottam, Periyakuyilai, Sulur Taluk, Coimbatore District – 641 201.
Mobile	98650 44822
Email	mskarathi4822@gmail.com
Status	Individual

1.2.2 Identification of Project

TABLE 1.2: SALIENT FEATURES OF THE PROPOSED PROJECT

Name of the Project	Tmt.M.Selvathal Rough stone and Gravel quarry		
S.F. No.	279/2C1B		
Extent	1.13.70 ha		
Village Taluk and District	Pachapalayam Village, Sulur Taluk, Coimbatore District.		
Land Type	Proponent own patta land		
Existing quarry operation	Nil it is a fresh area, the side casting work has been carried out on the North side of the project before the purchasing of Land		
Toposheet No	58 - F/01		
Latitude between	10° 54' 23.73"N to 10° 54' 27.69"N		
Longitude between	77° 04' 04.52"E to 77° 04' 09.12"E		
Elevation of the area	415m AMSL		
Lease period	5 Years		
Mining Plan period	5 years		
Proposed Depth of Mining	41m bgl (2m Gravel + 4m Weathered Gravel + 35m Rough stone)		
Geological Resources	Rough Stone in m ³	Weathered Rock m ³	Gravel m ³
Mineable Reserves	3,95,500	45,200	22,600
	1,08,990	32,592	16,296
Year wise Production	1,08,990	32,592	16,296
Peak Production	21,910	13,104	6,552
Ultimate Pit Dimension	97m (L) x 84m (W) x 41m(D) bgl		
Water Level in the region	70 – 65 m bgl		
Method of Mining	Opencast Mechanized Mining Method involving small drilling and Controlled blasting using Slurry Explosives		
Topography	The lease applied area is flat terrain. The area has gentle sloping towards Southern side and altitude of the area is 415m above from Mean sea level. The area is covered by 2m thickness of Gravel, 4 Weathered Rock and followed by Massive Charnockite which is clearly inferred from the nearby existing quarry pit.		
Machinery proposed	Jack Hammer	3 Nos	
	Compressor	1 Nos	
	Excavator with Bucket and Rock Breaker	1 No	
	Tipplers	2 Nos	
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.		

Proposed Manpower Deployment	18 Nos	
Project Cost	Rs. 35,94,000/-	
EMP Cost	Rs. 3,80,000/-	
Total Project cost	Rs. 39,74,000/-	
CER Cost	Rs. 5,00,000/-	
Nearby Water Bodies	Seasonal Odai	120m West
	Seasonal Odai	340m SE
	Odai	3.3km SE
	Noyyal River	9km North
	Pallapalayam Lake	8.5km NE
Greenbelt Development Plan	Proposed to plant 680 Nos of trees considering 500 Nos of trees/ Ha criteria The plantation will be developed around the project site and nearby village roads	
Proposed Water Requirement	1.4 KLD	
Nearest Habitation	370m – North West	
Nearest Reserve Forest	Boluvampatti. R.F. – 13.14 km – North West (Source - TNGIS)	
Nearest Wild Life Sanctuary	Indira Gandhi (Anaimalai) Wildlife sanctuary -40km-South	

Source: Approved Mining & Land Documents.

1.3 BRIEF DESCRIPTION OF THE PROJECT

1.3.1 Nature and Size of the Project

The quarrying operation is proposed to be carried out by Opencast Mechanized Mining method with 5.0m bench height and 5.0m bench width by deploying Jack Hammer Drilling & Slurry Explosive during blasting. Hydraulic Excavator and tippers are used for Loading and transportation. Rock Breakers are deployed to avoid secondary blasting.

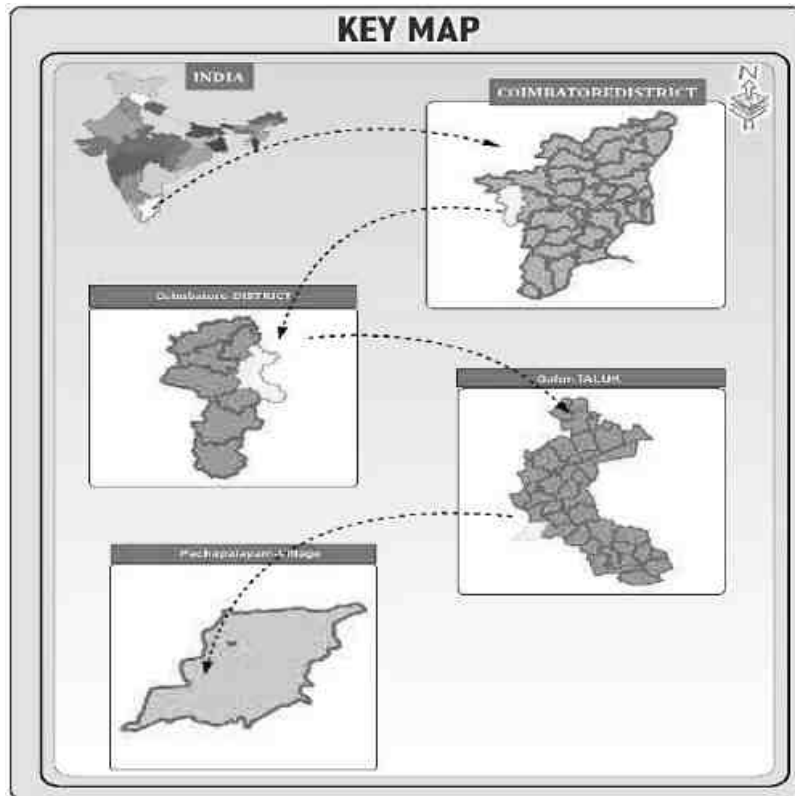
The peak production of Rough stone is 21,190m³ maximum in a year (70m³ per day/ 5-6 Tippers per day considering 21m³ per load). The depth of the mining is 12m bgl.

1.3.2 Location of the Project

- The project site is located in Pachapalayam Village, Sular Taluk and Coimbatore District.
- 17km Southeast of Coimbatore, 15km Southwest of Sular and 1km Northwest side of Pachapalayam Village.



FIGURE 1.2 LOCATION MAP OF THE PROJECT SITE



Source: Survey of India Toposheet 58-A/15 & 16

FIGURE 1.3: TOPOSHEET MAP OF THE STUDY AREA 10 KM RADIUS

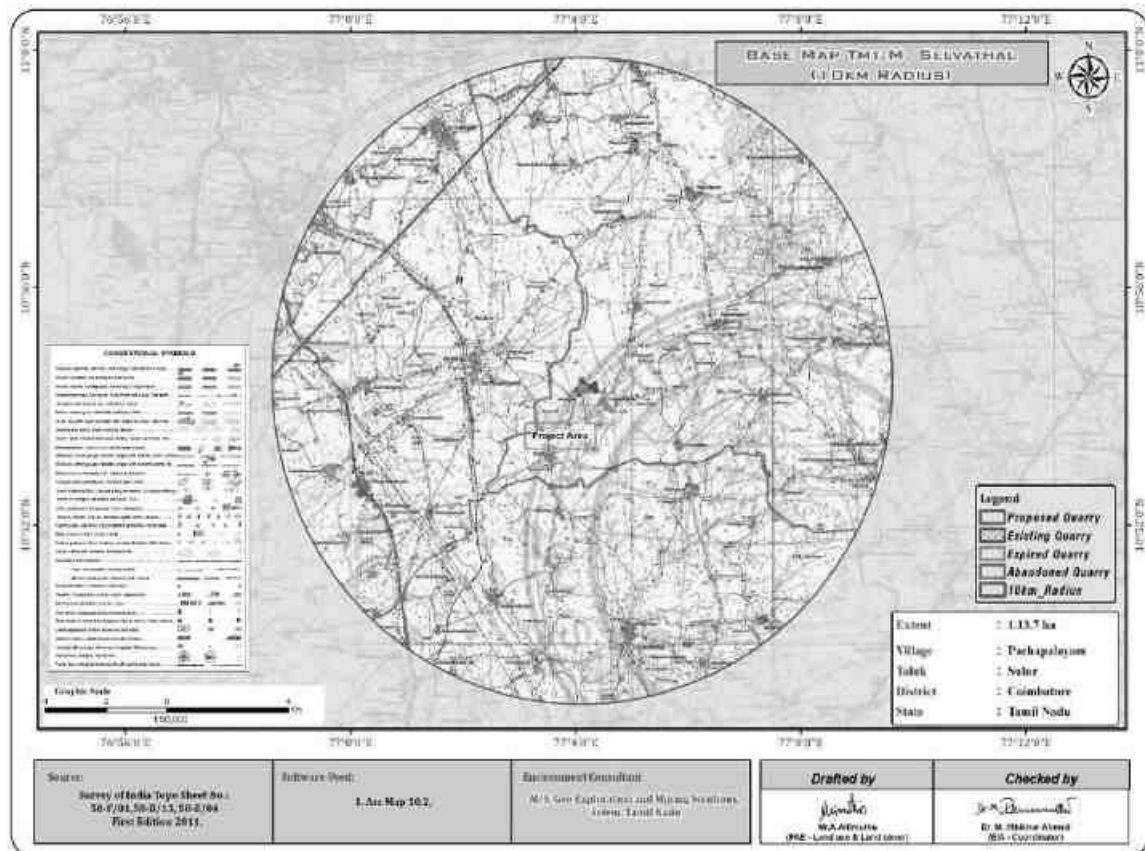
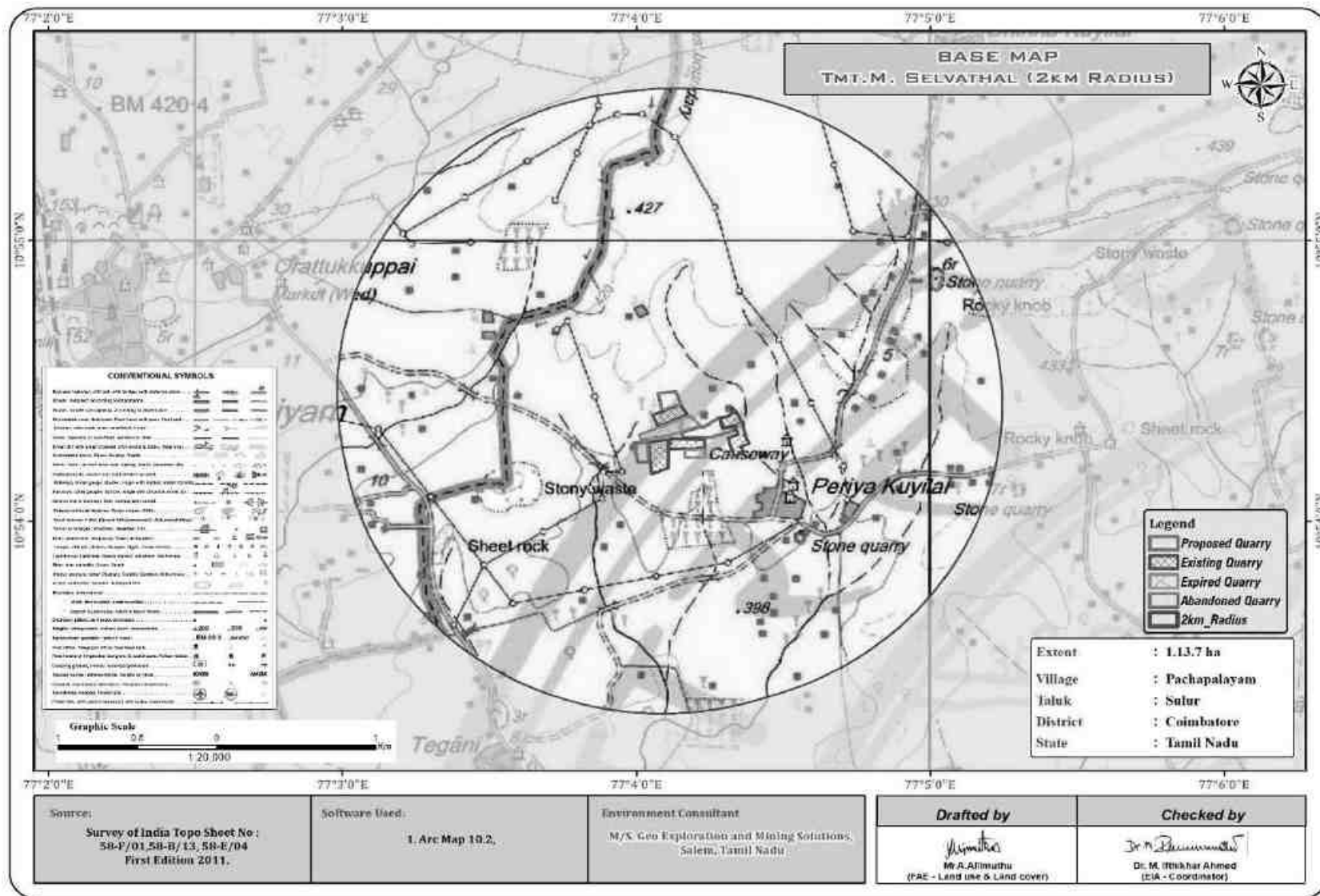


FIGURE 1.4: TOPOSHEET MAP OF THE STUDY AREA 2KM RADIUS



1.4 ENVIRONMENTAL CLEARANCE

The Environmental Clearance process for the project will comprise of four stages. These stages in sequential order are given below: -

- Screening,
- Scoping
- Public consultation &
- Appraisal

SCREENING –

- The proponent applied for Rough Stone and Gravel Quarry Lease Dated: 24.09.2020.
- Precise Area Communication Letter was issued by the District Collector, Coimbatore Rc. No 544/Mines/2020, Dated: 27.01.2021.
- The Mining Plan was prepared by Recognized Qualified Person and approved by Assistant Director, Geology and Mining, Coimbatore District, vide Rc. No 544/Mines/2020, Dated: 16.03.2021
- The proposed project falls under “B1” Category as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018
- Proponent applied for ToR for Environmental Clearance vide online Proposal No. SIA/TN/MIN/413115/2023. dated: 04.01.2023.

SCOPING:

- The proposal was placed in 366th SEAC meeting held on 30.03.2023 and the committee recommended for issue of ToR.
- The proposal was considered in 613rd SEIAA meeting held on 21.04.2023 and issued ToR vide Lr No.SEIAA-TN/F.No.9727/ToR-1431/2022 Dated: 21.04.2023

PUBLIC CONSULTATION

Application to The Member Secretary of the Tamil Nadu Pollution Control Board (TNPCB) to conduct Public Hearing in a systematic, time bound and transparent manner ensuring widest possible public participation at the project site or in its close proximity in the district is submitted along with this Draft EIA/ EMP Report and the outcome of public hearing proceedings will be detailed in the Final EIA/EMP Report.

APPRAISAL –

Appraisal is the detailed scrutiny by the State Expert Appraisal Committee (SEAC) of the application and other documents like the final EIA & EMP Report, outcome of the Public Consultations including Public Hearing Proceedings, submitted by the proponent to the regulatory authority concerned for grant of environmental clearance.

1.5 TERMS OF REFERENCE (ToR)

The ToR was issued by the SEIAA vide Lr No. SEIAA-TN/F.No.9727/ToR-1431/2022 Dated: 21.04.2023. The Details of the ToR Compliance is given in the Page No.

1.6 POST ENVIRONMENT CLEARANCE MONITORING

The proponent shall submit a half-yearly compliance report in respect of stipulated Environmental Clearance terms and conditions to MoEF & CC Regional Office & SEIAA after grant of EC on 1st June and 1st December of each calendar year as per MoEF & CC Notification S.O. 5845 (E) Dated: 26.11.2018.

1.7 GENERIC STRUCTURE OF EIA DOCUMENT

The overall contents of the EIA report follow the list of contents prescribed in the EIA Notification 2006 and the “Environmental Impact Assessment Guidance Manual for Mining of Minerals” published by MoEF & CC.

1.8 THE SCOPE OF THE STUDY

The main scope of the EIA study is to quantify the cumulative impact in the study area due to cluster quarries and formulate the effective mitigation measures. A detailed account of the emission sources, emissions control equipment, background Air quality levels, Meteorological measurements, Dispersion model and all other aspects of pollution like effluent discharge, Dust generation etc., have been discussed in this report. The baseline monitoring study has been carried out during the summer season (March 2023 to May 2023) for various environmental components so as to assess the anticipated impacts of the cluster quarry projects on the environment and suggest suitable mitigation measures for likely adverse impacts due to the proposed project.

TABLE 1.3: ENVIRONMENT ATTRIBUTES

Sl.No.	Attributes	Parameters	Source and Frequency
1	Ambient Air Quality	PM ₁₀ , PM _{2.5} , SO ₂ , NO ₂	Continuous 24-hourly samples twice a week for three months at 8 locations (1 Core & 7 Buffer)
2	Meteorology	Wind speed and direction, temperature, relative humidity and rainfall	Near project site continuous for three months with hourly recording and from secondary sources of IMD station
3	Water quality	Physical, Chemical and Bacteriological parameters	Grab samples were collected at 6 locations – 2 Surface water and 4 Ground water samples; once during study period.
4	Ecology	Existing terrestrial and aquatic flora and fauna within 10 km radius circle.	Limited primary survey and secondary data was collected from the Forest department.
5	Noise levels	Noise levels in dB(A)	8 locations – data monitored once for 24 hours during EIA study
6	Soil Characteristics	Physical and Chemical Parameters	Once at 6 locations during study period
7	Land use	Existing land use for different categories	Based on Survey of India topographical sheet and satellite imagery and primary survey.
8	Socio-Economic Aspects	Socio-economic and demographic characteristics, worker characteristics	Based on primary survey and secondary sources data like census of India 2011.

9	Hydrology	Drainage pattern of the area, nature of streams, aquifer characteristics, recharge and discharge areas	Based on data collected from secondary sources as well as hydro-geology study report prepared.
10	Risk assessment and Disaster Management Plan	Identify areas where disaster can occur by fires and explosions and release of toxic substances	Based on the findings of Risk analysis done for the risk associated with mining.

Source: Field Monitoring Data

1.8.1 Regulatory Compliance & Applicable Laws/Regulations for all Proposed Quarries

- Application for Quarrying Lease as per Tamil Nadu Minor Mineral Concession Rules, 1959.
- Obtained Precise Area Communication Letter as per Tamil Nadu Minor Mineral Concession Rules, 1959 for Preparation of Mining Plan and obtaining Environmental Clearance.
- The Mining Plan has been approved under Rule 41 & 42 as amended of Tamil Nadu Minor Mineral Concession Rules, 1959.
- ToR vide Lr No. SEIAA-TN/F.No.9727/ToR-1431/2022 Dated: 21.04.2023

2. PROJECT DESCRIPTION

2.0 GENERAL

The Proposed Rough Stone Quarries requires Environmental Clearance. There are 2 proposed, and 5 existing quarries forming a cluster; calculated as per MoEF & CC Notification S.O. 2269(E) Dated 1st July 2016 and the total extent of cluster is 13.85.7 ha.

As the extent of cluster are more than 5 ha, the proposal falls under B1 Category as per the Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green Tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018, and requirement for EIA, EMP and Public Consultation for obtaining Environmental Clearance.

2.1 DESCRIPTION OF THE PROJECT

The proposed project is site specific and there is no additional area required for this project. There is no effluent generation/discharge from this project. Method of mining is opencast mechanized method involving splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy crushers and rock breakers to avoid secondary blasting.

2.2 LOCATION OF THE PROJECT

The project area is located about 17km Southeast of Coimbatore, 15km Southwest of Suler and 1km North west side of Pachapalayam Village.

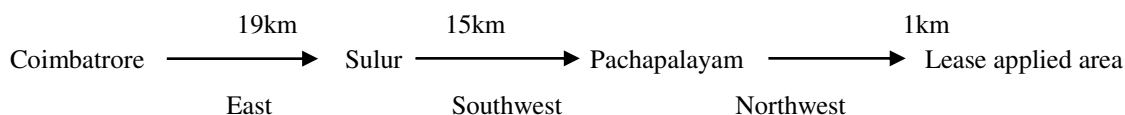


TABLE 2.1: SITE CONNECTIVITY

Nearest Roadway	NH544- Salem – Kochi Road -7.0km-NW SH163- Othakalmandapam – Palladam Road-3.0km-NW
Nearest Village	Pachapalayam – 800m- SE
Nearest Town	Kinathukadavu – 11.0km-SW
Nearest Railway Station	Chettipalayam – 4.0km-NW
Nearest Airport	Coimbatore – 14.0km – NW
Seaport	Kochi – 139 km – South West

Source: Survey of India Toposheet

TABLE 2.2: CO-ORDINATES – PROJECT BOUNDARY

Corner Nos.	Latitude	Longitude
1	10°54'23.73"N	77°04'05.19"E
2	10°54'27.34"N	77°04'04.52"E
3	10°54'27.69"N	77°04'07.95"E
4	10°54'25.01"N	77°04'09.12"E
Datum: UTM-WGS84, Zone 43 North		

Source: Approved Mining Plan

FIGURE 2.1: TOPOGRAPHICAL VIEW OF PROJECT AREA



Project Site



Crusher material stored temporarily in the project site



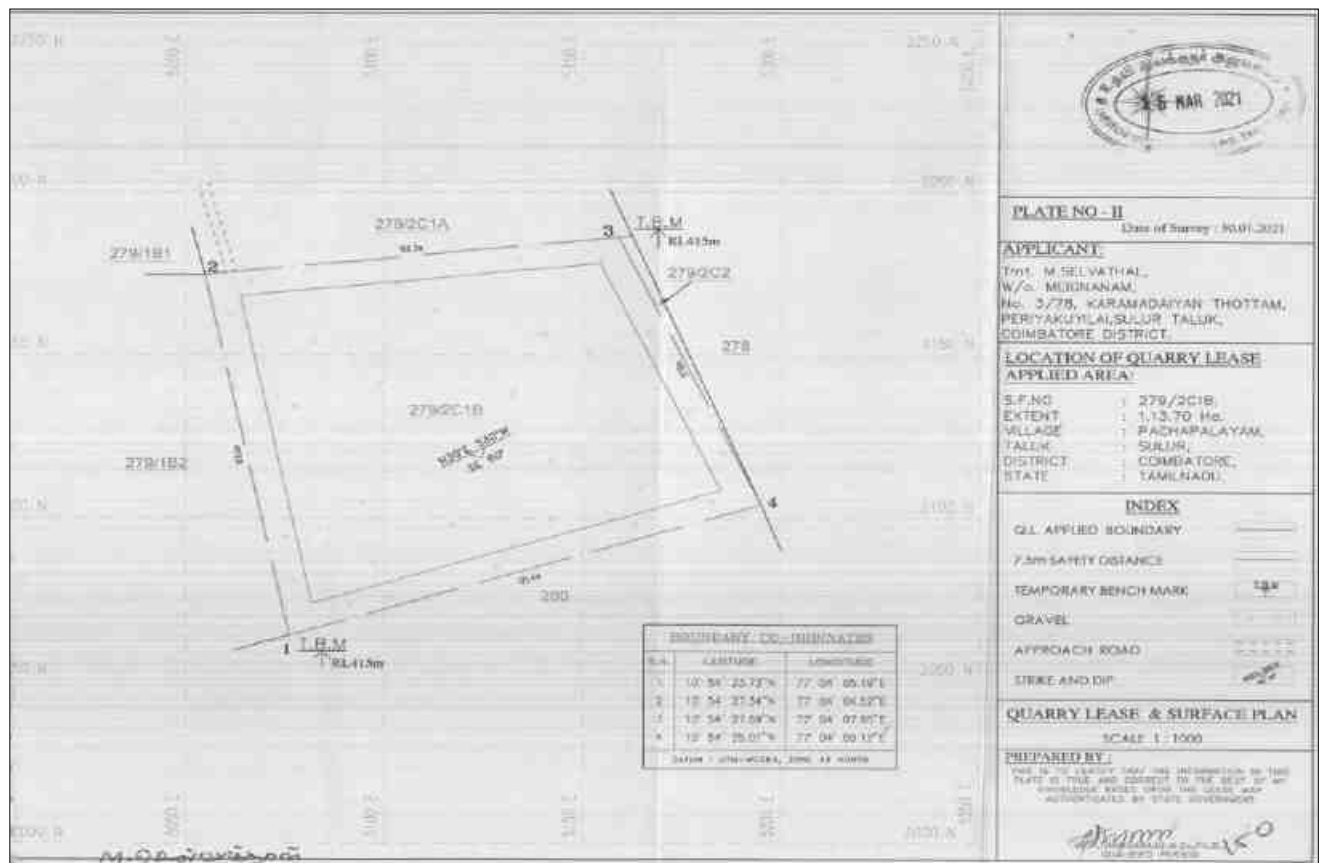
Fencing at Project site

FIGURE 2.2: GOOGLE IMAGE OF THE PROJECT AREA



Source: Google Earth Imagery

FIGURE 2.3: QUARRY LEASE PLAN / SURFACE PLAN



Source: Approved Mining Plan

FIGURE 2.4: VILLAGE MAP SUPERIMPOSED ON GOOGLE EARTH IMAGE

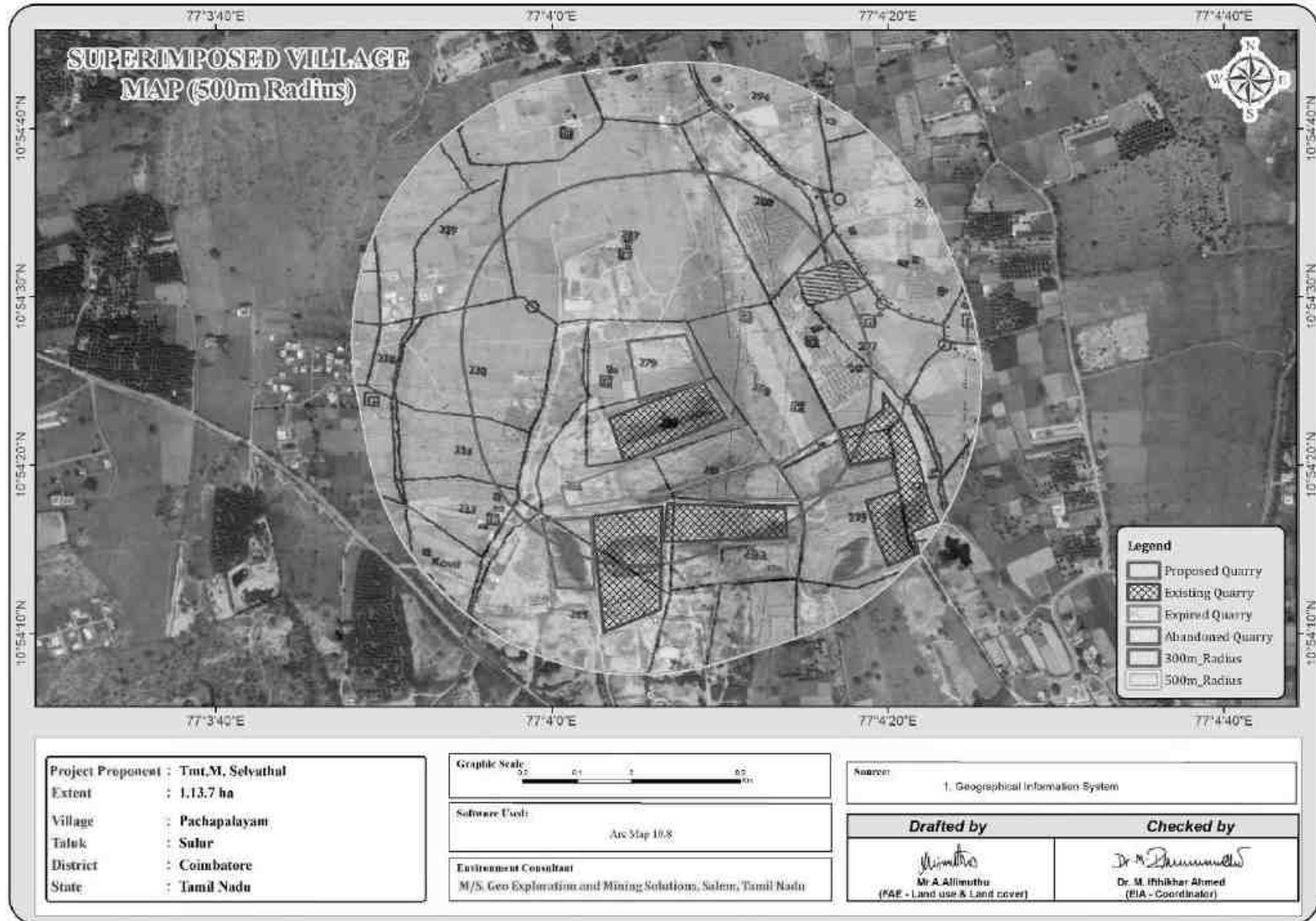


FIGURE 2.5: IMAGE SHOWING SURFACE FEATURES AROUND 10 KM RADIUS

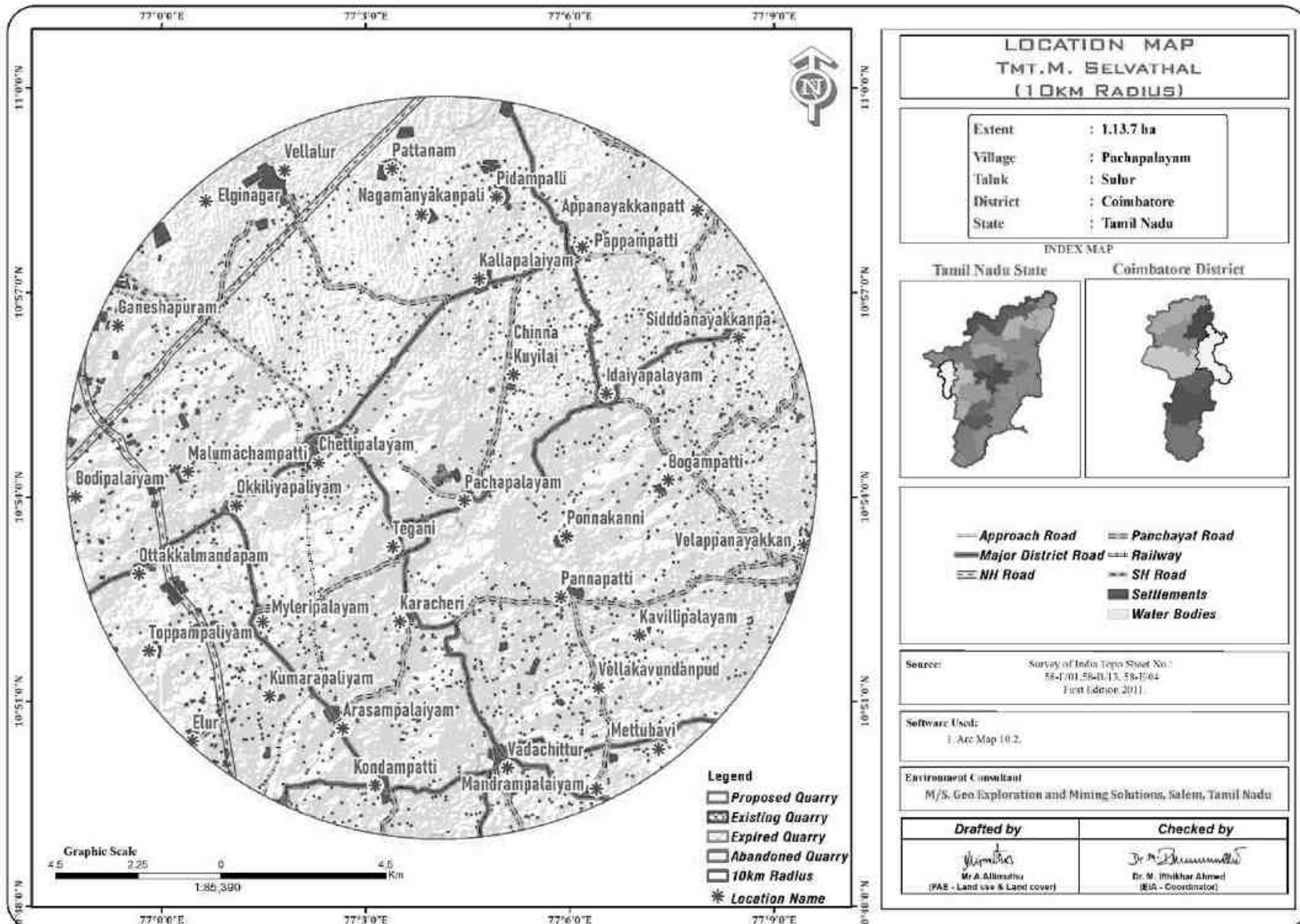
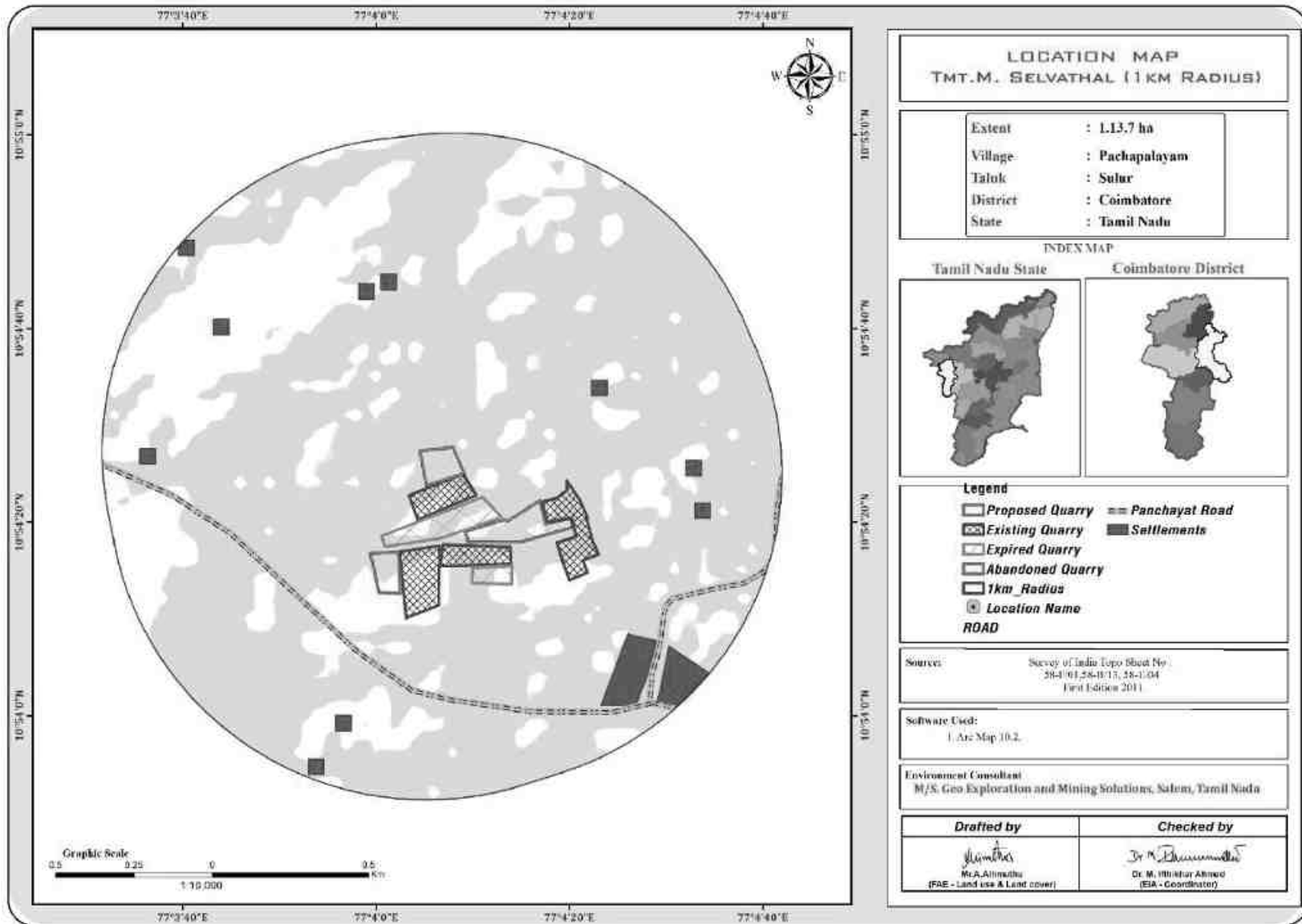


FIGURE 2.6: IMAGE SHOWING SURFACE FEATURES AROUND 1 KM RADIUS



2.2.1 Project Area

- The project is site specific & no beneficiation or processing in the project site.
- There is no forest land involved in the proposed projects and is devoid of major vegetation and trees.

TABLE 2.3: LAND USE PATTERN

Description	Present area (Ha)	Area at the end of this quarrying period (Ha)
Area under quarrying	Nil	0.84.8
Infrastructure	Nil	0.01.0
Roads	Nil	0.02.0
Green Belt	Nil	0.12.8
Unutilized Area	1.13.7	0.13.1
Grand Total	1.13.7	1.13.7

Source: Approved Mining

2.2.2 Size or Magnitude of Operation

TABLE 2.4: RESOURCES AND RESERVES

PARTICULARS	DETAILS		
	Rough Stone	Weathered Rock m ³	Gravel in m ³
Geological Resources	3,95,500	45,200	22,600
Mineable Reserves	1,08,990	32,592	16,296
Production for five-year plan period	1,08,990	32,592	16,296
Peak Production	21,910	13,104	6,552
Mining Plan Period / Lease Applied Period	5 Years		
Number of Working Days	300 Days		
Production per day	73	27	18
No of Lorry loads (12m ³ per load)	6	5	3
Total Depth of Mining	41m (2m Gravel + 4m Weathered Gravel + 35m Rough stone) below ground level.		

Source: Approved mining plan.

2.3 GEOLOGY

2.3.1 Regional Geology

Coimbatore district of Tamil Nadu forms a part of southern Granulitic terrain and is predominantly occupied by crystalline rocks of Archaean to late Proterozoic age. Regionally, the rocks can be grouped under five categories namely –

i.	Charnockite Group represented by Charnockite, Pyroxene Granulite and Magnetite Quartzite
ii	Peninsular Gneissic Complex (II) comprising hornblende-biotite gneiss
iii	Peninsular Gneissic Complex (II) comprising hornblende-biotite gneiss
iv	Younger intrusive comprising, Nepheline-Syenite, Pink Granite, Pegmatite and Quartz veins and
v	Younger intrusive comprising, Nepheline-Syenite, Pink Granite, Pegmatite and Quartz veins and
vi	Quaternary sediments of Kankar and soil

Geologically, the district is covered by rocks belonging to Archean age comprising the khondalite group, Charnockite Group, migmatite group, Sathyamangalam group, Bhavani Group and Alkali complex of Proterozoic age and Recent to Late Pleistocene rocks of Cainozoic age.

The Charnockite Group of rocks consisting of Charnockite, pyroxene granulites and associated magnetite quartzite, the Knodalite Group comprising garnetiferous – sillimanite gneiss, calc-granulite, crystalline limestone, sillimanite quartzites and associated migmatitic gneisses. The rocks are restricted to the central and southern portions of the district, especially around Sulur, Sulur and Pollachi taluks.

The fissile hornblende gneisses (Peninsular gneiss – younger phase) of Bhavani Group with enclaves of schistose, micaceous and amphibolitic rocks, fuchsitge – kyanite quartzites, ferruginous quartzite (Sathyamangalam Group) intruded by a number of ultramafic and basic rocks and granites are seen in the Northern portions of the district especially around Mettupalayam and Northern areas of Coimbatore. The granites are Proterozoic age and occupy the Western end and Eastern Part of the District as separate bodies and are recognized as Maruthamalai Granite and Punjapuliyampatti Granites respectively. The quaternary alluvium is seen in the Western areas of Coimbatore town. The alluvium is more than 30m thick in the Chinnathadagam valley northwest of Coimbatore and in the Siruvani valley west of Coimbatore.

Source: District Survey Report for Minor Minerals Coimbatore District – May 2019

2.3.2 Local Geology: -

The study area follows the regional trend and mainly comprises of Hard Rock Formation as a homogeneous formation / Batholith formation of Charnockite. All the project areas are plain terrain, all the project areas are covered with gravel and weathered gravel formation of 1m - 4m thickness (2m gravel & 2m Weathered gravel); Massive Charnockite formation is found after 1m-4m gravel and weathered gravel formation which is clearly inferred from the existing quarry pit.

Peninsular gneiss forms the oldest rock formation, in which the massive formation of Charnockite lies over the rich accumulation of recent quaternary formation. On regional scale of the Charnockite body is N30⁰E – S30⁰W and dipping towards SE60⁰.

Exploration :

No Exploration is required, the Rough stone and Gravel formation is clearly inferred from the existing quarry pit situated on the south side.

The General Geological sequence of the area is given below:

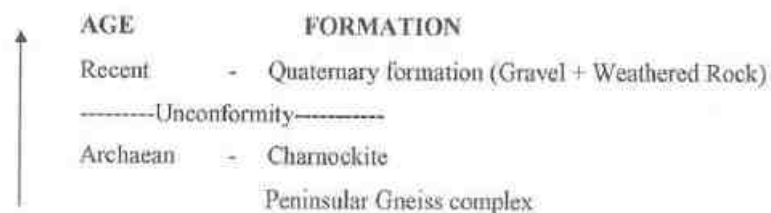


FIGURE 2.7: REGIONAL GEOLOGY MAP

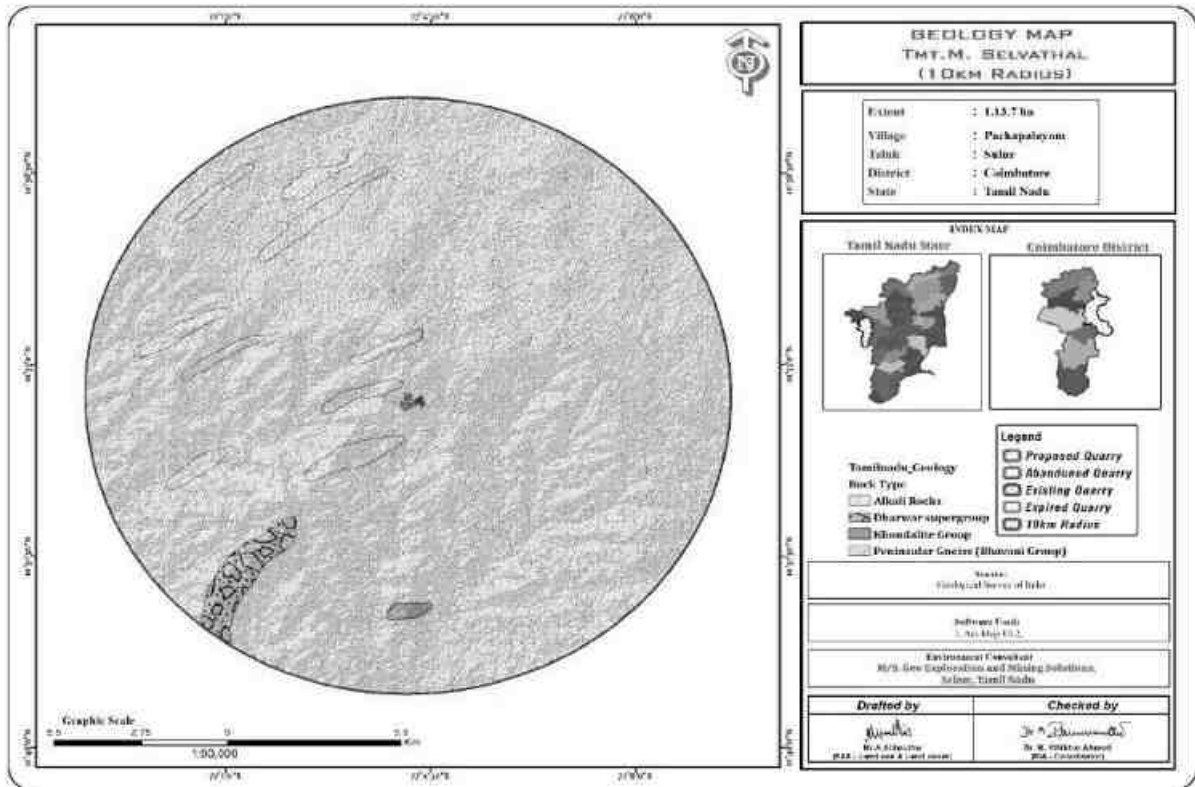
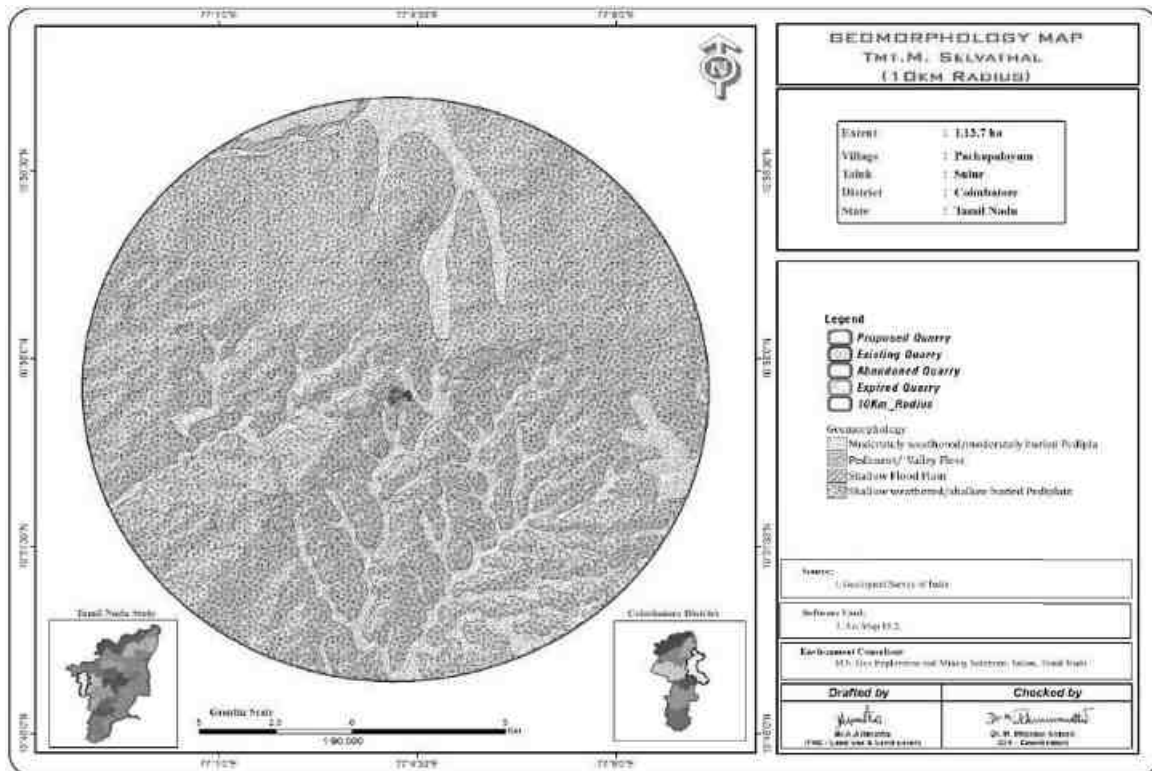


FIGURE 2.8: GEOMORPHOLOGY MAP



2.4 RESOURCES AND RESERVES

The Resources and Reserves of Rough Stone and Gravel were calculated based on Cross-Section Method by plotting sections to cover the maximum lease area. Based on the availability of Geological Resources the Mineable Reserves are calculated by considering excavation system of bench formation and leaving essential safety distance of 7.5 m (Safety Barrier all around the applied area) and safety distance as per precise area communication letter and deducting the locked up reserves during bench formation (Also called as Bench Loss) and the Mineable Reserves is calculated considering there is no waste / overburden / side burden (100% Recovery Anticipated).

TABLE 2.5: RESOURCES AND RESERVES

Description	Rough Stone m ³	Weathered Rock m ³	Gravel m ³
Geological Resource in m ³	3,95,500	45,200	22,600
Mineable Resource in m ³	1,08,990	32,592	16,296
Year wise production for five year plan period	1,08,990	32,592	16,296

Source: Approved Mining Plan

TABLE 2.6: YEAR-WISE PRODUCTION PLAN

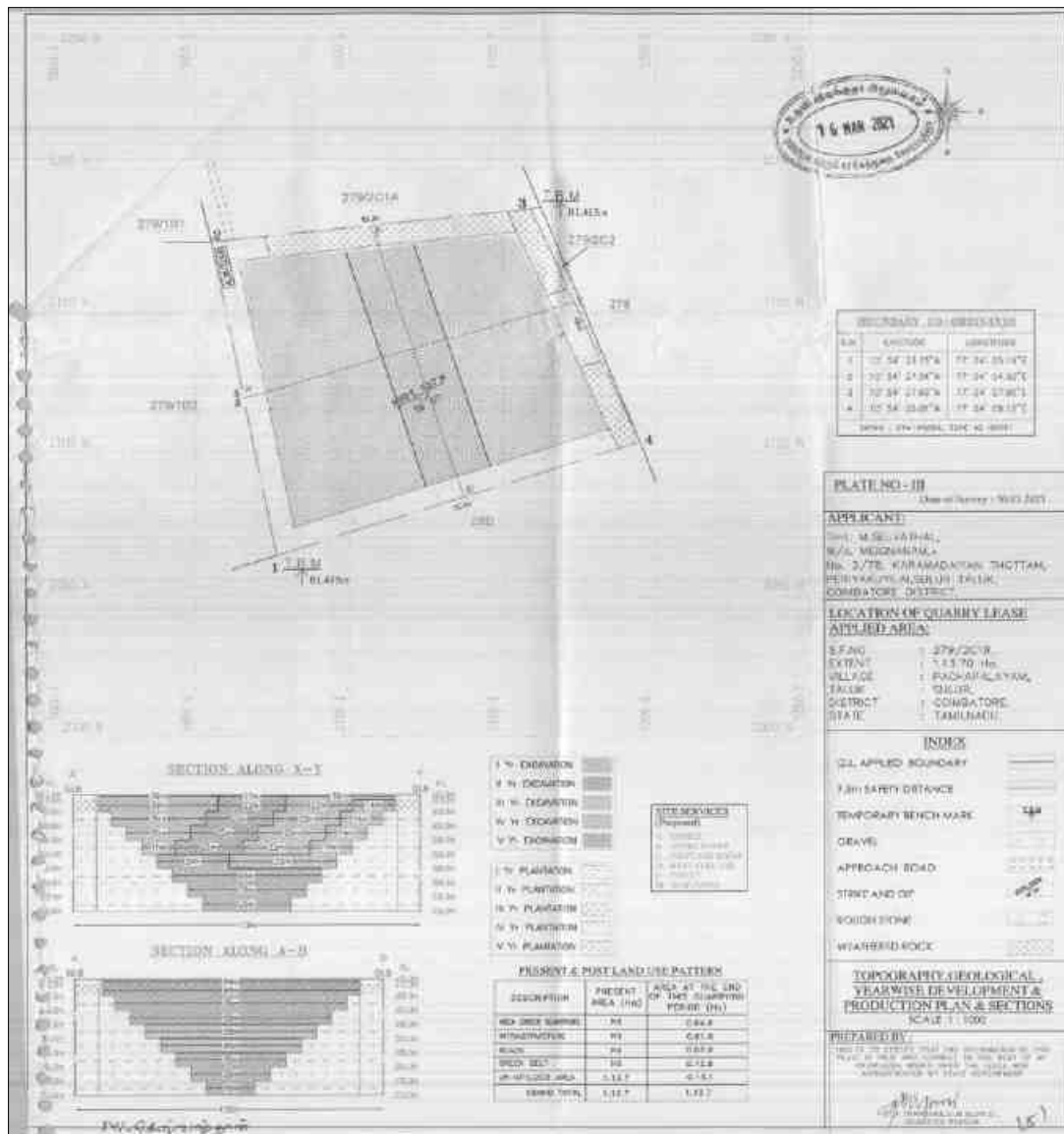
YEAR	ROUGH STONE (m ³)	WEATHERED ROCK m ³	GRAVEL (m ³)
I	21790	13104	6552
II	21780	7392	3696
III	21780	7392	6048
IV	21910	4704	-
V	21730	-	-
TOTAL	1,08,990	32,592	16,296

Source: Approved Mining Plan

Disposal of Waste

The overburden in the form of Gravel formation is about 16,296m³ up to depth 2m and Weathered formation is about 32,592m³ up to depth 4m for during this period. the Gravel and Weathered Rock will be directly loaded into tippers for the filling and levelling of low-lying areas, this will be done only after obtaining permission and paying necessary seigniorage fees to the Government.

FIGURE 2.9: TOPOGRAPHY, GEOLOGICAL, YEAR-WISE DEVELOPMENT PRODUCTION PLAN AND SECTIONS



Source: Approved Mining Plan

Conceptual Mining Plan/ Final Mine Closure Plan

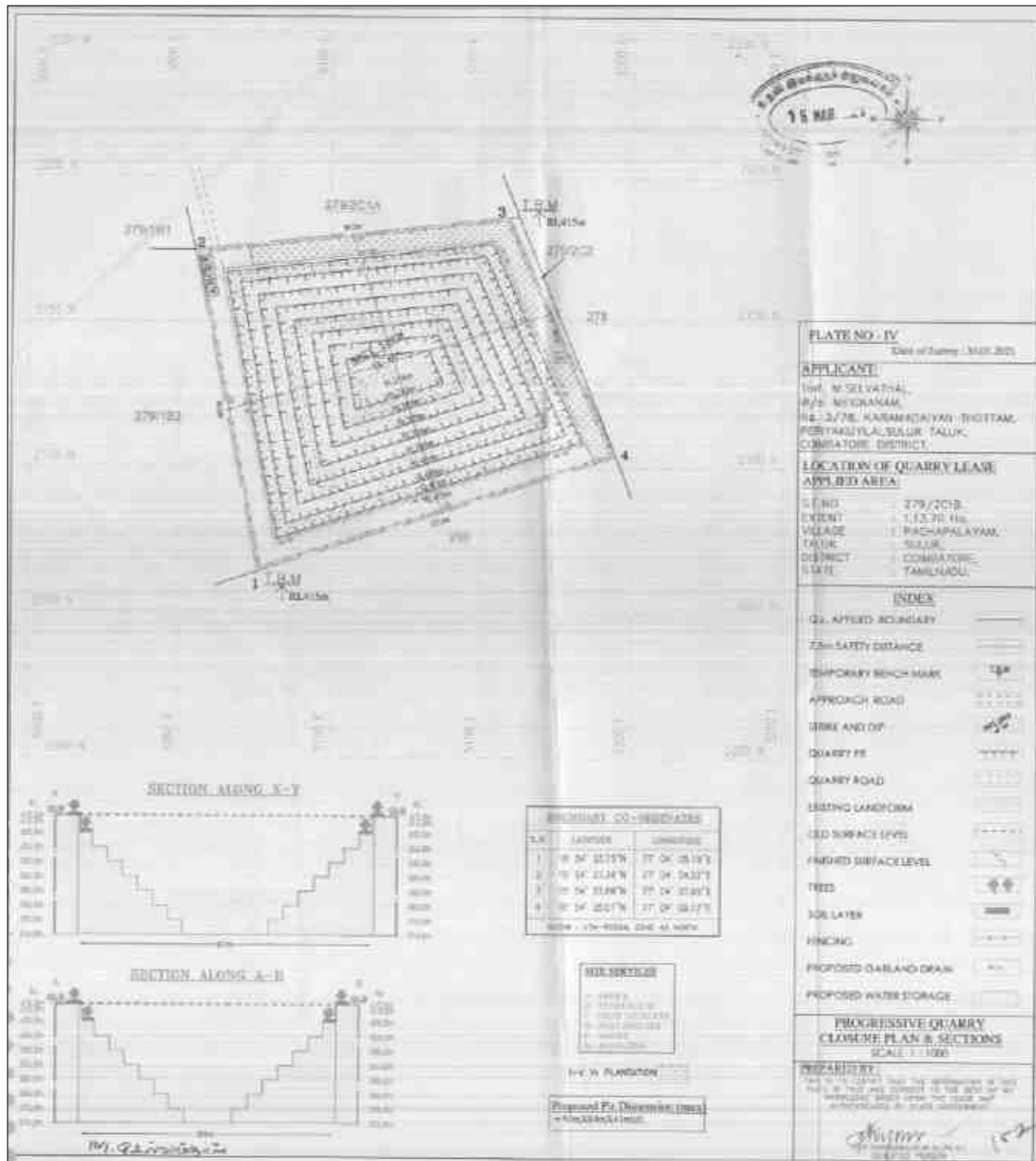
The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc.

TABLE 2.7: ULTIMATE PIT DIMENSION

Pit	Length (Max) (m)	Width (Max) (m)	Depth (Max)
I	97	84	41m bgl

Source: Approved Mining Plan

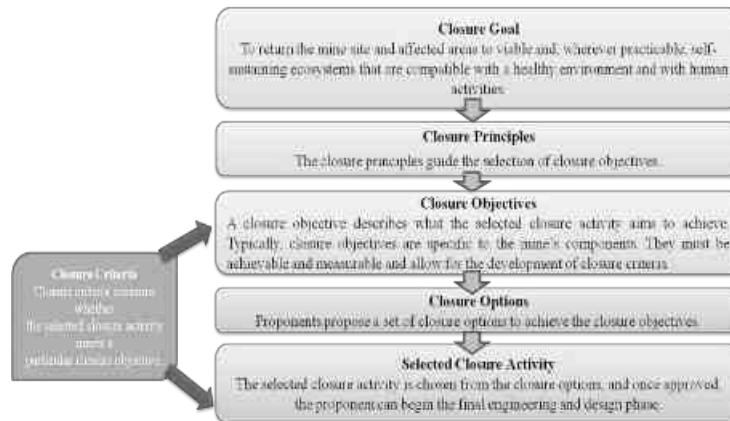
FIGURE 2.10: CLOSURE PLAN AND SECTIONS



Source: Approved Mining Plan

- At the end of life of mine, the excavated mine pit / void will act as artificial reservoir for collecting rain water and helps to meet out the demand or crises during drought season.
- After mine closure the greenbelt developed along the safety barrier and top benches and temporary water reservoir will enhance the ecosystem
- Mine Closure is a process of returning a disturbed site to its natural state or which prepares it for other productive uses that prevents or minimizes any adverse effects on the environment or threats to human health and safety.
- The principal closure objectives are for rehabilitated mines to be physically safe to humans and animals, geo-technically stable, geo-chemically non-polluting/ non-contaminating, and capable of sustaining an agreed post-mining land use.

Closure Objectives –



- Access to be limited, for the safety of humans and wildlife.
- The open pit mine workings and pit boundary are physically and geo-technically stable.
- Water quality in flooded pits is safe for humans, aquatic life, and wildlife.
- Discharge of contaminated drainage has been minimized and controlled.
- Original or desired new surface drainage patterns have been established.
- For flooded pits, in-pit aquatic habitat has been established where practical and feasible.
- Emergency access and escape routes from flooded pits for humans and wildlife are in place.
- Dust levels are safe for people, vegetation, aquatic life, and wildlife.

Closure Planning & Options Considerations in Mine Design –

- The closure of mine is well planned at the initial stage of planning & design consideration by the internal and external stake holders
- Construction of 2m height bund all along the mine pit boundary and ensure its stability all time & construction of garland drain along the natural slope to avoid sliding and collection of soil to the pit & surface runoff during rainfall
- After complete exploitation of mineral, the lowest bench foot wall side will be maintained as plain surface without any sump pits to avoid any accidents
- All the sharp edges will be dressed to smoother face before the closure of mine and ensure no loose debris on hanging wall side
- The project proponent as a part of social responsibilities assures to supply the stored mine pit water to the nearby villages after effective treatment process as per the standards of TNPCB & TWAD
- Native species will be planted in 3 row patterns on the boundary barriers and 1st bench, a full-time sentry will be appointed at the gate to prevent inherent entry of public & cattle.
- The access road to the quarry will be cut-off immediately after the closure
- The layout design shall be prepared and get approved from Department of Geology and Mining.
- The proponent is instructed to construct as per the layout approved
- Physical and chemical stability of structures left in place at the site, the natural rehabilitation of a biologically diverse, stable environment, the ultimate land use is optimized and is compatible with the surrounding area and the requirements of the local community, and taking the needs of the local community into account and minimizing the socio-economic impact of closure
- There will be a positive change in the environmental and ecology due to the mine closure

2.5 METHOD OF MINING

Opencast Mechanized Mining Method is proposed by formation of 5.0-meter height bench with a bench width not less than the bench height. Bench slope will be maintained as 60°.

The Rough Stone is a batholith formation and the splitting of rock mass of considerable volume from the parent rock mass will be carried out by deploying jackhammer drilling and Slurry Explosives will be used for blasting. Hydraulic Excavator attached with rock breaker/ bucket with tipper combination will be involved for the excavation/breaking of Rough stone after blasting. Hydraulic excavators attached with bucket unit will be deployed for loading the Rough Stone into the tippers and then the stone is transported from pithead to the nearby crushers.

It is recommended to obtain necessary statutory permission from the Department of Geology and Mining for Using Heavy Earth Moving Machineries, Blasting and appointment of Mines Manager etc.,

2.5.1 Drilling & Blasting Parameters

Drilling will be carried out using Jack hammer and compressor, the depth of the hole will be maximum 1.5m. Drilling & Blasting will be carried out as per parameters given below: -

Spacing	–	1.2m
Burden	–	1.0 m
Depth of hole	–	1.5 m
Charge per hole	–	0.50 – 0.75kg
Powder factor	–	6.0 tonnes/kg
Diameter of hole	–	32 mm
Peak production Capacity	=	73m ³ of Rough stone per day
Spacing X Burden X Depth	=	1.2m X 1.0m X 1.5m = 1.8m ³
	=	1.8m ³ X 2.6 (Bulk Density) = 4.6Ts per hole

hence for the peak production of 73m³ (189Ts) = 46 Nos of holes to be drilled per day

Explosives per hole = ½ kg hence 92 kg of Explosives will be utilized maximum considering the peak production

Type of Explosives to be used –

Slurry explosives (An explosive material containing substantial portions of a liquid, oxidizers, and fuel, plus a thickener), NONEL / Electric Detonator & Detonating Fuse.

Storage of Explosives –

No proposal for storage of explosives within the project area, the project proponent will made agreement with authorized explosives agencies for carrying out blasting activities and competent person as per DGMS guidelines will be employed for safety and supervision of overall quarrying activities.

The explosives will be sourced from the blasting agency on daily basis and the blasting will be carried out under the supervision of competent qualified Blaster and it will be ensured that there shall be no balance of explosive stock; any balance stock will be taken back by the supplier.

2.5.2 Extent of Mechanization

TABLE 2.8 PROPOSED MACHINERY DEPLOYMENT

S.NO.	TYPE	NOS	SIZE/CAPACITY	MOTIVE POWER
1	Jack hammers	3	1.2m to 2.0m	Compressed air
2	Compressor	1	400psi	Diesel Drive
3	Excavator with Bucket and Rock Breaker	1	300 HP	Diesel Drive
4	Tipppers	2	20 Tonnes	Diesel Drive

Source: Approved Mining Plan

2.6 GENERAL FEATURES

2.6.1 Existing Infrastructures

Infrastructures like Mine office, Temporary Rest shelters for workers, Latrine and Urinal Facilities will be constructed as per the Mine Rule after the grant of quarry lease in all the proposed quarries.

2.6.2 Drainage Pattern

There are no streams, canals or water bodies crossing within the project area. The drainage pattern of the area is dendritic – sub dendritic.

2.6.3 Traffic Density

The traffic survey conducted based on the transportation route of material, the Rough Stone is proposed to be transported mainly through

Traffic density measurements were performed at two locations

1. Chettipalayam - Pachapalayam Panchayat Road
2. Chettipalayam -Vadasithur District Road

Traffic density measurement was made continuously for 24 hours by visual observation and counting of vehicles under three categories, viz., Heavy motor vehicles, light motor vehicles and two/three wheelers. As traffic densities on the roads are high, two skilled persons were deployed simultaneously at each station during each shift-one person on either direction for counting the traffic. At the end of each hour, fresh counting and recording was undertaken.

TABLE.2.9: TRAFFIC SURVEY LOCATIONS

Station Code	Road Name	Distance and Direction	Type of Road
TS1	Tottikuppam-Irudhukottai	1.5 km-North	Panchayat Road
TS2	Denkanikottai-Marandahalli	3.0 km-North	District Road

Source: On-site monitoring by GEMS FAE & TM

TABLE 2.10: EXISTING TRAFFIC VOLUME

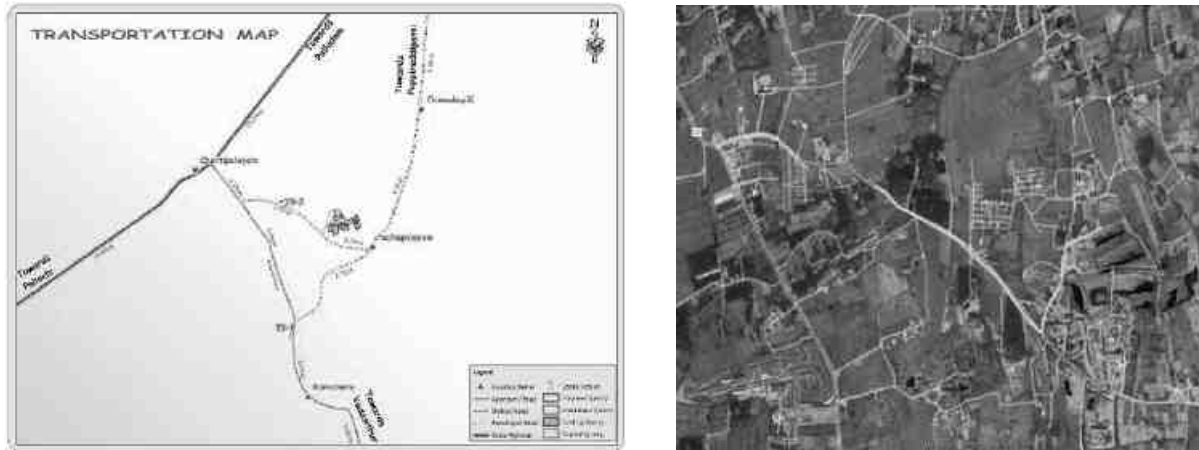
Station code	HMV		LMV		2/3 Wheelers		Total PCU
	No	PCU	No	PCU	No	PCU	
TS1	175	525	75	75	150	75	750
TS2	225	675	125	125	200	100	900

Source: On-site monitoring by GEMS FAE & TM

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

TABLE 2.11: ROUGH STONE & GRAVEL HOURLY TRANSPORTATION REQUIREMENT

Transportation of Rough Stone & Gravel per day		
Capacity of trucks	No. of Trips per day	Volume in PCU
20 tonnes	20	60

FIGURE.2.11: MINERAL TRANSPORTATION ROUTE MAP**Proposed Transportation Route :**

1. The Rough stone will be transported to the Crusher which is located 150m North side of the project site.
2. Existing approach road is located on the south side this road connecting in the Pachapalayam – Chettipalayam road (Total Stretch of the approach road = 600m)
3. Pachapalayam – Chettipalayam road connecting in the Major District road (522) at a distance of 2km the total Stretch of the Transportation route is about 2.5 to 3km from the project site
4. No Major Habitation, Schools in the proposed transportation route.

TABLE 2.12: SUMMARY OF TRAFFIC VOLUME

Route	Existing Traffic volume in PCU	Incremental traffic due to the project	Total traffic volume	Hourly Capacity in PCU as per IRC – 1960 guidelines
Karamadai - Kariyampalayam State Highway (SH- 168)	750	60	810	1500
Senniveeranpalayam – Therampalayam –Panchayat Road	900	60	960	1200

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

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

2.6.4 Mineral Beneficiation and Processing

There is no proposal for the mineral processing or ore beneficiation in any of the proposed project.

2.7 PROJECT REQUIREMENT

2.7.1 Water Source & Requirement

Detail of water requirements in KLD as given below:

TABLE 2.13: WATER REQUIREMENT FOR THE PROJECT

Purpose	Quantity	Source
Dust Suppression	0.6KLD	From the existing pit or from the water vendors
Green Belt	0.5KLD	From the existing pit or from the water vendors
Sanitation & Drinking	0.3KLD	From the existing pit or from the water vendors.
Total	1.4 KLD	

Source: Prefeasibility report

2.7.2 Power and Other Infrastructure Requirement

Power is not required for the mining operation, the mining operation will be carried out using Diesel Generator and Earth moving machineries using diesel. The quarrying activity is proposed during day time only (General Shift 8 AM – 5 PM, Lunch Break 1 PM – 2 PM). Electricity for use in office and other internal infrastructure will be obtained from TNEB by project proponent.

No workshops are proposed inside the project area hence there will not be any process effluent generation from the project area. Domestic effluent from the mine office will be discharged to septic tank and soak pit. There is no toxic effluent expected to generate in the form of solid, liquid or gaseous form hence there is no requirement of waste treatment plant.

2.7.3 Fuel Requirement

One Excavator will excavate 25m³ of Broken up Rough stone per hour and 60m³ of Weathered rock and Gravel per hour.

Peak production of Rough stone = 73m³

Peak production of Weathered rock = 43m³

Peak production of Gravel = 21m³

Peak production for the overburden (Gravel + Weathered rock) = 64

Type of machinery	Working hours	Average Diesel consumption/ Hour	Quantity of Diesel in Ltrs
Working hours of Excavator (Aprx)	73m ³ /20 m ³ = 4 Hrs (Rough stone)	18 Ltrs	72
	64/60m ³ = 1-2 Hrs	18 Ltrs	18
Compressor	Working hours per day 2 Hrs	8 Ltrs	16
Tippers, Motor pumps to drain water	Occasionally		20
Total Diesel Consumption			126

The Maximum diesel consumption is around 130 Ltrs per day considering the peak production.

2.7.4 Project Cost

The Environmental Management plan has been prepared considering the mode of working, Safety of the employees and Monitoring periods the total Cost is 95 Lakhs.

2.8 EMPLOYMENT REQUIREMENT:

The following manpower's are proposed in the mining plan to carry out the day-to-day quarrying activities, the same employment is maintaining aimed at the proposed production target and also to comply with the statutory provisions of the Metalliferous mine's regulations, 1961.

TABLE 2.14: PROPOSED MANPOWER DEPLOYMENT

Designation	No of persons
Mines Manager/Mines Foreman	1
Mate/Blaster	1
Jack hammer operator	6
Excavator Operator	1
Tippers driver	2
Helper	3
Cleaner & Co-operator	3
Security	1
Total	18

Source: Approved Mining Plan & Pre Feasibility report.

2.9 PROJECT IMPLEMENTATION SCHEDULE

The mining operation will commence after the grant of Environmental Clearance, Consent to operate (CTO), Execution of Lease Deed and Obtaining permission from the DGMS (Notice of Opening).

TABLE 2.15: EXPECTED TIME SCHEDULE

Sl.No.	Particulars	Time Schedule (In Month)					Remarks if any
		1 st	2 nd	3 rd	4 th	5 th	
1	Environmental Clearance						
2	Consent to Operate						
3	Execution of Lease deed						
4	Permission from DGMS						
Time line may vary; subjected to rules and regulations /& other unforeseen circumstances							

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

3. DESCRIPTION OF ENVIRONMENT

3.0 GENERAL

The baseline environment quality represents the background environmental scenario of various environmental components such as Land, Water, Air, Noise, Biological and Socio-economic status of the study area. Field monitoring studies to evaluate the base line status of the project site were carried out covering March 2023 to May 2023 with CPCB guidelines for the following attributes –

- Land
- Water
- Air
- Noise
- Biological
- Socio-economic status

Environmental data has been collected with reference to cluster quarries by EHS 360 Lab Private Limited, – An accredited by ISO/IEC 17025:2017 (NABL).

Study Area

An area of 10 km radius (aerial distance) from the periphery of the cluster is considered for EIA study. The study area has been divided into two zones viz **core zone** and **buffer zone**.

- Core zone is considered as cluster area
- Buffer zone taken as 10km radius from the periphery of the Cluster. Both Core zone and Buffer zone is taken as the study area.

Study Period

The baseline study was conducted during the summer season i.e., March 2023 to May 2023.

Study Methodology

- The project area was surveyed in detail with the help of Total Station Survey instruments and pillars were marked. The boundary coordinates were superimposed on the satellite imagery to understand the relief of the area, besides Land use pattern of the area was studied through the Bhuvan (ISRO)
- Soil samples were collected and analysed for relevant physio-chemical characteristics in order to assess the impact due to mining activities and to recommend saplings for Greenbelt development.
- Ground water samples were collected from the existing bore wells, Surface water was collected from water bodies in the buffer zone and analysed as per CPCB Guidelines.
- An onsite meteorological station was setup in cluster area, to collect data about wind speed, wind direction, temperature, relative humidity, rainfall and general weather conditions were recorded throughout the study period.
- Air quality Data's were collected by installation of Respiratory Dust Samplers (RDS) for Fugitive dust, PM₁₀ and SO₂, NO_x with gaseous attachments & Fine Dust Samplers (FDS) for PM_{2.5} and other parameters as per NAAQ norms and analysed for primary air pollutants to work out the existing status of air quality.
- The Noise level measurements were also made at various locations in different intervals of time with the help of sound level meter to establish the baseline noise levels in the impact zone.
- Baseline biological studies were carried out to assess the ecology of the study area to study the existing flora and fauna pattern of the area.

- Socio-Economic survey was conducted at village and household level in the study area to understand the present socio-economic conditions and assess the extent of impact due to the proposed mining project. The sampling methodologies for the various environmental parameters required for the study, frequency of sampling, method of samples analysis, etc., are given below Table 3.1.

TABLE 3.1: MONITORING ATTRIBUTES AND FREQUENCY OF MONITORING

Attribute	Parameters	Frequency of Monitoring	No. of Locations	Protocol
Land-use Land cover	Land-use Pattern within 10 km radius of the study area	Data's from census handbook 2011 and from the satellite imagery	Study Area	Satellite Imagery Primary Survey
*Soil	Physio-Chemical Characteristics	Once during the study period	6 (2 core & 4 buffer zone)	IS 2720 Agriculture Handbook - Indian Council of Agriculture Research, New Delhi
*Water Quality	Physical, Chemical and Bacteriological Parameters	Once during the study period	6 (2 surface water & 4 ground water)	IS 10500& CPCB Standards
Meteorology	Wind Speed Wind Direction Temperature Cloud cover Dry bulb temperature Rainfall	1 Hourly Continuous Mechanical/Auto matic Weather Station	1	Site specific primary data & Secondary Data from IMD Station
*Ambient Air Quality	PM10 PM2.5 SO2 NOX Fugitive Dust	24 hourly twice a week (December 2020 – February 2021)	8 (2 core & 6 buffer)	IS 5182 Part 1-23 National Ambient Air Quality Standards, CPCB
*Noise Levels	Ambient Noise	Hourly observation for 24 Hours per location	8 (2 core & 6 buffer zone)	IS 9989 As per CPCB Guidelines
Ecology	Existing Flora and Fauna	Through field visit during the study period	Study Area	Primary Survey by Quadrante & Transect Study Secondary Data – Forest Working Plan
Socio Economic Aspects	Socio-Economic Characteristics, Population Statistics and Existing Infrastructure in the study area	Site Visit & Census Handbook, 2011	Study Area	Primary Survey, census handbook & need based assessments.

Source: On-site monitoring/sampling by EHS 360 in association with GEMS

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

3.1 LAND ENVIRONMENT

The main objective of this section is to provide a baseline status of the study area covering 10km radius around the proposed mine site so that temporal changes due to the mining activities on the surroundings can be assessed in future.

3.1.1 Land Use/ Land Cover

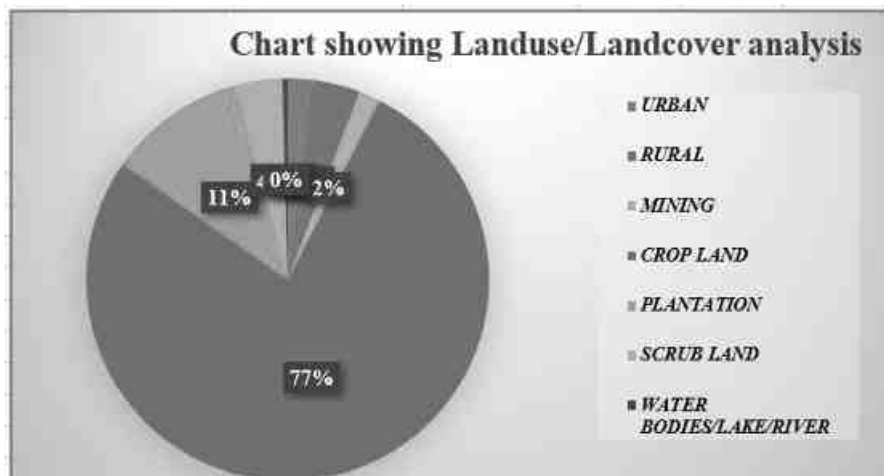
A visual interpretation technique has been adopted for land use classification based on the keys suggested in the chapter – V of the guidelines issued by NNRMS Bangalore & Level III classification with 1:50,000 scale for the preparation of land use mapping. Land use pattern of the area was studied through LISS III imagery of Bhuvan (ISRO). The 10 km radius map of study area was taken for analysis of Land use cover.

TABLE 3.2: LAND USE / LAND COVER TABLE 10 Km RADIUS

S.No	CLASSIFICATION	AREA in HA	AREA in %
BUILTUP			
1	Urban	646.18	2.03
2	Rural	1207.34	3.79
3	Mining	544.10	1.71
AGRICULTURAL LAND			
4	Crop land	24599.52	77.20
5	Plantation	3508.36	11.01
BARREN/WASTE LANDS			
6	Scrub land	1225.24	3.85
WETLANDS/ WATER BODIES			
7	Water bodies/lake/river	132.10	0.41
TOTAL		31862.85	100.00

Source: Survey of India Toposheet and Landsat Satellite Imagery

FIGURE 3.1: PIE DIAGRAM OF LAND USE AND LAND COVER



From the above table, pie diagram and land use map it is inferred that the majority of the land in the study area is Agriculture and fallow land (includes crop land) 77.20% followed by Built-up Lands – 5.82%, Scrub land – 3.85%, and Water bodies 0.41%.

The total mining area within the study area is 544.10 ha i.e., 1.71%. The cluster area of 12.01.20 ha contributes about 0.02% of the total mining area within the study area. This small percentage of Mining Activities shall not have any significant impact on the environment.

3.1.2 Topography

The project area is almost plain terrain having gentle slope towards South side, the south side of the area is existing Rough stone quarry. The North side of the area is side casted upto the maximum 0.5m to utilize temporary storage of Crushed materials.

3.1.3 Drainage Pattern of the Area

The drainage pattern of the area is dendritic – sub dendritic. Drainage pattern is the pattern formed by the streams, rivers, and lakes in a particular drainage basin. They are governed by the topography of the land, whether a particular region is dominated by hard or soft rocks, and the gradient of the land. There are no streams, canals or water bodies crossing within the project area.

3.1.4 Seismic Sensitivity

The proposed project site falls in the seismic Zone II, low damage risk zone as per BMTPC, Vulnerability Atlas of Seismic zone of India IS: 1893 – 2002. The project area falls in the hard rock terrain on the peninsular shield of south India which is highly stable.

3.1.5 Environmental Features in the Study Area

There is no Wildlife Sanctuaries, National Park and Archaeological monuments within project area. No Protected and Reserved Forest area is involved in the project area. Therefore, there will be no need to acquisition/diversion of forest land. The details related to the environment sensitivity around the proposed mine lease area i.e. 10 km radius, are given in the below Table 3.3.

FIGURE 3.2: PHYSIOGRAPHIC MAP 10KM RADIUS

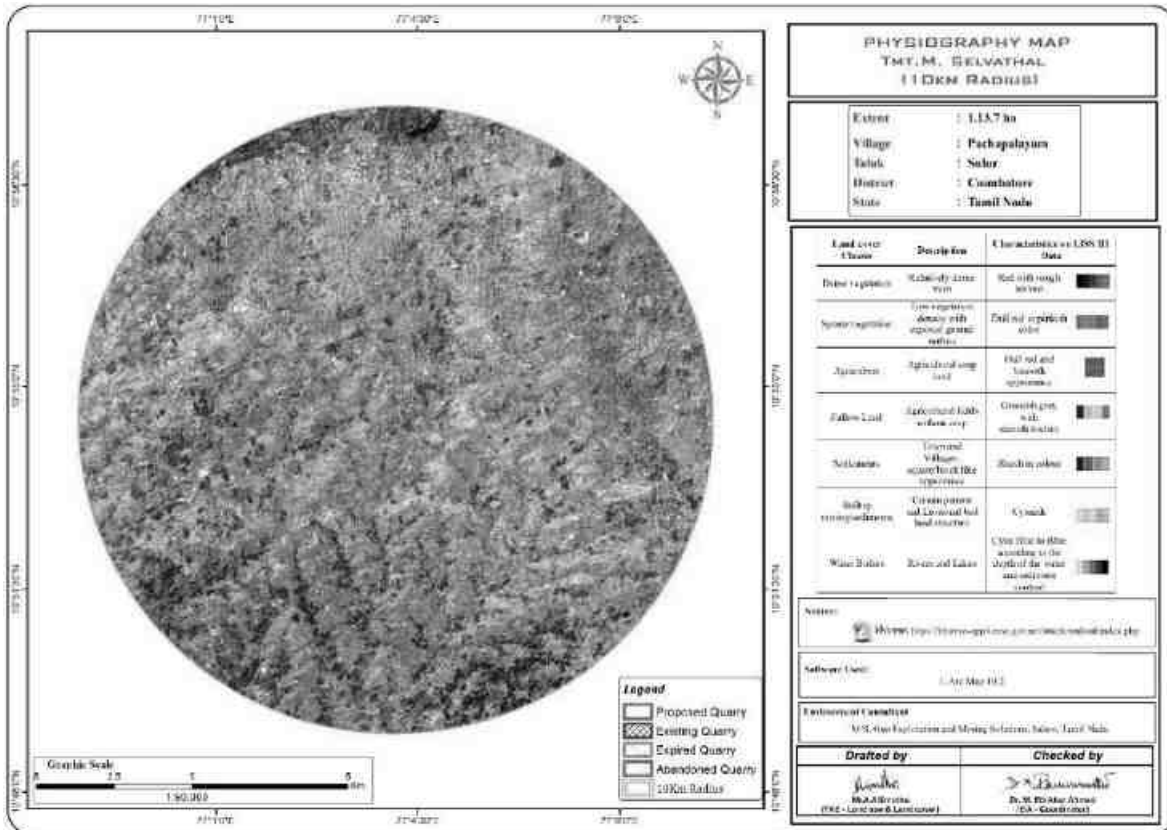


FIGURE 3.3: LAND USE LAND COVER MAP 10KM RADIUS

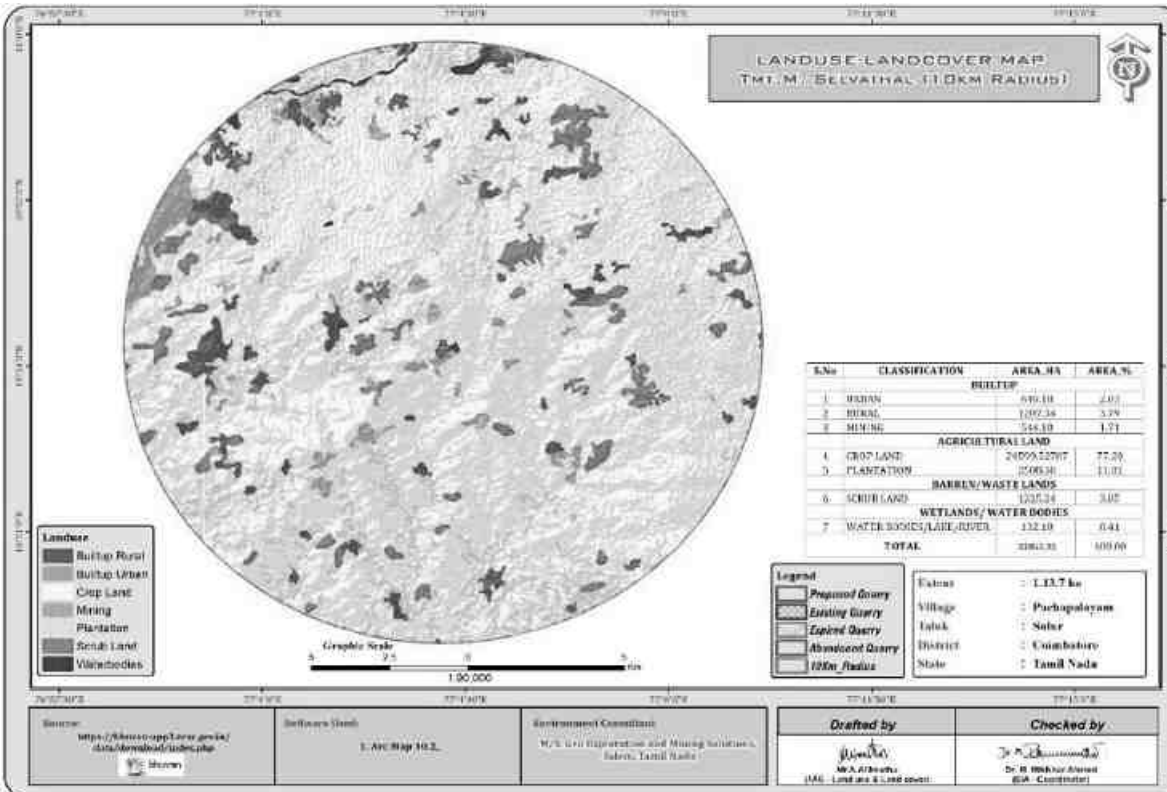


TABLE 3.3: DETAILS OF ENVIRONMENT SENSITIVITY AROUND THE CLUSTER

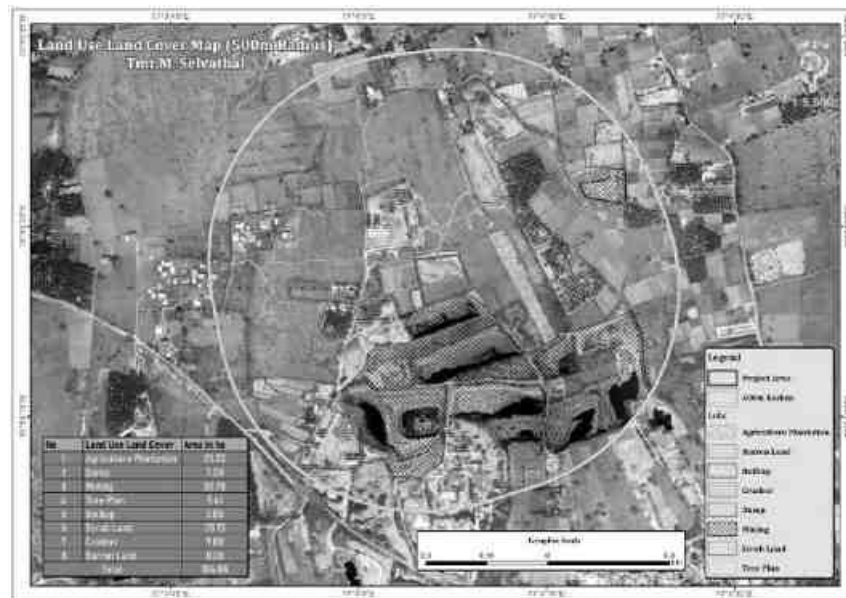
Sl.No	Sensitive Ecological Features	Name	Arial Distance in km from Cluster
1	National Park / Wild life Sanctuaries	Indiragandhi (Anamalai)	40km-South
2	Reserve Forest	Boluvampatti R.F	13.14 Km North west
3	Tiger Reserve/ Elephant Reserve/ Biosphere Reserve	None	Nil within 10Km Radius
4	Critically Polluted Areas	Coimbatore - SIDCO Industrial Estate	Around 10.5 km- North West
5	Mangroves	None	Nil within 10km Radius
6	Mountains/Hills	None	Nil within 10km Radius
7	Notified Archaeological Sites	None	Nil within 10km Radius
8	Industries/ Thermal Power Plants	None	Nil within 10km Radius
9	Defence Installation	None	Nil within 10km Radius

Source: Survey of India Toposheet

TABLE 3.4: NEARBY WATER BODIES FROM THE PROPOSED PROJECT SITE

Sl.No	NAME	DISTANCE & DIRECTION
1	Seasonal Odai	120m West
2	Seasonal Odai	340m SE
3	Odai	3.3km SE
4	Noyyal River	9km North
5	Pallapalayam Lake	8.5km NE

Source: Village Cadastral Map and Field Survey

FIGURE 3.4: LAND USE LAND COVER MAP 500m RADIUS

Land use Landcover of the area within 500m radius were studied in detailed that the majority of the land within 500m is Scrub land (35.13) followed by agriculture land and Mining areas are contributing majority of the land use.

3.1.6 Soil Environment

Soil quality of the study area is one of the important components of the land environment. The composite soil samples were collected from the study area and analysed for different parameters. The locations of the monitoring sites are detailed in Table 3.5 and Figure 3.5.

The objective of the soil sampling is -

To determine the baseline soil characteristics of the study area; study the impact of proposed activity on soil characteristics and study the impact on soil more importantly agriculture production point of view.

TABLE 3.5: SOIL SAMPLING LOCATIONS

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	S-1	Core Zone	Project Area	10°54'24.94"N 77° 4'6.74"E
2	S-2	Core Zone	300m South	10°54'5.74"N 77° 3'53.48"E
3	S-3	Chettipalayam	2.8 Km NW	10°54'33.13"N 77° 2'26.60"E
4	S-4	Panapatti	4.5 Km SE	10°52'41.74"N 77° 5'58.95"E
5	S-5	Kallapalayam	4.8 Km North	10°57'3.30"N 77° 4'38.23"E
6	S-6	Okkilipalayam	5.5 Km SW	10°53'36.89"N 77° 1'11.02"E

Source: On-site monitoring/sampling by EHS 360 lab in association with GEMS.

Methodology –

For studying soil quality, sampling locations were selected to assess the existing soil conditions in and around the project site representing various land use conditions. The samples were collected by auger boring into the soil up to 90-cm depth. Six (6) locations were selected for soil sampling on the basis of soil types, vegetative cover, industrial & residential activities including infrastructure facilities, which would accord an overall idea of the soil characteristics. The samples were analysed for physical and chemical characteristics. The samples were sent to laboratory for analysis. The samples were filled in Polythene bags, coded and sent to laboratory for analysis and the details of methodology in respect are given in below Table 3.6.

TABLE 3.6: METHODOLOGY OF SAMPLING COLLECTION

Particulars	Details
Frequency	One grab sample from each station-once during the study period
Methodology	Composite grab samples of the topsoil were collected from 3 depths, and mixed to provide a representative sample for analysis. They were stored in airtight Polythene bags and analysed at the laboratory.

Source: On-site monitoring/sampling by EHS360 Labs Private Limited in association with GEMS

Soil Testing Result –

The samples were analysed as per the standard methods prescribed in “Soil Chemical Analysis (M.L. Jackson, 1967) & Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India”. The important properties analysed for soil are bulk density, porosity, infiltration rate, pH and Organic matter, kjeldahi Nitrogen, Phosphorous and Potassium. The standard classifications of soil are presented below in Figure 3.4 and the physico-chemical characteristics of the soil & Test Results in Table 3.7.

FIGURE 3.5: SOIL SAMPLING LOCATIONS AROUND 10 KM RADIUS

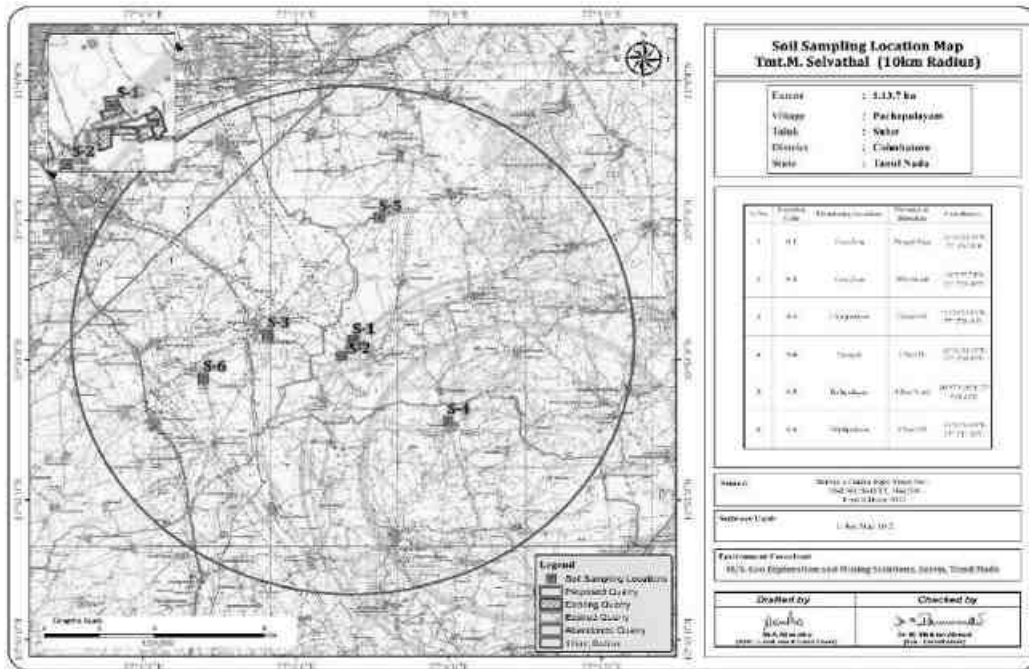


FIGURE 3.6: SOIL MAP

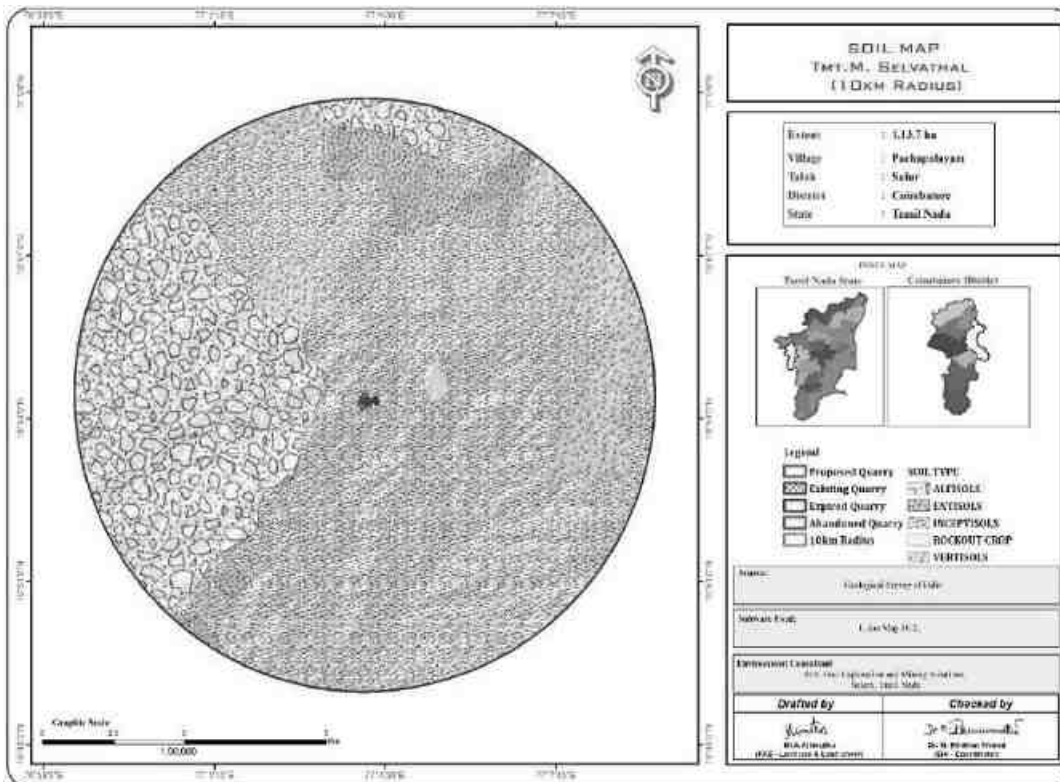


TABLE 3.7: SOIL QUALITY OF THE STUDY AREA

S. No	Test Parameters	Protocols	S-1 Core Zone	S-2 Core Zone	S-3 Chettipalayam	S-4 Panapatti	S-5 Kallapalayam	S-6 Okkilipalayam
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff:2016)	8.25	7.85	8.19	8.19	7.91	8.21
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	730 µmhos/cm	578 µmhos/cm	695 µmhos/cm	629 µmhos/cm	552 µmhos/cm	515 µmhos/cm
03	Texture :							
	Clay	Gravimetric method	31.3 %	29.5 %	31.5 %	27.5 %	28.1 %	30.5 %
	Sand		34.6 %	32.5 %	34.6 %	29.6 %	31.8 %	35.0 %
	Silt		34.1 %	38.0 %	33.9 %	42.9 %	40.1 %	34.5 %
04	Water Holding Capacity	By Gravimetric method	44.8 %	43.0 %	40.8 %	40.0 %	40.6 %	40.5 %
05	Bulk Density	By Cylindrical method	1.22 g/cm ³	1.14 g/cm ³	0.99 g/cm ³	1.13 g/cm ³	1.13 g/cm ³	1.10 g/cm ³
06	Porosity	By Gravimetric method	40.3 %	42.5 %	43.5 %	39.8 %	40.2 %	41.8 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	136 mg/kg	126 mg/kg	116 mg/kg	108.2 mg/kg	112 mg/kg	152.3 mg/kg
08	Magnesium as Mg		70.2 mg/kg	53.5 mg/kg	59 mg/kg	33.5 mg/kg	26.7 mg/kg	59.5 mg/kg
09	Manganese as Mn		14.7 mg/kg	13.0 mg/kg	16.8 mg/kg	18.6 mg/kg	19.3 mg/kg	26.5 mg/kg
10	Zinc as Zn		1.0 mg/kg	0.7 mg/kg	3.9 mg/kg	1.44 mg/kg	3.8 mg/kg	0.95 mg/kg
11	Boron as B		0.85 mg/kg	0.95 mg/kg	1.1 mg/kg	1.12 mg/kg	1.1 mg/kg	1.02 mg/kg
12	Chloride as Cl	APHA 23rd Edn 2019 4500 Cl B	41.7 mg/kg	129 mg/kg	96.4 mg/kg	30.5 mg/kg	63.5 mg/kg	135 mg/kg
13	Total Soluble Sulphate as SO ₄	IS 2720 Part 27 : 1977 (Reaff:2015)	0.020 %	0.004 %	0.0015 %	0.063 %	0.006 %	0.004 %
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	18.5 mg/kg	33.8 mg/kg	49 mg/kg	16.5 mg/kg	105 mg/kg	23.4 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Reaff: 2019)	2.1 mg/kg	3.0 mg/kg	1.65 mg/kg	3.2 mg/kg	3.2 mg/kg	3.0 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999 (Reaff:2019)	256 mg/kg	510 mg/kg	638 mg/kg	374 mg/kg	568 mg/kg	498 mg/kg
17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)
20	Lead as Pb		0.39 mg/kg	0.21 mg/kg	0.62 mg/kg	0.35 mg/kg	0.49 mg/kg	0.75 mg/kg
21	Iron as Fe		1.10 mg/kg	1.09 mg/kg	1.13 mg/kg	0.92 mg/kg	1.38 mg/kg	1.18 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972 (Reaff: 2015)	1.95 %	2.89 %	1.87 %	1.62 %	2.01 %	2.21 %
23	Organic Carbon	IS : 2720 Part 22: 1972 (Reaff: 2015)	1.13 %	1.67 %	1.08 %	0.93%	1.17 %	1.28 %
24	Cation Exchange Capacity	USEPA 9080 – 1986	34.5 meq/100g of soil	29.6 meq/100g of soil	40.6 meq/100g of soil	29.8 meq/100g of soil	42.4 meq/100g of soil	40.3 meq/100g of soil

Source: Sampling Results by EHS 360 Lab Private Limited.

FIGURE 3.7: SOIL SAMPLE COLLECTION**Interpretation & Conclusion****Physical Characteristics –**

The physical properties of the soil samples were examined for texture, bulk density, porosity and water holding capacity. The soil texture found in the study area is Clay (27.5 % 31.5 %) to Sandy Loam Soil and Bulk Density of Soils in the study area varied between 0.99– 1.22 g/cc. The Water Holding Capacity and Porosity of the soil samples is found to be medium i.e., ranging from 40.0 – 44.8 %. and 40.2-43.5 %.

Chemical Characteristics –

- The nature of soil is slightly alkaline to strongly alkaline with pH range 7.85 to 8.25
- The available Nitrogen content range between 256 to 638 mg/kg
- The available Phosphorus content range between 1.65 to 3.2 mg/kg
- The available Potassium range between 16.5 mg/kg to 105 mg/kg

Observation :

The pH of the Soil indicates that the soil is Neutral and arid region and ideal for plant growth.

3.2 WATER ENVIRONMENT

The water resources, both surface and groundwater play a significant role in the development of the area. The purpose of this study is to assess the water quality characteristics for critical parameters and evaluate the impacts on agricultural productivity, domestic community usage, recreational resources and aesthetics in the vicinity. The water samples were collected and transported as per the norms in pre-treated sampling cans to laboratory for analysis.

3.2.1 Surface Water Resources:

Noyyal River is the major surface water body in the study area and the rainfall over the area is moderate, the rainwater storage in open wells and trenches are in practice over the area and the stored water acts as source of drinking water for few months after rainy season.

3.2.2 Ground Water Resources:

Groundwater occurs in all the crystalline formations of oldest Achaeans and Recent Alluvium. The occurrence and behaviour of groundwater are controlled by rainfall, topography, geomorphology, geology, structures etc., The weathering is controlled by the intensity of weathering and fracturing. Dug wells as wells as bore wells are more common ground water abstraction structures in the area. The diameter of the dug well is in the range of 7 to 10 m and depth of dug wells range from 7.2 to 13 m bgl. The dug wells yield up to 1 lps in summer months and few wells remains dry. The yield is adequate for irrigation for one or two crops in monsoon period.

3.2.3 Methodology

Reconnaissance survey was undertaken and monitoring locations were finalized based on;

- Drainage pattern;
- Location of Residential areas representing different activities/likely impact areas; and
- Likely areas, which can represent baseline conditions

Two (2) surface water and Four (4) ground water samples were collected from the study area and were analysed for physio-chemical, heavy metals and bacteriological parameters in order to assess the effect of mining and other activities on surface and ground water. The samples were analysed as per the procedures specified by CPCB, IS-10500:2012 and 'Standard methods for the Examination of Water and Wastewater' published by American Public Health Association (APHA). The water sampling locations are given in Table 3.8 and shown as Figure 3.5.

TABLE 3.8: WATER SAMPLING LOCATIONS

S.NO	CODE	LOCATIONS	DISTANCE & DIRECTION	CO-ORDINATES
SURFACE WATER				
1	SW-1	Existing Quarry Pit Water	400m SE	10°54'15.74"N 77° 4'0.67"E
2	SW-2	Pallapalayam Lake	9km NE	10°59'18.68"N 77° 4'25.61"E
GROUND WATER				
3	WW-1	Near Project Area	380m NW	10°54'33.65"N 77° 3'53.87"E
4	WW-2	Panapatti	4.5km SE	10°52'41.07"N 77° 5'51.48"E
5	BW-1	Near Project Area	480m NE	10°54'7.44"N 77° 4'8.81"E
6	BW-2	Okkilipalayam	5.5km SW	10°53'41.76"N 77° 1'4.78"E

Source: On-site monitoring/sampling by EHS 360 Lab Private Limited in association with GEMS

FIGURE 3.8: WATER SAMPLING LOCATIONS AROUND 10 KM RADIUS

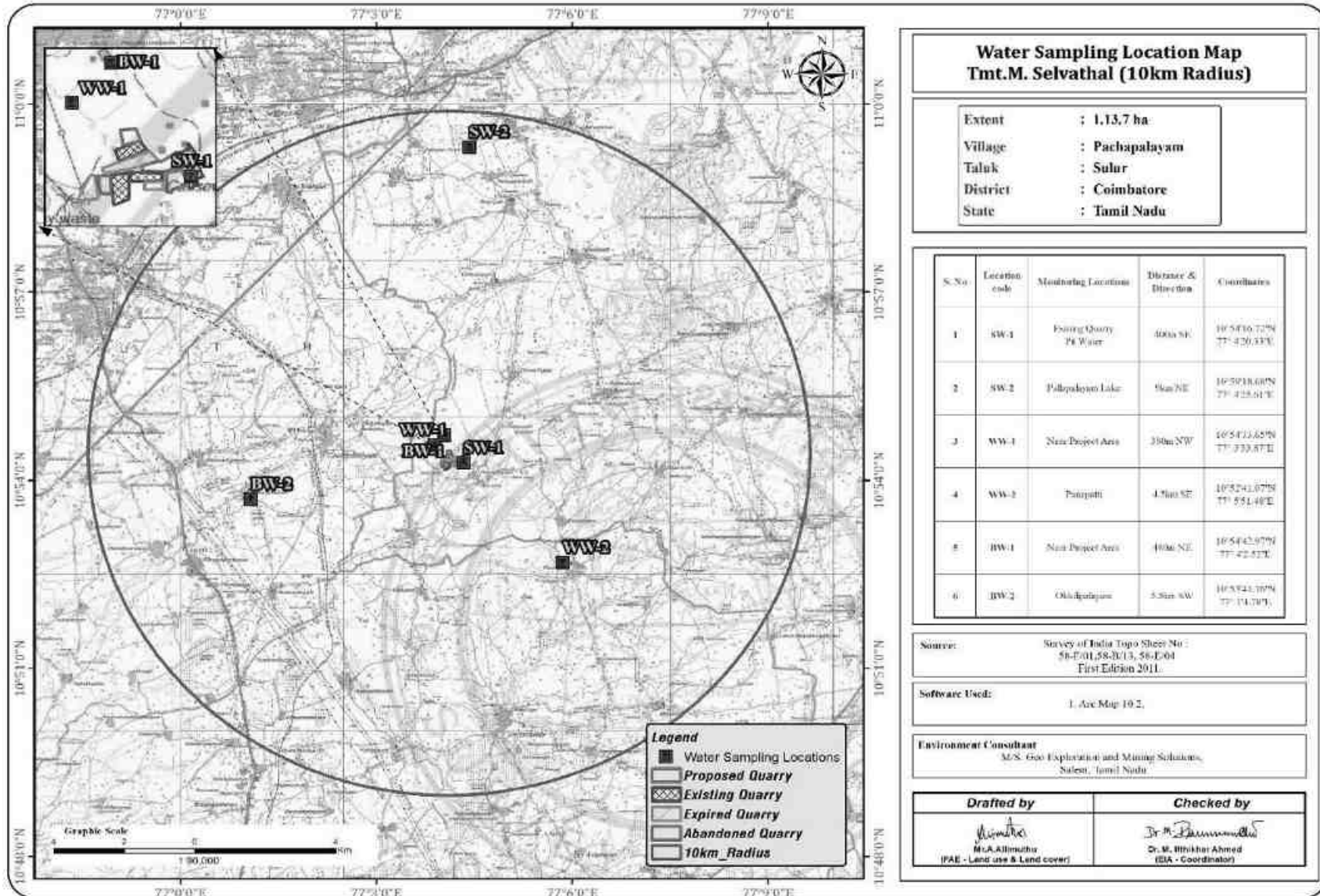


TABLE 3.9: GROUND WATER SAMPLING RESULTS

S.NO	Parameter	BW-1 Near Project Area	BW-2 Okkilipalayam	WW-1 Near Project Area	WW-2 Panapatti
1	Color	5 Hazen	5 Hazen	5	5 Hazen
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable
3	pH@ 25°C	7.36	7.68	7.49	7.58
4	Electrical Conductivity @ 25°C	1128 µmhos/cm	1085 µmhos/cm	1214 µmhos/cm	1018 µmhos/cm
5	Turbidity	2.5 NTU	6 NTU	< 1 NTU	2.0 NTU
6	Total Dissolved Solids	728 mg/l	699 mg/l	789 mg/l	658 mg/l
7	Total Hardness as CaCO ₃	166 mg/l	148 mg/l	127.0mg/l	159 mg/l
8	Calcium as Ca	33.8 mg/l	28.2 mg/l	26.2 mg/l	32.6 mg/l
9	Magnesium as Mg	19.6 mg/l	19.0 mg/l	14.8 mg/l	19.0 mg/l
10	Total Alkalinity	142 mg/l	130 mg/l	137 mg/l	196 mg/l
11	Chloride as Cl ⁻	88 mg/l	121 mg/l	114 mg/l	126 mg/l
12	Sulphate as SO ₄ ⁻	39.4 mg/l	40.6 mg/l	32.8 mg/l	29.4 mg/l
13	Iron as Fe	0.35 mg/l	0.25 mg/l	0.20 mg/l	0.20 mg/l
14	Free Residual Chlorine	BDL (DL:0.1 mg/l)	BDL (DL:0.1 mg/l)	BDL (DL:0.1 mg/l)	BDL (DL:0.1 mg/l)
15	Fluoride as F	0.40 mg/l	0.35 mg/l	0.25 mg/l	0.4 mg/l
16	Nitrates as NO ₃	7.8 mg/l	8.0 mg/l	5.4 mg/l	4.8 mg/l
17	Copper as Cu	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
18	Manganese as Mn	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)
19	Mercury as Hg	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)
20	Cadmium as Cd	BDL (DL:0.001 mg/l)	BDL (DL:0.001 mg/l)	BDL (DL:0.001 mg/l)	BDL (DL:0.001 mg/l)
21	Selenium as Se	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
22	Aluminium as Al	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
23	Lead as Pb	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
24	Zinc as Zn	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)
25	Total Chromium	BDL(DL : 0.02 mg/l)	BDL(DL : 0.02 mg/l)	BDL(DL : 0.02 mg/l)	BDL(DL : 0.02 mg/l)
26	Boron as B	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)
27	Mineral Oil	BDL(DL : 0.01 mg/l)	BDL(DL : 0.01 mg/l)	BDL(DL : 0.01 mg/l)	BDL(DL : 0.01 mg/l)
28	Phenolic Compunds as C ₆ H ₅ OH	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)
29	Anionic Detergents as	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
30	Cynaide as CN	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
31	Total Coliform	95 MPN/100ml	95 MPN/100ml	70 MPN/100ml	68 MPN/100ml
32	E-Coli	< 1.8 MPN/100ml	< 1.8 MPN/100ml	< 1.8 MPN/100ml	< 1.8 MPN/100ml
33	Barium as Ba	BDL(DL:0.05 mg/l)	BDL(DL:0.05 mg/l)	BDL(DL:0.05 mg/l)	BDL(DL:0.05 mg/l)
34	Ammonia (as Total	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
35	Sulphide as H ₂ S	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
36	Molybdenum as Mo	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)
37	Total Arsenic as As	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
38	Total Suspended Solids	BDL (DL:1.0 mg/l)	BDL (DL:1.0 mg/l)	BDL (DL:1.0 mg/l)	BDL (DL:1.0 mg/l)

* IS: 10500:2012-Drinking Water Standards; # within the permissible limit as per the WHO Standard. The water can be used for drinking purpose in the absence of alternate sources. Note: SW- Surface water, GW – Ground water

TABLE 3.10: SURFACE WATER SAMPLING RESULTS

Sl. No.	Parameter	Unit	RESULT		CPCB Designated Best Use
			SW1- Existing Quarry Pit Water	SW2- Pallapalayam Lake	
1	Colour	Hazen	5 Hazen	10 Hazen	300
2	Odour	-	Agreeable	Agreeable	Not specified
3	pH@ 25°C	-	7.31	7.58	6.5 – 8.5
4	Electrical Conductivity @ 25°C	µs/cm	895 µmhos/cm	885 µmhos/cm	
5	Turbidity	NTU	6.0 NTU	7.5 NTU	Not specified
6	Total Dissolved Solids	mg/l	571 mg/l	570 mg/l	1500
7	Total Hardness as CaCO ₃	mg/l	129 mg/l	154 mg/l	Not specified
8	Calcium as Ca	mg/l	25.9 mg/l	29.6 mg/l	Not specified
9	Magnesium as Mg	mg/l	15.6 mg/l	18.4 mg/l	Not specified
10	Total Alkalinity as CaCO ₃	mg/l	146 mg/l	170 mg/l	Not specified
11	Chloride as Cl ⁻	mg/l	88.0 mg/l	108 mg/l	600
12	Sulphate as SO ₄ ⁻	mg/l	29.6 mg/l	39.6 mg/l	400
13	Iron as Fe	mg/l	0.21 mg/l	0.21 mg/l	50
14	Free Residual Chlorine	mg/l	BDL (DL:0.1 mg/l)	BDL (DL:0.1 mg/l)	400
15	Fluoride as F	mg/l	0.18 mg/l	0.30 mg/l	1.5
16	Nitrates as NO ₃	mg/l	8.4 mg/l	6.8 mg/l	50
17	Copper as Cu	mg/l	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	1.5
18	Manganese as Mn	mg/l	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	Not specified
19	Mercury as Hg	mg/l	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	Not specified
20	Cadmium as Cd	mg/l	BDL (DL:0.001 mg/l)	BDL (DL:0.001 mg/l)	0.01
21	Selenium as Se	mg/l	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	Not specified
22	Aluminium as Al	mg/l	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	Not specified
23	Lead as Pb	mg/l	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	0.1
24	Zinc as Zn	mg/l	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	15
25	Total Chromium	mg/l	BDL(DL : 0.02 mg/l)	BDL(DL : 0.02 mg/l)	0.05
26	Boron as B	mg/l	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	Not specified
27	Mineral Oil	mg/l	BDL(DL : 0.01 mg/l)	BDL(DL : 0.01 mg/l)	Not specified
28	Phenolic Compounds as C ₆ H ₅ OH	mg/l	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	0.005
29	Anionic Detergents as MBAS	mg/l	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	Not specified
30	Cyanide as CN	mg/l	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	0.05
31	Biological Oxygen Demand, 3 days @ 27°C		11.6 mg/l	10.5 mg/l	3
32	Chemical Oxygen Demand		38 mg/l	32 mg/l	Not specified
33	Dissolved Oxygen		5.0 mg/l	5.4 mg/l	4
34	Total Coliform	MPN/ 100ml	590 MPN/100ml	845 MPN/100ml	5000
35	E-Coli		70 MPN/100ml	98 MPN/100ml	Not specified
36	Barium as Ba	mg/l	BDL (DL:0.5)	BDL (DL:0.5)	300
37	Ammonia (as Total Ammonia-N)	mg/l	BDL (DL:0.01 mg/l)	3.0 mg/l	Not specified
38	Sulphide as H ₂ S	mg/l	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	Not specified
39	Molybdenum as Mo	mg/l	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	Not specified
40	Total Arsenic as As	mg/l	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	0.2
41	Total Suspended Solids	mg/l	11.2 mg/l	7.4 mg/l	-

Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number.

3.2.4 Interpretation & Conclusion

Surface Water

The pH varied from 7.31 to 7.58 while turbidity found within the standards (Optimal pH range for sustainable aquatic life is 6.5 to 8.5 pH).

Total Dissolved Solids:

Total Dissolved Solids varied from 570 to 571 mg/l, the TDS mainly composed of carbonates, bicarbonates, Chlorides, phosphates and nitrates of calcium, magnesium, sodium and other organic matter.

Other parameters:

Chloride content is 88.0 – 108 mg/l. Nitrates varied from 6.8 to 8.4 mg/l, while sulphates varied from 29.6 to 39.6 mg/l.

Ground Water

The pH of the water samples collected ranged from 7.36 to 7.68 and within the acceptable limit of 6.5 to 8.5. pH, Sulphates and Chlorides of water samples from all the sources are within the limits as per the Standard. On Turbidity, the water samples meet the requirement. Total Dissolved Solids were found in the range of 658– 789 mg/l in all samples. Total hardness varied between 127– 166 mg/l for all samples.

On Microbiological parameters, the water samples from all the locations meet the requirement. The parameters thus analysed were compared with IS 10500:2012 and are well within the prescribed limits.

3.2.5 Hydrology and Hydrogeological studies

The district is underlain by hard rock formation fissured and fractured crystalline rocks constitute the important aquifer systems in the district. Geophysical prospecting was carried out in that area by SSRMP-80 Instrument by qualified Geo physicist with the help of IGIS software and it was inferred that the low resistance encountered at the depth between 70-65m. The maximum depth proposed out of proposed projects is 41m (2m Gravel + 4m Weathered Gravel + 35m Rough stone) below ground level.

Ground water levels and Flow Direction based on the Bore well and open well Data's

In general the ground water movement is based on the gradient ie., water moves from the highest static ground water elevation to lowest static ground water elevation point. The ground water movement is important aspect to locating the recharge and discharge areas. Therefore the data has been collected in the study area. Water level measured in the eight open well and 7 borewells.

The average water level in the open well is varies from = 12.8m to 14.4m bgl

The water level in the bore well is varies from = 66 to 68.2m bgl

Based on the water level contour map of the open well and bore well the water flow direction in the particular region is towards North side.

The water level in the area is above 60m hence there is no possibilities of water table intersection during the entire mine life period besides it is also inferred topographically that there are no major water bodies intersecting the project area.

TABLE 3.11: SUMMER SEASON WATER LEVEL OF OPEN WELLS 1 KM RADIUS

S.NO	LABEL	LONGITUDE	LATITUDE	Mar-23	Apr-23	May-23
1	OW-1	77° 04' 15.1252" E	10° 54' 28.0230" N	12.8	13.4	14
2	OW-2	77° 04' 26.4138" E	10° 54' 30.6668" N	12.5	13.1	13.7
3	OW-3	77° 04' 14.2391" E	10° 53' 58.3732" N	13	13.6	14.2
4	OW-4	77° 03' 51.5667" E	10° 54' 33.4078" N	12.6	13.2	13.8
5	OW-5	77° 03' 51.8012" E	10° 53' 51.0406" N	12.2	12.8	13.4
6	OW-6	77° 04' 21.6098" E	10° 54' 51.1563" N	12.4	13	13.6
7	OW-7	77° 04' 35.6615" E	10° 54' 06.3954" N	13.2	13.8	14.4
8	OW-8	77° 03' 19.8849" E	10° 54' 28.6641" N	13.1	13.7	14.3

Source: Onsite monitoring data

FIGURE 3.9: OPEN WELL CONTOUR MAP MARCH- MAY 2023

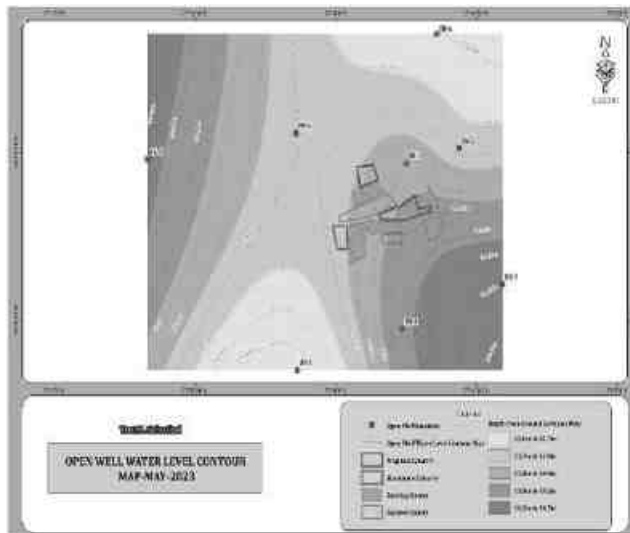
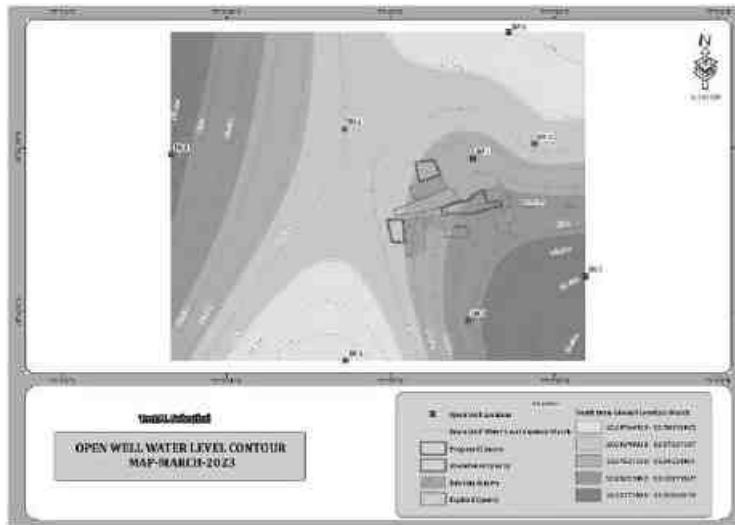


TABLE 3.12: SUMMER SEASON WATER LEVEL OF BOREWELLS 1 KM RADIUS

S.NO	LABEL	LONGITUDE	LATITUDE	Mar-23	Apr-23	May-23
1	BW-1	77° 04' 14.4228" E	10° 54' 29.6742" N	66.8	67.4	68
2	BW-2	77° 04' 34.5215" E	10° 54' 03.2477" N	66	66.6	67.2
3	BW-3	77° 04' 31.7715" E	10° 54' 19.8928" N	66.5	67.1	67.7
4	BW-4	77° 04' 06.0430" E	10° 54' 03.3744" N	66.3	66.9	67.5
5	BW-5	77° 03' 43.2180" E	10° 54' 54.1335" N	67	67.6	68.2
6	BW-6	77° 03' 32.1144" E	10° 54' 26.8624" N	66.9	67.5	68.1
7	BW-7	77° 03' 49.9282" E	10° 53' 50.2520" N	66.2	66.8	67.4

Source: Onsite monitoring data

FIGURE 3.10: BOREWELL CONTOUR MAP – MARCH 2023

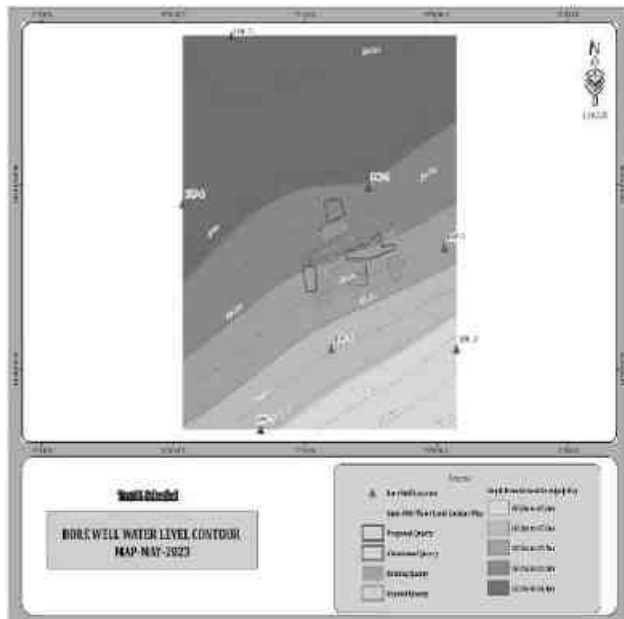
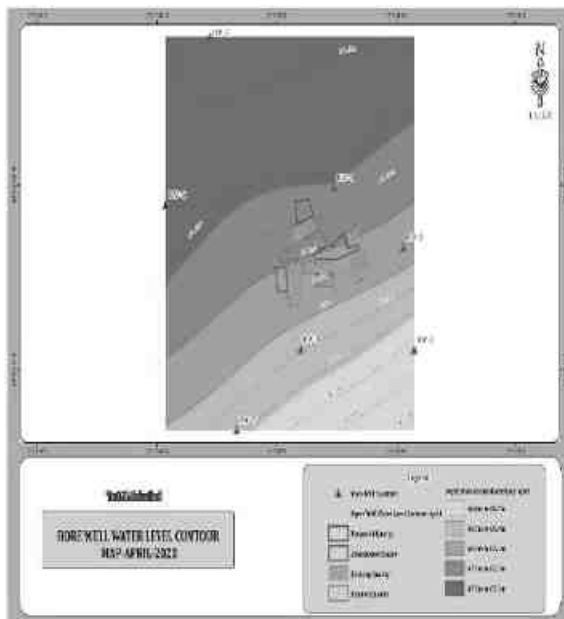
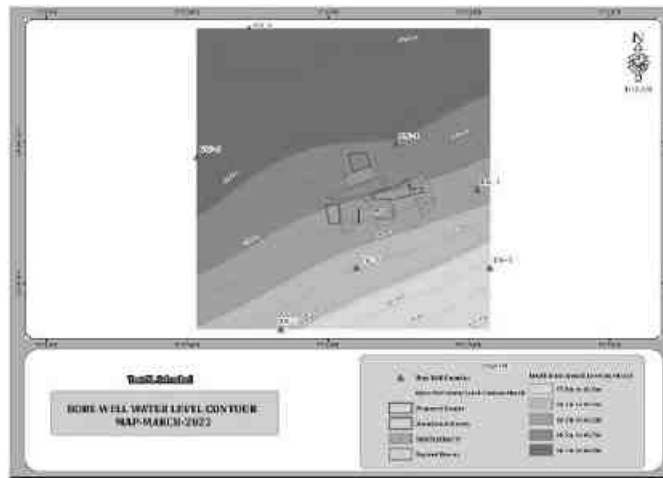
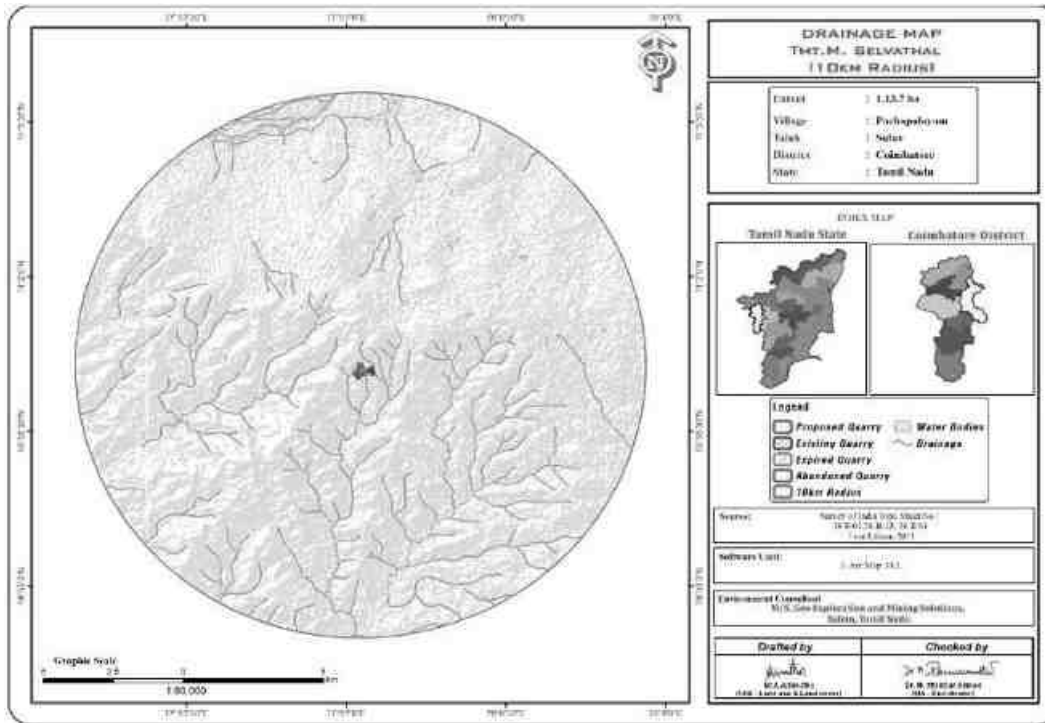
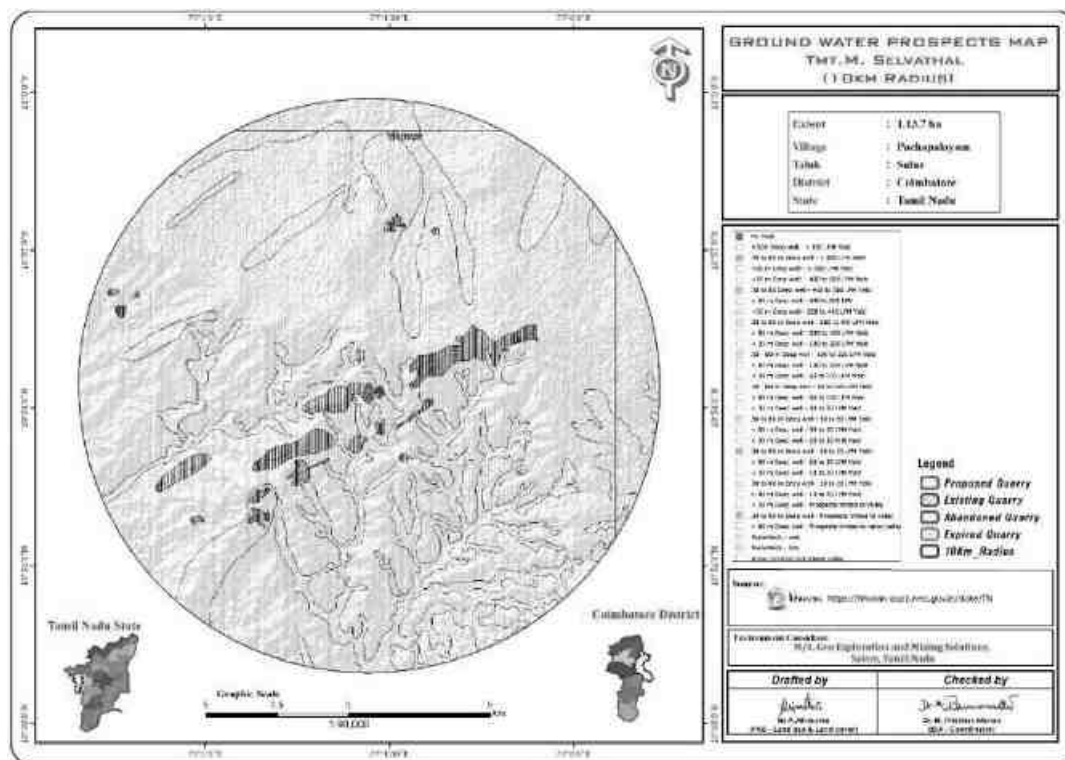


FIGURE 3.11: DRAINAGE MAP AROUND 10 KM RADIUS FROM PROJECT SITE



Remarks : it is inferred that the area is dendritic to sub dendritic pattern

FIGURE 3.12: GROUND WATER PROSPECT MAP



Remarks : Water table in the area is 80m as per the Bhuvan Data

Geophysical Resistivity Survey

3.2.5.1 Methodology and Data Acquisition

The Geophysical Electrical Resistivity survey conducted in the area Schlumberger configuration, Vertical Electrical Sounding (VES) method. Schlumberger electrode set up was employed for making sounding measurements. Since it is least influenced by lateral in homogeneities and is capable of providing higher depth of investigation. This is four electrodes collinear set up where in the outer electrodes send current into the ground and the inner electrodes measure the potential difference.

The present study utilizes maximum current electrode separation $AB/2$. The data from this survey are commonly arranged and contoured in the form of Pseudo-section that gives an approximate of the subsurface resistivity. This technique is used for the inversion of Schlumberger VES data to predict the layer parameter namely layer resistivity and Geo electric layer thickness. The main goal of the present study is to search the vertical in homogeneities that is consistent with the measured data.

For a Schlumberger among the Apparent resistivity can be calculated as follows.

$$\rho_a = \frac{G\Delta V}{I}$$

ΔV = potential difference between receiving electrodes

G = Geometric Factor.

Rocks show wide variation in resistivity ranging from 10⁻⁸ more than 10⁺¹⁴ ohmmeter. On a broad classification, one can group the rocks falling in the range of 10⁻⁸ to 1 ohmmeter as good conductors. 1 to 10⁶ ohmmeter as intermediate conductors and 10⁶ to 10¹² ohmmeter as more as poor conductor. The resistivity of rocks and subsurface lithology, which is mostly dependent on its porosity and the pore fluid resistivity is defined by Archie's Law,

$$\rho_r = F\rho_w = a \emptyset^m \rho_w$$

ρ_r = Resistivity of Rocks

ρ_w = Resistivity of water in pores of rock

F = Formation Factor

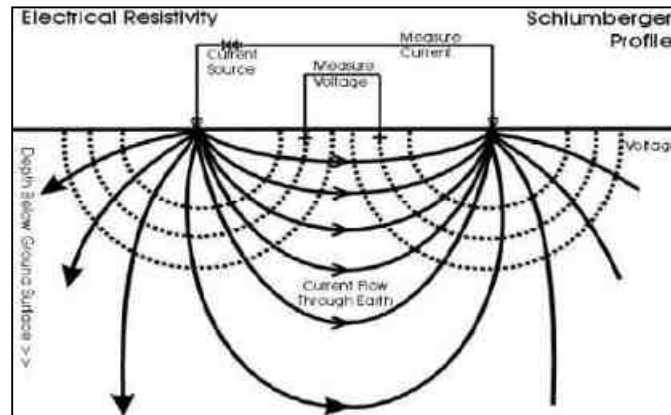
\emptyset = Fractional pore volume

A = Constants with values ranging from 0.5 to 2.5

3.2.5.2 Survey Layout

The field equipment deployed for the study is in a deep resistivity meter with a model of SSR – MP – AT. This Signal stacking Resistivity meter is a high-quality data acquisition system incorporating several innovation features for Earth resistivity. In the presence of random earth Noises the signal to noise ration can be enhanced by \sqrt{N} where N is the number of stacked readings. This SSR meter in which running averages of measurements [1, (1+2)/2, (1+2+3)/3 ... (1+2...+16/16)] up to the chosen stacks are displayed and the final average is stored automatically, in memory utilizing the principles of stacking to achieve the benefit of high signals to noise ratio. Based on these above significations the signal stacking resistivity meter was used for (VES) Vertical Electric Resistivity Sounding.

RESISTIVITY SURVEY PROFILE



Measurements of ground Resistivity is essentially done by sending a current through two electrodes called current electrodes (C_1 & C_2) and measuring the resulting potential by two other electrodes called potential electrode (P_1 & P_2). The amount of current required to be sent into the ground depends on the contact resistance at the current electrode, the ground resistivity and the depth of interest.

3.2.5.3 Data Presentation

It was inferred that the low resistance encountered at the depth between 56-70m. The maximum depth proposed out of proposed projects 41m BGL. Hence there is no possibilities of water table intersection during the entire mine life period besides it is also inferred topographically that there are no major water bodies intersecting the project area.

3.2.5.4 Geophysical Data Interpretation

The geophysical data was obtained to study the lateral variations, vertical in homogeneities in the sub – surface with respect to the availability of groundwater. From the interpreted data, it has inferred that the area has moderate groundwater potential in the investigated area. This small quarrying operation will not have any significant impact on the natural water bodies.

It is inferred that the existing quarries in the surrounding area reaches maximum of 45m and the water table is not intersected, only the seepage water during rainy season encountered from the upper layer and it will be used for the Greenbelt development, Dust suppression and quarrying operation.

3.3 AIR ENVIRONMENT

The existing ambient air quality of the area is important for evaluating the impact of mining activities on the ambient air quality.

The baseline studies on air environment include identification of specific air pollution parameters and their existing levels in ambient air. The ambient air quality with respect to the study zone of 10 km radius around the cluster forms the baseline information. The prime objective of the baseline air quality study was to establish the existing ambient air quality of the study area. These will also be useful for assessing the conformity to standards of the ambient air quality during the operation of proposed projects in cluster.

3.3.1 Meteorology & Climate

Meteorology is the key to understand the Air quality. The essential relationship between meteorological condition and atmospheric dispersion involves the wind in the broadest sense. Wind fluctuations over a very wide range of time, accomplish dispersion and strongly influence other processes associated with them.

A temporary meteorological station was installed at project site by covering cluster quarries. The station was installed at a height of 3 m above the ground level in such a way that there are no obstructions facilitating flow of wind, wind speed, wind direction, humidity and temperature are recorded on hourly basis.

Climate

Coimbatore is 421m above sea level. Coimbatore's climate is classified as tropical. The summers here have a good deal of rainfall, while the winters have very little rain. This location is classified as Aw by Köppen and Geiger. In Coimbatore –

- The climatic conditions in this region are characterized by a tropical climate. During the winter season, there is a significant decrease in precipitation levels within Coimbatore as compared to the summer months. Köppen and Geiger classify this climate as Aw. The average annual temperature in Coimbatore is 25.4 °C | 77.8 °F. Approximately 952 mm | 37.5 inch of rainfall occurs on a yearly basis.
- The region of Coimbatore is characterized by a temperate climate, and the summer season presents some challenges in terms of precise categorization. The most favoured period for a visit is during the months of March, April, May.
- During January, the amount of precipitation is at its lowest, with only 13 mm | 0.5 inch recorded. The month of October experiences the highest amount of precipitation, with an average value of 181 mm | 7.1 inch.
- The month of maximum warmth in a year is April. The average temperature during this period reaches up to 28.9 °C | 84.1 °F, making it the hottest time of the year. The month of December is characterized by the lowest temperatures, which have an average reading of 23.2 °C | 73.7 °F.

<https://en.climate-data.org/asia/india/tamil-nadu/coimbatore-2788/>

Rainfall

TABLE 3.13: RAINFALL DATA

Actual Rainfall in mm					Normal Rainfall in mm
2017	2018	2019	2020	2021	
873.4	1302	1272.4	1585.3	2119.1	1213.2

Source: <https://www.twadboard.tn.gov.in/content/coimbatore>

TABLE 3.14: METEOROLOGICAL DATA RECORDED AT SITE

S. No	Parameters		March-2023	Apri-2023	May 2023
1	Temperature (°C)	Max	28.75	30.17	28.41
		Min	24.69	25.4	24.51
		Avg.	26.72	27.78	26.46
2	Relative Humidity (%)	Avg.	54.62	57.40	79.44
3	Wind Speed (m/s)	Max	4.63	3.62	4.09
		Min	1.13	1.27	1.5
		Avg.	2.88	2.44	2.79
4	Cloud Cover (OKTAS)		0-8	0-8	0-8
5	Wind direction		E,ENE	E,SSE	WSW,W

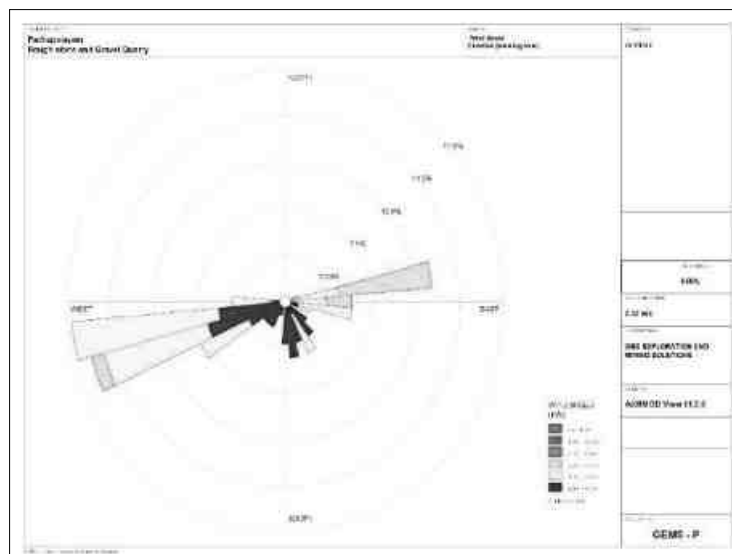
Source: On-site monitoring/sampling by EHS 360 lab Private Limited in association with GEMS

Correlation between Secondary and Primary Data

The average rain fall over the period of five years is 1213.2mm. The meteorological data collected at the site is almost similar to that of secondary data collected from IMD Coimbatore_Agro. A comparison of site data generated during the three months with that of IMD, Coimbatore_Agro

Wind rose diagram of the study site is depicted in Figure. 3.14. Predominant downwind direction of the area during study season is East-North-East to West South West.

FIGURE 3.13: WINDROSE DIAGRAM



In the abstract of collected data wind rose were drawn on presented in figure No.3.14 during the monitoring period in the study area

1. Predominant winds were from ENE, E, SSE, WSW, W
2. Wind velocity readings were recorded between 0.50 to 3.60m/s
3. Calm conditions prevail of about 0 % of the monitoring period
4. Temperature readings ranging from 24.51 to 30.17 °C
5. Relative humidity ranging from 54.62 to 79.44 %
6. The monitoring was carried out continuously for three months.

3.3.2 Methodology and Objective

The prime objective of the ambient air quality study is to assess the existing air quality of study area and its conformity to NAAQS. The observed sources of air pollution in the study area are industrial, traffic and domestic activities. The baseline status of the ambient air quality has been established through a scientifically designed ambient air quality monitoring network considering the followings:

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

3.3.3 Sampling and Analytical Techniques

TABLE 3.15: METHODOLOGY AND INSTRUMENT USED FOR AAQ ANALYSIS

Parameter	Method	Instrument
PM2.5	Gravimetric Method Beta attenuation Method	Fine Particulate Sampler Make – Thermo Environmental Instruments – TEI 121
PM10	Gravimetric Method Beta attenuation Method	Respirable Dust Sampler Make –Thermo Environmental Instruments – TEI 108
SO ₂	IS-5182 Part II (Improved West & Gaeke method)	Respirable Dust Sampler with gaseous attachment
NO _x	IS-5182 Part II (Jacob & Hochheiser modified method)	Respirable Dust Sampler with gaseous attachment
Free Silica	NIOSH – 7601	Visible Spectrophotometry

Source: Sampling Methodology followed by EHS 360 lab Private Limited & CPCB Notification

TABLE 3.16: NATIONAL AMBIENT AIR QUALITY STANDARDS

Sl.No.	Pollutant	Time Weighted Average	Concentration in ambient air	
			Industrial, Residential, Rural & other areas	Ecologically Sensitive area (Notified by Central Govt.)
1	Sulphur Dioxide ($\mu\text{g}/\text{m}^3$)	Annual Avg.* 24 hours**	50.0 80.0	20.0 80.0
2	Nitrogen Dioxide ($\mu\text{g}/\text{m}^3$)	Annual Avg. 24 hours	40.0 80.0	30.0 80.0
3	Particulate matter (size less than $10\mu\text{m}$) PM10 ($\mu\text{g}/\text{m}^3$)	Annual Avg. 24 hours	60.0 100.0	60.0 100.0
4	Particulate matter (size less than $2.5\mu\text{m}$) PM2.5 ($\mu\text{g}/\text{m}^3$)	Annual Avg. 24 hours	40.0 60.0	40.0 60.0

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

*Annual Arithmetic mean of minimum 104 measurements in a year taken twice a Week 24 hourly at uniform interval,

** 24 hourly / 8 hourly or 1 hourly monitored value as applicable shall be complied with 98 % of the time in a year. However, 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

3.3.4 Frequency & Parameters for Sampling

Ambient air quality monitoring has been carried out with a frequency of two samples per week at eight (8) locations, adopting a continuous 24 hourly (3 shift of 8-hour) schedule for the period March – May 2023. The baseline data of ambient air has been generated for PM₁₀, PM_{2.5}, Sulphur Dioxide (SO₂) & Nitrogen Dioxide (NO₂) Monitoring has been carried out as per the CPCB, MoEF guidelines and notifications.

The equipment was placed preferably at a height of at least $3 \pm 0.5\text{m}$ above the ground level at each monitoring station, for negating the effects of wind-blown ground dust. The equipment was placed at open space free from trees and vegetation which otherwise act as a sink of pollutants resulting in lower levels in monitoring results.

3.3.5 Ambient Air Quality Monitoring Stations

Eight (8) monitoring stations were set up in the study area as depicted in Figure 3.15 for assessment of the existing ambient air quality. Details of the sampling locations are as per given below.

TABLE 3.17: AMBIENT AIR QUALITY (AAQ) MONITORING LOCATIONS

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	AAQ-1	Core Zone	Project Area	10°54'25.78"N 77°04'08.34"E
2	AAQ-2	Core Zone	Near Project Area	10°54'6.80"N 77°03'58.64"E
3	AAQ-3	Chettipalayam	3.0km NW	10°54'37.41"N 77° 2'20.12"E
4	AAQ-4	Edayapalayam	4.5km NE	10°55'16.54"N 77° 6'30.52"E
5	AAQ-5	Karacherry	4km South	10°52'18.87"N 77° 3'39.99"E
6	AAQ-6	Panapatti	4.5km SE	10°52'35.83"N 77° 5'56.31"E
7	AAQ-7	Kallapalayam	4.8km North	10°57'3.71"N 77° 4'38.09"E
8	AAQ-8	Okkilipalayam	5.5km SW	10°53'37.21"N 77° 1'10.69"E

Source: On-site monitoring/sampling by EHS 360 lab Private Limited in association with GEMS.

FIGURE 3.14: AIR QUALITY MONITORING PHOTOGRAPHS



FIGURE 3.15: AMBIENT AIR QUALITY LOCATIONS AROUND 10 KM RADIUS

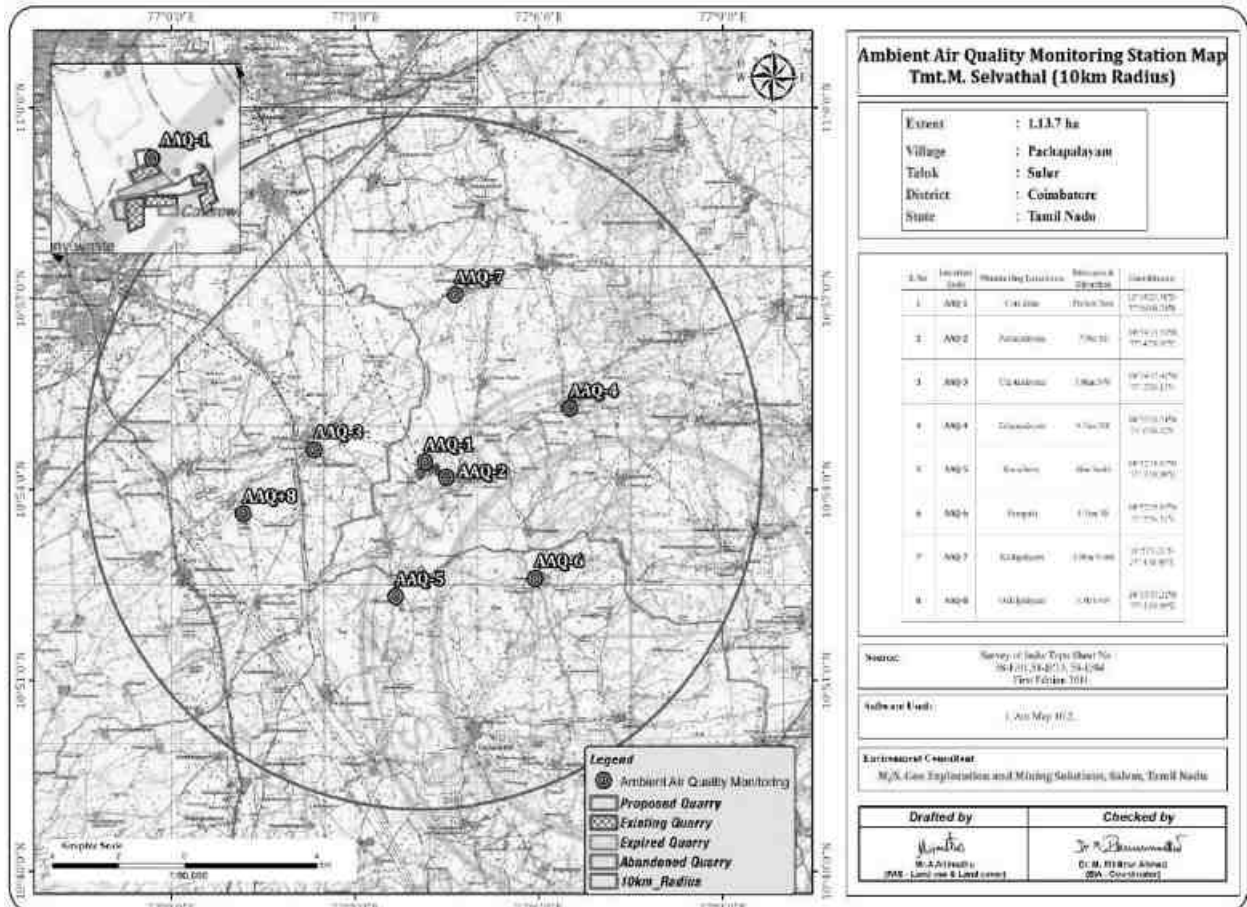


TABLE 3.18: SUMMARY OF AAQ 1 to AAQ 8

PM10	AAQ1 Core zone	AAQ2 Core Zone	AAQ3 Chettipalaym	AAQ4 Edayapalayam	AAQ5 Karachery	AAQ6 Panapatti	AAQ7 Kallapalayam	AAQ8 Okkilipalayam
Arithmetic Mean	45.8	43.3	43.1	46.1	42.0	42.0	44.9	42.9
Minimum	44.7	41.0	40.4	42.4	39.9	42.0	42.5	41.4
Maximum	46.9	45.4	45.2	49.2	45.3	45.2	48.6	45.2
NAAQ Norms	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
PM2.5	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7	AAQ8
Arithmetic Mean	23.7	21.6	22.2	21.8	42.0	43.4	23.9	22.4
Minimum	22.1	20.3	20.1	20.2	20.2	20.7	22.6	21.1
Maximum	24.8	22.8	26.3	23.3	23.2	22.8	25.3	24.2
NAAQ Norms	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
SO2	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7	AAQ8
Arithmetic Mean	8.1	8.6	6.4	8.0	8.1	6.9	7.6	6.9
Minimum	6.1	8.0	5.2	6.5	7.6	5.4	6.2	5.2
Maximum	9.8	9.4	7.7	9.1	9.2	8.2	9.5	8.8
NAAQ Norms	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
NO2	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7	AAQ8
Arithmetic Mean	23.8	20.5	22.2	21.3	21.7	21.5	20.6	22.9
Minimum	21.5	18.1	18.5	18.9	18.9	19.1	17.8	20.5
Maximum	27.6	23.6	24.6	23.9	25.3	23.4	22.7	25.2
NAAQ Norms	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

TABLE 3.19: ABSTRACT OF AMBIENT AIR QUALITY DATA

1	Parameter	PM10	PM2.5	SO ₂	NO ₂
2	No. of Observations	260	260	260	260
3	98 th Percentile Value	48.6	25.3	9.3	25.3
4	Arithmetic Mean	44.6	22.8	7.9	22.3
5	Geometric Mean	44.5	22.8	7.8	22.3
6	Standard Deviation	2.2	1.4	1.0	1.8
7	Minimum	41.6	21.1	6.2	19.4
8	Maximum	48.6	25.3	9.3	25.3
9	NAAQ Norms*	100.0	60.0	80.0	80.0
	% Values exceeding Norms*	0.0	0.0	0.0	0.0

FIGURE 3.16: BAR DIAGRAM OF SUMMARY OF AAQ 1 – AAQ8

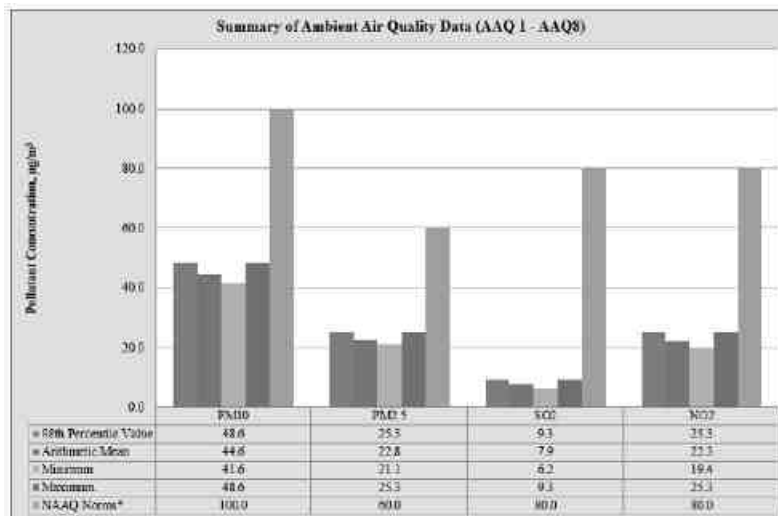


FIGURE 3.17: BAR DIAGRAM OF PARTICULATE MATTER PM_{2.5}

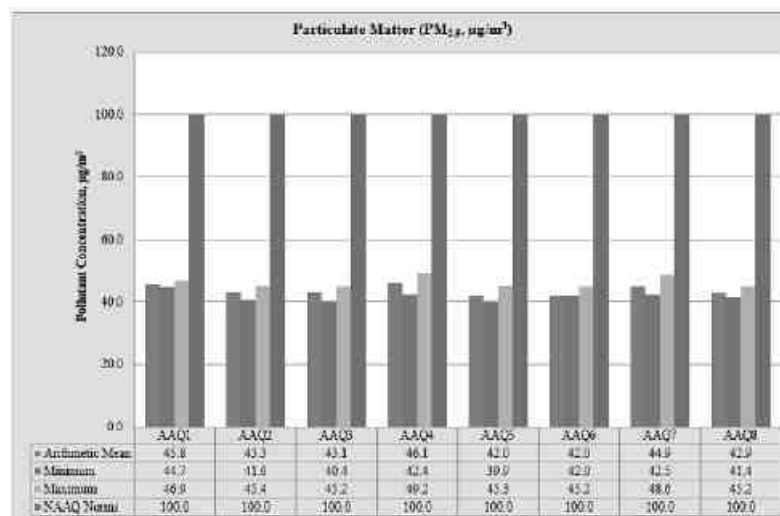


FIGURE 3.18: BAR DIAGRAM OF PARTICULATE MATTER PM₁₀

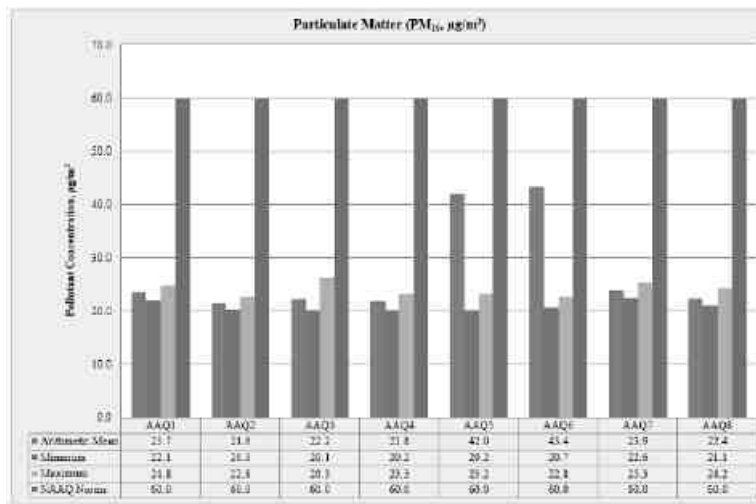


FIGURE 3.19: BAR DIAGRAM OF GASEOUS POLLUTANT SO₂

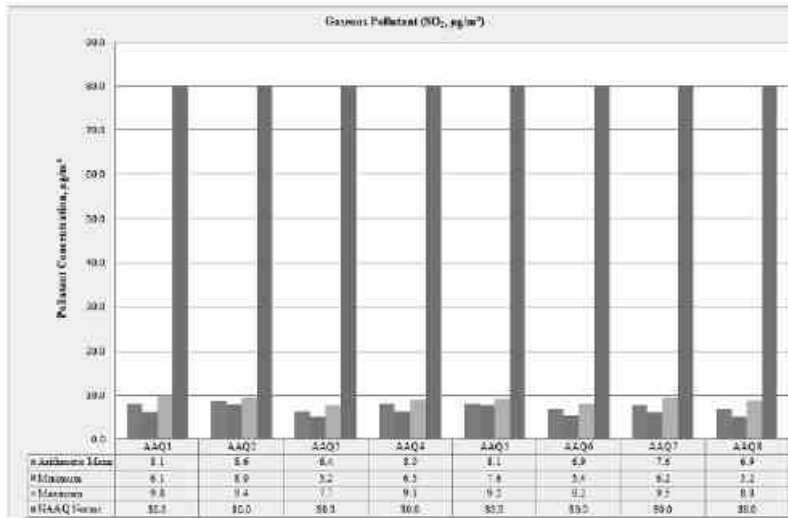
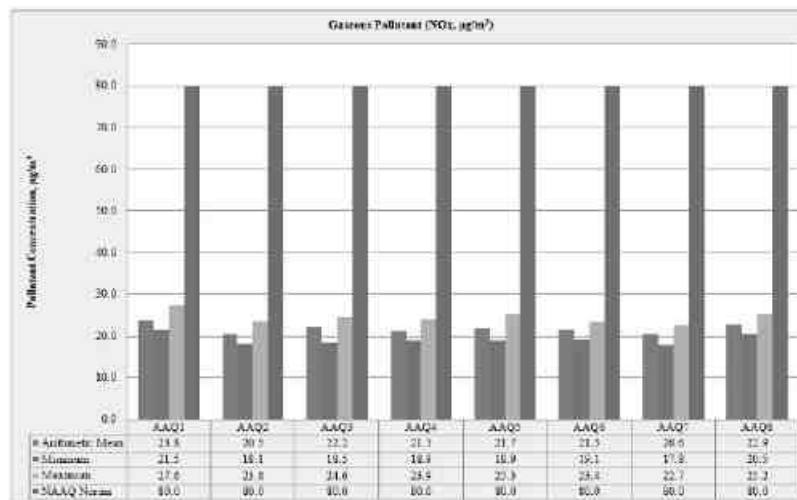


FIGURE 3.20: BAR DIAGRAM OF GASEOUS POLLUTANT NO_x



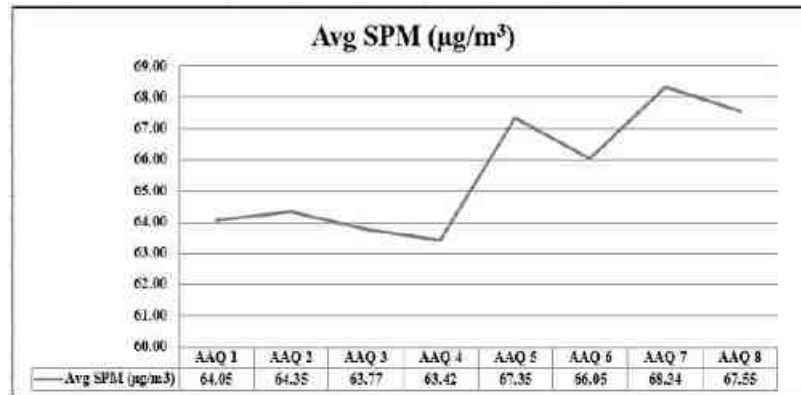
3.3.7 FUGITIVE DUST EMISSION –

Fugitive dust was recorded at 8AAQ monitoring stations for 30 days average during the study period.

TABLE 3.20: FUGITIVE DUST SAMPLE VALUES IN $\mu\text{g}/\text{m}^3$

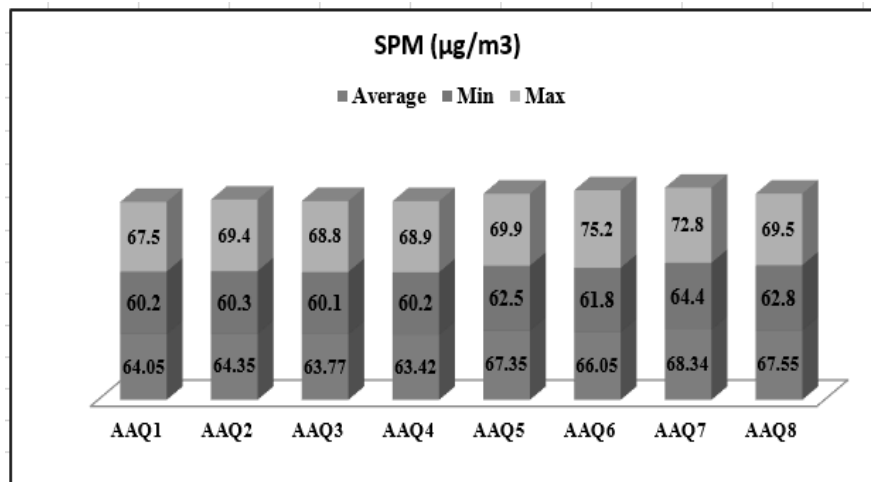
SPM ($\mu\text{g}/\text{m}^3$)	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7	AAQ8
Average	64.05	64.35	63.77	63.42	67.35	66.05	68.34	67.55
Min	60.2	60.3	60.1	60.2	62.5	61.8	64.4	62.8
Max	67.5	69.4	68.8	68.9	69.9	75.2	72.8	69.5

FIGURE 3.21: LINE DIAGRAM OF AVERAGE SPM VALUES



Source: Calculations from Lab Analysis Reports

FIGURE 3.22: BAR DIAGRAM OF SPM VALUES



3.3.6 Interpretations & Conclusion

As per monitoring data, PM_{10} ranges from $39.9 \mu\text{g}/\text{m}^3$ to $49.2 \mu\text{g}/\text{m}^3$, $\text{PM}_{2.5}$ data ranges from $20.1 \mu\text{g}/\text{m}^3$ to $26.3 \mu\text{g}/\text{m}^3$, SO_2 ranges from $5.2 \mu\text{g}/\text{m}^3$ to $9.8 \mu\text{g}/\text{m}^3$ and NO_2 data ranges from $17.8 \mu\text{g}/\text{m}^3$ to $27.6 \mu\text{g}/\text{m}^3$. The concentration levels of the above criteria pollutants were observed to be well within the limits of NAAQS prescribed by CPCB.

3.4 NOISE ENVIRONMENT

The vehicular movement on road and mining activities is the major sources of noise in study area, the environmental assessment of noise from the mining activity and vehicular traffic can be undertaken by taking into consideration various factors like potential damage to hearing, physiological responses, and annoyance and general community responses. The main objective of noise monitoring in the study area is to establish the baseline noise level and assess the impact of the total noise expected to be generated during the project operations around the project site.

3.4.1 Identification of Sampling Locations

In order to assess the ambient noise levels within the study area, noise monitoring was carried out at Eight (8) locations. The noise level measurement was carried out at each ambient air quality station. The main aim of the noise level monitoring is

- To assess the ambient Noise level in the study area
- Type of noise pollution generated in the core zone
- To predict the temporal changes in the ambient noise level in the area

The noise level monitoring locations were carried out by covering commercial, residential, rural areas within the radius of 10km. A noise monitoring methodology was chosen such that it best suited the purpose and objectives of the study.

TABLE 3.21: DETAILS OF SURFACE NOISE MONITORING LOCATIONS

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	N1	Core Zone	Project Area	10°54'24.74"N 77° 4'5.33"E
2	N2	Core Zone	Near Project Area	10°54'6.48"N 77° 3'58.02"E
3	N3	Chettipalayam	3.0km NW	10°54'37.18"N 77° 2'20.24"E
4	N4	Edayapalayam	4.5km NE	10°55'16.54"N 77° 6'30.33"E
5	N5	Karacherry	4km South	10°52'18.61"N 77° 3'37.66"E
6	N6	Panapatti	4.5km SE	10°52'36.01"N 77° 5'55.92"E
7	N7	Kallapalayam	4.8km North	10°57'3.85"N 77° 4'37.89"E
8	N8	Okkilpalayam	5.5km SW	10°53'36.71"N 77° 1'10.94"E

Source: On-site monitoring/sampling by EHS 360 lab Private Limited in association with GEMS.

3.4.2 Method of Monitoring

Digital Sound Level Meter was used for the study. All reading was taken on the 'A-Weighting' frequency network, at a height of 1.5 meters from ground level. The sound level meter does not give a steady and consistent reading and it is quite difficult to assess the actual sound level over the entire monitoring period. To mitigate this shortcoming, the Continuous Equivalent Sound level, indicated by Leq, is used. Equivalent sound level, 'Leq', can be obtained from variable sound pressure level, 'L', over a time period by using following equation. The equivalent noise level is defined mathematically as,

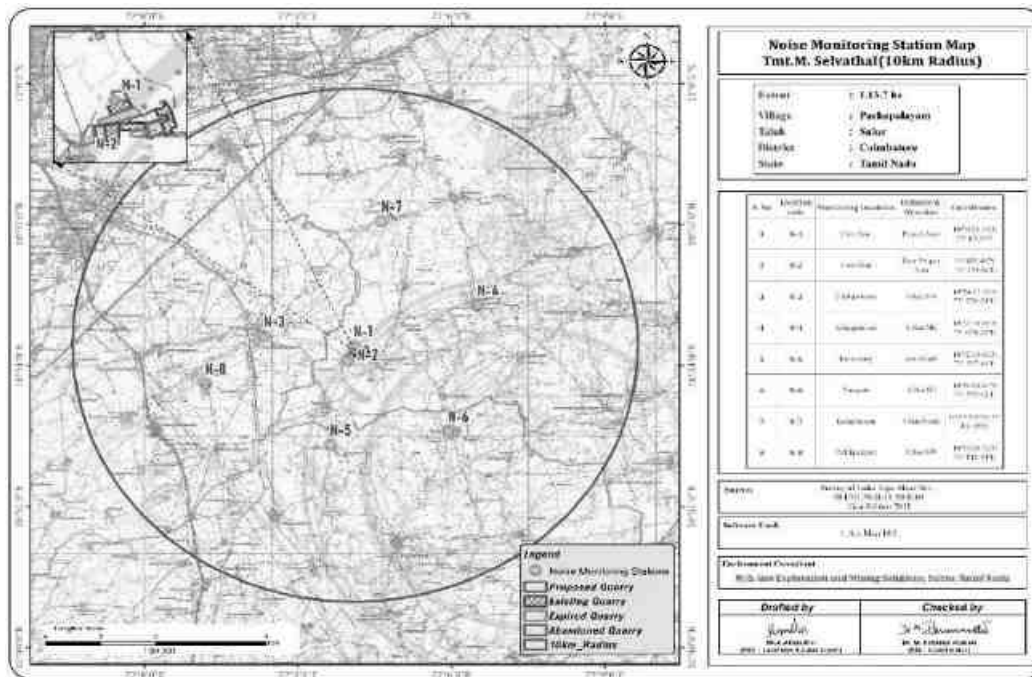
$$Leq = 10 \log L / T \sum (10L_n/10)$$

Where L = Sound pressure level at function of time dB (A)

T = Time interval of observation

Measured noise levels, displayed as a function of time, is useful for describing the acoustical climate of the community. Noise levels recorded at each station with a time interval of about 60minutes are computed for equivalent noise levels. Equivalent noise level is a single number descriptor for describing time varying noise levels.

FIGURE 3.23: NOISE MONITORING STATIONS AROUND 10 KM RADIUS



3.4.3 Analysis of Ambient Noise Level in the Study Area

The Digital Sound pressure level has been measured by a sound level meter (Model: HTC SL-1352)

An analysis of the different Leq data obtained during the study period has been made. Variation was noted during the day-time as well as night-time. The results are presented in below Table 3.32.

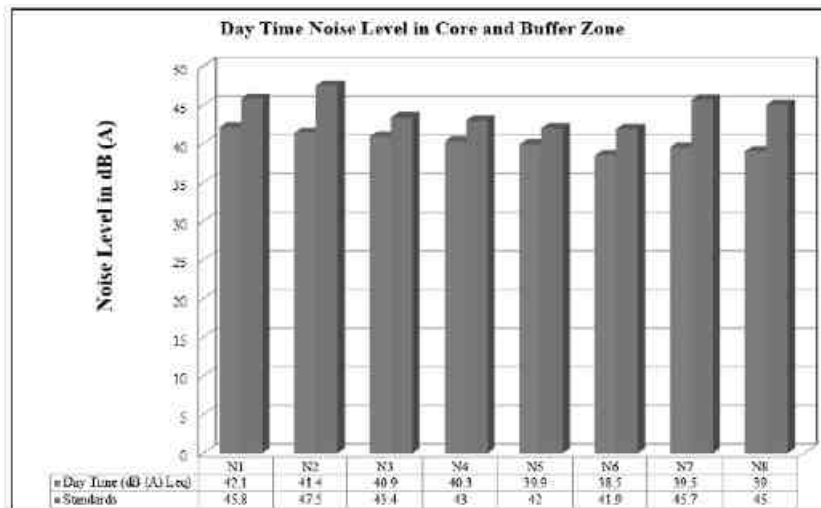
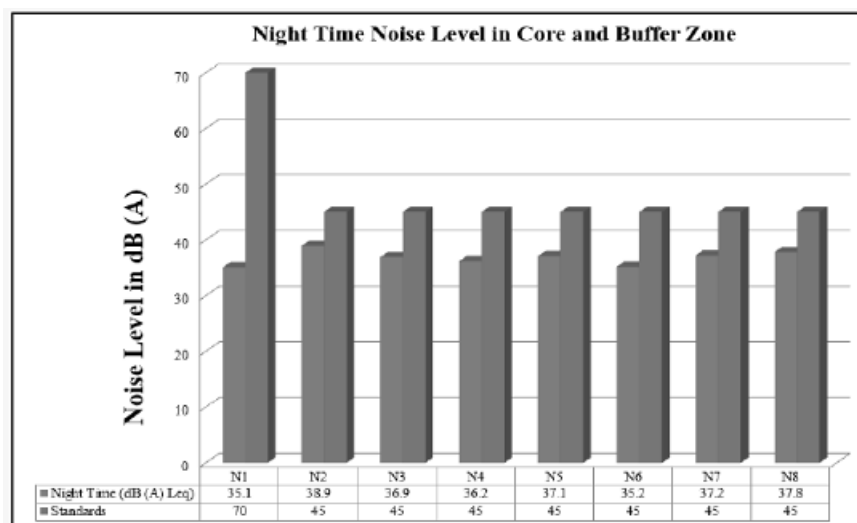
Day time: 6:00 hours to 22.00 hours.

Night time: 22:00 hours to 6.00 hours.

TABLE 3.22: AMBIENT NOISE QUALITY RESULT

S. No	Locations	Noise level (dB (A) Leq)		Ambient Noise Standards
		Day Time	Night Time	
1	Core Zone	42.1	35.1	Industrial Day Time- 75 dB (A) Night Time- 70 dB (A)
2	Core Zone	41.4	38.9	
3	Chettipalayam	40.9	36.9	
4	Edayapalayam	40.3	36.2	
5	Karacherry	39.9	37.1	Residential Day Time- 55 dB (A) Night Time- 45 dB (A)
6	Panapatti	38.5	35.2	
7	Kallapalayam	39.5	37.2	
8	Okkilipalayam	39.0	37.8	

Source: On-site monitoring/sampling by EHS 360 lab Private Limited in association with GEMS

FIGURE 3.24: DAY TIME NOISE LEVELS IN CORE AND BUFFER ZONE**FIGURE 3.25: NIGHT TIME NOISE LEVELS IN CORE AND BUFFER ZONE****3.4.4 Interpretation & Conclusion:**

Ambient noise levels were measured at 8 (Eight) locations around the proposed project area. Noise levels recorded in core zone during day time were from 42.1 dB (A) Leq and during night time were from 35.1 dB (A) Leq. Noise levels recorded in buffer zone during day time were from 38.5 to 39.7 dB (A) Leq and during night time were from 36.2 to 38.9 dB (A) Leq. Thus, the noise level for Industrial and Residential area meets the requirements of CPCB.

3.5 ECOLOGICAL ENVIRONMENT

3.5.1. Study area Ecology

An Ecological survey was conducted to collect the baseline data regarding flora and fauna in the study area of 10km radius. Data were also collected from different sources i.e., government Department such as District Forest Office, Government of Tamil Nadu. On the basis of onsite observations as well as forest department records the checklist of Flora and Fauna was prepared.

3.5.2. Objectives of Biological Studies

- a) To study the likely impact of the proposed mining project on the local biodiversity and to suggest mitigation measures
- b) Undertake intensive field survey to assess the status of floral & faunal component in different habitats in the core and buffer areas of the project site.
- c) Identification and listing of flora and fauna which are important as per the Wildlife (Protection) Act 1972.
- d) Suggest Wildlife conservation (species specific/habitat specific) and management plan for the threatened (critically endangered & endangered species - schedule I) faunal species if any reported within the study area.
- e) To identify the impacts of mining on agricultural lands and how it affects.
- f) Proper collection of information about wildlife Sanctuaries/ national parks/ biosphere reserves of the project area.
- g) Devise management & conservation measures for biodiversity.

3.5.3. Methodology of Sampling

Plot method is used in the floral documentation in the core and buffer zone. For trees (10x10-m), shrubs (5x5-m) and herbs (1x1-m) plots were taken. Birds and butterflies were mainly focused during faunal assessment, transect method was employed for birds and butterflies. Transect is a path along which one counts and records the occurrence of an individual for study. A straight-line walk covering desired distance, within a time span of one hour to 30 minutes was carried out in the proposed region. Bird species were recorded during the hours of peak activity. 0700 to 1100 Hrs and 1430 to 1730 Hrs (Bibby et al. 2000).

Direct observations and bird calls were used for bird documentation. Same transects were used for counting butterflies. Opportunistic observations were made for Amphibians, reptiles and ordinals. Presence of mammals was recorded by direct and indirect signs. All possible transects were taken for birds and butterflies. Birds and butterflies were classified into species level. Recorded bird species were identified to species level using standard books (Ali & Ripley 1987, Grimmett et al., 2016).

3.5.3.1. Sampling

A stratified simple random sampling procedure was employed to obtain a sample from study area. The study area was further stratified in different land use/ecosystems.

3.5.3.2 Sampling Size

Keeping in mind both random sampling technique and covering all land use patterns for the study following sampling locations were chosen depending up on the area of the proposed site.

3.5.3.3. Timing of Study

The study was carried out during morning and evening hours, to cover the different activity phases for important species such as time resting, feeding, hunting, and daily movements.

3.5.3.4. Observations from Sampling

The various observations relating to flora and fauna species are discussed in detail below, in separate sections.

3.5.3.5. Equipment/ References

- Canon Mark III Camera with 50-500mm lens– Snap shots taken
- Leica Binoculars (8x 20) to spot/identify species
- IUCN Red Data Book – <https://www.iucnredlist.org/species>

Ornithological/Entomological/Herpetological/Mammalian catalogues and pictorial descriptions from various authors and websites are followed for species identification.

3.5.4. Part I Field Sampling Techniques

3.5.4.1. Transect walk – Birds

Six no transect lines with varying length (100m-300m) and fixed width (2m) were laid which cuts through the core and buffer areas of proposed site. The transect surveys were conducted from 0700 to 1100Hrs and 1430 to 1730Hrs (Bibby et al. 2000). All avifauna found along these transects were recorded for analysing the data. Counts were conducted while there is no heavy rain, mist or strong wind.

3.5.4.2. Modified Pollard Walk – for Butterflies

The Modified Pollard Walk (Pollard 1977, 1993, Walpole 1999) using fixed width transect walk method was employed to investigate butterfly spatial distribution, diversity and abundance at the different survey sites.

3.5.4.3. Visual Encounter Survey (VES) - reptiles and amphibians

VES is a time-constrained sampling technique (Campbell and Christman, 1982; Corn and Bury, 1990). It needs a systematic search through an area or habitat for a prescribed time period (Campbell and Christman, 1982). The result of VES is measured against the time spent for the search. VES technique is one of the simplest methods and an appropriate technique for both inventory and monitoring Herpetofauna (Heyer et al. 1994).

3.5.4.4. Observational methods- Mammals

For the purpose of recording mammals, we used two different observational techniques: (1) direct observations, and (2) recording of occurrences like holes, markings, scats, hairs, and spines (Menon 2003). For identification confirmations, photographs with a scale reference were used, and locations were recorded using a portable GPS device. Indigenous knowledge particularly that of the locals, was occasionally employed to compile a preliminary list of species and/or aid in the recognition of indicators.

3.5.4.5. Multiple Stage Quadrat – Vegetation

A variety of habitat or vegetation structure variables were measured using the Multiple Stage Quadrat sampling protocol (Sykes and Horrill 1977). All of those areas were sampled, and the major corners were temporarily delineated with colored ribbons. Each site was identified in the field using a compass and clinometer, and the plot's latitude, longitude, and elevation were recorded using a handheld Global Positioning System (Garmin 12XL).

3.5.5. Flora

The quadrat sampling technique was used for sampling vegetation. Sampling quadrats of the regular shape of dimensions 10 × 10 m, 5 × 5 m, and 1 × 1 m, were nested within each other and were defined as the units for sampling the area and measuring the diversity of trees, Shrubs, and herbs respectively.

TABLE 3.23: FLORA IN THE CORE ZONE – CLUSTER AREA

SI.No	English Name	Vernacular Name	Scientific Name	Family Name
Trees				
1.	Velvet mesquite	Mullu Maram	<i>Prosopis juliflora</i>	Fabaceae
2.	Wild Tamarind	Savundal	<i>Leucaena latisiliqua</i>	Mimosaceae
3.	Neem or Indian lilac	Vembu maram	<i>Azadirachta indica</i>	Meliaceae
4.	Millettia Pinnata	Pongam oiltree	<i>Pongamia pinnata</i>	Fabaceae
5.	Malayan Cherry	Ten Pazham	<i>Muntingia calabura</i>	Muntingiaceae
6.	Coconut	Thennai maram	<i>Cocos nucifera</i>	Arecaceae
Shrubs				
1.	Avaram	Avarai	<i>Senna auriculata</i>	Fabaceae
2.	Devil's trumpet	Umathai	<i>Datura metel</i>	Solanaceae
3.	Triangular spruce	Chaturakalli	<i>Euphorbia antiquorum</i>	Euphorbiaceae
4.	Milk Weed	Erukku	<i>Calotropis gigantea</i>	Apocynaceae
5.	West Indian Lantana	Unni chedi	<i>Lantana camara</i>	Verbenaceae
Herbs				
1.	Common leucas	Thumbai	<i>Leucas aspera</i>	Lamiaceae
2.	Fish poison	Kolinchi	<i>Tephrosia purpurea</i>	Fabaceae
3.	Coat buttons	Thatha poo	<i>Tridax procumbens</i>	Asteraceae
4.	Devil's thorn	Nerunji	<i>Tribulus terrestris</i>	Zygophyllales
5.	Asthma-plant	Amman pacharisi	<i>Euphorbia hirta</i>	Euphorbiaceae
6.	Indian doab	Arugampul	<i>Cynodon dactylon</i>	Poaceae
7.	Malabar catmint	Pie Viratti	<i>Anisomeles malabarica</i>	Lamiaceae
Grasses				
1.	Eragrostis	Pullu	<i>Eragrostis ferruginea</i>	Poaceae
2.	Great brome	Thodappam	<i>Bromus diandrus</i>	Poaceae
Cactus				
1.	Indian fig opuntia	Sapathikalli	<i>Opuntia ficus-indica</i>	Cactaceae

Sources: Species observation in the field study

3.5.6. Flora Composition in the Core Zone

Taxonomically a total of 21 species belonging to 16 families have been recorded from the core mining lease area. The proposed area applied area exhibits flat terrain. This land is fit for vegetation and cultivation. Based on the habitat classification of the enumerated plants the majority of species were Herbs 7 followed by Trees 6, Shrubs 5, Grasses 2, and Cactus 1. Details of flora with scientific name were mentioned in Table No. 3.33. The result of the core zone of flora studies shows that Fabaceae and Poaceae, Lamiaceae are the main dominating species in the study area mentioned in Table No.3.33 No species were found as threatened category.

FIGURE 3.26: FLORA SPEIES IN THE CORE ZONE*Azadirachta indica**Muntingia calabura**Calotropis gigantea**Opuntia ficus-**Calotropis gigantea***TABLE 3.24: FLORA IN THE BUFFER ZONE**

Sl.No	English Name	Vernacular Name	Scientific Name	Family Name
Trees				
1.	Velvet mesquite	Mullu maram	<i>Prosopis juliflora</i>	Fabaceae
2.	Neem or Indian lilac	Vembu	<i>Azadirachta indica</i>	Meliaceae
3.	Asian Palmyra palm	Panai maram	<i>Borassus flabellifer</i>	Arecaceae
4.	Mango	Manga	<i>Mangifera indica</i>	Anacardiaceae
5.	Wild Tamarind	Savundal	<i>Leucaena latisiliqua</i>	Mimosaceae
6.	Tree of heaven	Perumaram	<i>Ailanthus excelsa</i>	Simaroubaceae
7.	Coconut	Thennai maram	<i>Cocos nucifera</i>	Arecaceae
8.	Madras thorn	Kudukapuli	<i>Pithecellobium dulce</i>	Fabaceae
9.	River tamarind	Soundal maram	<i>Leucaena leucocephala</i>	Fabaceae
10.	Monkey pod tree	Thungumoonchi	<i>Samanea saman</i>	Fabaceae
11.	Cutch tree	Karangali	<i>Acacia chundra</i>	Mimosaceae
12.	Portia tree	Poovarasam	<i>Thespesia Populnea</i>	Malvaceae
13.	Jack fruit	Bala maram	<i>Artocarpusintegrifolia</i>	Moraceae
14.	Indian siris	Vagai	<i>Albizia lebeck</i>	Mimosaceae
15.	Bitter Albizia	Unja, Usilai	<i>Albizia amara</i>	Mimosaceae
16.	Tree of heaven	Perumaram	<i>Ailanthus excelsa</i>	Simaroubaceae
17.	Velvet mesquite	Mullu maram	<i>Prosopis juliflora</i>	Fabaceae
18.	Peepal	Asoka maram	<i>Ficus religiosa</i>	legume

19.	Lemon	Ezhumuchaipalam	<i>Citrus lemon</i>	Rutaceae
20.	Jamun Fruit Plant	Naval maram	<i>Syzygium cumini</i>	Myrtaceae
21.	Gum arabic tree	Karuvelam	<i>Vachellia nilotica</i>	Fabaceae
22.	Rain Tree	Mazhiamaram	<i>Samanea saman</i>	Mimosaceae
23.	Chinese chaste tree	Nochi	<i>Vitex negundo</i>	Verbenaceae
24.	Yellow Flame	Vagai	<i>Peltophorum pterocarpum</i>	Caesalpiniaceae
25.	Teak	Thekku	<i>Tectona grandis</i>	Verbenaceae
26.	Indian mulberry	Nuna maram	<i>Morinda tinctoria</i>	Rubiaceae
27.	Drumstick tree	Murunga maram	<i>Moringa oleifera</i>	Moringaceae
28.	Guava	Koyya	<i>Psidium guajava</i>	Myrtaceae
29.	Eucalyptus	Thailam maram	<i>Eucalyptus tereticornis</i>	Myrtaceae
30.	Pongamia pinnata	Pongam	<i>Millettia pinnata</i>	Fabaceae
31.	Horsetail She-oak	Savukku maram	<i>Casuarina equisetifolia</i>	Casuarinaceae
32.	Henna	Marudaani	<i>Lawsonia inermis</i>	Lythraceae
33.	Indian gooseberry	Nelli	<i>Phyllanthus emblica</i>	Phyllanthaceae
34.	Indian siris	Eayal vaagai	<i>Albizia lebbek</i>	Mimosaceae
35.	Tamarind	Puliyamaram	<i>Tamarindus indica</i>	Legumes
36.	Malayan Cherry	Ten Pazham	<i>Muntingia calabura</i>	Muntingiaceae
37.	Sacred fig	Arasa maram	<i>Ficus religiosa</i>	Moraceae
38.	Jujube Trees	Elantha Pazham	<i>Ziziphus Mauritiana</i>	Rhamnaceae
39.	Papaya	Pappali maram	<i>Carica papaya</i>	Caricaceae
40.	Mountain date	Malai eecham,	<i>Phoenix loureirii</i>	Arecaceae
41.	Ceylon satinwood	Purush, Porasu	<i>Chloroxylon swietenia</i>	Rutaceae
42.	Banana tree	Vazhaimaram	<i>Musa acuminata</i>	Musaceae
43.	Custard apple	Seethapazham	<i>Annona reticulata</i>	Annonaceae
44.	Manilkara zapota	Sapota	<i>Manilkara zapota</i>	Sapotaceae
45.	Indian-almond	Badam	<i>Terminalia catappa</i>	Combretaceae
46.	Banyan tree	Alamaram	<i>Ficus benghalensis</i>	Moraceae
47.	Jack fruit	Palamaram	<i>Artocarpus heterophyllus</i>	Moraceae
Shrubs				
1.	Giant reed	Mudaampul	<i>Arundo donax</i>	Poaceae
2.	Devil's trumpet	Umathai	<i>Datura metel</i>	Solanaceae
3.	Senna Coffee	Payaveri	<i>Cassia occidentalis</i>	Caesalpiniaceae
4.	Avaram	Avarai	<i>Senna auriculata</i>	Fabaceae
5.	Triangular spruce	Chaturakalli	<i>Euphorbia antiquorum</i>	Euphorbiaceae
6.	Water-hyacinth	Agayathamara	<i>Eichhornia crassipes</i>	Pontederiaceae
7.	Kangkong	Sarkaraivalli	<i>Ipomea aquatica</i>	Convolvulaceae
8.	Castor bean	Amanakku	<i>Ricinus communis</i>	Euphorbiaceae
9.	Green amaranth	Kuppaikeerai	<i>Amaranthus vividis</i>	Amaranthaceae
10.	Jungle geranium	Idly Poo	<i>Ixora coccinea</i>	Rubiaceae
11.	Birch-Leaved Cat Tail	Aathaathazhai	<i>Acalypha fruticosa</i>	Euphorbiaceae
12.	Horn of Plenty	Karu Umathai	<i>Datura metel</i>	Solanaceae
13.	Devil's claw	Thael kodukkukai	<i>Martynia annua</i>	Pedaliaceae
14.	Shoe flower	Chemparuthi	<i>Hibiscus rosa-sinensis</i>	Malvaceae
15.	Asian Bushbeech	Sirukumalaan	<i>Gmelina asiatica</i>	Verbenaceae
16.	Wild jasmine	Kattumalli	<i>Jasminum trichotomum</i>	Oleaceae
17.	Milk Weed	Erukku	<i>Calotropis gigantea</i>	Apocynaceae
18.	Rough cocklebur	Marlumuttu	<i>Xanthium indicum</i>	Asteraceae
19.	Mexican prickly poppy	Bramathndu	<i>Argemone mexicana</i>	Papaveraceae

20.	Orange Jasmine	Mock Orange	<i>Murraya paniculata</i>	Rutaceae
21.	Puriging nut	Kattamanakku	<i>Jatropha curcas</i>	Euphorbiaceae
22.	Cypress vine	Mayil maanikam	<i>Ipomoea quamoclit</i>	Convolvulaceae
23.	Indian Balm of Gilead	Mulkilluvai	<i>Commiphora berryi</i>	Burseraceae
24.	Malabar catmint	Pei veratti	<i>Anisomeles malabarica</i>	Lamiaceae
25.	Dwarf Heliotrope	Theelkoduku	<i>Heliotropium supinum</i>	Boraginaceae
26.	Clustered Morning Glory	Onan kodi	<i>Ipomoea staphylina</i>	Convolvulaceae
27.	Touch-me-not	Thottalchinungi	<i>Mimosa pudica</i>	Mimosaceae
28.	Indian mallow	Thuthi	<i>Abutilon indicum</i>	Meliaceae
29.	Night shade plan	Sundaika	<i>Solanum torvum</i>	Solanaceae
30.	Rosary pea	Kundumani	<i>Abrus precatorius</i>	Fabaceae
31.	Indian Oleander	Arali	<i>Nerium indicum</i>	Apocynaceae
32.	West Indian Lantana	Unni chedi	<i>Lantana camara</i>	Verbenaceae
33.	Rough cocklebur	Marlumutt	<i>Xanthium indicum</i>	Asteraceae
Herbs				
1.	Carrot grass	Partiniyam	<i>Parthenium hysterophorus</i>	Asteraceae
2.	Sessile Joyweed	Ponnankanni	<i>Alternanthera sessilis</i>	Amaranthaceae
3.	Billygoat weed	Pumpillu	<i>Ageratum conyzoides</i>	Asteraceae
4.	Aloe barbadensis	Katrazhai	<i>Aloe vera</i>	Asphodelaceae
5.	Madagascar Periwinkle	Nithyakalyani	<i>Catharanthus roseus</i>	Apocynaceae
6.	Indian Mercury	Kuppamani	<i>Acalypha indica</i>	Euphorbiaceae
7.	Indian nettle	Nayuruvi	<i>Achyranthes aspera</i>	Amaranthaceae
8.	Chloris barbata	Kodai pul	<i>Chloris barbata</i>	Poaceae
9.	Spreading hogweed	Mookkaratti	<i>Boerhavia diffusa</i>	Nyctaginaceae
10.	Bui	Ciru-pulai	<i>Aervalanata</i>	Amaranthaceae
11.	Indian doab	Arugampul	<i>Cynodon dactylon</i>	Poaceae
12.	Spiny amaranth	Mullu keerai	<i>Amaranthus spinosus</i>	Amaranthaceae
13.	Prickly chaff flower	Uthrani	<i>Achyranthes aspera</i>	Amaranthaceae
14.	Tropical milkweed	Blood Flower	<i>Asclepias curassavica</i>	Asclepiadaceae
15.	Mexican prickly poppy	Mullu umathai	<i>Argemone mexicana</i>	Papaveraceae
16.	Dwarf morning-glory	Vishnu kiranthi	<i>Evolvulus alsinoides</i>	Convolvulaceae
17.	Datura metel	Oomathai	<i>Datura metel</i>	Solanaceae
18.	Carry me seed	Kizhar nelli	<i>Phyllanthus amarus</i>	Phyllanthaceae
19.	Malabar catmint	Peymarutti	<i>Anisomeles malabarica</i>	Lamiaceae
20.	Yellow elder	Manjarali	<i>Tecoma stans</i>	Apocynaceae
21.	Green amaranth	Kuppai keerai	<i>Amaranthus viridis</i>	Amaranthaceae
22.	Cleome viscosa	Nai kadugu	<i>Celome viscosa</i>	Capparidaceae
23.	Common leucas	Thumbai	<i>Leucas aspera</i>	Lamiaceae
24.	Century plant	Agave	<i>Agave america</i>	Agavaceae
25.	Fish poison	Kollukaivelai	<i>Tephrosia purpureae</i>	Papilionaceae
26.	Asthma-plant	Amman pacharisi	<i>Euphorbia hirta</i>	Euphorbiaceae
27.	Holy basil	Thulasi	<i>Ocimum tenuiflorum</i>	Lamiaceae
28.	Red Hogweed	Mukurattai	<i>Boerhavia diffusa</i>	Nyctaginaceae
29.	Tridax daisy	Thatha poo	<i>Tridax procumbens</i>	Asteraceae
30.	Gale of the wind	Keelaneeli	<i>Phyllanthus niruri</i>	Phyllanthaceae
31.	Eggplant	Kathirikai	<i>Solanum melongena</i>	Solanaceae
32.	European black nightshade	Manathakkali	<i>Solanum nigrum</i>	Solanaceae
Climber/ Creeper				
1.	Ivy gourd	Kovai	<i>Coccinia grandis</i>	Cucurbitaceae

2.	Cucumis maderaspatanus	Musumusukkai	<i>Mukia maderaspatana</i>	Cucurbitaceae
3.	Butterfly pea	Sangu poo	<i>Clitoria ternatea</i>	Fabaceae
4.	Wild water lemon	Siruponaikaali	<i>Passiflora foetida</i>	Passifloraceae
5.	Stemmed vine	Perandai	<i>Cissus quadrangularis</i>	Vitaceae
6.	Bottle Guard	Sorakkai	<i>Lagenaria siceraria</i>	Cucurbitaceae
7.	Rosary Pea	Gundumani	<i>Abrus precatorius</i>	Fabaceae
8.	Pointed gourd	Kovakkai	<i>Trichosanthes dioica</i>	Cucurbitaceae
9.	Wild bitter	Pavarkai	<i>Momordica charantia</i>	Cucurbitaceae
Grass				
1.	Eragrostis	Pullu	<i>Eragrostis ferruginea</i>	Poaceae
2.	Giant reed	Elephant grass	<i>Arundo donax</i>	Poaceae
3.	Windmill grass	Chevvarakupul	<i>Chloris barbata</i>	Amaranthaceae
4.	Nut grass	Korai	<i>Cyperus rotandus</i>	Poaceae
5.	Great brome	Thodappam	<i>Bromus diandrus</i>	Poaceae
Cactus				
1.	Prickly pear	Nagathali	<i>Opuntia dillenii</i>	Cactaceae

Sources: Species observation in the field study and secondary data

3.5.7. Flora Composition in the Buffer Zone

Similar habitats may be found in the buffer area as well, although there is a wider variety of plants there than in the core zone area. The buffer zone study area contains a total of 127 species that have been recorded from the buffer zone. The floral (127) varieties of Trees 47, herbs 33, shrubs 32, Climbers 9, Grasses 5, and Cactus 1 were identified. The result of the buffer zone of flora studies shows that Fabaceae and Poaceae, Mimosaceae are the main dominating species in the study area mentioned in Table No.3.34. There are no impacts due to this mining activity. There are no Rare, Endangered, and Threatened Flora species in the mining area and their surrounding study area. Apart from the proposed project area, there is agricultural land. Horticulture and agricultural land are untouched. There are no Rare, Endangered, and Threatened Flora species in the mining area and their surrounding study area. A list of floral species has been prepared based on a primary survey (site observations) and discussion with local people (Secondary data). The total number of different plant life forms under trees, shrubs, herbs, and climbers is shown in Table 3.35 and their % distribution is shown in Figure 3.20.

TABLE 3.25: NUMBER OF FLORAL LIFE FORMS IN THE STUDY AREA

S. No	Plant Life Form	Number of Species
1	Trees	47
2	Shrubs	33
3	Herbs	32
4	Climber	9
6	Grass	5
7	Cactus	1
Total No. of Species		127

FIGURE 3.27: PIE DIAGRAM OF FLORA DISTRIBUTION IN THE STUDY AREA

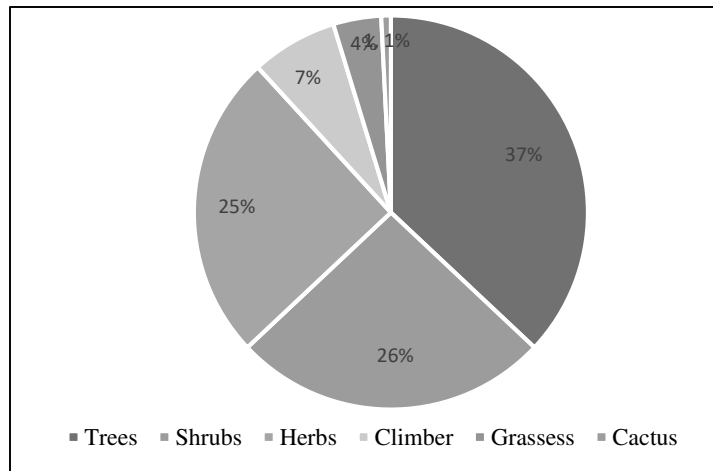
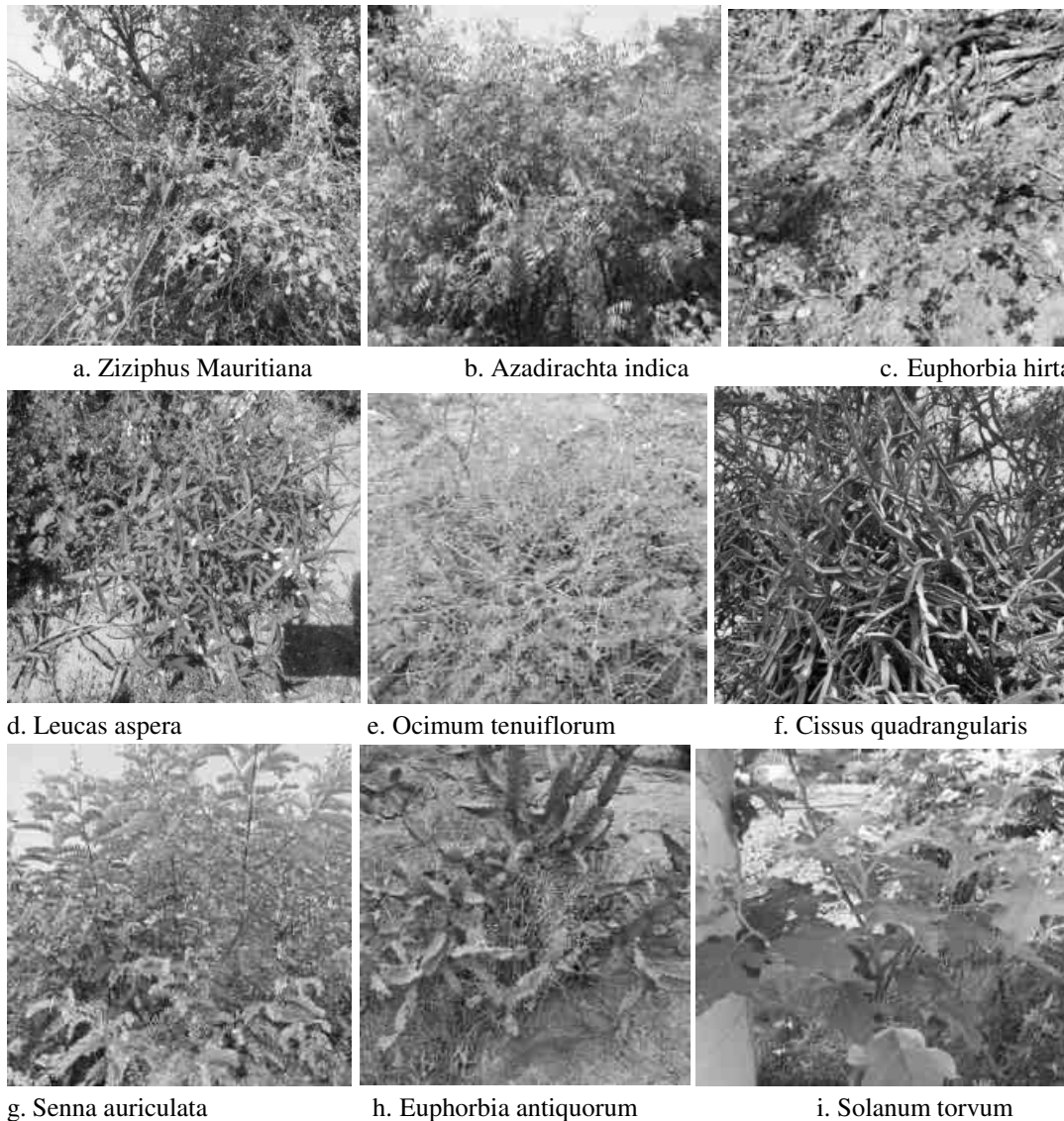


FIGURE 3.28: FLORA IMAGES IN THE BUFFER ZONE





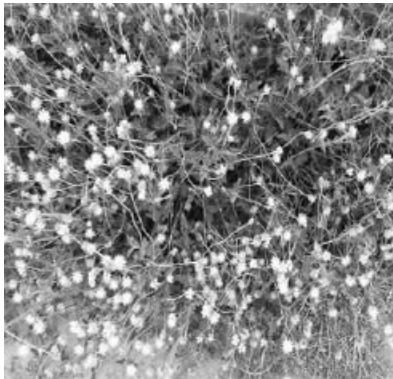
J.Cocos nucifera



k. Musa acuminata



l. Prosopis juliflora



m. Tridax procumbens



n.Tecoma stans



o. Vitex negundo



p. Opuntia dillenii



q. Senna auriculata



r.Lantana camara



S. Borassus flabellifer



t. Abrus precatorius



u. Calotropis gigantea

3.5.9. The vegetation in the RF / PF areas, ecologically sensitive areas

There are neither reserved (RF) nor protected (PF) forests either in the mine lease area or in the buffer zone. Thus, no forest land is involved in any manner. There are no Biosphere reserves or wildlife sanctuaries or National parks or Important Bird Areas (IBAs), or migratory routes of fauna. Thus, the area under study (Mine lease area and the 10 Km buffer zone) is not ecologically sensitive. It is away from the proposed project site.

3.5.10. Fauna

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

3.5.10.1. Fauna Composition in the Core Zone

Core Zone: The area is surrounded by existing quarries and Crushers No major varieties of Fauna in the core zone since the core zone area is minimal. During the study, it was found that the faunal diversity in the core site was limited. Butterflies, insects, and some species of mammals & and reptiles among them numbers Insects 8, Reptiles 3, Mammals 3, and Avian 8. The core site has avifauna species like crow, Black drongo, Koel, etc. None of these species are threatened or endemic in the study area and surroundings. There is no Schedule I species and 11 species are under Schedule IV according to the Indian Wildlife Act 1972. There are no critically endangered, endangered, vulnerable, and endemic species were observed.

TABLE 3.26: FAUNA IN CORE ZONE

SI. No	Common Name	Scientific Name	Schedule list WLPC 1972
Insects			
1.	Common Tiger	<i>Danaus genutia</i>	NL
2.	Red-veined darter	<i>Sympetrum fonscolombii</i>	NL
3.	Tawny coster	<i>Danaus chrysippus</i>	Schedule IV
4.	House fly	<i>Musca domestica</i>	-
5.	Dragonfly	<i>Agriansp</i>	-
6.	Striped tiger	<i>Danaus plexippus</i>	Schedule IV
7.	Grey pansy	<i>Junonia atlites</i>	LC
8.	Common Tiger	<i>Danaus genutia</i>	LC
Reptiles			
1.	Oriental garden lizard	<i>Calotes versicolor</i>	NL
2.	Indian forest skink	<i>Sphenomorphus indicus</i>	NL
3.	House lizards	<i>Hemidactylus flaviviridis</i>	Schedule IV
Mammals			
1.	Indian Field Mouse	<i>Mus booduga</i>	Schedule IV
2.	Asian Small Mongoose	<i>Herpestes javanicus</i>	Schedule (Part II)
3.	Squirrel	<i>Funambulus palmarum</i>	Schedule IV
Aves			
1.	Rose-ringed parkeet	<i>Psittacula krameri</i>	Schedule IV
2.	Common myna	<i>Acridotheres tristis</i>	NL
3.	Blue-rock pigeon	<i>Colombalivia</i>	Schedule IV
4.	Pond heron	<i>Ardeolagrayii</i>	Schedule IV
5.	Asian koel	<i>Eudynamysscolopacea</i>	Schedule IV
6.	Koel	<i>Eudynamys</i>	Schedule IV
7.	Black drongo	<i>Dicrurus macrocercus</i>	Schedule IV
8.	House crow	<i>Corvussplendens</i>	NL

NL- Not listed, LC- Least Concern

(Sources: [Species observation in the field study](#))

3.5.11. Fauna Composition in the Buffer Zone

As animals, especially vertebrates move from place to place in search of food, shelter, mate or other biological needs, separate lists for core and buffer areas are not feasible however, a separate list of fauna pertaining to core and buffer zone are listed separately. Though there is no reserved forests in the buffer zone. As such there are no chances of occurrence of any rare or endangered or endemic or threatened (REET) species within the core or buffer area.

There are no Sanctuaries, National Parks, Tiger Reserve or Biosphere reserves or Elephant Corridor or other protected areas within 10 km radius of from the core area. It is evident from the available records, reports, and circumstantial evidence that the entire study area including the core and buffer areas were free from any endangered animals. There were no resident birds other than common bird species such as Cattle egret, Asian Koel, House crow, Black drangos, Crows, Rose-ringed Parakeet etc.,

The list of bird species recorded during the field survey and literature from the study area are given in Table 3.38. The list of reptilian species recorded during the field survey and literature from the study area is given in Table 3.39. The list of insect species recorded during the field survey and literature from the study area are given in Table 3.41. The list of Butterflies species recorded during the field survey and literature from the study area are given in Table 3.40. It is apparent from the list that none of the species either spotted or reported is included in Schedule I of the Wildlife Protection Act. Similarly, none of them comes under the REET category.

Taxonomically a total of 79 species recorded were from the buffer zone area. Based on habitat classification the majority of species were Insects 5, followed by birds 43, Reptiles 10, Mammals 5, Amphibians 3, and Butterflies 13. There are five Schedule II species, and 54 species are under Schedule IV according to the Indian Wildlife Act 1972. A total of 43 species of bird were sighted in the study area. There are no critically endangered, endangered, vulnerable, and endemic species were observed. There are no impacts on nearby fauna species.

Dominant species are mostly birds, butterflies, and insects, and three amphibian was observed during the extensive field visit *Sphaerotheca breviceps*, *Euphlyctis hexadactylus*, *Bufo melanostictus*, etc. There is no Schedule I Species in the study area. There are no critically endangered, endangered, vulnerable, and endemic species were observed.

TABLE 3.27: LIST OF FAUNA & CONSERVATION STATUS

SI. No	Common Name	Scientific Name	Schedule list WLP 1972
1.	Brown rat	<i>Rattus norvegicus</i>	Schedule IV
2.	Indian palm squirrel	<i>Funambulus palmarum</i>	Schedule IV
3.	Asian Small Mongoose	<i>Herpestes javanicus</i>	Schedule (Part II)
4.	Indian hare	<i>Lepus nigricollis</i>	Schedule (Part II)
5.	Indian Field Mouse	<i>Mus booduga</i>	Schedule IV

Status assigned by the IUCN, where – CR – Critically Endangered; EN – Endangered; LC – Least Concern; NT – Near Threatened; VU – Vulnerable, DA – Data Deficient, NE – Not Evaluated

TABLE 3.28: LIST OF BIRDS

SI. No	Common Name	Scientific Name	Schedule list WLP 1972
1.	Rose-ringed Parakeet	<i>Psittaculakrameria</i>	Schedule IV
2.	Little grebe	<i>Tachybaptusruficollis</i>	Schedule IV
3.	Red-vented Bulbul	<i>Pycnonotus cafer</i>	Schedule IV
4.	Small blue Kingfisher	<i>Alcedo atthis</i>	Schedule IV
5.	Purple Sunbird	<i>Leptocoma zeylonica</i>	Schedule IV
6.	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Schedule IV
7.	Two-tailed Sparrow	<i>Dicrurus macrocercus</i>	Schedule IV
8.	Grey heron	<i>Ardeacineria</i>	Schedule IV
9.	Cattle egret	<i>Bubulcus ibis</i>	Schedule IV
10.	Common myna	<i>Acridotheres tristis</i>	Schedule IV
11.	Indian roller	<i>Coracias benghalensis</i>	Schedule IV
12.	Night heron	<i>Ncticoraxncticorax</i>	Schedule IV
13.	Greater Coucal	<i>Centropus sinensis</i>	Schedule IV
14.	Paddyfield Pipit	<i>Anthus rufulus</i>	Schedule IV
15.	Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	Schedule IV
16.	Little Egret	<i>Egretta garzetta</i>	Schedule IV
17.	Green Bee-eater	<i>Merops orientalis</i>	Schedule IV
18.	Grey Francolin	<i>Francolinus pondicerianus</i>	Schedule IV
19.	Green Sandpiper	<i>Tringa ochropus</i>	Schedule IV
20.	Grey Wagtail	<i>Motacilla cinerea</i>	Schedule IV
21.	Common Iora	<i>Aegithina tiphia</i>	Schedule IV
22.	Yellow wagtail	<i>Motacilla flava</i>	Schedule IV
23.	Spotted owlet	<i>Athene brama</i>	Schedule IV
24.	House Sparrow	<i>Passer domesticus</i>	Schedule IV
25.	White-eyed Buzzard	<i>Butastur teesa</i>	Schedule IV
26.	Black Drongo	<i>Dicrurus macrocercus</i>	Schedule IV
27.	Brown Shrike	<i>Lanius cristatus</i>	Schedule IV
28.	Plain Prinia	<i>Prinia inornata</i>	Schedule IV
29.	Purple Heron	<i>Ardea purpurea</i>	Schedule IV
30.	Spotted dove	<i>Streptopeliachinensis</i>	Schedule IV
31.	Shikra	<i>Accipiter badius</i>	Schedule IV
32.	Bay-backed Shrike	<i>Lanius vittatus</i>	Schedule IV
33.	Asian koel	<i>Eudynamysscolopacea</i>	Schedule IV
34.	Small-blue kingfisher	<i>Alcedoatthis</i>	Schedule IV
35.	White-breasted kingfisher	<i>Halcyon smyrnensis</i>	Schedule IV
36.	Ashy Drongo	<i>Dicrurus leucophaeus</i>	Schedule IV
37.	Rock Pigeon	<i>Columba livia (Feral Pigeon)</i>	Schedule IV
38.	Black-rumped flameback	<i>Dinopium benghalense</i>	Schedule IV
39.	House crow	<i>Corvussplendens</i>	Schedule IV
40.	Jungle crow	<i>Corvusmacrorhynchos</i>	Schedule IV
41.	Robin	<i>Copsychussaularis</i>	Schedule IV

42.	Pond heron	<i>Ardeolagrari</i>	Schedule IV
43.	Common quail	<i>Coturnix coturnix</i>	Schedule IV

Reference: Coimbatore City Bird Atlas, February–March, 2020. Birds of Coimbatore Wetlands, By Dr. P.Pramod Ali, S. (2002). The Book of Indian Birds (13th revised edition). Oxford University Press, New Delhi. 326pp

TABLE 3.29: LIST OF REPTILES IN THE STUDY AREA

SI. No	Common Name	Scientific Name	Schedule list WLPA 1972
1	Oriental garden lizard	<i>Calotes versicolor</i>	NL
2	Common krait	<i>Bungarus caeruleus</i>	Schedule IV
3	House lizards	<i>Hemidactylus flaviviridis</i>	Schedule IV
4	Indian cobra	<i>Naja naja</i>	Sch II (Part II)
5	Green vine snake	<i>Ahaetulla nasuta</i>	Schedule IV
6	Russell's viper	<i>Vipera russelli</i>	Sch II (Part II)
7	Rat snake	<i>Ptyas mucosa</i>	Sch IV (Part II)
8	Common skink	<i>Mabuya carinatus</i>	NL
9	Bornze Grass Skink	<i>Eutropis macularia</i>	Schedule IV
10	Keeled / Common Grass Skink	<i>Eutropis carinata</i>	Schedule IV

TABLE 3.30: LIST OF BUTTERFLIES IN THE STUDY AREA

SI. No	Common Name/English Name	Scientific Name	Schedule
1	Indian palm bob	<i>Suastusgremius</i>	-
2	Common Mormon	<i>Papilio polytes</i>	-
3	Common rose	<i>Pachlioptaaristolochiaee</i>	-
4	Spotless grass yellow	<i>Eurema laeta</i>	-
5	Common Tiger	<i>Danaus genutia</i>	-
6	Common emigrant	<i>Catopsiliapomona</i>	-
7	Crimson tip	<i>Colotisdanae</i>	-
8	Common Indian crow	<i>Euploea core</i>	-
9	Dark Blue Tiger	<i>D. hamata (McLeay)</i>	-
10	Lime Butterfly	<i>Papilio demoleus</i>	-
11	Yellow Pansy	<i>Junonia hierta</i>	-
12	Chocolate Pansy	<i>Junonia iphita</i>	-
13	Double-branded Black Crow	<i>Euploea sylvester</i>	-

3.5.12 Aquatic Ecology

The study area has few seasonal odai and canal away from the proposed project site. But no major drainage system can be found within the study area. No Aquatic diversity is noticed in the core zone area. Aquatic weeds are found to be growing everywhere in 10 km radius area, in every water bog, pond, etc. *Typha angustata* can be found growing all along the drains of villages, small water-logged depressions, and agricultural fields lacking water but containing enough moisture to support its growth. And where water is present, *Eichhornia crassipes* has taken its roots and covers the entire water surface by its sprawl and invasion.

1.5.17. Findings/Results

The assessment was carried out during the Summer season. The inspection day was quite alright with respectable weather. The details of the flora and fauna observed are given below.

Records of threatened species in the area

No threatened species were observed

Endangered Species as per Wildlife (Protection) Act

No Endangered fauna was recorded in the project area.

Endemic Species of the Project areas

No endemic species were observed in the project area.

Migratory species of the Project areas

No migratory fauna observed in project area.

Migratory corridors and Flight paths

No migratory corridors and Flight paths were observed in project area.

Breeding and spawning grounds

No breeding and spawning grounds were earmarked for the wildlife fauna in project area.

1.5.18. Conclusion

There is no Major trees, Shrubs within the project site and no Fauna observed during the entire study period except some least concerns. During the quarry operation plantation will be developed in the project site about 680 Nos of trees will be planted in the boundary barrier and village road through this project and after the excavation the pit will act as temporary reservoir to create the small eco system in the site. Hence the positive impact will create due to this project after closure.

- No Aquatic diversity is noticed in the core zone area. Aquatic weeds are found to be growing everywhere in 10 km radius area
- There are no Biosphere reserves or wildlife sanctuaries or National parks or Important Bird Areas (IBAs), or migratory routes of fauna.
- Mine lease area and the 10 Km buffer zone is not ecologically sensitive. It is away from the proposed project site

This baseline information viewed against proposed project activities help in predicting their impacts on the wildlife and their habitats in the region. Data collected and information gathered from secondary literature on flora, fauna, protected area, natural habitats, and wildlife species etc., and consulted and discussed with local people, from the villages, herders and farmers who inhabit close to the proposed project area.

3.6 SOCIO ECONOMIC ENVIRONMENT

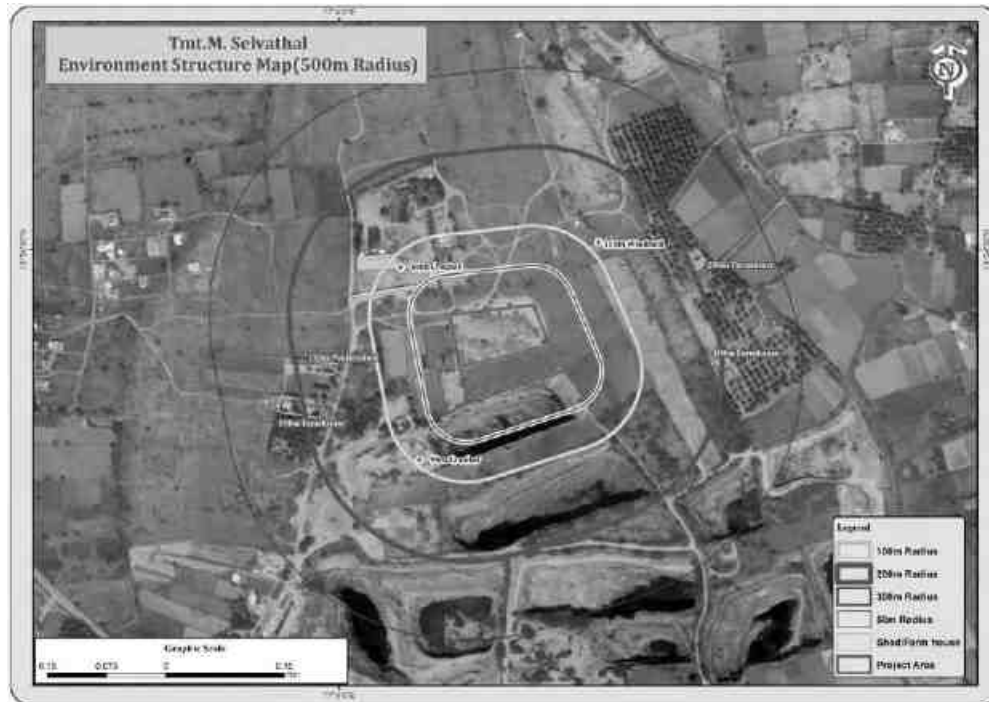
Socio-economic study is an essential part of environmental study. It includes demographic structure of the area, provision of basic amenities viz., housing, education, health and medical services, occupation, water supply, sanitation, communication, transportation, prevailing diseases pattern as well as feature like temples, historical monuments etc., at the baseline level. This will help in visualizing and predicting the possible impact depending upon the nature and magnitude of the project. It is expected that the Socio-Economic Status of the area will substantially improve because of this proposed project. As the proposed project will provide direct and indirect employment and improve the infrastructural facilities in that area and, thus, improve their standard of living.

STRUCTURE STUDY IN 300m RADIUS

There are few structures within the radius of 500m from the project site, the details of the structures is given below:

TABLE 3.31: STRUCTURES IN 300m RADIUS

0-50m radius – No Structures							
50 – 100m – 2 Structures							
Structure Numbers	Type of Structure	Usage Purpose	Commercial / industry / residential / farm house / Govt. building	Occupants of Building/ Structure	Structure belongs to owner	Structure Not belongs to owner	Remarks
1 – 80m Crusher - NW	Crusher	To make size reduced stone	Industrial	Nil	No	Yes	Compound wall erected around the crusher one Material Store shed is along with Crusher
2- 90m SW	Crusher	To make size reduced stone	Industrial	Nil	No	Yes	Crusher is not in use now
100-200m – 2 Nos							
Structure Numbers	Type of Structure	Usage Purpose	Commercial / industry / residential / farm house / Govt. building	Occupants of Building/ Structure	Structure belongs to owner	Structure Not belongs to owner	Remarks
1 Wind Mill - 110m - NE	Tower type structure	Generate Electricity	Industry	Nil	No	Yes	Tower type wind mill structure
Poultry Farm – 150m West	Tiled Shed	Poultry farming for eggs	Commercial	Nil	No	Yes	Poultry farming for eggs
200 – 300m – 3 Nos							
Structure Numbers	Type of Structure	Usage Purpose	Commercial / industry / residential / farm house / Govt. building	Occupants of Building/ Structure	Structure belongs to owner	Structure Not belongs to owner	Remarks
3 Nos of Farm houses	Concrete houses	Farm house and occasional residence	Agriculture	4 Nos	No	Yes	Farm houses occasionally used for the staying purpose. Utilized for the storage of agriculture goods.

FIGURE 3.29: STRUCTURE MAP 300m RADIUS

3.6.1 Objectives of the Study

The objectives of the socio-economic study are as follows:

- To study the socio-economic status of the people living in the study area.
- To assess the impact of the project on Quality of life of the people in the study area.
- To recommend Community Development measures needs to be taken up in the study Area.

3.6.2 Scope of Work

- To study the Socio-economic Environment of the area from the secondary sources;
- Data Collection & Analysis
- Prediction of project impact
- Mitigation Measures

3.6.3 District Profile

Coimbatore district is divided into 12 taluks. The taluks are further divided into 18 blocks, which further divided into 860 villages. In 2011, Coimbatore had population of 2,464,875 of which male and female were 1,235,889 and 1,228,986 respectively. In 2001 census, Coimbatore had a population of 2,186,125 of which males were 1,095,859 and remaining 1,090,266 were females. Coimbatore District population constituted 3.42 percent of total Maharashtra population. In 2001 census, this figure for Coimbatore District was at 3.50 percent of Maharashtra population.

There was change of 12.75 percent in the population compared to population as per 2001. In the previous census of India 2001, Coimbatore District recorded increase of 7.01 percent to its population compared to 1991.

3.6.4 Study area:

PACHAPALAYAM VILLAGE

Pachapalayam village is situated in Sulur Taluk, Coimbatore District and Tamil Nadu India. Village has population of 2933 as per census data of 2011, in which male population is 1488 and female population is 1445. Total geographical area of Pachapalayam village is 1559 Hectares. Population density of Pachapalayam is 2 persons per Hectares. Total number of house hold in village is 842. As per the Census Data 2011 there are 1,445 Female and 1,488 males out of 2,933 total population of village. There are 922 females per 1000 males under 6 years of age in the village.

In Pachapalayam village population of children with age 0-6 is 271 which makes up 9.24 % of total population of village. Average Sex Ratio of Pachapalayam village is 971 which is lower than Tamil Nadu state average of 996. Child Sex Ratio for the Pachapalayam as per census is 922, lower than Tamil Nadu average of 943.

Sex Ratio of Pachapalayam Village -Census 2011

As per the Census Data 2011 there are 971 Female per 1000 males out of 2933 total population of village. There are 922 girls per 1000 boys under 6 years of age in the village.

Literacy of pachapalayam Village

Out of total population total 1754 people in Pachapalayam Village are literate, among them 1003 are male and 751 are female in the village. Total literacy rate of of Pachapalayam is 65.89%, for male literacy is 74.46% and for female literacy rate is 57.11%.

Workers profile of pachapalayam Village

Total working population of Pachapalayam is 1627 which are either main or marginal workers. Total workers in the village are 1627 out of which 981 are male and 646 are female. Total main workers are 1466 out of which female main workers are 921 and male main workers are 545. Total marginal workers of village are 161.

TABLE 3.32: PACHAPALAYAM VILLAGE CENSUS 2011 DATA

Description	Census 2011 Data
Village Name	Pachapalayaam
Teshil Name	Sulur
District Name	Coimbatore
State Name	Tamil Nadu
Total Population	2933
Total Area	1559 (Hectares)
Total No of House Holds	842
Total Male Population	1488
Total Female Population	1445
0-6 Age group Total Population	271
0-6 Age group Male Population	141
0-6 Age group Female Population	130
Total Person Literates	1754
Total Male Literates	1003
Total Female Literates	751
Total Person Illiterates	1179
Total Male Illiterates	485
Total Female Illiterates	694
Scheduled Cast Persons	556
Scheduled Cast Males	278

Scheduled Cast Females	278
Scheduled Tribe Persons	0
Scheduled Tribe Males	0
Scheduled Tribe Females	0

Source: <https://etrace.in/census/village/pachapalayam-sulur-district-coimbatore-tamil-nadu-644389>

Sex-ratio	971
Literacy	65.89%
Male Literacy	74.46%
Female Literacy	57.11%
Scheduled Tribes (ST) %	0
Scheduled Caste (SC) %	556

TABLE 3.33 PACHAPALAYAM WORKING POPULATION ---CENSUS 2011

	Total	Male	Female
Total Workers	1627	981	646
Main Workers	1466	921	545
Main Workers Cultivators	491	285	206
Agriculture Labourer	177	97	80
Household Industries	19	9	10
Other Workers	779	530	249
Marginal Workers	161	60	101
Non Working Persons	1306	507	799

Source: <https://etrace.in/census/village/pachapalayam-sulur-district-coimbatore-tamil-nadu-644389>

TABLE 3.34: POPULATION DATA OF STUDY AREA

Sl.No.	Village Name	No of House Holds	Total Population	Male	Female	Total Literate Population	Male Literate	Female Literate	Total Illiterate Population	Male Illiterate	Female Illiterate
1	Appanaickenpatti	1121	3992	1998	1994	2665	1413	1252	1327	585	742
2	Arasampalayam	1090	3818	1894	1924	2473	1384	1089	1345	510	835
3	Arisippalayam	700	2400	1212	1188	1670	883	787	730	329	401
4	Bogampatti	686	2415	1254	1161	1515	905	610	900	349	551
5	Edayapalayam	667	2251	1130	1121	1659	930	729	592	200	392
6	Kalangal	1639	5590	2853	2737	3889	2158	1731	1701	695	1006
7	Kallapalayam	860	3066	1581	1485	2350	1293	1057	716	288	428
8	Kondampatty	738	2467	1218	1249	1625	889	736	842	329	513
9	Mettubavi	719	2485	1281	1204	1671	971	700	814	310	504
10	Myleripalayam	1393	4990	2451	2539	3169	1746	1423	1821	705	1116
11	Odderpalayam	2051	7403	3626	3777	5054	2684	2370	2349	942	1407
12	Pachapalayam	842	2933	1488	1445	1754	1003	751	1179	485	694
13	Panappatti	763	2635	1383	1252	1740	1026	714	895	357	538
14	Pappampatti	1172	4143	2052	2091	2865	1524	1341	1278	528	750
15	Peedampalli	1134	3896	1955	1941	2982	1601	1381	914	354	560
16	Seerappalayam	1646	5881	3053	2828	4457	2470	1987	1424	583	841
17	Sellakkarichal	1863	6209	3109	3100	4368	2447	1921	1841	662	1179
18	Solavampalayam	1837	6387	3195	3192	4074	2234	1840	2313	961	1352
19	Vadasithur	1532	5080	2483	2597	3452	1878	1574	1628	605	1023
20	Vadavalli	955	3171	1567	1604	2010	1093	917	1161	474	687

Source: www.censusindia.gov.in - Tamilnadu Census of India – 2011

TABLE 3.35: WORKERS PROFILE OF STUDY AREA

Sl.No.	Village Name	Total Workers Population	Male Workers	Female Workers	Total Main Workers	Main Workers Male	Main Workers Female	Main Cultivation Workers	Main Agriculture Workers	Main Other Workers	Non-Worker Population
1	Appanaickenpatti	2199	1285	914	2006	1197	809	115	430	1416	1793
2	Arasampalayam	2041	1269	772	1863	1166	697	360	746	734	1777
3	Arisippalayam	1126	771	355	974	702	272	117	281	561	1274
4	Bogampatti	1165	813	352	985	731	254	470	278	223	1250
5	Edayapalayam	1150	748	402	977	676	301	200	178	556	1101
6	Kalangal	3112	1893	1219	2784	1806	978	243	639	1863	2478
7	Kallapalayam	1547	979	568	1522	961	561	362	454	662	1519
8	Kondampatty	1310	818	492	986	635	351	140	414	423	1157
9	Mettubavi	1372	891	481	1325	879	446	477	457	383	1113
10	Myleripalayam	2912	1666	1246	2581	1539	1042	568	584	1343	2078
11	Odderpalayam	3295	2281	1014	3045	2178	867	464	496	1957	4108
12	Pachapalayam	1627	981	646	1466	921	545	491	177	779	1306
13	Panappatti	1579	974	605	1566	969	597	631	604	320	1056
14	Pappampatti	1977	1341	636	1761	1262	499	143	383	1160	2166
15	Peedampalli	1869	1241	628	1465	1023	442	178	183	974	2027
16	Seerappalayam	2623	1845	778	2451	1760	691	149	450	1786	3258
17	Sellakkarichal	3200	2034	1166	2662	1768	894	403	1024	1097	3009
18	Solavampalayam	3367	2134	1233	3037	2014	1023	240	926	1827	3020
19	Vadasithur	2512	1671	841	2419	1631	788	548	717	1126	2568
20	Vadavalli	1894	1111	783	1858	1095	763	289	1113	301	1277

Source: www.censusindia.gov.in – Tamil Nadu Census of India – 2011

TABLE 3.36: EDUCATIONAL FACILITIES IN THE STUDY AREA

SI	Village Name	PPS		PS		MS		SS		SSS		DC		EC		MC		MI		PT		VTS		SSD	
		G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P
1	Appanaickenpatti	1	2	1	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	Arasampalayam	1	2	1	2	1	2	1	2	2	2	2	2	2	1	2	1	2	1	2	2	2	2	2	2
3	Arisippalayam	1	2	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2
4	Bogampatti	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
5	Edayapalayam	1	2	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
6	Kalangal	1	2	1	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
7	Kallapalayam	1	1	1	1	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
8	Kondampatty	1	2	1	1	1	1	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2
9	Mettubavi	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
10	Myleripalayam	1	2	1	2	1	2	2	2	2	2	2	2	2	1	2	2	2	2	2	1	2	2	2	2
11	Odderpalayam	1	2	1	1	1	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
12	Pachapalayam	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
13	Panappatti	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
14	Pappampatti	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
15	Peedampalli	1	2	1	2	1	1	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
16	Seerappalayam	1	1	1	1	1	1	2	2	2	2	2	1	2	1	2	2	2	2	2	1	2	2	2	2
17	Sellakkarichal	1	2	1	1	1	1	1	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
18	Solavampalayam	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
19	Vadasithur	1	2	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
20	Vadavalli	1	1	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Abbreviations: PPS-Pre Primary School; SSS-Senior Secondary School; DC-Degree School; PT-Polytechnic; PS-Primary School; G-Government; EC-Engineering College; VTS-Vocational School /ITI; MS-Middle School; P-Private; MC-Medical College; SSD-Special School For Disabled; SS-Secondary School; MI-Management College/Institute;

Note – 1 - Available within the village; 2 - Not available

TABLE 3.37: MEDICAL FACILITIES IN THE STUDY AREA

SI. No.	Village Name	CHC	PHC	PHSC	MCW	TBC	HA	HAM	D	VH	MHC	FWC	NGM-I/O
1	Appanaickenpatti	0	0	1	0	0	0	0	0	0	0	0	b
2	Arasampalayam	0	0	1	0	0	0	0	0	0	0	0	b
3	Arisippalayam	0	1	1	1	1	0	0	1	0	0	1	
4	Bogampatti	0	0	0	0	0	0	0	0	0	0	0	c
5	Edayalayam	0	0	0	0	0	0	0	0	0	0	0	c
6	Kalangal	0	0	1	0	0	0	0	0	0	0	0	c
7	Kallapalayam	0	0	1	0	0	0	0	0	0	0	0	c
8	Kondampatty	0	0	1	0	0	0	0	0	0	0	0	a
9	Mettubavi	0	0	0	0	0	0	0	0	0	0	0	b
10	Myleripalayam	0	1	1	1	1	0	0	1	0	0	1	
11	Odderpalayam	0	0	1	1	0	0	0	0	0	0	0	a
12	Pachapalayam	0	0	0	0	0	0	0	0	1	0	0	c
13	Panappatti	0	0	1	0	0	0	0	0	1	0	0	c
14	Pappampatti	0	0	1	0	0	0	0	0	1	0	0	c
15	Peedampalli	0	0	1	0	0	0	0	0	0	0	0	b
16	Seerappalayam	0	0	3	0	0	0	0	0	0	0	0	a
17	Sellakkarichal	0	0	1	0	0	0	0	0	3	0	0	b
18	Solavampalayam	0	0	3	0	0	0	0	0	0	0	0	b
19	Vadasithur	0	0	1	0	0	0	0	0	1	0	0	b
20	Vadavalli	0	0	1	0	0	0	0	0	0	0	0	b

Abbreviations: CHC-Community Health Centre; TBC-TB Clinic; VH- Vetrernity Hospital; PHC-Primary Health Centre; HA-Aallopathic Hospital; FWC-Family Welfare Centre; PHSC-Primary Health Sub Centre; HAM-Alternative Medicine Hospital; MH-Mobile Health Clinic; MCW-Maternity and Child Welfare Centre; D-Dispensary; NGM-I/O-Non Government Medical Facilities In & Out Patient

Note – 1 - Available within the village; 2 - Not available a-facility available at <5kms b-facility available at>10kms

Source: www.censusindia.gov.in - Tamilnadu Census of India – 2011

3.6.6 Recommendation and Suggestion

- The main activities in the area is agriculture, quarry operation and Crushing units there are 10 Numbers of quarries operated in the region and now only 1 quarry is operating at present which will expired lease period in 2024 January. Hence starting up of new mine in this region is necessary at current scenario
- 4 number of Crushers operating within 1km and the demand of Rough stone is high to the crushing units 100 Nos of peoples depending upon the Crushing units in the area and crushers are meeting scarcity due to supply demand in the region.
- Due to the project about 18 Nos of peoples will benefitted directly due to employment and more than 20 Nos of peoples and Crushers will benefitted through this project
- As part of CER activities proponent intends to spend Rs 5 Laksh for the improvement of School sanitation facilities, Greenbelt development and other needs.
- At the end of the life of the mine the mined out pit will act as temporary reservoir, the collected rain water in the mine pit may utilized for the nearby agriculture lands.

Apart from the following general activities will be conducted

- Awareness program to be conducted to make the population aware to get education and a better livelihood.
- Vocational training programme can be organized to make the people self - employed, particularly for women and unemployed youth.
- On the basis of qualification and skills local community may be preferred. Long term and short-term employments can be generated.
- While developing an Action Plan, it is very important to identify the population who falls under the marginalized and vulnerable groups. So that special attention can be given to these groups with special provisions while making action plans.

3.6.7 Summary & Conclusion

The socio-economic study of surveyed villages gives a clear picture of its population, average household size, literacy rate and sex ratio etc. It is also found that a part of population is suffering from lack of permanent job to run their day-to-day life. Their expectation is to earn some income for their sustainability on a long-term basis. The proposed project will aim to provide preferential employment to the local people there by improving the employment opportunity in the area and in turn the social standards will improve.

4. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.0 GENERAL

Environmental impacts both direct and indirect on various environmental attributes due to proposed mining activity will be created in the surrounding environment, during the operational and post-operational phases. The occurrence of mineral deposits, being site specific, their exploitation, often, does not allow for any choice except adoption of eco-friendly operation. The methods are required to be selected in such a manner, so as to maintain environmental equilibrium ensuring sustainable development.

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

Several scientific techniques and methodologies are available to predict impacts of physical environment. Mathematical models are the best tools to quantitatively describe the cause-and-effect relationships between sources of pollution and different components of environment. In cases where it is not possible to identify and validate a model for a particular situation, predictions have been arrived at based on logical reasoning / consultation / extrapolation.

The following parameters are of significance in the Environmental Impact Assessment and are being discussed in detail

- Land environment
- Soil environment
- Water Environment
- Air Environment
- Noise Environment
- Socio economic environment
- Biological Environment

Based on the baseline environmental status at the project site, the environmental factors that are likely to be affected (Impacts) are identified, quantified and assessed.

4.1 LAND ENVIRONMENT:

4.1.2 Anticipated Impact

- 0.84.8 Ha of the land will be under mining sine the Permanent or temporary change on land use and land cover will occur
- Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations due to dust, noise and it also causes traffic hazards.
- Due to degradation of land by pitting the aesthetic environment of the core zone may be affected.
- Earthworks during the rainy season increase the potential for soil erosion and sediment laden water entering the water ways.

If no due care is taken wash off from the exposed working area may choke the water course & can also causes the siltation of water course

4.1.2 Mitigation Measures

- The 0.84.8 Ha of the land will be converted into temporary reservoir which will full fill the water scarcity in the drought season and the nearby agriculture land will benefitted by the supply of water
- About 680 Nos of trees will be planted in the lease area and approach road will retain the eco system
- The mining activity will be gradual confined in blocks and excavation will be undertaken progressively along with other mitigative measures like phase wise development in the production
- Construction of garland drains all around the quarry pits and construction of silt trap at strategic location in lower elevations to prevent erosion due to surface runoff during rainfall and also to collect the storm water for various uses within the proposed area.
- Green belt development along the boundary within safety zone. The small quantity of water stored in the mined-out pit will be used for greenbelt.
- Thick plantation will be carried out on unutilized area, top benches of mined out pits, on safety barrier, etc.,
- Fencing will be constructed before starting the mining operation and it will be maintained in the conceptual stage Security will be posted round the clock, to prevent inherent entry of the public and cattle.

4.1.3 Soil Environment

4.1.4 Impact on Soil Environment

- Removal of vegetation cover
- Soil Erosion in the project site during rainy season due to quarry operation

4.1.5 Mitigation Measures

- Garland drains will be constructed all around the project boundary to prevent surface flows from entering the quarry. And will be discharged into vegetated natural drainage lines, or as distributed flow across an area stabilised against erosion.
- Sedimentation ponds - Run-off from working areas will be routed towards sedimentation ponds (Silt pond). These trap sediment and reduce suspended sediment loads before runoff is discharged from the quarry site. Sedimentation ponds should be designed based on runoff, retention times, and soil characteristics. There may be a need to provide a series of sedimentation ponds to achieve the desired outcome.
- Retain vegetation – Retain existing or re-plant the vegetation at the site wherever possible.
- Monitoring and maintenance – Weekly monitoring and daily maintenance of erosion control systems so that they perform as specified specially during rainy season.

4.1.6 Waste Dump Management

There is no waste anticipated in this Rough Stone and gravel quarrying operation. The entire quarried out materials will be utilized (100%).

4.2 WATER ENVIRONMENT

4.2.1 Anticipated Impact

- The major sources of water pollution normally associated due to mining and allied operations are:
 - Generation of waste water from vehicle washing.
 - Washouts from surface exposure or working areas
 - Domestic sewage
 - Disturbance to drainage course in the project area
 - Mine Pit water discharge
- Increase in sediment load during monsoon in downstream of lease area
- This being a mining project, there will be no process effluent. Waste from washing of machinery may result in discharge of Oil & grease, suspended solids.

- The sewage from soak pit may percolate to the ground water table and contaminate it.
- Surface drainage may be affected due to Mining
- Abstraction of water may lead to depletion of water table
- 1.4 KLD water will be utilized for the quarrying operation

4.2.2 Mitigation Measures

- Water for the quarrying operation such as sprinkling on haul roads, Greenbelt development will be sourced from the lower part of the mine pit which is specifically allotted to collect the rain water.
- Garland drain, settling tank will be constructed along the proposed mining lease area. The Garland drain will be connected to settling tank and sediments will be trapped in the settling traps and only clear water will be discharged out to the natural drainage
- Rainwater will be collected in sump in the mining pits and will be allowed to store and pumped out to surface setting tank of 15 m x 10m x 3m to remove suspended solids if any. This collected water will be judiciously used for dust suppression and such sites where dust likely to be generated and for developing green belt. The proponent will collect and judiciously utilize the rainwater as part of rainwater harvesting system.
- Periodic (every 6 month once) analysis of quarry pit water and ground water quality in nearby villages.
- Domestic sewage from site office & urinals/latrines provided in ML is discharged in septic tank followed by soak pits.
- Waste water discharge from mine will be treated in settling tanks before using for dust suppression and tree plantation purposes.
- De-silting will be carried out before and immediately after the monsoon season.

4.3 AIR ENVIRONMENT

4.3.1. Anticipated Impact

- During mining, at various stages activities such as excavation, drilling, blasting, and transportation of materials, particular matter (PM), gases such as Sulphur dioxide, oxides of Nitrogen from vehicular exhaust are the main air pollutants.
- Emissions of noxious gases due to incomplete detonation of explosive may sometimes pollute the air.
- The fugitive dust released from the mining operations may cause effect on the mine workers who are directly exposed to the fugitive dust.
- Simultaneously, the air-borne dust may travel to longer distances and settle in the villages located near the mine lease area.

4.3.1.1. Modelling of Incremental Concentration from all Proposed Projects

Wind erosion of the exposed areas and the air borne particulate matter generated by quarrying operation, and transportation are mainly PM₁₀ & PM_{2.5} and emissions of Sulphur dioxide (SO₂) & Oxides of Nitrogen (NO_x) due to excavation/loading equipment and vehicles plying on haul roads are the cause of air pollution in the project area.

Similarly, loading - unloading and transportation of Rough Stone, wind erosion of the exposed area and movement of light vehicles causes of pollution. This leads to an impact on the ambient air environment around the project area.

Anticipated incremental concentration due to this quarrying activity and net increase in emissions due to quarrying activities within 500 meters around the project area is predicted by Open Pit Source modelling using

AERMOD Software.

Prediction of impacts on air environment has been carried out taking into consideration cumulative production all the quarries falls in the Cluster. Air environment and net increase in emissions by Open pit source modelling in AERMOD Software AERMOD 9.61.

4.3.2.1 Emission Estimation

An emissions factor is a representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant.

The general equation for emissions estimation is:

$$E = A \times EF \times (1-ER/100)$$

Where:

E = emissions;

A = activity rate;

EF = emission factor, and

ER =overall emission reduction efficiency, %

The proposed mining activity includes various activities like ground preparation, excavation, handling and transport of Rough Stone. These activities have been analysed systematically basing on USEPA-Emission Estimation Technique Manual, for Mining AP-42, to arrive at possible emissions to the atmosphere and estimated emissions are given in Table 4-2.

4.3.2 Frame work of Computation & Model details

Suspended Particulate Matter (SPM) is the major pollutant occurred during quarrying activities. The prediction included the impact of Excavation, Drilling, Blasting (Occasionally), loading and movement of vehicles during transportation and meteorological parameters such as wind speed, wind direction, temperature, rainfall, humidity and Cloud cover.

Impact was predicted over the distance of 10 km around the source to assess the impact at each receptor separately at the various locations and maximum incremental GLC value at the project site. Maximum impact of PM₁₀ was observed close to the source due to low to moderate wind speeds. Incremental value of PM₁₀ was superimposed on the base line data monitored at the proposed site to predict total GLC of PM₁₀ due to combined impacts

TABLE 4.1: ESTIMATED EMISSION RATE

PM₁₀			
Activity	Source type	Value	Unit
Drilling	Point Source	0.065524981	g/s
Blasting	Point Source	0.000292179	g/s
Mineral Loading	Point Source	0.039143795	g/s
Haul Road	Line Source	0.002486576	g/s/m
Overall Mine	Area Source	0.040721471	g/s
SO₂			
Activity	Source type	Value	Unit
Overall Mine	Area Source	0.00028146	g/s
NO_x			
Overall Mine	Area Source	0.000007599	g/s

FIGURE 4.1: AERMOD TERRAIN MAP

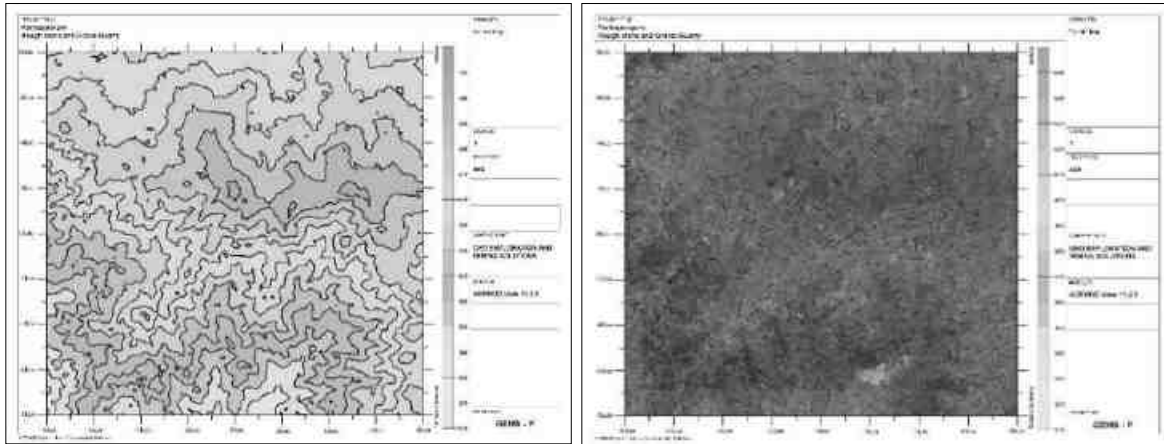


FIGURE 4.2: PREDICTED INCREMENTAL CONCENTRATION OF PM₁₀

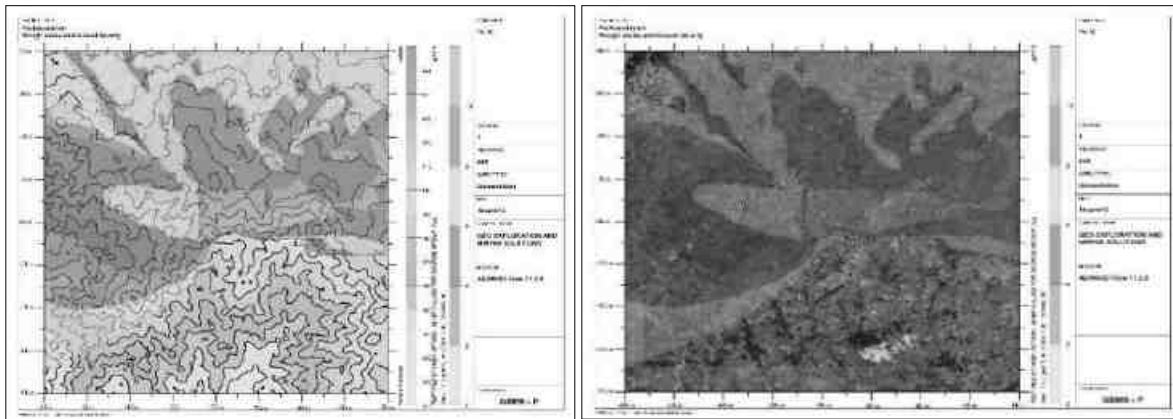


FIGURE 4.3: PREDICTED INCREMENTAL CONCENTRATION OF PM₂₅

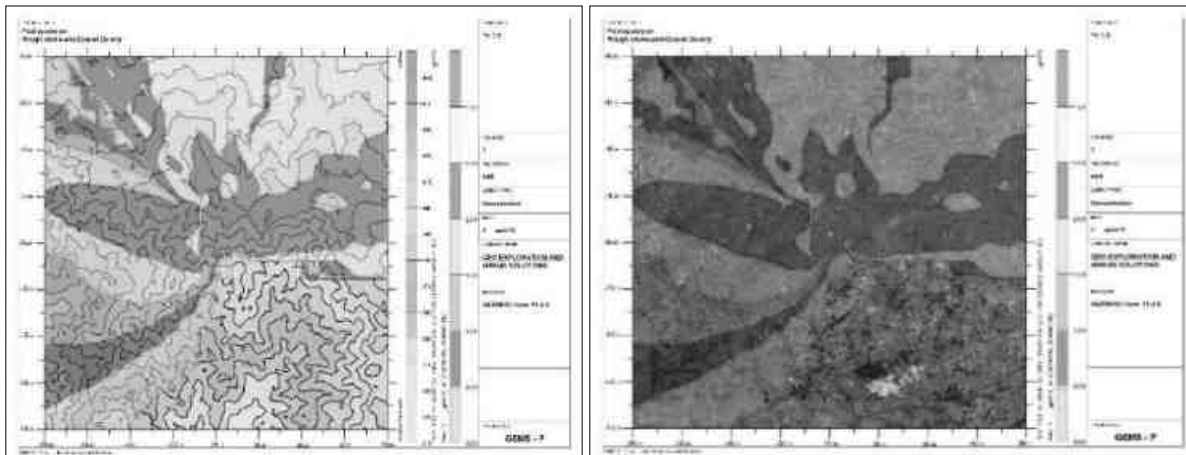


FIGURE 4.4: PREDICTED INCREMENTAL CONCENTRATION OF NO_x

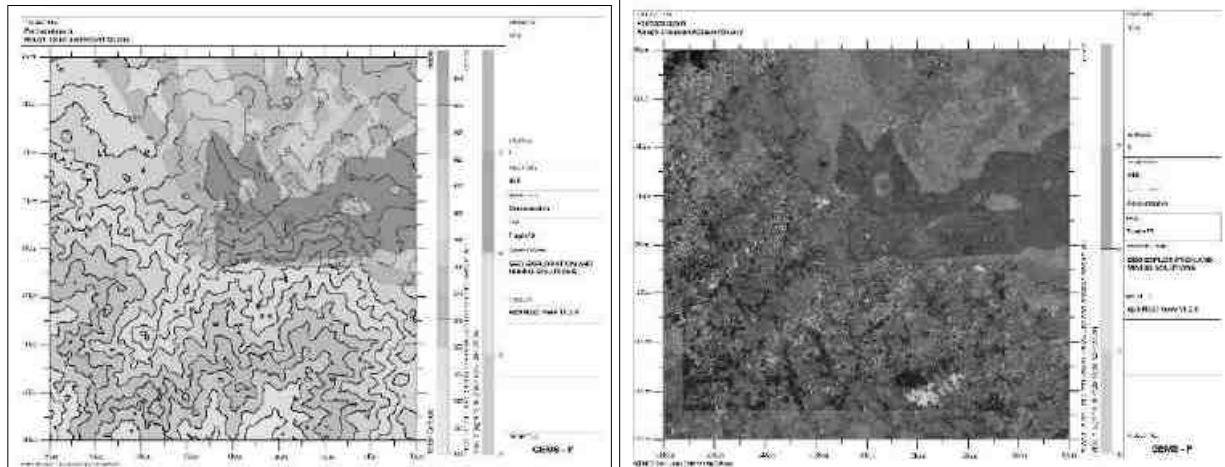


FIGURE 4.5: PREDICTED INCREMENTAL CONCENTRATION OF SO₂

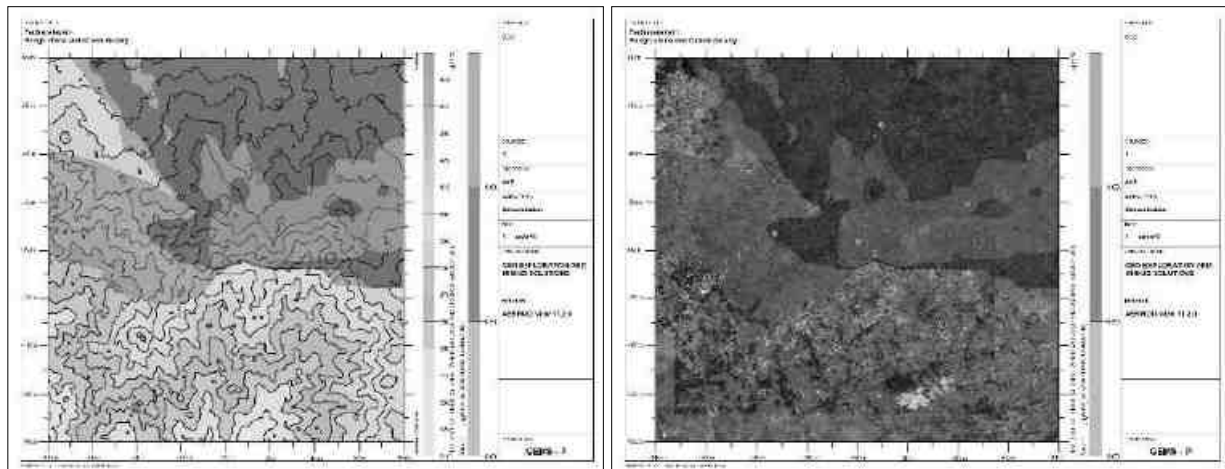
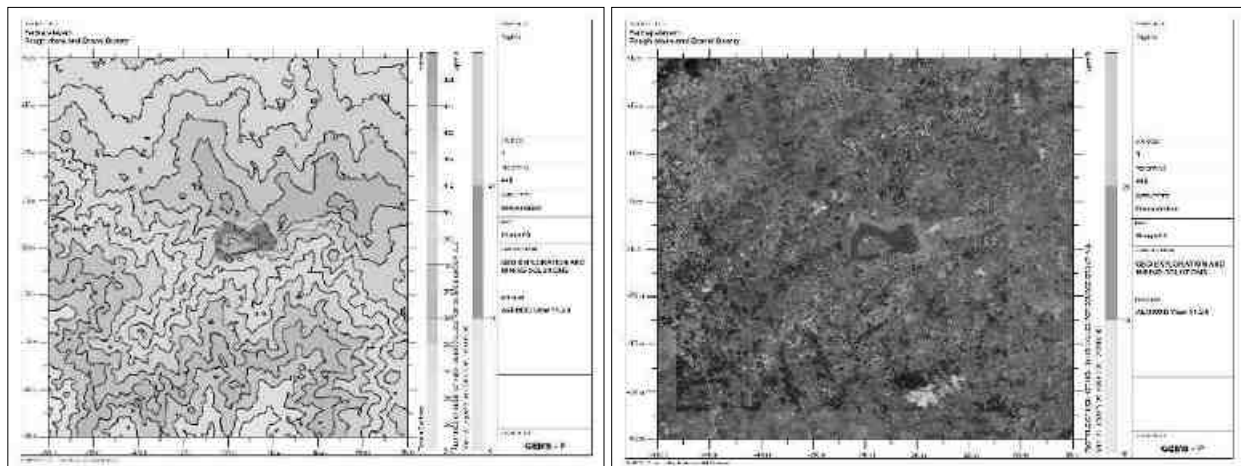


FIGURE 4.6: PREDICTED INCREMENTAL CONCENTRATION OF FUGITIVE DUST



4.3.2.1 Model Results

The post project Resultant Concentrations of PM₁₀, PM_{2.5}, SO₂ & NO_x (GLC) is given in Table below:

TABLE 4.2: INCREMENTAL & RESULTANT GLC OF PM₁₀

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline PM ₁₀ (µg/m ³)	Incremental value of PM ₁₀ due to mining (µg/m ³)	Total PM ₁₀ (µg/m ³)
AAQ1	10°54'25.78"N 77° 4'8.34"E	51	1	45.8	10.79	56.5
AAQ2	10°54'11.51"N 77° 4'29.65"E	703	-442	43.3	3.00	46.3
AAQ3	10°54'37.41"N 77° 2'20.12"E	-3257	358	43.1	6.81	49.9
AAQ4	10°55'16.54"N 77° 6'30.52"E	4398	1572	46.1	9.79	55.9
AAQ5	10°52'18.84"N 77° 3'39.38"E	-835	-3924	42.0	0	42.0
AAQ6	10°52'35.83"N 77° 5'56.31"E	3352	-3396	42.0	0	42.0
AAQ7	10°57'3.71"N 77° 4'38.09"E	963	4885	44.9	8.49	53.4
AAQ8	10°53'37.21"N 77° 1'10.69"E	-5380	-1502	42.9	4.53	47.4

TABLE 4.3: INCREMENTAL & RESULTANT GLC OF PM_{2.5}

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline PM _{2.5} (µg/m ³)	Incremental value of PM _{2.5} due to mining (µg/m ³)	Total PM _{2.5} (µg/m ³)
AAQ1	10°54'25.78"N 77° 4'8.34"E	51	1	23.7	4.79	28.5
AAQ2	10°54'11.51"N 77° 4'29.65"E	703	-442	21.6	1.28	22.8
AAQ3	10°54'37.41"N 77° 2'20.12"E	-3257	358	22.2	2.63	24.8
AAQ4	10°55'16.54"N 77° 6'30.52"E	4398	1572	21.8	4.07	25.9
AAQ5	10°52'18.84"N 77° 3'39.38"E	-835	-3924	42.0	0.14	42.1
AAQ6	10°52'35.83"N 77° 5'56.31"E	3352	-3396	43.4	0	43.4
AAQ7	10°57'3.71"N 77° 4'38.09"E	963	4885	23.9	3.85	27.8
AAQ8	10°53'37.21"N 77° 1'10.69"E	-5380	-1502	22.4	1.72	24.1

TABLE 4.4: INCREMENTAL & RESULTANT GLC OF SO₂

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline SO ₂ (µg/m ³)	Incremental value due to mining (µg/m ³)	Total SO ₂ (µg/m ³)
AAQ1	10°54'25.78"N 77° 4'8.34"E	51	1	8.1	1.49	9.6
AAQ2	10°54'11.51"N 77° 4'29.65"E	703	-442	8.6	0.11	8.7
AAQ3	10°54'37.41"N 77° 2'20.12"E	-3257	358	6.4	0.57	7.0
AAQ4	10°55'16.54"N 77° 6'30.52"E	4398	1572	8.0	1.06	9.1
AAQ5	10°52'18.84"N 77° 3'39.38"E	-835	-3924	8.1	0	8.1
AAQ6	10°52'35.83"N 77° 5'56.31"E	3352	-3396	6.9	0	6.9
AAQ7	10°57'3.71"N 77° 4'38.09"E	963	4885	7.6	0.81	8.4
AAQ8	10°53'37.21"N 77° 1'10.69"E	-5380	-1502	6.9	0.2	7.1

TABLE 4.5: INCREMENTAL & RESULTANT GLC OF NOX

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline NOx ($\mu\text{g}/\text{m}^3$)	Incremental value due to mining ($\mu\text{g}/\text{m}^3$)	Total NOx ($\mu\text{g}/\text{m}^3$)
AAQ1	10°54'25.78"N 77° 4'8.34"E	51	1	24	7.51	31.5
AAQ2	10°54'11.51"N 77° 4'29.65"E	703	-442	24.6	0	24.6
AAQ3	10°54'37.41"N 77° 2'20.12"E	-3257	358	22	0	22.0
AAQ4	10°55'16.54"N 77° 6'30.52"E	4398	1572	23	6	29.0
AAQ5	10°52'18.84"N 77° 3'39.38"E	-835	-3924	23.6	0	23.6
AAQ6	10°52'35.83"N 77° 5'56.31"E	3352	-3396	23.5	0	23.5
AAQ7	10°57'3.71"N 77° 4'38.09"E	963	4885	21.4	3.7	25.1
AAQ8	10°53'37.21"N 77° 1'10.69"E	-5380	-1502	23.7	0	23.7

TABLE 4.6: INCREMENTAL & RESULTANT GLC OF FUGITIVE DUST

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline Fugitive ($\mu\text{g}/\text{m}^3$)	Incremental value due to mining ($\mu\text{g}/\text{m}^3$)	Total Fugitive Dust ($\mu\text{g}/\text{m}^3$)
AAQ1	10°54'25.78"N 77° 4'8.34"E	51	1	64.05	21	85.0
AAQ2	10°54'11.51"N 77° 4'29.65"E	703	-442	64.35	0	64.3
AAQ3	10°54'37.41"N 77° 2'20.12"E	-3257	358	63.77	0	63.8
AAQ4	10°55'16.54"N 77° 6'30.52"E	4398	1572	63.42	0	63.4
AAQ5	10°52'18.84"N 77° 3'39.38"E	-835	-3924	67.35	0	67.4
AAQ6	10°52'35.83"N 77° 5'56.31"E	3352	-3396	66.05	0	66.0
AAQ7	10°57'3.71"N 77° 4'38.09"E	963	4885	68.34	0	68.3
AAQ8	10°53'37.21"N 77° 1'10.69"E	-5380	-1502	67.55	0	67.5

From the resultant of cumulative concentration i.e., Background + Incremental Concentration of pollutant in all the receptor locations without effective mitigation measures are still within the prescribed NAAQ limits of 100, 80 & 80 $\mu\text{g}/\text{m}^3$ for PM10, SO₂ & NO_X respectively. By adopting suitable mitigation measures, the pollutant levels in the atmosphere can be further being controlled.

4.3.4. Mitigation Measures

Drilling – To control dust at source, wet drilling will be practiced. Where there is a scarcity of water, suitably designed dust extractor will be provided for dry drilling along with dust hood at the mouth of the drill-hole collar.

Advantages of Wet Drilling: -

- In this system dust gets suppressed close to its formation. Dust suppression become very effective and the work environment will be improved from the point of occupational comfort and health.
- Due to dust free atmosphere, the life of engine, compressor etc., will be increased.
- The life of drill bit will be increased.
- The rate of penetration of drill will be increased.
- Due to the dust free atmosphere visibility will be improved resulting in safer working conditions.

Blasting –

- Establish time of blasting to suit the local conditions and water sprinkling on blasting face
- Avoid blasting i.e., when temperature inversion is likely to occur and strong wind blows towards residential areas

- Controlled blasting includes Adoption of suitable explosive charge and short delay detonators, adequate stemming of holes at collar zone and restricting blasting to a particular time of the day i.e. at the time lunch hours, controlled charge per hole as well as charge per round of hole
- Before loading of material water will be sprayed on blasted material
- Dust mask will be provided to the workers and their use will be strictly monitored

Haul Road & Transportation –

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

Green Belt –

- 680 Nos of trees will be planted through this project in the lease area and village roads (Approach road) to prevent the generation of dust due to movement of dumpers/trucks
- Green belt of adequate width will be developed around the project areas

Occupational Health –

- Dust mask will be provided to the workers and their use will be strictly monitored
- Annual medical checkups, trainings and campaigns will be arranged to ensure awareness about importance of wearing dust masks among all mine workers & tipper drivers
- Ambient Air Quality Monitoring will be conducted six months once to assess effectiveness of mitigation measures proposed

4.4 NOISE ENVIRONMENT

Noise pollution is mainly due to operation like drilling & blasting and plying of trucks & HEMM. These activities will not cause any problem to the inhabitants of this area because there is no human settlement within 300m radius from the project site. Noise modelling has been carried out considering blasting and compressor operation (drilling) and transportation activities.

Predictions have been carried out to compute the noise level at various distances around the working pit due to these major noise-generating sources. Noise modelling has been carried out to assess the impact on surrounding ambient noise levels.

Basic phenomenon of the model is the geometric attenuation of sound. Noise at a point generates spherical waves, which are propagated outwards from the source through the air at a speed of 1,100 ft/sec, with the first wave making an ever-increasing sphere with time. As the wave spreads the intensity of noise diminishes as the fixed amount of energy is spread over an increasing surface area of the sphere. The assumption of the model is based on point source relationship i.e., for every doubling of the distance the noise levels are decreased by 6 dB (A).

For hemispherical sound wave propagation through homogeneous loss free medium, one can estimate noise levels at various locations at different sources using model based on first principle.

$$Lp_2 = Lp_1 - 20 \log (r_2/r_1) - Ae_{1,2}$$

Where:

Lp_1 & Lp_2 are sound levels at points located at distances r_1 & r_2 from the source.

$Ae_{1,2}$ is the excess attenuation due to environmental conditions. Combined effect of all sources can be determined at various locations by logarithmic addition.

$$Lp_{total} = 10 \log \{10^{(Lp1/10)} + 10^{(Lp2/10)} + 10^{(Lp3/10)} + \dots\}$$

4.4.1 Anticipated Impact

Attenuation due to Green Belt has been taken to be 4.9 dB (A). The inputs required for the model are:

- Source data
- Receptor data
- Attenuation factor

Source data has been computed taking into account of all the machinery and activities used in the mining process. Same has been listed in Table 4-8.

TABLE 4.7: ACTIVITY AND NOISE LEVEL PRODUCED BY MACHINERY

Sl.No.	Machinery / Activity	Impact on Environment?	Noise Produced in dB(A) at 50 ft from source*
1	Blasting	Yes	94
2	Jack Hammer	Yes	88
3	Compressor	No	81
4	Excavator	No	85
5	Tipper	No	84
Total Noise Produced			95.8

Source: U.S. Department of Transportation (Federal Highway Administration) – Construction Noise Handbook

The total noise to be produced by mining machineries 95.8 dB (A). Generally, most mining operations produce noise between 100-109 dB (A). We have considered equipment and operation noise levels (max) to be approx. 109 dB (A) for noise prediction modelling.

TABLE 4.8: PREDICTED NOISE INCREMENTAL VALUES

Location ID	N1	N2	N3	N4	N5	N6	N7	N8
Maximum Monitored Value (Day) dB(A)	48.2	48.2	48.9	49.3	45.4	43.2	43.99	43.99
Incremental Value dB(A)	47.30	42.60	30.56	27.04	28.06	27.04	26.48	25.29
Total Predicted Noise level dB(A)	46.30	49.26	48.96	49.33	45.48	43.30	44.07	44.05

The incremental noise level is found within the range of 47.3dB (A) in Core Zone and 25.29 – 42.6 dB (A) in Buffer zone. The noise level at different receptors in buffer zone is lower due to the distance involved and other topographical features adding to the noise attenuation. The resultant Noise level due to monitored values and calculated values at the receptors are based on the mathematical formula considering attenuation due to Green Belt as 4.9 dB (A) the barrier effect. From the above table, it can be seen that the ambient noise levels at all the locations are within permissible limits of Industrial area (core zone) & Residential area (buffer zone) as per THE NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000 (The Principal Rules were published in the Gazette of India, vide S.O. 123(E), dated 14.2.2000 and subsequently amended vide S.O. 1046(E), dated 22.11.2000, S.O. 1088(E), dated 11.10.2002, S.O. 1569 (E), dated 19.09.2006 and S.O. 50 (E) dated 11.01.2010 under the Environment (Protection) Act, 1986.).

4.4.2 Mitigation Measures

The following noise mitigation measures are proposed for control of Noise

- Usage of sharp drill bits while drilling which will help in reducing noise;
- Secondary blasting will be totally avoided and hydraulic rock breaker will be used for breaking boulders;
- Controlled blasting with proper spacing, burden, stemming and optimum charge/delay will be maintained;
- Proper maintenance, oiling and greasing of machines will be done every week to reduce generation of noise;
- Provision of sound insulated chambers for the workers working on machines (HEMM) producing higher levels of noise;
- Silencers / mufflers will be installed in all machineries;
- Green Belt/Plantation will be developed around the project area and along the haul roads. The plantation minimizes propagation of noise;
- Personal Protective Equipment (PPE) like ear muffs/ear plugs will be provided to the operators of HEMM and persons working near HEMM and their use will be ensured through training and awareness.
- Regular medical check-up and proper training to personnel to create awareness about adverse noise level effects

4.4.3 Ground Vibrations

Ground vibrations due to the proposed mining activities are anticipated due to operation of Mining Machines like Excavators, drilling and blasting, transportation vehicles, etc., However, the major source of ground vibration from the quarry is blasting. The major impact of the ground vibrations is observed on the domestic houses located in the villages nearby the mine lease area. The kuchha houses are more prone to cracks and damage due to the vibrations induced by blasting whereas RCC framed structures can withstand more ground vibrations. Apart from this, the ground vibrations may develop a fear factor in the nearby settlements.

Another impact due to blasting activities is fly rocks. These may fall on the houses or agricultural fields nearby the mining lease area and may cause injury to persons or damage to the structures. Nearest habitation from the proposed project areas is listed in below table. The ground vibrations due to the blasting in the quarry are calculated using the empirical equation.

The empirical equation for assessment of peak particle velocity (PPV) is:

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

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

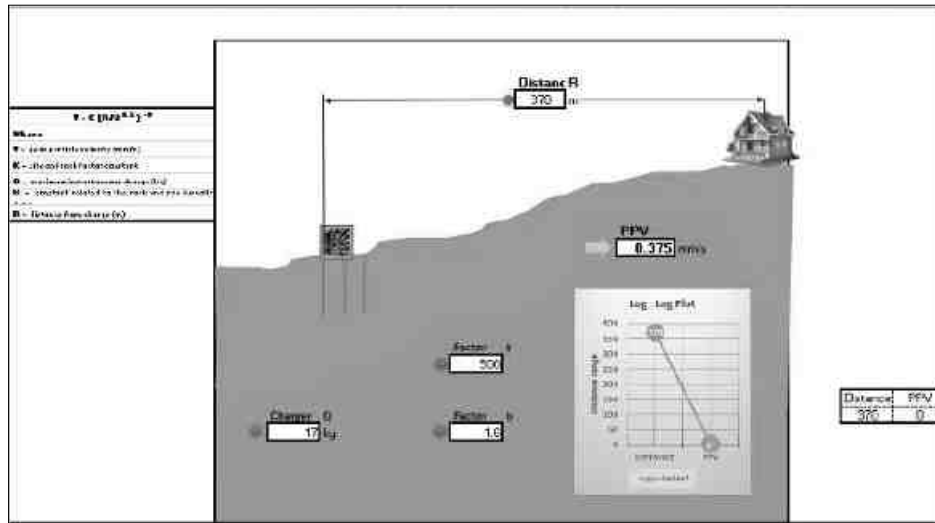
Q = maximum instantaneous charge (kg)

B = constant related to the rock and site (usually 1.6)

R = distance from charge (m)

TABLE 4.9: PREDICTED PPV VALUES DUE TO BLASTING

Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in m/ms
P1	31	370-NW	0.375

FIGURE 4.6: GROUND VIBRATION PREDICTION

From the above graph, the charge per blast of 31 kg is well below the Peak Particle Velocity of 8 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997. But the all the project proponents ensure that the charge per blast shall be less than 85 kg and carry out blasting twice or thrice a day based on the onsite conditions under the supervision of competent person employed. However, as per statutory requirement control measures will be adopted to avoid the impacts due to ground vibrations and fly rocks due to blasting.

4.4.3.1 Mitigation Measures

- It is proposed to carry out blasting operation 20kg per round so that the vibration will be minimal
- The mining operation will be carried out without deep hole drilling, 25mm small dia cartridge will be utilized for the blasting
- The blasting operations in the project site without deep hole drilling and blasting using delay detonators, which reduces the ground vibrations;
- Proper quantity of explosive, suitable stemming materials and appropriate delay system will be adopted to avoid overcharging and for safe blasting;
- Adequate safe distance from blasting will be maintained as per DGMS guidelines;
- Blasting shelter will be provided as per DGMS guidelines;
- Blasting operations will be carried out only during day time;
- The charge per delay will be minimized and preferably a greater number of delays will be used per blasts;
- During blasting, other activities in the immediate vicinity will be temporarily stopped;
- Drilling parameters like depth, diameter and spacing will be properly designed to give proper blast;
- A fully trained explosives blast man (Mining Mate, Mines Foreman, 2nd Class Mines Manager/ 1st Class Mines Manager) will be appointed.

- A set of shot firing rules will be drawn up and blasting shall commence outlining the detailed operating procedures that will be followed to ensure that shot firing operations on site take place without endangering the workforce or public.
- The detonators will be connected in a predetermined sequence to ensure that only one charge is detonated at any one time and a NONEL or similar type initiation system will be used.
- The detonation delay sequence shall be designed so as to ensure that firing of the holes is in the direction of free faces so as to minimise vibration effects.
- Appropriate blasting techniques shall be adopted such that the predicted peak particle velocity shall not exceed 8 mm/s.
- Vibration monitoring will be carried out every 6 months to check the efficacy of blasting practices

4.5 ECOLOGY AND BIODIVERSITY

Mining activities generally result in deforestation, land degradation, and water, air, and noise pollution which directly or indirectly affect the faunal and floral status of the mine area. However, the occurrence and magnitude of these impacts are entirely dependent upon the project location, mode of operation, and technology involved. Existing roads will be used; new roads will not be constructed to reduce the impact on flora. Wildlife is not commonly found in the lease area and its immediate environments because of the lack of vegetal cover and surface water.

4.5.1. Anticipated Impact on Flora

- None of the plants will be cut during the operational phase of the mine.
- There shall be negligible air emissions or effluents from the project site. During the loading of the truck, dust generation will be likely. This shall be a temporary effect and not anticipated to affect the surrounding vegetation significantly.
- Most of the land in the buffer area is undulating terrain with croplands, grass patches, and small shrubs. Hence, there will be no effect on the flora of the region.

4.5.1.1. Mitigation Measures

The main objective of the green belt is to provide a barrier between the source of pollution and the surrounding areas. Although the project will not lead to any tree cutting, it is proposed to improve the greenery of the locality through plantation services. To avoid dust emissions, the mined materials will be covered with tarpaulin during transportation.

- 680 Nos of trees is proposed to plant in the project site and village roads
- Plants that grow fast will be preferred.
- Preference for high canopy covers plants with local varieties.
- Perennial and evergreen plants will be preferred.
- The development of the Green Belt is an important aspect for any plant because:
 - a. It improves the ambient air quality by controlling Suspended Particulate Matter (SPM) in the air.
 - b. It helps in noise abatement for the surrounding area.
 - c. It helps in the settlement of new birds and insects within itself.
 - d. It maintains the ecological balance.
 - e. It increases the aesthetic value of the site.

TABLE No 4.10. LIST OF PLANT SPECIES PROPOSED FOR GREENBELT DEVELOPMENT

S. No	Scientific name	Tamil Name
1	<i>Aegle marmelos</i>	Vilva Maram

2	<i>Albizia lebbbeck</i>	Vaagai Maram
3	<i>Cassia fistula</i>	Konrai tree
4	<i>Lannea coromandelica</i>	Othiyam
5	<i>Limonia acidissima</i>	Vila maram
6	<i>Syzygium cumini</i>	Naval maram
7	<i>Toona ciliata</i>	Santhana Vembu
8	<i>Ficus hispida</i>	Aththi maram
9	<i>Borassus flabellifer</i>	Panai-maram
Species suitable for abatement of noise and dust pollution		
1	<i>Azadirachta indica</i>	Vembhu maram
2	<i>Ficus religiosa</i>	Arasan maram
3	<i>Ficus hispida</i>	Aththi maram
4	<i>Bombax ceiba</i>	Mul Elavu
5	<i>Syzygium cumini</i>	Naval maram
6	<i>Tamarindus indica</i>	Puliyamaram
7	<i>Mangifera indica</i>	Manga maram
8	<i>Harwickia binata</i>	Anjan maram

4.5.2. Anticipated Impact on Fauna

- No rare, endemic & or endangered species are reported in the buffer zone. However, during the course of mining, the management will practice the scientific method of mining with a proper Environmental Management Plan including pollution control measures especially for air and noise, to avoid any adverse impact on the surrounding wildlife.
- Fencing around the mine lease area to restrict the entry of stray animals.
- Green belt development will be carried out which will help in minimizing adverse impact on the flora found in the area.

4.5.2.1. Mitigation Measures

- A suitable plan for the conservation of Schedule-I Species have been prepared and the necessary fund for implementation for the same will be made.
- All the preventive measures will be taken for the growth & development of fauna.
- Creating and developing awareness for nature and wildlife in the adjoining villages.
- The workers shall be trained to not harm any wildlife, should it come near the project site. No work shall be carried out after 6.00 p.m.
- Topsoil has a large number of seeds of native plant species in the mining area.
- Checks and controls the movement of vehicles in and out of the mine.
- Undertaking mitigative measures for a conducive environment for the flora and fauna in consultation with the Forest Department.
- A dust suppression system will be installed within the mine and periphery of the mine.

4.5.3. Impact on Aquatic Biodiversity

Mining activities will not disturb the aquatic ecology as there is no effluent discharge proposed from the Rough Stone and Gravel quarry. There is no natural perennial surface water body within the mine lease area, like wetlands, rivers streams, lakes, and farmer sites. There are few water bodies located in the study area. There are a few Odai and Canals located in the study area. There is no impact on fish habitats

and the food WEB/ food chain in the water body and Reservoir. Kindly refer the clause no 3.5.12. Aquatic biodiversity is observed in the study area.

4.5.4. Impacts on Bird Fauna

The project does not involve any tree felling or removal of vegetation. Therefore, there may not be loss of nesting and roosting habitat of avian fauna.

4.5.5. Impacts on wildlife

There is no National Park, Wildlife Sanctuary, Biosphere Reserve, Wildlife corridors, and Tiger/Elephant Reserve found within 10 km radius of the project site.

4.5.5. Impact Assessment on Biological Environment

A detail of impact and assessments was mentioned in Table No 4.14

TABLE 4.11: ECOLOGICAL IMPACT ASSESSMENTS.

S.No	Attributes	Assessment
1	Impact of mining activity on agricultural land nearby the proposed project site.	Agricultural land is located away from the proposed project site. There are no impacts on the agricultural land & Horticulture. Kindly refer to the conclusion.
	Activities of the project affect the breeding/nesting sites of birds and animals	No breeding and nesting site was identified in the mining lease site. The fauna sighted mostly migrated from the buffer area.
2	Located near an area populated by rare or endangered species	No Endangered, Critically Endangered, or vulnerable species were sighted in the core mining lease area.
3	Proximity to national park/wildlife sanctuary/reserve forest /mangroves/ coastline/estuary/sea	There is no National Park/ Wildlife Sanctuary/ Reserve Forest/ Mangroves and Eco-Sensitive zone/ Critically polluted area/ HACA/CRZ located within 10 km radius of the area.
4	The proposed project restricts access to waterholes for wildlife	'No'
5	Proposed mining project impact surface water quality that also provides water to wildlife	'No' 'scheduled or threatened wildlife animals are sighted regularly core in the core area.
6	Proposed mining project increase siltation that would affect nearby biodiversity areas.	Surface runoff management such as drains is constructed properly so there will be no siltation effect in the nearby mining area.
7	Risk of fall/slip or cause death to wild animals due to project activities.	'No'
8	The project release effluents into a water body that also supplies water to a wildlife.	No water body near to core zone so the chances of water becoming polluted is low.
9	Mining projects affect the forest-based livelihood/ any specific forest product on which local livelihood depended.	'No'
10	The project likely to affect migration routes.	'No' 'migration route was observed during the monitoring period.
11	The project is likely to affect the flora of an area, which have medicinal value	'No'
12	Forestland is to be diverted, has carbon high sequestration.	No. There was no forest land diverted.

13	The project is likely to affect wetlands, Fish breeding grounds, and marine ecology.	No. Wetland was not present in the near core Mining lease area. No breeding and nesting ground is present in the core mining area.
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(*Source: EIA Guidance Manual-Mining and Minerals, 2010)

TABLE 4.12: RECOMMENDED SPECIES FOR GREENBELT DEVELOPMENT PLAN

Sl.No	Name of the plant (Botanical)	Family Name	Common Name	Habit
1	<i>Azadirachta indica</i>	Meliaceae	Neem, Vembu	Tree
2	<i>Albiziafalcataria</i>	Fabaceae	Tamarind, Puliymaram	Tree
3	<i>Polyalthialongifolia</i>	Annonaceae	Kattumaram	Tree
4	<i>Borassus Flabellifer</i>	Arecaceae	Palmyra Palm	Tree

The 7.5m Safety distance along the boundary has been identified to be utilized for subsequent Afforestation. However, the afforestation should always be carried out in a systematic and scientific manner. Regional trees like Neem, Pongamia, Pinnata will be planted along the Lease boundary and avenue plantation will be carried out in the project site. The rate of survival expected to be 80% in this area. Greenbelt development Plan is given in

TABLE 4.13: GREENBELT DEVELOPMENT PLAN

Year	No. of tress proposed to be planted	Considering survival rate of 80% additionally 20% of plantation is proposed	Area to be covered in m ²	Name of the species
I	570	680	The safety zone along the boundary barrier has been identified to be utilized for Greenbelt development.	Neem, Pongamia Pinnata etc.,

4.6 SOCIO ECONOMIC

4.6.1 Anticipated Impact

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

4.6.2 Mitigation Measures

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

4.7 OCCUPATIONAL HEALTH AND SAFETY

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

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

4.7.1 Respiratory Hazards

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

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

4.7.2 Noise

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

- No employee will be exposed to a noise level greater than 85 dB(A) for a duration of more than 8 hours per day without hearing protection
- The use of hearing protection will be enforced actively when the equivalent sound level over 8 hours reaches 85 dB(A), the peak sound levels reach 140 dB(C), or the average maximum sound level reaches 110 dB(A)
- Ear muffs provided will be capable of reducing sound levels at the ear to at least 85 dB(A)
- Periodic medical hearing checks will be performed on workers exposed to high noise levels

4.7.3 Physical Hazards

The following measures are proposed for control of physical hazards

- Specific personnel training on work-site safety management will be taken up;
- Work site assessment will be done by rock scaling of each surface exposed to workers to prevent accidental rock falling and / or landslide, especially after blasting activities;
- Natural barriers, temporary railing, or specific danger signals will be provided along rock benches or other pit areas where work is performed at heights more than 2m from ground level;
- Maintenance of yards, roads and footpaths, providing sufficient water drainage and preventing slippery surfaces with an all-weather surface, such as coarse gravel will be taken up

4.7.4 Occupational Health Survey

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

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

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

4.8 MINE WASTE MANAGEMENT

No waste is anticipated, the entire mined out material will be sold to needy crushers and customers.

4.9 MINE CLOSURE

The ultimate depth of the mine is 41m bgl and the life of the mine is 10 years, after completion of mining operation the following action will be taken in the project site as a part of Mine closure plan

- The total Mined out land would be around 0.84.8 Ha this land will be converted into temporary water reservoir which will facilitate to collect the rain water
- The stagnant water will be supplied to the nearby agriculture land during drought seasons
- Fencing will be re constructed around the pit after closure, the warning/ danger display board will be placed on all the sides of the project site
- The un utilized area and haul roads will be converted as plantation area, fruit bearing trees will be planted to retain the eco system of the area
- Final Mine closure plan will be prepared and submitted to the concerned authority

Mine closure plan is the most important environmental requirement in mining project. The mine closure plan should cover technical, environmental, social, legal and financial aspects dealing with progressive and post closure activities. The closure operation is a continuous series of activities starting from the decommissioning of the project.

As progressive mine closure is a continuous series of activities, it is obvious that the proposals of scientific mining have included most of the activities to be included in the closure plan. While formulating the closure objectives for the site, it is important to consider the existing or the pre-mining land use of the site; and how the operation will affect this activity.

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

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

4.9.1 Mine Closure Criteria

The criteria involved in mine closure are discussed below:

4.9.1.1 Physical Stability

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

4.9.1.2 Chemical Stability

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

pollutant concentrations exceeding the statutory limits for the water, soil and air qualities in the area around the closed mine.

4.9.1.3 Biological Stability

The stability of the surrounding environment is primarily dependent upon the physical and chemical characteristics of the site, whereas the biological stability of the mine site itself is closely related to rehabilitation and final land use. Nevertheless, biological stability can significantly influence physical or chemical stability by stabilizing soil cover, prevention of erosion/wash off, leaching, etc.,

A vegetation cover over the disturbed site is usually one of the main objectives of the rehabilitation programme, as vegetation cover is the best long-term method of stabilizing the site. When the major earthwork components of the rehabilitation programme have been completed, the process of establishing a stable vegetation community begins. For re-vegetation, management of soil nutrient levels is an important consideration. Additions of nutrients are useful under three situations.

- Where the nutrient level of spread topsoil is lower than material in-situ e.g. for development of social forestry
- Where it is intended to grow plants with a higher nutrient requirement than those occurring naturally e.g. planning for agriculture
- Where it is desirable to get a quick growth response from the native flora during those times when moisture is not a limiting factor e.g. development of green barriers

The Mine closure plan should be as per the approved mine plan. The mine closure is a part of approved mine plan and activities of closure shall be carried out as per the process described in mine closure plan.

5. ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)

5.0 INTRODUCTION

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

5.1 FACTORS BEHIND THE SELECTION OF PROJECT SITE

The surrounding areas already undergone quarrying operation, there are 4-5 Crushers within the radius of 1km. Most of the quarries in the regions are abandoned and lease expired quarries. Hence this quarry will feed the Rough stone material to the crushing units.

The Rough Stone and Gravel Quarry Project for excavation of Rough Stone, which is site specific. The proposed mining lease areas have following advantages: -

- The mineral deposit occurs in a non-forest area.
- There is no habitation within the project area; hence no R & R issues exist.
- There is no river, stream, nallah and water bodies in the applied mine lease areas.
- Availability of skilled, semi-skilled and unskilled workers in this region.
- All the basic amenities such as medical, firefighting, education, transportation, communication and infrastructural facilities are well connected and accessible.
- The mining operations will not intersect the ground water level. Hence, no impact on ground water environment.
- Study area falls in seismic zone – II, there is no major history of landslides, earthquake, subsidence etc., recorded in the past history.

5.2 ANALYSIS OF ALTERNATIVE SITE

No alternatives are suggested as all the mine sites are mineral specific

5.3 FACTORS BEHIND SELECTION OF PROPOSED TECHNOLOGY

The existing quarries in the area operated by Opencast Mechanised Mining operation with drilling and blasting method will be used to extract Rough Stone in the area. All the applied mining lease areas have following advantages –

- As the mineral deposition is homogeneous and batholith formation, therefore opencast method of working is preferred over underground method
- The material will be loaded with the help of excavators into dumpers / trippers and transported to the needy customers.
- Blasting and availability of drills along with controlled blasting technology gives desired fragmentation so that the mineral is handled safely and used without secondary blasting.
- Semi-skilled labours fit for quarrying operations are easily available around the nearby villages.

5.4 ANALYSIS OF ALTERNATIVE TECHNOLOGY

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

6. ENVIRONMENTAL MONITORING PROGRAMME

6.0 GENERAL

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

6.1 METHODOLOGY OF MONITORING MECHANISM

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

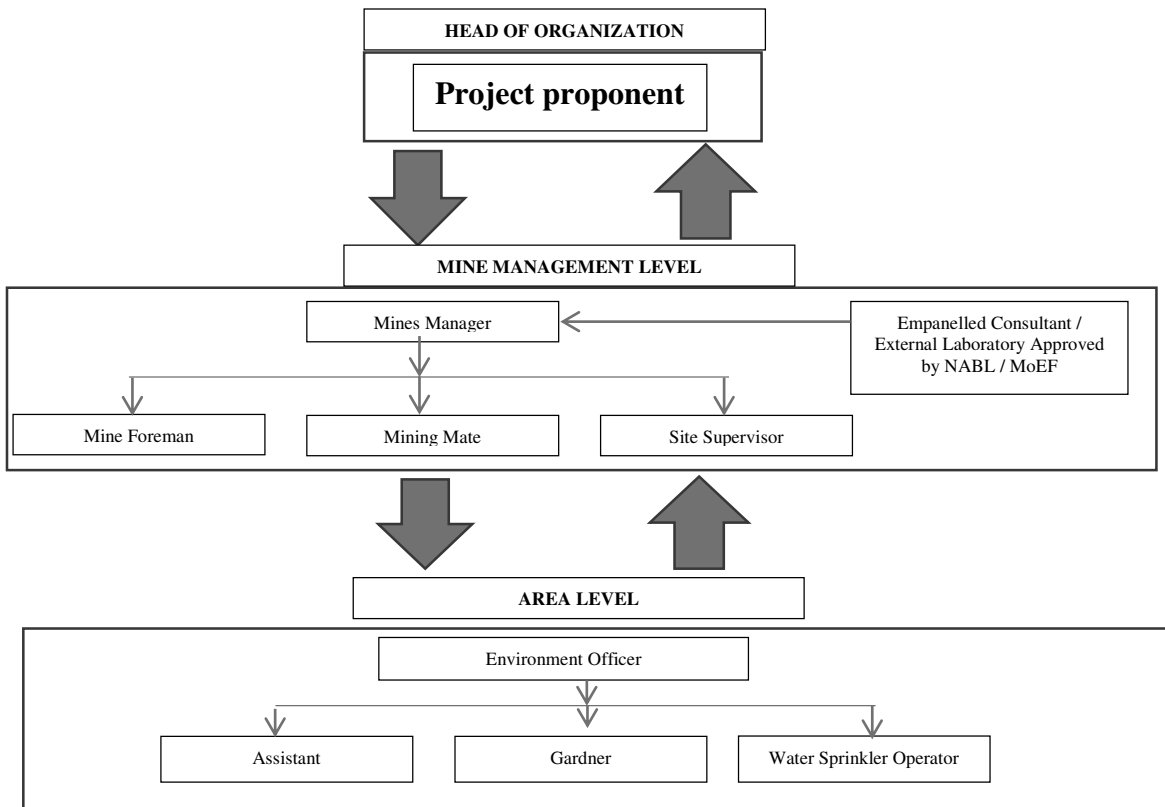
An Environment monitoring cell (EMC) will be constituted to monitor the implementation of EMP and other environmental protection measures in all the proposed quarries.

The responsibilities of this cell will be:

- Implementation of pollution control measures
- Monitoring programme implementation
- Post-plantation care
- To check the efficiency of pollution control measures taken
- Any other activity as may be related to environment
- Seeking expert's advice when needed.

The environmental monitoring cell will co-ordinate all monitoring programs at site and data thus generated will be regularly furnished to the State regulatory agencies as compliance status reports. The sampling and analysis report of the monitored environmental attributes will be submitted to the Tamil Nadu Pollution Control Board (TNPCB) at a frequency of half-yearly and yearly by each proposed project proponent. The half-yearly reports are submitted to Ministry of Environment and Forest, Regional Office and SEIAA as well.

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

FIGURE 6.1: PROPOSED ENVIRONMENTAL MONITORING CELL P1

6.2 IMPLEMENTATION SCHEDULE OF MITIGATION MEASURES

The mitigation measures proposed in Chapter-4 will be implemented so as to reduce the impact on the environment due to the operations of the proposed project. Implementation schedule of mitigation measures is given in Table 6.1.

TABLE 6.1 IMPLEMENTATION SCHEDULE

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

6.3 MONITORING SCHEDULE AND FREQUENCY

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

- Air quality;
- Water and wastewater quality;
- Noise levels;
- Soil Quality; and
- Greenbelt Development

The details of monitoring are detailed in Table 6.2

TABLE 6.2: PROPOSED MONITORING SCHEDULE POST EC FOR P1

S.No.	Environment Attributes	Location	Monitoring		Parameters
			Duration	Frequency	
1	Air Quality	2 Locations (1 Core & 1 Buffer)	24 hours	Once in 6 months	Fugitive Dust, PM _{2.5} , PM ₁₀ , SO ₂ and NO _x .
2	Meteorology	At mine site before start of Air Quality Monitoring & IMD Secondary Data	Hourly / Daily	Continuous online monitoring	Wind speed, Wind direction, Temperature, Relative humidity and Rainfall
3	Water Quality Monitoring	2 Locations (1SW & 1 GW)	-	Once in 6 months	Parameters specified under IS:10500, 1993 & CPCB Norms
4	Hydrology	Water level in open wells in buffer zone around 1 km at specific wells	-	Once in 6 months	Depth in bgl
5	Noise	2 Locations (1 Core & 1 Buffer)	Hourly – 1 Day	Once in 6 months	Leq, Lmax, Lmin, Leq Day & Leq Night
6	Vibration	At the nearest habitation (in case of reporting)	-	During blasting Operation	Peak Particle Velocity
7	Soil	2 Locations (1 Core & 1 Buffer)	-	Once in six months	Physical and Chemical Characteristics
8	Greenbelt	Within the Project Area	Daily	Monthly	Maintenance

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

6.4 BUDGETARY PROVISION FOR EMP

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

The proposed capital cost for Environmental Monitoring Programme is Rs 76,000/- and the recurring cost is Rs 3,80,000/- per annum for each Proposed Project.

TABLE 6.3 ENVIRONMENT MONITORING PROGRAM BUDGET

PROPOSAL – P1			
Sl.No.	Parameter	Capital Cost	Recurring Cost per annum
1	Air Quality	Rs. 76,000/-	Rs. 76,000/-
2	Meteorology		
3	Water Quality		

4	Hydrology		
5	Soil Quality		
6	Noise Quality		
7	Vibration Study		
Total		Rs 76,000/-	Rs 76,000/-

Source: Approved Mining Plan

6.5 REPORTING SCHEDULES OF MONITORED DATA

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

Periodical reports to be submitted to: -

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

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

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

7. ADDITIONAL STUDIES

7.0 GENERAL

The following Additional Studies were done as per items identified by project proponent and items identified by regulatory authority. And items identified by public and other stakeholders will be incorporated after Public Hearing.

- Public Consultation
- Risk Assessment
- Disaster Management Plan
- Cumulative Impact Study
- Plastic Waste Management
- Post-COVID Health Management Plan

7.1. PUBLIC CONSULTATION

Application to The Member Secretary of the Tamil Nadu Pollution Control Board (TNPCB) to conduct Public Hearing in a systematic, time bound and transparent manner ensuring widest possible public participation at the project site or in its close proximity in the district is submitted along with this Draft EIA / EMP Report and the outcome of public hearing proceedings will be detailed in the Final EIA/EMP Report.

7.2 RISK ASSESSMENT

The methodology for the risk assessment has been based on the specific risk assessment guidance issued by the Directorate General of Mine Safety (DGMS), Dhanbad, vide Circular No.13 of 2002, dated 31st December, 2002. The DGMS risk assessment process is intended to identify existing and probable hazards in the work environment and all operations and assess the risk levels of those hazards in order to prioritize those that need immediate attention. Further, mechanisms responsible for these hazards are identified and their control measures, set to timetable are recorded along with pinpointed responsibilities.

The whole quarry operation will be carried out under the direction of a Qualified Competent Mine Manager holding certificate of competency to manage a metalliferous mine granted by the DGMS, Dhanbad for all proposed projects. Risk Assessment is all about prevention of accidents and to take necessary steps to prevent it from happening.

Factors of risks involved due to human induced activities in connection with these proposed mining & allied activities with detailed analysis of causes and control measures for the mine is given in below Table 7.1.

TABLE 7.1 RISK ASSESSMENT& CONTROL MEASURES

S. No	Risk factors	Causes of risk	Control measures
1	Accidents due to explosives and heavy mining machineries	Improper handling and unsafe working practice	All safety precautions and provisions of Mine Act, 1952, Metalliferous Mines Regulation, 1961 and Mines Rules, 1955 will be strictly followed during all mining operations; Workers will be sent to the Training in the nearby Group Vocational Training Centre Entry of unauthorized persons will be prohibited; Fire-fighting and first-aid provisions in the mine office complex and mining area;

			<p>Provisions of all the safety appliances such as safety boot, helmets, goggles etc. will be made available to the employees and regular check for their use</p> <p>Working of quarry, as per approved plans and regularly updating the mine plans;</p> <p>Cleaning of mine faces on daily basis shall be daily done in order to avoid any overhang or undercut;</p> <p>Handling of explosives, charging and firing shall be carried out by competent persons only under the supervision of a Mine Manager;</p> <p>Maintenance and testing of all mining equipment as per manufacturer 's guidelines.</p>
2	Drilling	<p>Improper and unsafe practices</p> <p>Due to high pressure of compressed air, hoses may burst</p> <p>Drill Rod may break</p>	<p>Safe operating procedure established for drilling (SOP) will be strictly followed.</p> <p>Only trained operators will be deployed.</p> <p>No drilling shall be commenced in an area where shots have been fired until the blaster/blasting foreman has made a thorough Examination of all places,</p> <p>Drilling shall not be carried on simultaneously on the benches at places directly one above the other.</p> <p>Periodical preventive maintenance and replacement of worn-out accessories in the compressor and drill equipment as per operator manual.</p> <p>All drills unit shall be provided with wet drilling shall be maintained in efficient working in condition.</p> <p>Operator shall regularly use all the personal protective equipment.</p>
4	Blasting	<p>Fly rock, ground vibration, Noise and dust.</p> <p>Improper charging, stemming & Blasting/fining of blast holes</p> <p>Vibration due to movement of vehicles</p>	<p>Restrict maximum charge per delay as per regulations and by optimum blast hole pattern, vibrations will be controlled within the permissible limit and blasting can be conducted safely.</p> <p>SOP for Charging, Stemming & Blasting/Firing of Blast Holes will be followed by blasting crew during initial stage of operation</p> <p>Shots are fired during daytime only.</p> <p>All holes charged on any one day shall be fired on the same day.</p> <p>The danger zone will be distinctly demarcated (by means of red flags)</p>
5	Transportation	<p>Potential hazards and unsafe workings contributing to accident and injuries</p> <p>Overloading of material</p> <p>While reversal & overtaking of vehicle</p>	<p>Before commencing work, drivers personally check the dumper/truck/tipper for oil(s), fuel and water levels, tyre inflation, general cleanliness and inspect the brakes, steering system, warning devices including automatically operated audio-visual reversing alarm, rear view mirrors, side indicator lights etc., are in good condition.</p> <p>Not allow any unauthorized person to ride on the vehicle nor allow any unauthorized person to operate the vehicle.</p> <p>Concave mirrors should be kept at all corners</p>

		Operator of truck leaving his cabin when it is loaded.	All vehicles should be fitted with reverse horn with one spotter at every tipping point Loading according to the vehicle capacity Periodical maintenance of vehicles as per operator manual
6	Natural calamities	Unexpected happenings	Escape Routes will be provided to prevent inundation of storm water Fire Extinguishers & Sand Buckets
7	Failure of Mine Benches and Pit Slope	Slope geometry, Geological structure	Ultimate or over all pit slope shall be below 60° and each bench height shall be 5m height.

Source: Analysed and Proposed by FAE & EC

7.3 DISASTER MANAGEMENT PLAN

Natural disasters like Earthquake, Landslides have not been recorded in the past history as the terrain is categorized under seismic zone II. The area is far away from the sea hence the disaster due to heavy floods and tsunamis are not anticipated

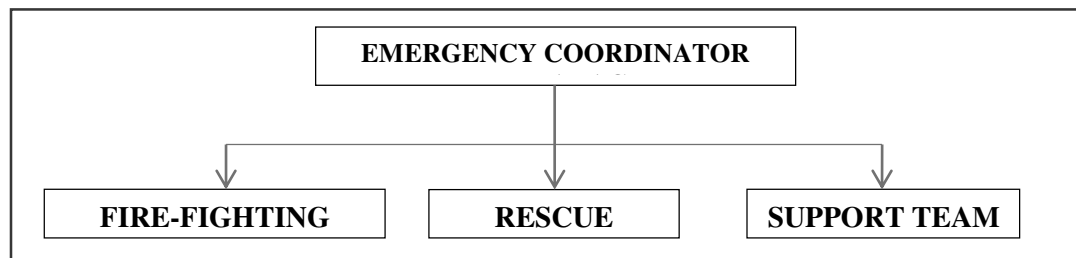
The Disaster Management Plan is aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this same order of priorities.

The objective of the Disaster Management Plan is to make use of the combined resources of the mine and the outside services to achieve the following:

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

In case a disaster takes place, despite preventive actions, disaster management will have to be done in line with the descriptions below. There is an organization proposed for dealing with the emergency situations and the coordination among key personnel and their team has been shown in Fig 7.1.

FIGURE 7.1: DISASTER MANAGEMENT TEAM LAYOUT



The emergency organization shall be headed by emergency coordinator who will be qualified competent mine manager. In his absence senior most people available at the mine shall be emergency coordinator till arrival of mine manager. There would be three teams for taking care of emergency situations – Fire-Fighting Team, Rescue Team and Support Team. The proposed composition of the teams is given in Table 7.2.

TABLE 7.2: PROPOSED TEAMS TO DEAL WITH EMERGENCY SITUATION

DESIGNATION	QUALIFICATION
FIRE-FIGHTING TEAM	
Team Leader/ Emergency Coordinator (EC)	Mines Manager
Team Member	Mines Foreman
Team Member	Mining Mate
RESCUE TEAM	
Team Leader/ Emergency Coordinator (EC)	Mines Manager
Team Member/ Incident Controller (IC)	Environment Officer
Team Member	Mining Foreman
SUPPORT TEAM	
Team Leader/ Emergency Coordinator (EC)	Mines Manager
Assistant Team Leader	Environment Officer
Team Member	Mining Mate
Security Team Leader/ Emergency Security Controller	Mines Foreman

Once the mine becomes operational, the above table along with names of personnel will be prepared and made easily available to workers. A mobile communication network and wireless shall connect Mine Emergency Control Room (MECR) to control various departments of the mine, fire station and neighbouring industrial units/mines.

Roles and responsibilities of emergency team –

(a) Emergency coordinator (EC)

The emergency coordinator shall assume absolute control of site and shall be located at MECR.

(b) Incident controller (IC)

Incident controller shall be a person who shall go to the scene of emergency and supervise the action plan to overcome or contain the emergency. Shift supervisor or Environmental Officer shall assume the charge of IC.

(c) Communication and advisory team

The advisory and communication team shall consist of heads of Mining Departments i.e., Mines Manager

(d) Roll call coordinator

The Mine Foreman shall be Roll Call Coordinator. The roll call coordinator will conduct the roll call and will evacuate the mine personnel to assembly point. His prime function shall be to account for all personnel on duty.

(e) Search and rescue team

There shall be a group of people trained and equipped to carryout rescue operation of trapped personnel. The people trained in first aid and fire-fighting shall be included in search and rescue team.

(f) Emergency security controller

Emergency Security Controller shall be senior most security person located at main gate office and directing the outside agencies e.g. fire brigade, police, doctor and media men etc.,

Emergency control procedure –

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

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

Proposed fire extinguishers at different locations –

The following type of fire extinguishers has been proposed at strategic locations within the mine.

TABLE 7.3: PROPOSED FIRE EXTINGUISHERS AT DIFFERENT LOCATIONS

LOCATION	TYPE OF FIRE EXTINGUISHERS
Electrical Equipment's	CO ₂ type, foam type, dry chemical powder type
Fuel Storage Area	CO ₂ type, foam type, dry chemical powder type, Sand bucket
Office Area	Dry chemical type, foam type

Alarm system to be followed during disaster –

On receiving the message of disaster from Site Controller, fire-fighting team, the mine control room attendant will sound siren wailing for 5 minutes. Incident controller will arrange to broadcast disaster message through public address system. On receiving the message of "Emergency Over" from Incident Controller the emergency control room attendant will give "All Clear Signal", by sounding alarm straight for 2 minutes.

7.4 CUMULATIVE IMPACT STUDY

For easy representation of Proposed and Existing Quarries in the Cluster are given unique codes and identifies and studied in this EIA EMP Report.

TABLE 7.4: LIST OF QUARRIES WITHIN 500 METER RADIUS

PROPOSED QUARRIES					
CODE	Name of the Owner	Village	S.F. Nos	Extent in Ha	Status
P1	Tmt.M.Selvathal	Pachapalayam	279/2C1B	1.13.70	LrNo.SEIAA-TN/F.No.9727/ToR-1431/2022 Dated: 21.04.2023.
P2	Thiru.S.A.Ganesan	Pachapalayam	273/2A & 281/2	2.03.0	Letter No.SEIAA-TN/F.No.7833/SEAC/ToR-828/2020 Dated:16.12.2020 PH -conducted
TOTAL EXTENT				3.16.70	
EXISTING QUARRIES					
CODE	Name of the Owner	Village	S.F. Nos	Extent in Ha	Status
E-1	Thiru.B.Sakthivel	Pachapalayam	281/1(P) & 280/2(P)	1.34.5	06.06.2016 to 05.06.2021
E-2	Thiru.R.S.Senthilkumar	Pachapalayam	285/3, 286/2	3.15.0	11.11.2017 to 10.11.2022
E-3	Thiru.K.Chinnasamy	Pachapalayam	282/1A & 282/1B (P)	1.73.0	06.12.2017 to 05.12.2022
E-4	Thiru.T.Ragupathi	Pachapalayam	273/1B, 273/2B, 273/3E(P),274/1A & 274/2A	2.62.0	03.01.2019 to 02.01.2024
TOTAL EXTENT				8.84.5	
EXPIRED QUARRIES					
Ex-1	Thiru.M.Muralikrishnan	Pachapalayam	281/1 & 286/1B4	2.30.0	02.06.2014 to 01.06.2018
Ex-2	Thiru.V.Gopalakrishnan	Pachapalayam	282/2A2	1.28.5	02.06.2014 to 01.06.2018
TOTAL EXTENT				3.58.5	
ABANDONED QUARRIES					
A-1	Thiru.A.Velusamy	Pachapalayam	285/1B1	1.72.5	05.05.2010 to 04.05.2015
TOTAL EXTENT				1.72.5	
TOTAL CLUSTER EXTENT				12.01.2	

- Cluster area is calculated as per MoEF & CC Notification – S.O. 2269 (E) Dated: 01.07.2016

TABLE 7.5: SALIENT FEATURES OF PROPOSAL "P1"

Name of the Project	Tmt.M. Selvathal, Rough Stone & Gravel Quarry		
Land type	It is a Patta land (Barren land) which is not fit for vegetation/ Cultivation		
Land owner details	Registered in the name of the applicant (Tmt.M. Selvathal). Refer the Patta No.1605		
Previous lease details	It is a fresh lease application.		
Toposheet No	58 - F/01		
Latitude between	10° 54' 23.73"N to 10° 54' 27.69"N		
Longitude between	77° 04' 04.52"E to 77° 04' 09.12"E		
Highest Elevation	415m AMSL		
Mining Plan period	5 years		
Proposed Depth of Mining	41m (2m Gravel + 4m Weathered Gravel + 35m Rough stone) below ground level.		
Geological Resources	Rough Stone in m ³	Weathered Rock m ³	Gravel m ³
	3,95,500	45,200	22,600
Mineable Reserves	Rough Stone in m ³	Weathered Rock m ³	Gravel m ³
	1,08,990	32,592	16,296
Yearwise Production	Rough Stone in m ³	Weathered Rock m ³	Gravel m ³
	1,08,990	32,592	16,296
Ultimate Pit Dimension	97m (L) x 84m (W) x 41m(D) bgl		
Water Level in the surrounding areas	70 – 65 m bgl		
Method of Mining	Opencast Mechanized Mining Method involving small drilling and Controlled blasting using Slurry Explosives		
Topography	The lease applied area is flat terrain. The area has gentle sloping towards Southern side and altitude of the area is 415m above from Mean sea level. The area is covered by 2m thickness of Gravel, 4 Weathered Rock and followed by Massive Charnockite which is clearly inferred from the nearby existing quarry pit.		
Machinery proposed	Jack Hammer	3 Nos	
	Compressor	1 Nos	
	Excavator with Bucket and Rock Breaker	1 No	
	Tippers	2 Nos	
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.		
Proposed Manpower Deployment	18 Nos		
Project Cost	Rs. 35,94,000/-		
EMP Cost	Rs. 3,80,000/-		
Total Project cost	Rs. 39,74,000/-		
CER Cost	Rs. 5,00,000,-		
Nearby Water Bodies	Seasonal Odai	120m West	
	Seasonal Odai	340m SE	
	Odai	3.3km SE	
	Noyyal River	9km North	
	Pallapalayam Lake	8.5km NE	

Greenbelt Development Plan	As per Mining plan it is Proposed to plant 210trees in the 7.5 m Safety Zone, approach road and panchayat roads.
Proposed Water Requirement	1.4 KLD
Nearest Habitation	370m – NorthWest

Source: Approved Mining Plan

TABLE 7.6: SALIENT FEATURES OF PROPOSAL “P2”

Name of the Quarry	S.A.Ganesan Rough Stone and Gravel Quarry	
Toposheet No	58-F/01	
Latitude between	10°54'17.95"N to 10°54'22.27"N	
Longitude between	77°04'09.23"E to 77°04'20.36"E	
Highest Elevation	425 m AMSL	
Proposed Depth of Mining	33 m bgl (3m Gravel + 30m Rough Stone)	
Geological Resources	Rough Stone in m ³	Gravel m ³
	6,70,752	12,816
Mineable Reserves	Rough Stone in m ³	Gravel m ³
	1,23,669	6,576
Proposal for this Mining Plan Period	Rough Stone in m ³	Gravel m ³
	1,23,669	6,576
Existing Pit Dimension	Pit-I	122m (L)* 36m (W)* 4m bgl (D)
	Pit-II	84m (L)* 69m (W)* 23m bgl (D)
Ultimate Pit Dimension	Pit-I	108m (L) * 70m (W) * 33m bgl (D)
	Pit-II	122m (L) * 46m (W) * 28m bgl (D)
	Pit-III	80m (L) * 16m (W) * 13m bgl (D)
Water Level in the surrounds area	60 – 65 m bgl	
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Topography	The lease applied area is flat terrain. The area has gentle slope towards northern side. The altitude of the area is 425m (max) above mean sea level. The area is covered by 3m (avg) thickness of Gravel Formation. Massive Charnockite is found after 3m (Gravel Formation) which is clearly inferred from the nearby existing quarry pit.	
Machinery proposed	Jack Hammer	3 Nos
	Compressor	1 No
	Excavator with Bucket & Rock Breaker	1 No
	Tipplers	2 Nos
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	21 Nos	
Total Project Cost	Project Cost	Rs.38,09,300/-
	Environment Monitoring Cost	Rs.3,80,000/-
	Total	Rs.41,89,300/-
CER Cost @ 2% of Project Cost	Rs.83,800/-	
Nearby Water Bodies	Odai	80m East
	odai	300m NW
	Singanallur Tank	9.5km NW
	Noyyal River	9.5km NW

Greenbelt Development Plan	Proposed to plant 250 trees in 2,300 Sq.m area in the 7.5 m Safety Zone
Proposed Water Requirement	4.2 KLD
Nearest Habitation	480 m South East

Source: Approved Mining Plan

TABLE 7.7: SALIENT FEATURES OF PROPOSAL “E1”

Name of the Quarry	Thiru. B.Sakthivel Rough Stone & Gravel Quarry E1	
Toposheet No	58- F/01	
Latitude between	10°54'23.09"N	
Longitude between	77°04'06.87"E	
Geological Resources	Rough Stone in m ³	Gravel m ³
	60,882m ³	-
Mineable Reserves	Rough Stone in m ³	Gravel m ³
	24,239m ³	-
Ultimate Pit Dimension	192 (L) * 62 (W) * 50 (D)	
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Machinery proposed	Jack Hammer	6 Nos
	Compressor	1 No
	Hydraulic Excavator	1 No
	Tipppers	2 Nos
Proposed Manpower Deployment	15	
Project Cost	67.70 lakhs	
CER Cost @ 2% of Project Cost	Rs.1,35,400/-	

Source: Approved Mining Plan

TABLE 7.8: SALIENT FEATURES OF PROPOSAL “E2”

Name of the Quarry	Thiru.R.S.Senthilkumar Rough Stone Quarry	
Toposheet No	58- F/01	
Latitude between	10°54'01.5"N to 10°54'03.02"N	
Longitude between	77°04'00.10"E to 77°04'01.90"E	
Geological Resources	Rough Stone in m ³	Gravel m ³
	16,65,639	-
Mineable Reserves	Rough Stone in m ³	Gravel m ³
	8,13,822	-

Source: Approved Mining Plan

TABLE 7.9: SALIENT FEATURES OF PROPOSAL “E3”

Name of the Quarry	Thiru. K. Chinnasamy Rough Stone Quarry	
Toposheet No	58-F/01	
Latitude between	10°54'16" N	
Longitude between	77°01'10" E	
Geological Resources	Rough Stone in m ³	Topsoil m ³
	4,50,110	17,159
Mineable Reserves	Rough Stone in m ³	Topsoil m ³
	90,310	5,037
Yearwise production	Rough Stone in m ³	Topsoil m ³
	90,310	5,037
Ultimate Pit Dimension	Pit-I	70m (L) * 74m (W) * 31m bgl (D)

	Pit-II	48m (L) * 65m (W) * 31m bgl (D)
	Pit-III	114m (L) * 36m (W) * 26m bgl (D)
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Machinery proposed	Jack Hammer	1 Nos
	Compressor	1 Nos
	Hydraulic Excavator	1 Nos
	Tippers	2 Nos
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	14 Nos	
Project Cost	Rs.73,37,500/-	
CER Cost @ 2% of Project Cost	Rs. 1,46,750/-	

Source: Approved Mining Plan

TABLE 7.10: SALIENT FEATURES OF PROPOSAL “E4”

Name of the Quarry	Thiru. T. Ragupathi Rough Stone Quarry	
Toposheet No	58-F/01	
Latitude between	10°54'14"N to 10°54'24"N	
Longitude between	77°04'16"E to 77°04'23"E	
Geological Resources	Rough Stone in m ³	Topsoil m ³
	2,57,590	51,518
Mineable Reserves	Rough Stone in m ³	Topsoil m ³
	1,43,605	34,222
Yearwise production	Rough Stone in m ³	Topsoil m ³
	65,435	15,742
Ultimate Pit Dimension	200m(L)* 70m(W)*12m(D)	
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Machinery proposed	Jack Hammer	1 Nos
	Compressor	1 Nos
	Hydraulic Excavator	1 Nos
	Tippers	2 Nos
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	14 Nos	

Source: Approved Mining Plan

The Cumulative Impact is mainly anticipated due to drilling & blasting and excavation and transportation activities in all the quarries (proposed and existing) within the cluster and major impact anticipated is on Air & Noise Environment and Ground Vibrations due to blasting.

Air Environment –

Calculating the Cumulative Load of Mining within the cluster is as shown in table 7.16 & 7.17.

TABLE 7.11: CUMULATIVE PRODUCTION LOAD OF ROUGH STONE

Quarry	Production for five-year plan period	Per Year Production in m ³	Per Day Production in m ³	Number of Lorry Load Per Day
P1	1,08,990	21,798	73	12
P2	1,23,669	24,734	82	14
Total	2,32,659	46,532	155	26
E1	24,239	4,848	16	3
E2	1,12,850	22,570	75	13
E3	90,310	18,062	60	10
E4	65,435	13,087	44	7
Total	2,92,834	31,149	195	33
Grand Total	5,25,493	77,681	350	59

TABLE 7.12: CUMULATIVE PRODUCTION LOAD OF GRAVEL

Quarry	Production for five-year plan period	Per Year Production in m ³	Per Day Production in m ³	Number of Lorry Load Per Day
P1	16296	5,432	18	3
P2	6,576	3,288	11	2
Total	22872	8720	29	5
PROPOSED PRODUCTION OF GRAVEL				
E1	-	-	-	-
E2	-	-	-	-
E3	5,037	2,519	8	1
E4	15,742	5,247	17	3
Total	20,779	7,766	25	4
Grand Total	43,651	16,486	54	9

TABLE 7.13: CUMULATIVE PRODUCTION LOAD OF WEATHERED ROCK

Quarry	Production during five year plan period	Per Year Production in m ³	Per Day Production in m ³	Number of Lorry Load Per Day
P1	32592	8148	27	5
Total	32592	8148	27	5

On a cumulative basis considering the proposed quarries, it can be seen that the overall production of Rough Stone is 155m³ per day and overall production of Gravel is 29 m³ per day with a capacity of 26trips of Rough Stone per day and 5 Trips per day of Gravel and weathered rock 5 Trips per day from the cluster.

Note: Per day production of Rough Stone is calculated for 5 Years Lease Period and for Gravel production with 3 years, Weathered rock 4 years of production period. And the load of existing quarries is covered under existing environment of the cluster.

Based on the above production quantities the emissions due to various activities in all the 2 mines includes various activities like ground preparation, excavation, handling and transport of ore. These activities have been analysed systematically basing on USEPA-Emission Estimation Technique Manual, for Mining AP-42, to arrive at possible emissions to the atmosphere and estimated emissions are given in Table 7.18.

TABLE 7.14: EMISSION ESTIMATION FROM QUARRIES WITHIN 500 METER RADIUS

EMISSION ESTIMATION FOR QUARRY "P1"				
	Activity	Source type	Value	Unit
Estimated Emission Rate for PM ₁₀	Drilling	Point Source	0.065524981	g/s
	Blasting	Point Source	0.000292179	g/s
	Mineral Loading	Point Source	0.039143795	g/s
	Haul Road	Line Source	0.002486576	g/s/m
	Overall Mine	Area Source	0.040721471	g/s
Estimated Emission Rate for SO ₂	Overall Mine	Area Source	0.00028146	g/s
Estimated Emission Rate for NO _x	Overall Mine	Area Source	0.000007599	g/s
EMISSION ESTIMATION FOR QUARRY "P2"				
	Activity	Source type	Value	Unit
Estimated Emission Rate for PM ₁₀	Drilling	Point Source	0.067952040	g/s
	Blasting	Point Source	0.000350451	g/s
	Mineral Loading	Point Source	0.039082857	g/s
	Haul Road	Line Source	0.002486508	g/s/m
	Overall Mine	Area Source	0.051354025	g/s
Estimated Emission Rate for SO ₂	Overall Mine	Area Source	0.000300569	g/s
Estimated Emission Rate for NO _x	Overall Mine	Area Source	0.000013674	g/s
EMISSION ESTIMATION FOR QUARRY "E1"				
	Activity	Source type	Value	Unit
Estimated Emission Rate for PM ₁₀	Drilling	Point Source	0.042734841	g/s
	Blasting	Point Source	0.000034477	g/s
	Mineral Loading	Point Source	0.033069352	g/s
	Haul Road	Line Source	0.002482977	g/s/m
	Overall Mine	Area Source	0.042966357	g/s
Estimated Emission Rate for SO ₂	Overall Mine	Area Source	5.60564E-05	g/s
Estimated Emission Rate for NO _x	Overall Mine	Area Source	0.000001745	g/s
EMISSION ESTIMATION FOR QUARRY "E2"				
	Activity	Source type	Value	Unit
Estimated Emission Rate for PM ₁₀	Drilling	Point Source	0.066203108	g/s
	Blasting	Point Source	0.000307614	g/s
	Mineral Loading	Point Source	0.038264066	g/s
	Haul Road	Line Source	0.002485678	g/s/m
	Overall Mine	Area Source	0.061044568	g/s
Estimated Emission Rate for SO ₂	Overall Mine	Area Source	0.000260736	g/s
Estimated Emission Rate for NO _x	Overall Mine	Area Source	0.000017582	g/s
EMISSION ESTIMATION FOR QUARRY "E3"				
	Activity	Source type	Value	Unit
Estimated Emission Rate for PM ₁₀	Drilling	Point Source	0.061836363	g/s
	Blasting	Point Source	0.000218693	g/s
	Mineral Loading	Point Source	0.037895098	g/s
	Haul Road	Line Source	0.002485353	g/s/m
	Overall Mine	Area Source	0.047956272	g/s
Estimated Emission Rate for SO ₂	Overall Mine	Area Source	0.000217662	g/s
Estimated Emission Rate for NO _x	Overall Mine	Area Source	0.000008550	g/s
EMISSION ESTIMATION FOR QUARRY "E4"				
Estimated Emission Rate for PM ₁₀	Activity	Source type	Value	Unit

	Drilling	Point Source	0.056139200	g/s
	Blasting	Point Source	0.000134879	g/s
	Mineral Loading	Point Source	0.037459511	g/s
	Haul Road	Line Source	0.002485005	g/s/m
	Overall Mine	Area Source	0.056519489	g/s
Estimated Emission Rate for SO ₂	Overall Mine	Area Source	0.000195547	g/s
Estimated Emission Rate for NO _x	Overall Mine	Area Source	0.000011147	g/s

Source: Emission Calculation

TABLE 7.15: INCREMENTAL & RESULTANT GLC WITHIN CLUSTER

PM₁₀ in µg/m³	
Background	45.8
Incremental	10.79
Resultant	56.5
NAAQ Norms	100 µg/m³
PM_{2.5} in µg/m³	
Background	23.7
Incremental	4.79
Resultant	28.5
NAAQ Norms	60 µg/ m³
So₂ in µg/m³	
Background	8.1
Incremental	1.49
Resultant	9.6
NAAQ Norms	80 µg/ m³
No₂ in µg/m³	
Background	24.0
Incremental	7.51
Resultant	31.5
NAAQ Norms	80 µg/ m³

Noise Environment –

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

For hemispherical sound wave propagation through homogeneous loss free medium, one can estimate noise levels at various locations at different sources using model based on first principle.

$$L_{p2} = L_{p1} - 20 \log (r_2/r_1) - A_{e1,2}$$

Where:

L_{p1} & L_{p2} are sound levels at points located at distances r_1 & r_2 from the source.

$A_{e1,2}$ is the excess attenuation due to environmental conditions. Combined effect of all sources can be determined at various locations by logarithmic addition.

$$L_{p_{total}} = 10 \log \{10^{(L_{p1}/10)} + 10^{(L_{p2}/10)} + 10^{(L_{p3}/10)} + \dots\}$$

Attenuation due to Green Belt has been taken to be 4.9 dB (A). The inputs required for the model are:

Source data has been computed taking into account of all the machinery and activities used in the mining process.

TABLE 7.16: PREDICTED NOISE INCREMENTAL VALUES FROM CLUSTER

Location ID	Background Value (Day) dB(A)	Incremental Value dB(A)	Total Predicted dB(A)	Residential Area Standards dB(A)
Habitation Near P1	48.2	47.3	46.3	55
Habitation Near P2	34.6	46.5	46.7	
Habitation Near E1	36.5	48.1	48.4	
Habitation Near E2	35.4	47.4	47.7	
Habitation Near E3	36.7	50.0	50.2	
Habitation Near E4	3.5	45.3	45.6	

Source: Lab Monitoring Data

The incremental noise level is found within the range of 45.3 – 50.0 dB (A) in Buffer zone. The noise level at different receptors in buffer zone is lower due to the distance involved and other topographical features adding to the noise attenuation. The resultant Noise level due to monitored values and calculated values at the receptors are based on the mathematical formula considering attenuation due to Green Belt as 4.9 dB (A) the barrier effect. From the above table, it can be seen that the ambient noise levels at all the locations near habitations are within permissible limits of Residential Area (buffer zone) as per THE NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000 (The Principal Rules were published in the Gazette of India, vide S.O.123(E), dated 14.2.2000 and subsequently amended vide S.O. 1046(E), dated 22.11.2000, S.O. 1088(E), dated 11.10.2002, S.O. 1569 (E), dated 19.09.2006 and S.O. 50 (E) dated 11.01.2010 under the Environment(Protection) Act, 1986).

Ground Vibrations

Ground vibrations due to mining activities in the all the 6 Mines within cluster are anticipated due to operation of Mining Machines like Excavators, drilling and blasting, transportation vehicles, etc. However, the major source of ground vibration from the all the 6 mines is blasting. The major impact of the ground vibrations is observed on the domestic houses located in the villages nearby the mine lease area. The kuchha houses are more prone to cracks and damage due to the vibrations induced by blasting whereas RCC framed structures can withstand more ground vibrations. Apart from this, the ground vibrations may develop a fear factor in the nearby settlements nearby the mining areas and may cause injury to persons or damage to the structures. Nearest Habitations from 6 mines respectively are as in below Table 7.21.

TABLE 7.17: NEAREST HABITATION FROM EACH MINE

Location ID	Distance & Direction
Habitation Near P1	370m-North West
Habitation Near P2	480m South East
Habitation Near E1	400m South East
Habitation Near E2	430m North West
Habitation Near E3	320m South
Habitation Near E4	550m West

The ground vibrations due to the blasting in all the mines are calculated using the empirical equation for assessment of peak particle velocity (PPV) is:

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

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

Q = maximum instantaneous charge (kg)

B = constant related to the rock and site (usually 1.6)

R = distance from charge (m)

TABLE 7.18: GROUND VIBRATIONS AT 6MINES

Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in m/ms
P1	31	370m-NW	0.375
P2	26	480m SE	0.348
E1	7	550m W	0.098
E2	33	430m NW	0.501
E3	19	400m SE	0.362
E4	14	320m S	0.405

Source: Blasting Calculations

From the above table, the charge per blast is considered as maximum in each mine and the resultant PPV is well below the Peak Particle Velocity of 8 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997.

Socio Economic Environment –

The 6 mines shall contribute towards CER and the community shall develop.

TABLE 7.19: SOCIO ECONOMIC BENEFITS FROM 6 MINES

Location ID	Project Cost	CER
P1	Rs. 39,74,000	Rs.5,00,000
P2	Rs.41,89,300/-	Rs.5,00,000
Total	Rs. 81,63,300/-	Rs.10,00,000

As per para 6 (II) of the office memorandum, all the mines being a green field project & Capital Investment is ≤ 100 crores, they shall contribute 2% of Capital Investment towards CER as per directions of EAC/SEAC.

- Proposed Projects shall fund towards CER – **Rs 10,00,000/-**

TABLE 7.20: EMPLOYMENT BENEFITS FROM 6MINES

Description	Employment
P1	18
P2	21
Total	39
E1	15
E2	31
E3	14
E4	14
Total	74
Grand Total	113

A total of 39 people will get employment due to 2 proposed mines in cluster and 74 people are already employed at existing mines.

TABLE 7.21: GREENBELT DEVELOPMENT BENEFITS FROM 6 MINES

CODE	No of Trees proposed to be planted	Survival %	Area Covered Sq.m	Name of the Species
P1	680	80%	The safety zone along the boundary barrier has been identified to be utilized for Greenbelt development	Neem, Pinnata, Pongamia, Ashoka etc.,
P2	250			
Total	930			
E1	150			
E2	250			
E3	50			
E4	100			
Total	550			
G.Total	1480			

Based on the Proposed Mining Plans it's anticipated that there shall growth of native species of Neem, Pinnata et., in the Cluster at a rate of 1,480 Trees Planted over a period of 5 Years with Survival Rate of 80%.

7.5 PLASTIC WASTE MANAGEMENT PLAN

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

Objective –

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

TABLE 7.22: ACTION PLAN TO MANAGE PLASTIC WASTE

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

Source: Proposed by FAE's and EC

8.PROJECT BENEFITS

8.0 GENERAL

The Proposed Project for Quarrying Rough Stone and gravel at Pachapalayam Village aims to produce 1,08,990m³ Rough Stone over a period of 5 Years & Weathered Rock 35,592m³ for period of 4 years and Gravel 16,296m³ for period of 3 years. This will enhance the socio-economic activities in the adjoining areas and will result in the following benefits.

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

8.1 EMPLOYMENT POTENTIAL

It is proposed to provide employment to about 18 persons for carrying out mining operations and give preference to the local people in providing employment in the three proposed quarries in the cluster. In addition, there will be opportunity for indirect employment to many people in the form of contractual jobs, business opportunities, service facilities etc. the economic status of the local people will be enhanced due to mining project.

8.2 SOCIO-ECONOMIC WELFARE MEASURES PROPOSED

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

8.3 IMPROVEMENT IN PHYSICAL INFRASTRUCTURE

The proposed quarries are located in Pachapalayam Village, Sular Taluk and Coimbatore District of Tamil Nadu and the area have communications, roads and other facilities already well established. The following physical infrastructure facilities will further improve due to proposed mine.

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

8.4 IMPROVEMENT IN SOCIAL INFRASTRUCTURE

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

8.5 OTHER TANGIBLE BENEFITS

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

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

CORPORATE SOCIAL RESPONSIBILITY

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

CSR Cost Estimation

- CSR activities will be taken up in the Pachapalayam village mainly contributing to education, health, training of women self-help groups and contribution to infrastructure etc., CSR budget is allocated as 2.5% of the profit.

CORPORATE ENVIRONMENT RESPONSIBILITY

For the existing quarries Allocation for Corporate Environment Responsibility (CER) shall be made as per Government of India, MoEF & CC Office Memorandum F.No.22-65/2017-IA.III, Dated: 01.05.2018.

Proponent intends to spent Rs 5,00,000/- towards CER for the Government School near the project site the details are given below:

TABLE 8.1 CER – ACTION PLAN

Activity	CER
<ul style="list-style-type: none"> • Renovation/ Construction of Existing Toilet • Providing Environmental Related books to the school Library • Carrying out plantation and maintenance in the school Ground • Any other requirements in consultation with the school Head master 	Rs 5,00,000/-

9. ENVIRONMENTAL COST BENEFIT ANALYSIS

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

10. ENVIRONMENTAL MANAGEMENT PLAN

10.0. GENERAL

Environment Management Plan (EMP) aims at the preservation of ecological system by considering in-built pollution abatement facilities at the proposed site. Good practices of Environmental Management plan will ensure to keep all the environmental parameters of the project in respect of Ambient Air quality, Water quality, Socio – economic improvement standards.

Mitigation measures at the source level and an overall environment management plan at the study area are elicited so as to improve the supportive capacity of the receiving bodies. The EMP presented in this chapter discusses the administrative aspects of ensuring that mitigative measures are implemented and their effectiveness monitored after approval of the EIA.

10.1. ENVIRONMENTAL POLICY

The Project Proponent is committed to conduct all its operations and activities in an environmentally responsible manner and to continually improve environmental performance.

The Proponent Tmt.M. Selvathal will –

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

Description of the Administration and Technical Setup –

The Environment Monitoring Cell discussed under Chapter 6 will ensure effective implementation of environment management plan and to ensure compliance of environmental statutory guidelines through Mine Management Level of each Proposed Quarry.

The said team will be responsible for:

- Monitoring of the water/ waste water quality, air quality and solid waste generated
- Analysis of the water and air samples collected through external laboratory
- Implementation and monitoring of the pollution control and protective measures/ devices which shall include financial estimation, ordering, installation of air pollution control equipment, waste water treatment plant, etc.
- Co-ordination of the environment related activities within the project as well as with outside agencies
- Collection of health statistics of the workers and population of the surrounding villages
- Green belt development
- Monitoring the progress of implementation of the environmental monitoring programme

- Compliance to statutory provisions, norms of State Pollution Control Board, Ministry of Environment and Forests and the conditions of the environmental clearance as well as the consents to establish and consents to operate.

10.2. LAND ENVIRONMENT MANAGEMENT –

Landscape of the area will be changed due to the quarrying operation, restoration of the land by converting the quarry pit into temporary reservoir and the remaining part of the area (un utilized areas, infrastructure, haul Roads) will be utilized for greenbelt development. There is no major vegetation in the project area during the course of quarrying operation and after completion of the quarrying operation thick plantation will be developed under greenbelt development programme.

TABLE 10.1. PROPOSED CONTROLS FOR LAND ENVIRONMENT

CONTROL	RESPONSIBILITY
Design vehicle wash-down areas so that all runoff water is captured and passed through oil water separators and sediment catchment devices.	Mines Manager
Refueling to be undertaken in a safe location, away from vehicle movement pathways & 100 m away of any watercourse Refueling activity to be under visual observation at all times. Drainage of refueling areas to sumps with oil/water separation	Mine Foreman & Mining Mate
Soil and groundwater testing as required following up a particular incident of contamination.	Mines Manager
At conceptual stage, the mining pits will be converted into Rain Water Harvesting. Remaining area will be converted into greenbelt area	Mines Manager
No external dumping i.e., outside the project area	Mine Foreman
Garland drains with catch pits / settlement traps to be provided all around the project area to prevent run off affecting the surrounding lands.	Mines Manager
The periphery of Project area will be planted with thick plantation to arrest the fugitive dust, which will also act as acoustic barrier.	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

10.3. SOIL MANAGEMENT

There overburden in the form of Gravel which will directly loaded into tippers for the filling and levelling of low lying areas.

TABLE 10.2. PROPOSED CONTROLS FOR SOIL MANAGEMENT

CONTROL	RESPONSIBILITY
Surface run-off from the project boundary via garland drains will be diverted to the mine pits	Mine Foreman & Mining Mate
Design haul roads and other access roads with drainage systems to minimize concentration of flow and erosion risk	Mines Manager
Empty sediment from sediment traps Maintain, repair or upgrade garland drain system	Mines Manager
Test soils for pH, EC, chloride, size & water holding capacity	Manager Mines

Source: Proposed by FAE's & EIA Coordinator

10.4. WATER MANAGEMENT

In the proposed quarrying project, no process is involved for the effluent generation, only oil & grease from the machinery wash is anticipated and domestic sewage from mines office. The quarrying operation is proposed upto a depth of 41 m BGL, the water table in the area is 70 m – 65 m below ground level, hence the proposed projects will not intersect the Ground water table during entire quarry period.

TABLE 10.3. PROPOSED CONTROLS FOR WATER ENVIRONMENT

CONTROL	RESPONSIBILITY
To maximize the reuse of pit water for water supply	Mines Foreman
Temporary and permanent garland drain will be constructed to contain the catchments of the mining area and to divert runoff from undisturbed areas through the mining areas	Mines Manager
Natural drains/nallahs/brooklets outside the project area should not be disturbed at any point of mining operations	Mines Manager
Ensure there is no process effluent generation or discharge from the project area into water bodies	Mines Foreman
Domestic sewage generated from the project area will be disposed in septic tank and soak pit system	Mines Foreman
Monthly or after rainfall, inspection for performance of water management structures and systems	Mines Manager
Conduct ground water and surface water monitoring for parameters specified by CPCB	Manager Mines

Source: Proposed by FAE's & EIA Coordinator

10.5. AIR QUALITY MANAGEMENT

The proposed quarrying activity would result in the increase of particulate matter concentrations due to fugitive dust. Daily water sprinkling on the haul roads, approach roads in the vicinity would be undertaken and will be continued as there is possibility for dust generation due to truck mobility. It will be ensured that vehicles are properly maintained to comply with exhaust emission requirements

TABLE 10.4. PROPOSED CONTROLS FOR AIR ENVIRONMENT

CONTROL	RESPONSIBILITY
Generation of dust during excavation is minimized by daily (twice) water sprinkling on working face and daily (twice) water sprinkling on haul road	Mines Manager
Wet drilling procedure /drills with dust extractor system to control dust generation during drilling at source itself is implemented	Mines Manager
Maintenance as per operator manual of the equipment and machinery in the mines to minimizing air pollution	Mines Manager
Ambient Air Quality Monitoring carried out in the project area and in surrounding villages to access the impact due to the mining activities and the efficacy of the adopted air pollution control measures	Mines Manager
Provision of Dust Mask to all workers	Mines Manager
Greenbelt development all along the periphery of the project area	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

10.6. NOISE POLLUTION CONTROL

There will be intermittent noise levels due to vehicular movement, trucks loading, drilling and blasting and cutting activities. No mining activities are planned during night time.

TABLE 10.5.:PROPOSED CONTROLS FOR NOISE ENVIRONMENT

CONTROL	RESPONSIBILITY
Development of thick greenbelt all along the Buffer Zone (7.5 Meters) of the project area to attenuate the noise and the same will be maintained	Mines Manager
Preventive maintenance of mining machinery and replacement of worn-out accessories to control noise generation	Mines Foreman
Deployment of mining equipment with an inbuilt mechanism to reduce noise	Mines Manager
Provision of earmuff / ear plugs to workers working in noise prone zones in the mines	Mining Mate
Provision of effective silencers for mining machinery and transport vehicles	Mines Manager
Provision of sound proof AC operator cabins to HEMM	Mines Manager
Sharp drill bits are used to minimize noise from drilling	Mines Foreman
Controlled blasting technologies are adopted by using delay detonators to minimize noise from blasting	Mines Manager
Annual ambient noise level monitoring are carried out in the project area and in surrounding villages to assess the impact due to the mining activities and the efficacy of the adopted noise control measures. Additional noise control measures will be adopted if required as per the observations during monitoring	Mines Manager
Reduce maximum instantaneous charge using delays while blasting	Mining Mate
Change the burden and spacing by altering the drilling pattern and/or delay layout, or altering the hole inclination	Mines Manager
Undertake noise or vibration monitoring	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

10.7. GROUND VIBRATION AND FLY ROCK CONTROL

The Rough stone quarry operation creates vibration due to the blasting and movement of Heavy Earth moving machineries, fly rocks due to the blasting.

TABLE 10.6.: PROPOSED CONTROLS FOR GROUND VIBRATIONS & FLY ROCK – P1

CONTROL	RESPONSIBILITY
Controlled blasting using delay detonators will be carried out to maintain the PPV value (below 8Hz) well within the prescribed standards of DGMS	Mines Manager
Drilling and blasting will be carried under the supervision of qualified persons	Mines Manager
Proper stemming of holes should be carried out with statutory competent qualified blaster under the supervision of statutory mines manager to avoid any anomalies during blasting	Mines Manager
Suitable spacing and burden will be maintained to avoid misfire / fly rocks	Manager Mines
Number of blast holes will be restricted to control ground vibrations	Manager Mines
Blasting will be carried out only during noon time	Mining Mate
Undertake noise or vibration monitoring	Mines Manager
ensure blast holes are adequately stemmed for the depth of the hole and stemmed with suitable angular material	Mines Foreman

Source: Proposed by FAE's & EIA Coordinator

10.8. BIOLOGICAL ENVIRONMENT MANAGEMENT

The proponent will take all necessary steps to avoid the impact on the ecology of the area by adopting suitable management measures in the planning and implementation stage. During mining, thick plantation will be carried out around the project periphery, on safety barrier zone, on top benches of quarried out area etc.,

Following control measures are proposed for its management and will be the responsibility of the Mines Manager.

- Greenbelt development all along the safety barrier of the project area
- It is also proposed to implement the greenbelt development programme and post plantation status will be regularly checked for every season.
- The main attributes that retard the survival of sapling is fugitive dust, this fugitive dust can be controlled by water sprinkling on the haul roads and installing a sprinkler unit near the newly planted area.
- Year wise greenbelt development will be recorded and monitored
 - Based on the area of plantation.
 - Period of plantation
 - Type of plantation
 - Spacing between the plants
 - Type of manuring and fertilizers and its periods
 - Lopping period, interval of watering
 - Survival rate
 - Density of plantation
- The ultimate reclamation planned leaves a congenial environment for development of flora & immigration of small fauna through green belt and water reservoir. The green belt and water reservoir developed within the Project at the end of mine life will attract the birds and animals towards the project area in the post mining period.

10.8.1. Green Belt Development Plan

About 680nos. of saplings is proposed to be planted for the Mining plan period in safety barrier of applied mine lease area with survival rate 80%. The greenbelt development plan has been prepared keeping in view the land use changes that will occur due to mining operation in the area.

TABLE 10.7: PROPOSED GREENBELT ACTIVITIES

Year	No. of trees proposed to be planted	Considering survival rate of 80% additionally 20% of plantation is proposed	Area to be covered in m ²	Name of the species
I	570	680	The safety zone along the boundary barrier has been identified to be utilized for Greenbelt development.	Neem, Pongamia Pinnata etc.,

Source: Approved Mining plan

The objectives of the greenbelt development plan are –

- Provide a green belt around the periphery of the quarry area to combat the dispersal of dust in the adjoining areas,
- Protect the erosion of the soil, Conserve moisture for increasing ground water recharging,
- Restore the ecology of the area, restore aesthetic beauty of the locality and meet the requirement of fodder, fuel and timber of the local community.

A well-planned Green Belt with multi rows (three tiers) preferably with long canopy leaves shall be developed with dense plantations around the boundary and haul roads to prevent air, dust noise propagation to undesired places and efforts will be taken for the enhancement of survival rate.

10.8.2. Species Recommended for Plantation

Following points have been considered while recommending the species for plantation:

- Creating of bio-diversity.
- Fast growing, thick canopy cover, perennial and evergreen large leaf area,
- Efficient in absorbing pollutants without major effects on natural growth

TABLE 10.8. RECOMMENDED SPECIES FOR THE PLANTSATION

S.No	Botanical Name	Local Name	Importance
1	Azadirachta indica	Neem, Vembu	Neem oil & neem products
2	Tamarindus indica	Tamarind	Edible & Medicinal and other Uses
3	Polyalthia longifolia	Nettilinkam	Tall and evergreen tree
4	Borassus Flabellifer	Palmyra Palm	Tall Wind breaker tree and its fruits are edible

Source: Proposed by FAE's & EIA Coordinator

10.9. OCCUPATIONAL SAFETY & HEALTH MANAGEMENT

Occupational safety and health are very closely related to productivity and good employer-employee relationship. The main factors of occupational health impact in quarries are fugitive dust and noise. Safety of employees during quarrying operation and maintenance of mining equipment will be taken care as per Mines Act 1952 and Rule 29 of Mines Rules 1955. To avoid any adverse effect on the health of workers due to dust, noise and vibration sufficient measures have been provided.

10.9.1. Medical Surveillance and Examinations –

The health status of workers in the mine will be regularly monitored under an occupational surveillance program. Under this program, all the employees are subjected to a detailed medical examination at the time of employment. The medical examination covers the following tests under mines act 1952.

- General Physical Examination and Blood Pressure
- X-ray Chest and ECG
- Sputum test
- Detailed Routine Blood and Urine examination

The medical histories of all employees will be maintained in a standard format annually. Thereafter, the employees will be subject to medical examination annually. The below tests keep upgrading the database of medical history of the employees.

TABLE 10.9. MEDICAL EXAMINATION SCHEDULE

Sl.No	Activities	1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year
1	Initial Medical Examination (Mine Workers)					
A	Physical Check-up					
B	Psychological Test					
C	Audiometric Test					

D	Respiratory Test					
2	Periodical Medical Examination (Mine Workers)					
A	Physical Check – up					
B	Audiometric Test					
C	Eye Check – up					
D	Respiratory Test					
3	Medical Camp (Mine Workers & Nearby Villagers)					
4	Training (Mine Workers)					

10.9.2 Proposed Occupational Health and Safety Measures –

- The mine site will have adequate drinking water supply so that workers do not get dehydrated.
- Lightweight and loose-fitting clothes having light colours will be preferred to wear.
- Noise exposure measurements will be taken to determine the need for noise control strategies.
- The personal protective equipment will be provided for mine workers.
- At noisy working activity, exposure time will be minimized.
- Dust generating sources will be identified and proper control measure will be adopted.
- Periodic medical examinations will be provided for all workers.
- In respect of contract work, safety code for contractors and workers will be implemented. They will be allowed to work under strict supervision of statutory person/officials only after they will impart training at vocational training centres. All personal protective equipment's will be provided to them.
- A safety committee meeting every month will be organized to discuss the safety of the mines and the persons employed.
- Celebration of annual mines safety week and environmental week in order to develop safety awareness and harmony amongst employees and co quarry owners.

FIGURE 10.1.: PERSONAL PROTECTIVE EQUIPMENT TO THE MINE WORKERS



10.9.3: Health and Safety Training Programme

The Proponent will provide special induction program along with machinery manufacturers for the operators and co-operators to run and maintain the machinery effectively and efficiently. The training program for the supervisors and office staffs will be arranged in the Group Vocational Training Centres in the State and engage Environmental Consultants to provide periodical training to all the employees to carry out the mining operation in and eco-friendly manner as per Metalliferous Mines Regulation, 1961.

10.9.4.: Budgetary Provision for Environmental Management –

Adequate budgetary provision has been made by the Company for execution of Environmental Management Plan. The Table 10.11 gives overall investment on the environmental safeguards and recurring expenditure for successful monitoring and implementation of control measures.

TABLE 10.10: EMP BUDGET FOR PROPOSED PROJECT

	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	11370	11370
	Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers	Fixed Sprinkler Installation and New Water Tanker Cost for Capital; and Water Sprinkling (thrice a day) Cost for recurring	800000	50000
	Muffle blasting – To control fly rocks during blasting	Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0	5000
	Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit	Dust extractor @ Rs. 25,000/- per unit deployed as capital & @ Rs. 2500 per unit recurring cost for maintenance - 3 Units	75000	7500
	No overloading of trucks/tippers/tractors	Manual Monitoring through Security guard	0	5000
	Stone carrying trucks will be covered by tarpaulin	Monitoring if trucks will be covered by tarpaulin	0	10000
	Enforcing speed limits of 20 km/hr within ML area	Installation of Speed Governors @ Rs. 5000/- per Tipper/Dumper deployed - 2 Units	10000	500
	Regular monitoring of exhaust fumes as per RTO norms	Monitoring of Exhaust Fumes by Manual Labour	0	5000
	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	22740
	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	50000	20000
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	0	0
	Oiling & greasing of Transport vehicles and HEMM at regular interval will be done	Provision made in Operating Cost	0	0
	Adequate silencers will be provided in all the diesel engines of vehicles.	Provision made in Operating Cost	0	0

	It will be ensured that all transportation vehicles carry a fitness certificate.	Provision made in Operating Cost	0	0
	Safety tools and implements that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	0	0
	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Provision made in Operating Cost	0	0
	Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.	Blowing Whistle by Mining Mate / Blaster / Compentent Person	0	0
	Provision for Portable blaster shed	Installation of Portable blasting shelter	50000	2000
	NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 Tonnes of Blasted Material	0	283374
Waste Management	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	5000	20000
		Installation of dust bins	5000	2000
	Bio toilets will be made available outside mine lease on the land of owner itself	Provision made in Operating Cost	0	0
Mine Closure	1. Progressive Closure Activity - Surface Runoff managment	Provision for garland drain @ Rs. 10,000/- per Hectare with maintenance of Rs. 5,000/- per annum	11370	5000
	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	227400	10000
	3. Progressive Closure Activity Green belt development - 500 trees per one hectare - Proposal for 680Trees - (300 Inside Lease Area & 380 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)	60000	6000

		Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring)	30000	3000
	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 closure stage - Last Year	41250	0
	5. Contribution towards Green Fund. As per TNMMCR 1959, Rule 35 A	The Contribution towards Green Funds @ 10% of Seigniorage fee are indicated as part of EMP Budge and not necessarily implemented in the Project Site	643041	0
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	10000	1000
	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	50000
	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) - 18 Employees	72000	18000
	Health check up for workers will be provisioned	IME & PME Health check up @ Rs. 1000/- per employee	0	18000
	First aid facility will be provided	Provision of 2 Kits per Hectare @ Rs. 2000/-	0	2274
	Mine will have safety precaution signages, boards.	Provision for signages and boards made	10000	2000

	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	56850	10000
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	30000	5000
	Implementation as per Mining Plan and ensure safe quarry working	Mines Manager (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	780000
CER	As per MoEF & CC OM 22-65/2017-IA.III Dated 25.02.2021	Detailed Description in following slides and Budget allocation is included as per MoeEF & CC OM	500000	0
TOTAL			1993990	1354758

*Marked cost is already discussed in the mining plan hence that is not included in the total Environmental Management plan cost Total Cost for the five years. The EMP has been prepared for the entire **lease period of 10 years** for the peak production capacity of **21,910m³ of Rough stone**.

Year	Total Cost
1 st	3348748
2 nd	1422495
3 rd	1493620
4 th	1568301
5 th	1687966
Total	95 Lakhs

Cost inflation 5% per annum

Note: This Environmental Management plan cost will vary according to the public consultation comments

10.10.: CONCLUSION –

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

11. SUMMARY AND CONCLUSION

This EIA & EMP report prepared for the proposed Rough stone and Gravel quarry project located in S.F.No 279/2C1B, Pachapalayam Village, Sulur Taluk and Coimbatore District belongs to Tmt. M.Selvathal. the Project falls in the Cluster category consist of 2 Proposed, 4 Existing Quarries falls under “B” category as per MoEF & CC Notification S.O. 3977 (E).

Now, as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green Tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018 clarified the requirement for EIA, EMP and therefore, Public Consultation for all areas from 5 to 25 ha falling in Category B-1 and appraised by SEAC/ SEIAA as well as for cluster situation.

The proposed project are categorized under category “B1” Activity 1(a) (mining lease area in cluster situation) and will be considered at SEIAA – TN after conducting Public Hearing and Submission of EIA/EMP Report for Grant of Environmental Clearance. “Draft EIA report prepared on the basis of ToR issued for carrying out public hearing for the grant of Environmental Clearance from SEIAA, Tamil Nadu”.

Environmental monitoring and audit mechanism have been recommended before and after commencement of the project, where necessary, to verify the accuracy of the EIA predictions and the effectiveness of recommended mitigation measures.

The main scope of the EIA study is to quantify the cumulative impact in the study area due to cluster quarries and formulate the effective mitigation measures for each individual leases. A detailed account of the emission sources, emissions control equipment, background Air quality levels, Meteorological measurements, Dispersion model and all other aspects of pollution like effluent discharge, Dust generation etc., have been discussed in this report. The baseline monitoring study has been carried out during the months March - May2023 for various environmental components so as to assess the anticipated impacts of the cluster quarry projects on the environment and suitable mitigation measures for likely adverse impacts due to the proposed project is suggested individually for the respective proposed project under Chapter 10.

The project proponent ensures to obtain necessary clearances and quarrying will be carried out as per rules and regulations. The Mining Activity will be carried out in a phased manner as per the approved mining plan after obtaining EC, CTO from TNPCB, execution of lease deed and obtaining DGMS Permission and working will be carried out under the supervision of Competent Persons employed. Overall, the EIA report has predicted that the project will comply with all environment standards and legislation after commencement of the project and operational stage mitigation measures are implemented.

Mining operations has positive impact on environment and socio economy such as landscape improvement, water as by-product, economy development and better public services, providing and supply of Rough Stone as per market demand. Sustainable and modern mining leads us to see positive impact of mining operation and providing consistent employment for nearly 18 people directly in the proposed projects and indirectly around 50 people.

As discussed, it is safe to say that the proposed quarries are not likely to cause any significant impact to the ecology of the area, as adequate preventive measures will be adopted to keep the various pollutants within the permissible limits. Green belt development around the area will also be taken up as an effective pollution mitigate technique, as well as to serve as biological indicators for the pollutants released from the Pachapalayam Rough Stone and Gravel Cluster Quarry (Extent – 1.13.70 ha).

12. DISCLOSURE OF CONSULTANT

M/s Geo Exploration and Mining Solutions, an Accredited Organization under Quality Council of India – National Accreditation Board for Education & Training, New Delhi, for carrying out the EIA Study as per the ToR Issued for the proposed project.

Name and address of the consultancy:

GEO EXPLORATION AND MINING SOLUTIONS

No 17, Advaita Ashram Road,

Alagapuram, Salem – 636 004

Tamil Nadu, India

Email:infogeoexploration@gmail.com

Web: www.gemssalem.com

Phone: 0427 2431989.

The Accredited Experts and associated members who were engaged for this EIA study as given below –

Sl.No.	Name of the expert	In house/ Empanelled	EIA Coordinator		FAE	
			Sector	Category	Sector	Category
1	Dr. M. Ifthikhar Ahmed	In-house	1	A	WP GEO SC	B A A
2	Dr. P. Thangaraju	In-house	-	-	HG GEO	A A
3	Mr. A. Jagannathan	In-house	-	-	AP NV SHW	B A B
4	Mr. N. Senthilkumar	Empanelled	38 28	B B	AQ WP RH	B B A
5	Mrs. Jisha parameswaran	In-house	-	-	SW	B
6	Mr. Govindasamy	In-house	-	-	WP	B
7	Mrs. K. Anitha	In-house	-	-	SE	A
8	Mrs. Amirtham	In-house	-	-	EB	B
9	Mr. Alagappa Moses	Empanelled	-	-	EB	A
10	Mr. A. Allimuthu	In-house	-	-	LU	B
11	Mr. S. Pavel	Empanelled	-	-	RH	B
12	Mr. J. R. Vikram Krishna	Empanelled	-	-	SHW RH	A A

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

DECLARATION BY EXPERTS CONTRIBUTING TO THE EIA/EMP

This EIA/EMP for Tmt.M.Selvathal Rough Stone & Gravel Quarry over an Extent of 1.13.70ha in Pachapalayam Village of Sular Taluk, Coimbatore District of Tamil Nadu is prepared as per the Generic Structure of EIA Guidelines manual. It is also certified that information furnished in the above EIA study are true and correct to the best of our knowledge.

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

Name: **Dr. M. Ifthikhar Ahmed**

Designation: **EIA Coordinator**

Date & Signature:




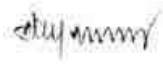

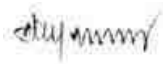








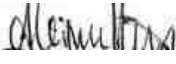



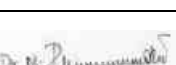

Period of Involvement: **January 2019 to till date**

Associated Team Member with EIA Coordinator:




1. Mr. S. Nagamani
2. Mr.P. Viswanathan
3. Mr. M. Santhoshkumar
4. Mr. S. Ilavarasan

FUNCTIONAL AREA EXPERTS ENGAGED IN THE PROJECT

Sl. No	Functional Area	Involvement	Name of the Expert/s	Signature
1	AP	<ul style="list-style-type: none"> ▪ Identification of different sources of air pollution due to the proposed mine activity ▪ Prediction of air pollution and propose mitigation measures / control measures 	Mr. A. Jagannathan	
2	WP	<ul style="list-style-type: none"> ▪ Suggesting water treatment systems, drainage facilities ▪ Evaluating probable impacts of effluent/waste water discharges into the receiving environment/water bodies and suggesting control measures. 	Dr. M. Ifthikhar Ahmed	
			Mr. N. Senthilkumar	
3	HG	<ul style="list-style-type: none"> ▪ Interpretation of ground water table and predict impact and propose mitigation measures. ▪ Analysis and description of aquifer Characteristics 	Dr. P. Thangaraju	
4	GEO	<ul style="list-style-type: none"> ▪ Field Survey for assessing the regional and local geology of the area. ▪ Preparation of mineral and geological maps. ▪ Geology and Geo morphological analysis/description and Stratigraphy/Lithology. 	Dr. M. Ifthikhar Ahmed	
			Dr. P. Thangaraju	
5	SE	<ul style="list-style-type: none"> ▪ Revision in secondary data as per Census of India, 2011. ▪ Impact Assessment & Preventive Management Plan ▪ Corporate Environment Responsibility. 	Mrs. K. Anitha	

6	EB	<ul style="list-style-type: none"> ▪ Collection of Baseline data of Flora and Fauna. ▪ Identification of species labelled as Rare, Endangered and threatened as per IUCN list. ▪ Impact of the project on flora and fauna. ▪ Suggesting species for greenbelt development. 	Mrs. Amirtham	
			Mr. Alagappa Moses	
7	RH	<ul style="list-style-type: none"> ▪ Identification of hazards and hazardous substances ▪ Risks and consequences analysis ▪ Vulnerability assessment ▪ Preparation of Emergency Preparedness Plan ▪ Management plan for safety. 	Mr. N. Senthilkumar	
			Mr. S. Pavel	
			Mr. J. R. Vikram Krishna	
8	LU	<ul style="list-style-type: none"> ▪ Construction of Land use Map ▪ Impact of project on surrounding land use ▪ Suggesting post closure sustainable land use and mitigative measures. 	Mr. A. Allimuthu	
9	NV	<ul style="list-style-type: none"> ▪ Identify impacts due to noise and vibrations ▪ Suggesting appropriate mitigation measures for EMP. 	Mr. A. Jagannathan	
10	AQ	<ul style="list-style-type: none"> ▪ Identifying different source of emissions and propose predictions of incremental GLC using AERMOD. ▪ Recommending mitigations measures for EMP 	Mr. N. Senthilkumar	
11	SC	<ul style="list-style-type: none"> ▪ Assessing the impact on soil environment and proposed mitigation measures for soil conservation 	Dr. M. Ifthikhar Ahmed	
12	SHW	<ul style="list-style-type: none"> ▪ Identify source of generation of non-hazardous solid waste and hazardous waste. ▪ Suggesting measures for minimization of generation of waste and how it can be reused or recycled. 	Mr. A. Jagannathan	
			Mr. J. R. Vikram Krishna	

LIST OF TEAM MEMBERS ENGAGED IN THIS PROJECT

Sl.No.	Name	Functional Area	Involvement	Signature
1	Mr. S. Nagamani	AP; GEO; AQ	<ul style="list-style-type: none"> ▪ Site Visit with FAE ▪ Provide inputs & Assisting FAE with sources of Air Pollution, its impact and suggest control measures ▪ Provide inputs on Geological Aspects ▪ Analyse & provide inputs and assist FAE with meteorological data, emission estimation, AERMOD modelling and suggesting control measures 	
2	Mr. Viswathanan	AP; WP; LU	<ul style="list-style-type: none"> ▪ Site Visit with FAE ▪ Provide inputs & Assisting FAE with sources of Air Pollution, its impact and suggest control measures ▪ Assisting FAE on sources of water pollution, its impacts and suggest control measures ▪ Assisting FAE in preparation of land use maps 	
3	Mr. Santhoshkumar	GEO; SC	<ul style="list-style-type: none"> ▪ Site Visit with FAE ▪ Provide inputs on Geological Aspects ▪ Assist in Resources & Reserve Calculation and preparation of Production Plan & Conceptual Plan ▪ Provide inputs & Assisting FAE with soil conservation methods and identifying impacts 	

4	Mr. Umamahesvaran	GEO	<ul style="list-style-type: none"> ▪ Site Visit with FAE ▪ Provide inputs on Geological Aspects ▪ Assist in Resources & Reserve Calculation and preparation of Production Plan & Conceptual Plan 	<i>S. Umamahesvaran</i>
5	Mr. A. Allimuthu	SE	<ul style="list-style-type: none"> ▪ Site Visit with FAE ▪ Assist FAE with collection of data's ▪ Provide inputs by analysing primary and secondary data 	<i>A. Allimuthu</i>
6	Mr. S. Ilavarasan	LU; SC	<ul style="list-style-type: none"> ▪ Site Visit with FAE ▪ Assisting FAE in preparation of land use maps ▪ Provide inputs & Assisting FAE with soil conservation methods and identifying impacts 	<i>S. Ilavarasan</i>
7	Mr. E. Vadivel	HG	<ul style="list-style-type: none"> ▪ Site Visit with FAE ▪ Assist FAE & provide inputs on aquifer characteristics, ground water level/table ▪ Assist with methods of ground water recharge and conduct pump test, flow rate 	<i>E. Vadivel</i>
8	Mr. D. Dinesh	NV	<ul style="list-style-type: none"> ▪ Site Visit with FAE ▪ Assist FAE and provide inputs on impacts due to proposed mine activity and suggest mitigation measures ▪ Assist FAE with prediction modelling 	<i>D. Dinesh</i>
9	Mr. Panneer Selvam	EB	<ul style="list-style-type: none"> ▪ Site Visit with FAE ▪ Assist FAE with collection of baseline data ▪ Provide inputs and assist with labelling of Flora and Fauna 	<i>P. Panneer Selvam</i>
10	Mrs. Nathiya	EB	<ul style="list-style-type: none"> ▪ Site Visit with FAE ▪ Assist FAE with collection of baseline data ▪ Provide inputs and assist with labelling of Flora and Fauna 	<i>T. Annam</i>

DECLARATION BY THE HEAD OF THE ACCREDITED CONSULTANT ORGANIZATION

I, Dr. M. Ifthikhar Ahmed, Managing Partner, Geo Exploration and Mining Solutions, hereby, confirm that the above-mentioned Functional Area Experts and Team Members prepared the Cluster EIA/EMP for Tmt.M.Selvathal Rough Stone & Gravel Quarry over an Extent of 1.13.70ha in Pachapalayam Village of Sulur Taluk, Coimbatore District of Tamil Nadu. It is also certified that information furnished in the EIA study are true and correct to the best of our knowledge.

Signature& Date:



Name:

Dr. M. Ifthikhar Ahmed

Designation:

Managing Partner

Name of the EIA Consultant Organization:

M/s. Geo Exploration and Mining Solutions

NABET Certificate No & Issue Date:

NABET/EIA/2225/RA 0276 Dated: 20-2-2023

Validity:

Valid till 06.08.2025

ANNEXURE

Tmt. M.SELVATHAL ROUGH STONE & GRAVEL QUARRY

Pachapalayam Village, Suler Taluk, Coimbatore District

EXTENT =1.13.70 ha

ToR obtained

Lr No.SEIAA-TN/F.No.9727/ToR-1431/2022 Dated: 21.04.2023

Project Proponent

Tmt. M.Selvathal,

W/o.Meignanam,

No. 3/78, Karamadaiyan Thottam,

Periyakuyilai,

Suler Taluk,

Coimbatore District - 641 201.

LIST OF ANNEXURES

Annexure No	DESCRIPTION	PAGE NO
P1 - Tmt. M.Selvathal Rough Stone and Gravel Quarry	COPY OF TERMS OF REFERENCE	1A – 24A
	COPY OF 500M RADIUS QUARRIES DETAILS LETTER	25A – 26A
	COPY OF MINING PLAN APPROVED LETTER	27A – 28A
	COPY OF APPROVED MINING PLAN WITH PLATES	29A – 89A
	COPY OF ADDITIONAL DOCUUMENT	90A – 119A
P2 - Thiru S.A.Ganesan	COPY OF MINING PLAN APPROVED LETTER	120A – 122A
E1- Thiru.B.Sakthivel	COPY OF APPROVED MINING PLAN	123A – 170A
E2 Thiru.R.S.Senthilkumar	COPY OF APPROVED MINING PLAN	171A – 216A
E3- Thiru.K.Chinnasamy	COPY OF APPROVED MINING PLAN	217A – 269A
E4 – Thiru.T.Ragupathi	COPY OF APPROVED MINING PLAN	270A – 361A
	COPY OF BASE LINE MONITORING DATA	362A – 400A
	COPY OF NABET CERTIFICATE	401A



THIRU.DEEPAK S.BILGI, I.F.S.
MEMBER SECRETARY

STATE LEVEL ENVIRONMENT IMPACT
ASSESSMENT AUTHORITY-TAMILNADU

3rd Floor, PanagalMaaligai,
No.1, Jeenis Road, Saidapet,
Chennai - 600 015.

Phone No. 044-24359973

Fax No. 044-24359975

TERMS OF REFERENCE (ToR)

Lr No.SEIAA-TN/F.No.9727/SEAC/ToR-1431/2023 Dated:21.04.2023

To

Tmt.M Selvathal,
W/O Meignam,
3/78 Karamadaiyan thottam,
Periyajytukau,
Sulur Taluk,
Coimbatore – 641 201.

Sir / Madam,

Sub: SEIAA, Tamil Nadu – Terms of Reference with Public Hearing (ToR) for the Proposed Rough Stone & Gravel lease over an extent of 1.13.7Ha at S.F.No. 279/2C1B in Pachapalayam Village, Sulur Taluk, Coimbatore District, Tamil Nadu by Tmt.M. Selvathal - 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/413115/2023 dt 04.01.2023.
2. Your application submitted for Terms of Reference dated: 12.01.2023
3. Minutes of the 366th Meeting of SEAC held on 30.03.2023
4. Minutes of the 613rd meeting of Authority held on 21.04.2023.


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Kindly refer to your proposal submitted to the State Level Impact Assessment Authority for Terms of Reference.

The proponent, Tmt.M. Selvathal has submitted application for ToR, in Form-I, Pre-Feasibility report for the Proposed Rough Stone & Gravel lease over an extent of 1.13.7Ha at S.F.No. 279/2C1B in Pachapalayam Village, Suler Taluk, Coimbatore District Tamil Nadu.

Discussion by SEAC and the Remarks:-

Proposed Rough Stone & Gravel lease over an extent of 1.13.7Ha at S.F.No. 279/2C1B in Pachapalayam Village, Suler Taluk, Coimbatore District, Tamil Nadu by Tmt.M. Selvathal - For Terms of Reference.(SIA/TN/MIN/413115/2023 dt 04.01.2023)

The proposal was placed in this 366th meeting of SEAC held on 30.03.2023. The details of the project furnished by the proponent are available in the website (parivesh.nic.in).

The SEAC noted the following:

1. The Project Proponent, Tmt.M. Selvathal has applied for Terms of Reference for the the Proposed Rough Stone & Gravel lease over an extent of 1.13.7Ha at S.F.No. 279/2C1B in Pachapalayam Village, Suler Taluk, Coimbatore District, Tamil Nadu.
2. The proposed quarry/activity is covered under Category "B1" of Item 1(a) "Mining Projects" of the Schedule to the EIA Notification, 2006.
3. As per the mining plan, the lease period is 5 years. The mining plan is for the period of five years & production should not exceed 1,08,990 m³ of Rough Stone, 32,592 m³ of Weathered Rock & 16,296 m³ of Gravel with an ultimate depth of mining 41m (2m Gravel + 4m Weathered Gravel + 35m Rough Stone) Below Ground Level. The annual peak production is 21,910 m³ of Rough Stone, 13,104 m³ of Weathered Rock & 6552 m³ of Gravel.

Based on the presentation made by the proponent, **SEAC decided to recommend for grant of Terms of Reference (TOR) with Public Hearing**, subject to the following TORs, in addition to the standard terms of reference for EIA study for non-coal mining projects and details issued by the MOEF & CC to be included in EIA/EMP Report:

1. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m 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.


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2. The PP shall provide the details of wind mills/Turbines which are located within 300m radius. Further, keeping the above windmills in mind, the PP shall carry out blast-induced vibration simulation study through any of one of the reputed scientific / academic Institutionssuch as CSIR-Central Institute of Mining & Fuel Research (CIMFR) / Dhanbad, NIRM/Bangalore, IIT-Madras, NIT-Dept of Mining Engg, Surathkal and Anna University – CEG Campus to predict the impacts of the blast-induced ground & air vibration and fly rock on such structures situated within 500 m distance from the quarry lease and the same shall be included in EIA Report.
3. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.
4. 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.
5. 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 prepare and submit an 'Action Plan' for carrying out the realignment of the benches in the proposed quarry lease after it is approved by the concerned Asst. Director of Geology and Mining during the time of appraisal for obtaining the EC.
6. 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.
7. 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.
8. 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.


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9. 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,
- What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?
 - 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.
10. 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).
11. The PP shall carry out Drone video survey covering the cluster, Green belt, fencing etc.,
12. The PP shall furnish the revised manpower including the statutory & competent persons as required under the provisions of the MMR 1961 for the prosed quarry based on the volume of rock handled & area of excavation.
13. 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.
14. 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.
15. The Project Proponent shall provide the Organization chart indicating the appointment of


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- 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.
16. 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.
 17. 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.
 18. 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.
 19. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.
 20. 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.
 21. 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.
 22. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the


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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.

23. 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.
24. Impact on local transport infrastructure due to the Project should be indicated.
25. 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.
26. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.
27. Public Hearing points raised and commitments 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 and to be submitted to SEIAA/SEAC with regard to the Office Memorandum of MoEF& CC accordingly.
28. The Public hearing advertisement shall be published in one major National daily and one most circulated vernacular daily.
29. The PP shall produce/display the EIA report, Executive summary and other related information with respect to public hearing in Tamil Language also.
30. 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.
31. 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 and local school/college authorities.


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- 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.
32. Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly 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
 33. 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.
 34. 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.
 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. 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.
 38. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
 39. 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.
 40. 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


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given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCCB.

41. 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.
42. 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.

Appendix - I
List of Native Trees Suggested for Planting

No	Scientific Name	Tamil Name	Tamil Name
1	<i>Azalea marmelos</i>	Vilvam	விவம்
2	<i>Adenanthura paventosa</i>	Marjadi	மரஜாடி, அமரஜாடி
3	<i>Albizia lebbek</i>	Vaagai	வாகை
4	<i>Albizia amara</i>	Ural	உரல்
5	<i>Bauhinia purpurea</i>	Maruthurai	மரூதூரை
6	<i>Bauhinia racemosa</i>	Aathu	ஆது
7	<i>Bauhinia tomentosa</i>	Iruvathu	இருவாது
8	<i>Buchanania axillaris</i>	Kathura	காதுரை
9	<i>Buransia flabellifera</i>	Panai	பனை
10	<i>Butea monosperma</i>	Murukkazaram	முருக்காசாரம்
11	<i>Bolus ceiba</i>	Ivalu, Sevvilavu	இவல், சேவ்விவல்
12	<i>Calophyllum inophyllum</i>	Punai	புனை
13	<i>Cassia fistula</i>	Sarakondrai	சரகண்டரை
14	<i>Cassia roxburghii</i>	Sengondrai	சேங்கண்டரை
15	<i>Chloroxylon swietenia</i>	Puraotharam	புரோதாரம்
16	<i>Cochlospermum religiosum</i>	Kongu, Marjallavu	கொங்கு, மரஜல்லவல்
17	<i>Cordia dichotoma</i>	Naruvuli	நரவூலி
18	<i>Cretica adamsii</i>	Mavalungum	மாவலுங்கம்
19	<i>Dillenia indica</i>	Uva, Urba	உவா, உர்வா
20	<i>Dillenia pentagyna</i>	SiruUva, Sitrutha	சீருஉவா, சீத்ருதா
21	<i>Diopyros ebenaria</i>	Karungali	கரங்கலி
22	<i>Diopyros schlerozylon</i>	Vagnnai	வாண்பை
23	<i>Ficus amplissima</i>	Kalitchi	காலிச்சி
24	<i>Hibiscus tiliaceus</i>	Aatropoovaram	ஆத்ரோபோவாரம்
25	<i>Hardwickia binata</i>	Aacha	ஆச்சா
26	<i>Holoptelia integrifolia</i>	Aayili	ஆயிலி
27	<i>Laurus coromandelica</i>	Odhian	ஒடியன்
28	<i>Lagerstroemia speciosa</i>	Poo Marudhu	பூ மரூதூ
29	<i>Lepisanthus tetraphyllo</i>	Nerkottaimaram	நேர்கோட்டைமாரம்
30	<i>Limonia aridissima</i>	Vila maram	வில்லா மாரம்
31	<i>Litsea glutinosa</i>	Piniyattai	பினியட்டை
32	<i>Madhuca longifolia</i>	Iluppai	இலுப்பை
33	<i>Mastihara hexamida</i>	UlabkaiPaalai	உலாப்கைப்பலை
34	<i>Mimusops elengi</i>	Magirbarnaram	மகிர்வாரம்
35	<i>Mitrasyris parvifolia</i>	Katambu	காடம்பு
36	<i>Morinda pubescens</i>	Nuna	நுனா
37	<i>Morinda citrifolia</i>	Vellai Nuna	வலை நுனா
38	<i>Phoenix sylvestris</i>	Eechai	ஏச்சை
39	<i>Pongamia pinnat</i>	Pumpam	பும்பம்


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40	<i>Premna mollissima</i>	Munnai	முனை
41	<i>Premna serratifolia</i>	Narumunnai	நடு முனை
42	<i>Premna tomentosa</i>	Malapoovaratu	மலை முறை
43	<i>Prosopis cinerea</i>	Vazni maram	வாழி மரம்
44	<i>Pterocarpus marsupium</i>	Vengai	வேளை
45	<i>Pterospermum canescens</i>	Vennangu, Tada	வேண்டாங்கு
46	<i>Pterospermum xylocarpum</i>	Polavu	புலவு
47	<i>Pithecanthus roxburghii</i>	Karpala	கர்பலா
48	<i>Salvadora persica</i>	Ugaa Maram	உகை மரம்
49	<i>Sapindus emarginatus</i>	Manupungan, Soapukai	மாண்புமணி சோபுகை
50	<i>Saraca asoca</i>	Asoca	அசோகா
51	<i>Streblus asper</i>	Piray maram	பிரை மரம்
52	<i>Strychnos nuxvomica</i>	Yetti	யெட்டி
53	<i>Strychnos potatorum</i>	Therthang Kottai	தேர்தங்க கட்டை
54	<i>Syzygium cumini</i>	Naval	நாவல்
55	<i>Terminalia bellaric</i>	Thandri	தாந்திரி
56	<i>Terminalia arjuna</i>	Ven marudhu	வேள் மருது
57	<i>Toona ciliata</i>	Sandhana vembu	சாந்தா வேம்பு
58	<i>Thespesia populnea</i>	Puvarasu	புவாசு
59	<i>Walsuratrifoliata</i>	valiura	வாலிசுரா
60	<i>Wrightia tinctoria</i>	Veppalai	வேப்பலை
61	<i>Pithecellobium dulce</i>	Kodakkapuli	கொக்கப்பூரி

Discussion by SEIAA and the Remarks:-

The proposal was placed in the 613rd Authority meeting held on 21.04.2023. The Authority noted that this proposal was placed for appraisal in this 366th meeting of SEAC held on 30.03.2023. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant **Terms of Reference (ToR) along with Public Hearing** 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 in addition to the conditions in 'Annexure B' of this minute.

Annexure 'B'

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.


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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 management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.
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.
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 furnish the Emergency Management plan within the cluster.
9. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.
10. The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.
11. The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.

Impact study of mining

12. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following
 - a) Soil health & soil biological, physical land chemical features .
 - b) Climate change leading to Droughts, Floods etc.


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- c) Pollution leading to release of Greenhouse gases (GHG), rise in Temperature, & Livelihood of the local people.
- d) Possibilities of water contamination and impact on aquatic ecosystem health.
- e) Agriculture, Forestry & Traditional practices.
- f) Hydrothermal/Geothermal effect due to destruction in the Environment.
- g) Bio-geochemical processes and its foot prints including environmental stress.
- h) Sediment geochemistry in the surface streams.

Agriculture&Agro-Biodiversity

- 13. Impact on surrounding agricultural fields around the proposed mining Area.
- 14. Impact on soil flora & vegetation around the project site.
- 15. Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.
- 16. The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.
- 17. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.
- 18. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.

Forests

- 19. The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife.
- 20. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.
- 21. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.
- 22. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.


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Water Environment

23. 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.
24. Erosion Control measures.
25. 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.
26. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.
27. The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities.
28. 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.
29. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.
30. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.

Energy

31. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.

Climate Change

32. 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.


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33. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.

Mine Closure Plan

34. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.

EMP

35. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.
36. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.

Risk Assessment

37. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.

Disaster Management Plan

38. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.

Others

39. 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.
40. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.

The 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


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on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.

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- 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


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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.


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- 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.


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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


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- 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


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- 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.


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- 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


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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.


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16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of is acquisition, nearby (in 2-3 km.) water body, population, with in 10km other industries, forest , eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies
22. Issues raised during public hearing (if applicable) and response given
23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan
26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.
31. A detailed plan on plastic waste management shall be furnished. Further, the proponent should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act,


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1986. In this connection, the project proponent has to furnish the action plan.

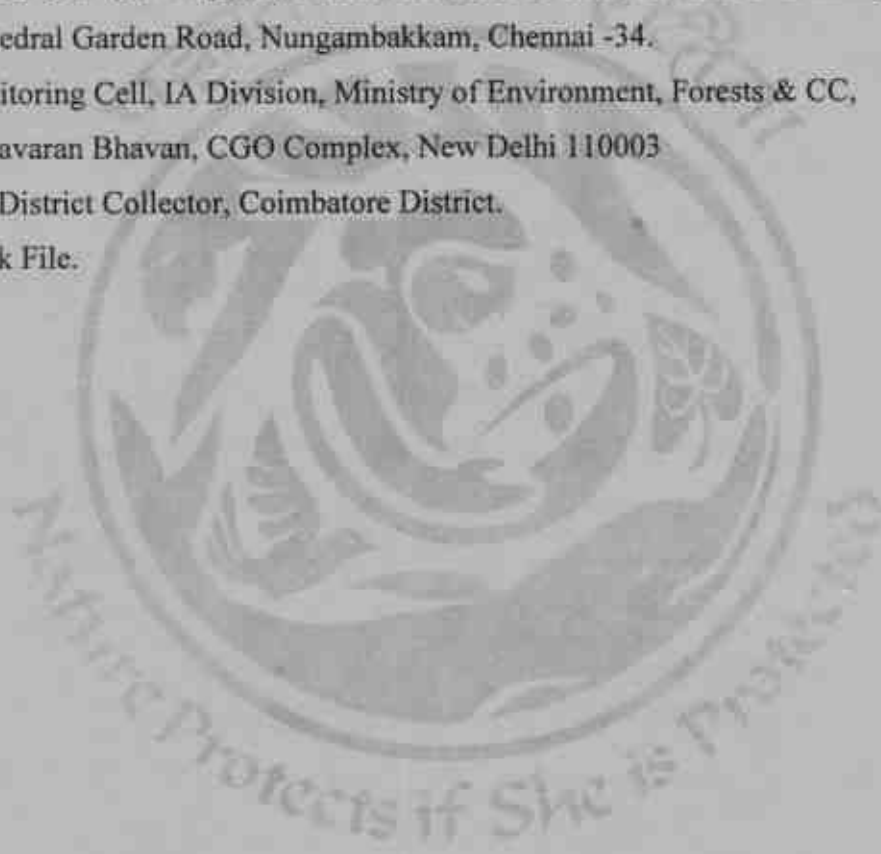
Besides the above, the below mentioned general points should also be followed:-

- 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.


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Copy to:

1. The Additional Chief Secretary to Government, Environment & 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 110032.
3. The Member Secretary, 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 110003
6. The District Collector, Coimbatore District.
7. Stock File.



From
Thiru.S.Rameshkumar, M.Sc.,
Assistant Director,
Dept. of Geology and Mining,
Coimbatore.

To
Tmt.M.Selvathal,
W/o.Meygnanam,
3/78, Karamadaiyan Thottam,
Periyakuyilai,
Sulur,
Coimbatore.

Rc.No.544/Mines/2020 Dated: 16.03.2021

Sir,

Sub: Mines & Minerals – Minor Mineral – Coimbatore District – Sulur Taluk – Pachapalayam Village – Survey No.279/2C1B – over an extent of 1.13.70 hectares of patta land – Application preferred by Tmt.M.Selvathal for quarrying Roughstone and Gravel – Precise area communicated – Details of quarries situated within 500 meter radial distance – Requested – furnished – reg.

- Ref. 1. Assistant Director, Dept. of Geology and Mining, Coimbatore Letter Rc.No.544/Mines/2020, Dated: 27.01.2021
2. Tmt.M.Selvathal, Coimbatore letter dated: 10.03.2021 –

I invite kind attention to the reference cited wherein Tmt.M.Selvathal has been issued precise area for the grant of Rough Stone and Gravel quarry lease over an extent of 1.13.70 hectares of patta land in Survey No. 279/2C1B of Pachapalayam Village, Sulur Taluk, Coimbatore District.

In the reference 2nd cited of Tmt.M.Selvathal has requested to furnish the details of quarries situated within 500 meter radial distance from the proposed area.

In this connection the details of abandoned, expired, existing and proposed quarries situated within 500 meter radial distance from the proposed area are furnished below.

i) Existing Quarries

Sl. No	Name of the Owner	Village &S.F.Nos.	Extent in Hect.	Lease period	Remarks
1.	B.Sakthivel	Pachapalayam 280/1(P) & 280/2(P)	1.34.5	06.06.2016 to 05.06.2021	

2.	S.A.Ganesan	Pachapalayam 260/1A1, 260/1B1, 260/1C1 & 260/1D1	1.76.5	28.07.2016 to 27.07.2021	
3.	R.S.Senthilkumar	Pachapalayam 285/3 & 286/2	3.15.0	11.11.2017 to 10.11.2022	
4.	K.Chinnasamy	Pachapalayam 282/1A & 282/1B (P)	1.73.0	06.12.2017 to 05.12.2022	
5.	T.Ragupathi	Pachapalayam 273/1B, 273/2B, 273/3E(P), 274/1A & 274/2A	2.62.0	03.01.2019 to 02.01.2024	

ii) Expired Quarries

10.61.049

Sl. No.	Name of the Owner	Village & S.F.Nos.	Extent in Hect.	Lease period	Remarks
1.	M.Muralikrishnan	Pachapalayam 281/1 & 286/1B4	2.30.0	02.06.2014 to 01.06.2018	
2.	V.Gopalakrishnan	Pachapalayam 282/2A2	1.28.5	02.06.2014 to 1.06.2018	

iii) Abandoned quarries

3.58.5

Sl. No.	Name of the Owner	Village & S.F.Nos.	Extent in Hect.	Lease period	Remarks
1.	A.Velusamy	Pachapalayam 285/1B1	1.72.5	05.05.2010 to 04.05.2015	
2.	A.Prabu	Pachapalayam 292/1D, 292/3B2, 292/3C & 293/1A1	2.62.0	25.10.2010 to 24.10.2015	

iv) Proposed quarries

4.34.5

Sl. No.	Name of the Owner	Village & S.F.Nos.	Extent in Hect.	Remarks
1.	M.Selvathal	Pachapalayam 279/2C1B	1.13.70	Subject area Precise area communicated
2.	S.A.Ganesan	Pachapalayam 273/2A & 281/2	2.03.0	Precise area communicated

v) Future Proposed quarries

3.16.7

Sl. No.	Name of the Owner	Village & S.F.Nos.	Extent in Hect.	Remarks
---NIL---				

13.77.7

[Signature]
Assistant Director,
Dept. of Geology and Mining,
Coimbatore.

From

Thiru.S.Rameshkumar, M.Sc.,
Assistant Director,
Dept. of Geology and Mining,
Coimbatore.

To

Tmt.M.Selvathal,
W/o.Meygnanam,
3/78, Karamadaiyan Thottam,
Periyakuyilai,
Sulur,
Coimbatore.

Rc.No.544/Mines/2020 Dated: 16.03.2021

Sir,

Sub: Mines & Minerals – Minor Mineral – Coimbatore District – Sulur Taluk – Pachapalayam Village - Survey No.279/2C1B - over an extent of 1.13.70 hectares of patta land - Application preferred by Tmt.M.Selvathal for quarrying Rough stone and Gravel – Submission of mining plan for approval – approved – regarding.

- Ref: 1. Quarry lease application dated 24.09.2020 preferred by Tmt.M.Selvathal, Coimbatore.
2. Assistant Director, Dept. of Geology and Mining, Coimbatore Letter Rc.No.544/Mines/2020, Dated: 27.01.2021.
3. Mining Plan submitted by Tmt.M.Selvathal dated: 10.03.2021.


In response to the precise area communicated by the Assistant Director of Geology and Mining, Coimbatore the applicant Tmt.M.Selvathal vide reference 3rd cited has submitted three copies of mining plan for the grant of Roughstone and Gravel quarry lease over an extent of 1.13.70 hectares of patta land in Survey No.279/2C1B of Pachapalayam Village, Sulur Taluk, Coimbatore District.

2. The mining plan submitted for the grant of Rough stone and Gravel quarry lease over an extent of 1.13.70 hectares of patta land in Survey No.279/2C1B of Pachapalayam Village, Sulur Taluk, Coimbatore District has been verified in detail.

3. As per the guidelines/instructions issued by the Commissioner of Geology and Mining, Chennai vide letter Rc.No.3868/LC/2012, dated 19.11.2012, the mining plan is hereby approved, subject to the following conditions:

- (i) The mining plan is approved without prejudice to any other Law applicable to the quarry lease from time to time whether such laws are made by the Central Government, State Government or any other authority.
- (ii) This approval of the mining plan does not in any way imply the approval of the Government in terms or any other provisions of the Mines and Minerals (Development and Regulation) Amended Act, 2015, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Explosives Act, 1884 (Central Act IV of 1884) and the Rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.
- (iii) The mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
- (iv) As per the Assistant Director, Dept. of Geology and Mining, Coimbatore letter Rc.No.544/Mines/2020, Dated: 27.01.2021 the following conditions have been incorporated in the Mining Plan.
- a) No hindrance should be caused to the adjacent pattadars and public.
- b) A safety distance of 7.5 meters should be provided for the adjacent patta lands from the lease applied area.
- c) DGPS survey should be done by the Government recognized agency and boundary stones should be erected along the entire boundary of the leased out area.
- v) Quarrying shall be done as per the approved Mining Plan and that the mining plan is approved without prejudice to any other law applicable to the quarry lease from time to time whether such laws are made by the Central Government, State Government or any other authority.

Encl: Two copies of Approved Mining Plan.


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

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

1-5





MINING PLAN AND PROGRESSIVE QUARRY CLOSURE PLAN FOR PACHAPALAYAM ROUGH STONE AND GRAVEL QUARRY

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDED UNDER TAMIL NADU MINOR MINERAL
CONCESSION RULES, 1959)

Patta Land / Lease Period = Five Years

IN

LOCATION OF THE QUARRY LEASE APPLIED AREA

EXTENT : 1.13.7 Ha ✓
S.F.No. : 279/2C1B ✓
VILLAGE : PACHAPALAYAM ✓
TALUK : SULUR ✓
DISTRICT : COIMBATORE ✓
STATE : TAMIL NADU ✓

FOR

APPLICANT

Tmt.M.Selvathal, ✓

W/o. Meignanam, ✓

No. 3/78, Karamadaiyan Thottam, ✓

Periyakuyilai, Sulur Taluk, ✓

Coimbatore District - 641 201. ✓

PREPARED BY

Dr.P.Thangaraju, M.Sc., Ph.D.,

Qualified Person

No.17, Advaita Ashram Road,

Alagapuram, Salem - 636 004.

Cell: 94422 78601 & 94433 56539.

E-Mail: infogeoexploration@gmail.com

M.Selvathal,
W/o. Meignanam,
No. 3/78, Karamadaiyan Thottam,
Periyakuyilai, Sular Taluk,
Coimbatore District – 641 201.



CONSENT LETTER FROM THE APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Pachapalayam Rough Stone and Gravel Quarry lease applied area over an extent of 1.13.7 Hectares of patta land in S.F.No. 279/2C1B of Pachapalayam Village, Sular Taluk, Coimbatore District and Tamil Nadu State has been prepared by

Dr.P.Thangaraju M.Sc., Ph.D.,
Qualified Person

I request to the Assistant Director, Department of Geology and Mining, Coimbatore District to make further correspondence regarding the modification of the Mining Plan with the said Qualified Person at his following address.

Dr.P.Thangaraju M.Sc., Ph.D.,
No. 17, Advaita Ashram Road,
Alagapuram, Salem – 636 004.
Cell: 94422 78601 & 94433 56539.

We hereby undertake that all the modifications, if any made in the Mining Plan by the Qualified Person may be deemed to have been made with my knowledge and consent and shall be acceptable to me and binding on me in all respects.

Signature of the Applicant

M. Selvathal

M.Selvathal

Place: Coimbatore

Date: 28.01.2021

M.Selvathal,
W/o. Meignanam,
No. 3/78, Karamadaiyan Thottam,
Periyakuyilai, Sular Taluk,
Coimbatore District – 641 201.

DECLARATION OF THE APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Pachapalayam Rough Stone and Gravel Quarry lease applied area over an extent of 1.13.7 Hectares of patta land in S.F.No. 279/2C1B of Pachapalayam Village, Sular Taluk, Coimbatore District and Tamil Nadu State 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.

Signature of the Applicant

14/02/2021

M.Selvathal

Place: Coimbatore

Date: 28.01.2021



CERTIFICATE

Certified that I am, **Dr.P.THANGARAJU, M.Sc., Ph.D.**, having an office at Regd. Off. No.17, Advaita Ashram Road, Alagapuram, Salem – 636 004, holding a Post Graduate Degree in Geology (M.Sc. Geology) from Madras University, Chennai and I worked in the field of Geology in a role of Geologist.

Rule 15(I)(a) and (b) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 stipulates the eligibility for preparing Mining plans as “(I)(a) a post graduate degree in Geology granted by a university established” and (I)(b) “Professional experience of five years of working in a supervisory capacity in the field of mining after obtaining the degree”. Since my qualification and experience are satisfied the Rule (I)(a) and (I)(b) of 15 of the said Rules, I am eligible to prepare Mining Plans for both Major and Minor Minerals.

Accordingly, I am prepared this Mining Plan and Progressive Quarry Closure Plan in Respect of Pachapalayam Rough Stone and Gravel Quarry in S.F.No. 279/2C1B over an extent of 1.13.7 Ha of Patta land in Pachapalayam Village, Sulur Taluk, Coimbatore District and Tamilnadu State for Tmt.M.Selvathal, W/o. Meignanam, residing at No. 3/78, Karamadaiyan Thottam, Periyakuyilai, Sulur Taluk, Coimbatore District – 641 201. Since the Mining Plan is prepared as per the provisions contained in Rule 15(I)(a) and (I)(b) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016.

Signature of the Qualified Person


Dr.P.Thangaraju, M.Sc., Ph.D.,

Place: Salem

Date: 10.02.2021

Dr.P.Thangaraju M.Sc., Ph.D.,
No. 17, Advaita Ashram Road,
Alagapuram, Salem – 636 004.
Cell: 94422 78601 & 94433 56539.



CERTIFICATE FROM THE QUALIFIED PERSON

This is to certify that the Provisions of Prepared under Rules 41 & 42 as Amended in Tamil Nadu Minor Mineral Concession Rules, 1959. The preparation of Mining Plan and Progressive Quarry Closure Plan for Pachapalayam Rough Stone and Gravel Quarry in S.F.No.279/2C1B over an extent of 1.13.7 Ha of Patta Land in Pachapalayam Village, Suler Taluk, Coimbatore District, Tamil Nadu State has been prepared for

Tmt.M.Selvathal,
W/o. Meignanam,
No. 3/78, Karamadaiyan Thottam,
Periyakuyilai, Suler Taluk,
Coimbatore District – 641 201.

Whenever specific permissions/ exemptions/ relaxations and approvals are required, the Applicant will approach the concerned authorities of the Assistant Director, Department of Geology and Mining, Coimbatore District, Tamil Nadu for such permissions/ exemptions/ relaxations and approvals.

It is also certified that information furnished in the above Mining Plan are true and correct to the best of my knowledge.

Signature of the Qualified Person


Dr.P.Thangaraju M.Sc., Ph.D.,

Place: Salem

Date: 10.02.2021

Dr.P.Thangaraju M.Sc., Ph.D.,

No. 17, Advaita Ashram Road,

Alagapuram, Salem – 636 004.

Cell: 94422 78601 & 94433 56539.



CERTIFICATE FROM THE QUALIFIED PERSON

Certified that the Provisions of Mines Act, Rules and Regulations or Orders made there under have been observed in the preparation of Mining Plan and Progressive Quarry Closure Plan for Pachapalayam Rough Stone and Gravel Quarry in S.F.No. 279/2C1B over an extent of 1.13.7 Ha of Patta Land in Pachapalayam Village, Sulur Taluk, Coimbatore District and Tamil Nadu State has been prepared for

Tmt.M.Selvathal,

W/o. Meignanam,

No. 3/78, Karamadaiyan Thottam,

Periyakuyilai, Sulur Taluk,

Coimbatore District – 641 201.

Whenever specific permissions/ exemptions/ relaxations and approvals are required, the Applicant will approach the concerned authorities of Director General of Mines Safety (DGMS), No.5, II Street, Block-AA, Anna Nagar, Chennai-40, Tamil Nadu for such permissions / exemptions / relaxations and approvals.

It is also certified that information furnished in the Mining Plan are true and correct to the best of my knowledge.

Signature of the Qualified Person


Dr.P.Thangaraju M.Sc., Ph.D.,

Place: Salem

Date: 10.02.2021



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புதுச்சேரி இயக்குநர் அலுவலகம்
16 MAR 2021

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**MINING PLAN ALONG WITH PROGRESSIVE QUARRY CLOSURE PLAN
FOR PACHAPALAYAM ROUGH STONE AND GRAVEL QUARRY OVER AN
EXTENT OF 1.13.7 Ha IN PACHAPALAYAM VILLAGE, SULUR TALUK,
COIMBATORE DISTRICT, TAMILNADU**

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDED UNDER TAMIL NADU MINOR MINERAL
CONCESSION RULES, 1959)

1.0 INTRODUCTION AND EXECUTIVE SUMMARY

The Mining Plan and Environmental Management plan is prepared for Tmt.M.Selvathal, W/o.Meignanam, residing at No. 3/78, Karamadaiyan Thottam, Periyakuyilai, Sulur Taluk, Coimbatore District – 641 201.

The applicant applied for Rough Stone and Gravel quarry over an extent of 1.13.7 Hectares of patta land in S.F.No.279/2C1B of Pachapalayam Village, Sulur Taluk, Coimbatore District, Tamil Nadu State under Rule 19(1) of Tamil Nadu Minor Mineral Concession Rules, 1959.

The application was processed by the Assistant Director, Department of Geology and Mining, Coimbatore District and passed a Precise area Communication letter vide **Rc.No.544/Mines/2020, Dated:27.01.2021** to submit an approved Mining Plan and obtain Environmental Clearance from the SEIAA, Tamil Nadu with the conditions to provide:

- a. Quarrying should be carried out without any hindrance to the adjacent patta lands and general public.
- b. Quarrying should be carried out leaving a safety distance of 7.5 meters to the adjacent patta lands

In order to ensure compliance of the order of the Honourable Supreme Court Dated: 27.02.2012 in LA.No.12-13 of 2011 in Special Leave Petition SLP (C) No 19628-19629/2009, it has been now decided that all mining projects of minor minerals including their renewal irrespective of sizes of the lease would hence forth require prior environmental clearance mining project within the lease applied area up to less than 100Ha including projects or minor mineral with lease applied area less then 5Ha would be treated as category B as defined in the EIA notification 2006 and will be considered by the state notified by MoEF as prescribed procedure under EIA notification 2006.

In the above circumstances the applicant through his consultant is hereby preparing the mining plan along with Progressive Quarry Closure Plan for approval and subsequent submission of Form-I,

Form-IM and Pre feasibility report to obtain environmental clearance from the SEIAA, Tamil Nadu, Rough Stone and Gravel quarry. This mining plan is prepared by considering the Rules 41 & 42 as Amended in Tamil Nadu Minor Mineral Concession Rules, 1959 and as per the EIA Notification 2006 and its subsequent Amendment and judgments till 24.01.2019.

Short Notes of Mining plan:

- a. Village Panchayat - Pachapalayam
- b. Panchayat Union - Sulthanpet
- c. The Geological Resources are $3,95,500\text{m}^3$ of Rough Stone, $45,200\text{m}^3$ of Weathered Rock and $22,600\text{m}^3$ of Gravel in the entire area.
- d. The Total Mineable Reserves are $1,08,990\text{m}^3$ of Rough Stone, $32,592\text{m}^3$ of Weathered Rock and $16,296\text{m}^3$ of Gravel in the entire area.
- e. The proposed quantity of reserves/ (level of production) to be mined are $1,08,990\text{m}^3$ of Rough Stone, $32,592\text{m}^3$ of Weathered Rock and $16,296\text{m}^3$ of Gravel for five years in the entire area.
- f. Total extent of the lease applied area is about 1.13.7 Ha.
- g. Topography of the area = The area is flat topography
- h. Proposed Depth of mining = 41m (2m Gravel + 4m Weathered Gravel + 35m Rough Stone) below ground level.
- i. This Mining Plan period = Five years
- j. It is a fresh lease application.
- k. Method of mining / level of mechanization.
Opencast mechanized method, the quarry operation involves shallow jack hammer drilling, slurry blasting.
- l. Type of machineries proposed in the quarrying operation is given below.
Excavators attached with rock breaker (Rental Basis).
Jack hammer, Compressor (Diesel drive) (4 Jack Hammer capacity) (Rental Basis).
- m. No trees will be uprooted due to this quarry operation.
- n. The approach road from the main road to quarry is will be Constructed and same will be maintained in a good condition for the haulage of quarry materials and machineries.
- o. There is No Export of this Rough Stone and Gravel.
- p. Topo sketch covering 10Km and 1Km radius around the proposed area with markings of habitations, water bodies including streams, rivers, roads, major structure like bridges, wells.

archaeological importance, places of worships is marked and enclosed as Plate No. IA and IB.

- q. The lease applied area is about 1.13.7Ha bounded by four corners; the corners are designated as 1-4 clock-wise from the Southwestern corner and the Co – ordinates for all the corners are clearly marked in the Quarry Lease Plan and Surface Plan enclosed as Plate No.II.
- r. The plans of proposed quarrying area showing the dimensions of the pit, their proposed depth and maximum area of proposed quarrying are and marked in the Topography, Geological Plan and section enclosed as Plate No. III.
- s. General conditions will not applicable for the proposed area. The area applied for lease is 10Km away from the,
- Interstate Boundary.
 - Protected area under wild life protection ACT 1972.
 - Critically polluted areas as identified by CPCB,
 - Notified Eco sensitive areas.
- t. There is no wastage anticipated during this quarry operation, hence waste dump is not proposed in the lease applied area.
- u. Around 18 employees are deploying in the quarrying operation.
- v. Total Cost of the project is about **Rs. 40,54,000/-**.
- w. Infrastructures around the quarry lease applied area:

Table – 1

Particulars	Location	Approximate aerial distance from lease applied area.
Nearest Post Office	Chettipalayam	4.0km – NW
Nearest School	Pachapalayam	1.0km – SE
Nearest Dispensary	Chettipalayam	4.0km – NW
Nearest Town	Kinathukadavu	11.0km – SW
Nearest Police Station	Chettipalayam	4.0km – NW
Nearest Govt. Hospital	Kinathukadavu	11.0km – SW
Nearest D.S.P. Office	Coimbatore	18.0km – NW
Nearest Railway Station	Chettipalayam	4.0km – NW
Nearest Airport	Coimbatore	14.0km – NW
Nearest Seaport	Kochi	139km – SW
District Head quarters	Coimbatore	18.0km – NW

**2.0 GENERAL INFORMATION**

2.1 a) Name of the Applicant : Tmt.M.Selvathal
: W/o. Meignanam,

b) Address of the Applicant (With Phone No and Aadhaar No.)

Address : No. 3/78, Karamadaiyan Thottam,
Periyakuyilai, Sulur Taluk,
Coimbatore District.

Pin Code : 641 201

Mobile No : 98650 44822

Aadhaar No : 4163 1748 6934

E-mail : mskarthi4822@gmail.com

c) Status of the Applicant (Individual / Company / Firm):

The applicant is an individual.

2.2 a) Mineral which the Applicant intends to mine:

The Applicant intends to quarry Rough Stone and Gravel only.

b) Precise area communication letter details received from the Competent Authority of the Government:

The precise area communication letter was received from the Assistant Director, Department of Geology and Mining, Coimbatore District vide **Rc.No544/Mines/2020, Dated: 27.01.2021** to submit an approved mining plan and Environmental Clearance from the SEIAA, Tamil Nadu.

c) Period of permission / lease to be granted:

The applicant has applied for five years, the Assistant Director, Department of Geology and Mining, Coimbatore District has recommended for Five years for Rough Stone and Gravel.

d) Name and address of the Qualified Person preparing the mining plan:

Name : **Dr.P.Thangaraju M.Sc., Ph.D.,**
Qualified Person

Address : No.17, Advaita Ashram Road,
Alagapuram, Salem - 636 004.

Mobile : 94422 78601 & 94433 56539

Telephone No. : 0427-2431989

Email : infogeoexploration@gmail.com



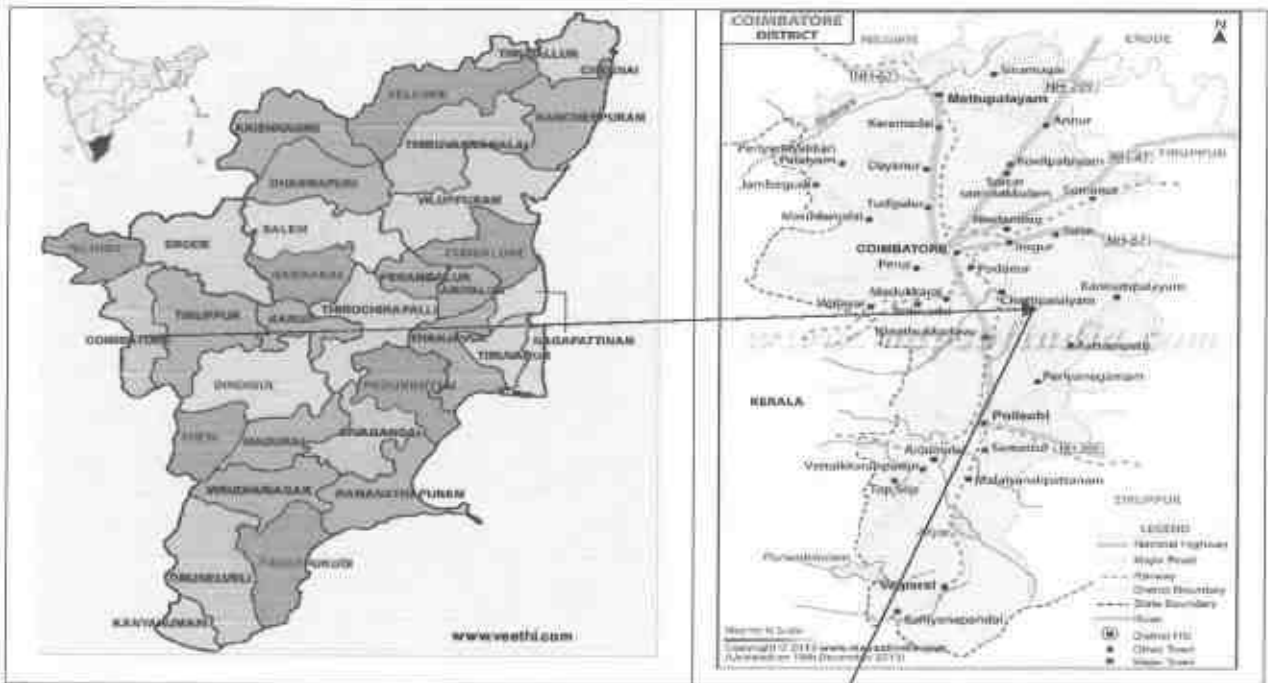
3.0 LOCATION

a) Details of the area with location map:

The lease applied area is located about 17km Southeast of Coimbatore, 15km Southwest of Sulur and 1km Northwest side of Pachapalayam Village.



Location Map of the Lease Applied area



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Table – 2

District	Taluk	Village	S.F. No.	Area in Ha.	Patta No.
Coimbatore	Sulur	Pachapalayam	279/2C1B	1.13.7	1605
Total Extent				1.13.7	

b) Classification of the area (Ryotwari/ Poramboke / others):

It is a Patta land (Barren land) which is not fit for vegetation/ Cultivation.

c) Ownership / Occupancy of the applied area (surface right):

It is a Patta land. Registered in the name of the applicant (Tmt.M.Selvathal) vide Patta No.1605.

Refer the Patta copy as Annexure No. IV.

d) Toposheet No. with latitude and longitude:

The lease applied area falls in the Toposheet No: 58 - F/01 Latitude between: 10° 54' 23.73"N to 10° 54' 27.69"N and Longitude between: 77° 04' 04.52"E to 77° 04' 09.12"E on WGS datum-1984.

Please refer the Plate Nos. I to II.

e) Existence of public road / Railway line, if any nearby and approximate distance:

The approach road (Earth road) is situated on the Western side of the area which is connects to the Chettipalayam – Pachapalayam Village Road located at 600m on the Southwestern side of the area.

Multiple road access is available from the quarry to state highways and National Highway, no towns are enrooted hence the traffic density is not much more due to the transportation of Rough Stone and Gravel.

The approach road from the quarry is will be constructed, the same will be utilized for haulage and maintained during the entire lease period, tree sapling will be planted on the either side of the road to prevent dust and noise propagation to the nearby areas.

The Nearest Railway line is Coimbatore – Pollachi which is located about 4.0km on the western side of the area.

PART - A

16 MAR 2021

4.0 GEOLOGY AND MINERAL RESERVES**4.1 Brief description of the Topography and general Geology of the area (with plans):**

The lease applied area is flat terrain. The area has gentle sloping towards Southern side and altitude of the area is 415m above from Mean sea level. The area is covered by 2m thickness of Gravel, 4 Weathered Rock and followed by Massive Charnockite which is clearly inferred from the nearby existing quarry pit.

The Water level in the surrounding area is 70m in summer and at 65m in rainy seasons below general ground profile which is observed from the nearby bore wells. Average annual rainfall is about 689mm.

Topographical View of Pachapalayam Rough Stone and Gravel
Quarry lease applied area



Peninsular gneiss forms the oldest rock formations, in which the massive formation of Charnockite lies over with rich accumulation of recent quaternary formation. On regional scale of the Charnockite body is N30°E – S30°W with dipping towards SE60°.

The general geological sequences of the rocks in this area are given below:

	AGE		FORMATION
↑	Recent	-	Quaternary formation (Gravel + Weathered Rock)
	-----Unconformity-----		
	Archaean	-	Charnockite Peninsular Gneiss complex

4.2 Details of exploration already carried out if any:

State Geology and Mining Dept, Govt. of Tamil Nadu, has carried out the Regional prospecting and exploration in these areas during 1992 to 1993.

Geological Survey of India has carried out detailed mapping in Coimbatore District. Besides, the Qualified Person and his team members made a detailed geological study of the proposed area. The Rough Stone formation is clearly inferred from the nearby existing quarry pit.

4.3 Estimation of Reserves:**a) Geological reserves with geological sections on a scale of 1:1000 / 1:2000**

As far as Rough Stone (Charnockite) is concerned, the only practical method is the systematic geological mapping and delineation of Rough Stone within the field and careful evaluation of body luster, physical properties, engineering properties, commercial aspects etc.,

Totally two sections have been drawn, one section is along the strike direction as (X-Y) Length wise and another one cross section is drawn perpendicular to strike as (A-B) Width wise to cover the maximum area considered for lease.

The Topographical, Geological plan and sections demarcated the commercial marketable Rough Stone (Charnockite) deposit has been prepared in the scale of 1:1000 (please refer the Geological plan and sections Plate No- III). As the sale of Rough Stone are in terms of cubic metres (Volume) only and not in terms of tonnage.

Geological Resources (Plate No. III):

The Geological Resources of Rough Stone and Gravel are calculated up to a maximum depth of 41m [2m Gravel + 4m Weathered Gravel + 35m Rough Stone] below from the general ground level. The total Geological Resources are calculated in cross section method.

Table-3

GEOLOGICAL RESOURCES							
Section	Bench	Length (m)	Width (m)	Depth (m)	Geological Resources of Rough Stone (m ³)	Weathered Rock (m ³)	Gravel (m ³)
XY-AB	I	113	100	2			22600
	II	113	100	4		45200	
	III	113	100	5	56500		
	IV	113	100	5	56500		
	V	113	100	5	56500		
	VI	113	100	5	56500		
	VII	113	100	5	56500		
	VIII	113	100	5	56500		
	IX	113	100	5	56500		
Total					395500	45200	22600

The Geological Resources of Gravel	:	22,600m ³
The Geological Resources of Weathered Rock	:	45,200m ³
The Geological Resources of Rough Stone	:	3,95,500m ³

Mineable Reserves:

The mineable reserves are calculated after leaving the safety distance and Bench loss.

Table - 4

MINABLE RESERVES							
Section	Bench	Length (m)	Width (m)	Depth (m)	Mineable Reserves of Rough Stone (m ³)	Weathered Rock (m ³)	Gravel (m ³)
XY-AB	I	97	84	2			16296
	II	97	84	4		32592	
	III	89	76	5	33820		
	IV	79	66	5	26070		
	V	69	56	5	19320		
	VI	59	46	5	13570		
	VII	49	36	5	8820		
	VIII	39	26	5	5070		
	IX	29	16	5	2320		
Total					108990	32592	16296

Total Mineable Reserves of Rough Stone @ 100% : 1,08,990m³

The Mineable Reserves of Weathered Rock : 32,592m³

Total Mineable Reserves of Gravel : 16,296m³

The mineable reserves have been computed as 1,08,990m³ of Rough Stone, 32,592m³ of Weathered Rock and 16,296m³ of Gravel at the rate of 100% recovery upto a depth of 41m (2m Gravel + 4m Weathered Rock + 35m Rough Stone) below from the general ground level for five years.

5.0 MINING**5.1. Method of mining (opencast / underground):**

Open cast Mechanized Mining is being carried out with 5.0 meter vertical bench with a bench width is not less than the bench height.

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.

5.2. Mode of working (mechanized, semi mechanized, manual):

The Rough Stone is proposed to quarry at 5m bench height & width with conventional Opencast Mechanized Method.

The quarry operation involves shallow jack hammer drilling, slurry explosives in blasting, excavation, Loading and transportation of Rough Stone to the needy crusher.

The production of Rough Stone in this quarry involves the following method which is typical for Rough Stone quarrying in contrast to other major mineral mining.

Splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy crushers.

Occasionally hydraulic excavators are attached with rock breakers for fragmentation to avoid secondary blasting. The primary boulders thus splitted are removed from the pits by excavators and further made to smaller sizes by rock breakers attached in excavators. It is a conventional opencast mechanized method of mining.

5.3. Proposed Bench Height and Width:

The bench height is proposed 5.0 meter vertical bench the width of the bench is not less than the Height.

5.4. Indicate the overburden / mineral production expected pit wise as detailed below (composite plan and section showing pit layout, dumps, disposal of waste if any etc.):

The overburden in the form of Gravel formation and Weathered Rock, the Gravel and Weathered Rock will be directly loaded into tippers for the filling and levelling of low lying areas, this will be done only after obtaining permission and paying necessary seigniorage fees to the Government. The excavated Rough Stone will be directly loaded into tippers to the needy customers. The Composite year wise Development and production plan and sections indicating the Pit lay out, Green belt development are shown in Plate No-III.

Year wise Development and Production

Table - 5

15 MAR 2021

YEARWISE RESERVES								
Section	Year	Bench	Length (m)	Width (m)	Depth (m)	Recoverable Reserve of Rough Stone (m ³)	Weathered Rock (m ³)	Gravel (m ³)
XY-AB	I	I	39	84	2			6552
		II	39	84	4		13104	
		III	31	76	5	11780		
		IV	21	66	5	6930		
		V	11	56	5	3080		
		Total					21790	13104
	II	I	22	84	2			3696
		II	22	84	4		7392	
		III	22	76	5	8360		
		IV	22	66	5	7260		
		V	22	56	5	6160		
		Total					21780	7392
	III	I	36	84	2			6048
		II	22	84	4		7392	
		III	22	76	5	8360		
		IV	22	66	5	7260		
		V	22	56	5	6160		
		Total					21780	7392
	IV	II	14	84	4			4704
		III	14	76	5	5320		
		IV	14	66	5	4620		
		V	14	56	5	3920		
		VI	35	46	5	8050		
		Total					21910	4704
	V	VI	24	46	5	5520		
		VII	49	36	5	8820		
		VIII	39	26	5	5070		
IX		29	16	5	2320			
Total						21730		
Grand Total						108990	32592	16296

Total proposed Reserves of Rough Stone @ 100% : 1,08,990m³

Total proposed Reserves of Weathered Rock : 32,592m³

Total proposed Reserves of Gravel : 16,296m³

The Recoverable reserves have been computed as 1,08,990m³ of Rough Stone, 32,592m³ of Weathered Rock and 16,296m³ of Gravel at the rate of 100% recovery upto a depth of 41m (2m Gravel + 4m Weathered Gravel + 35m Rough Stone) below ground level for five years.

The applicant ensures the total quantity proposed in the benches will not exceed during the quarrying operation. Besides the Rough Stone locked up in benches will be exploited after obtaining necessary permission from the office of Director General of Mine Safety, Chennai Region by submitting relevant documents, appropriate safety plans and its Mitigation measures.

One lorry load	=	6m ³ (approx.)
Total No of Working days	=	300 Days per year
Total quantity to be removed in this five years plan period	=	1,08,990m ³
Hence total Lorry loads per day	=	1,08,990m ³ /6m ³
	=	18,165 Lorry loads
	=	18,165/5 years
	=	3,633/300 days
Rough Stone	=	12 - 13 Lorry loads per day
Total quantity of Weathered Rock to be removed during four years	=	32,592m ³ (Gravel)
Hence total Lorry loads per day	=	32,592m ³ /6m ³
	=	5,432 Lorry loads
	=	5,432/4 years
	=	1,358/300 days
Weathered Rock load per day	=	4 - 5 Lorry loads per day
Total quantity of Gravel to be removed during three years	=	16,296m ³
Hence total Lorry loads per day	=	16,296m ³ /6m ³
	=	2,716 Lorry loads
	=	2,716/3 years
	=	905/300 days
Gravel load per day	=	3 Lorry loads per day

Working hours = 8.00 am to 5.00 pm (with 12.00-1.00 P.M. lunch break)

5.5. Machineries to be used:

For Mining:

The following machineries are utilized on rental basis for the development and production work at this quarry.

I. DRILLING MACHINE:

Table - 6

S.No.	Type	Nos	Dia Hole mm	Size Capacity	Motive power
1	Jack hammer	3	30-35	1.2m to 2.0m	Compressed air
2	Compressor	1	-	400 psi	Diesel Drive

II. EXCAVATION & LOADING EQUIPMENT:

S.No.	Type	Nos	Capacity	Motive Power
1	Excavator with Bucket and Rock Breaker	1	300	Diesel Drive

III. HAULAGE WITHIN THE MINE & TRANSPORT EQUIPMENT:

S.No.	Type	Nos	Capacity	Motive Power
1	Tippers	2	20 tonnes	Diesel Drive

5.6. Disposal of Overburden/Waste:

The overburden in the form of Gravel formation and Weathered Rock, the Gravel and Weathered Rock will be directly loaded into tippers for the filling and levelling of low lying areas. The excavated Rough Stone (100%) will be directly loaded into tippers to the needy customers. There is no Waste anticipated during this plan period hence, disposal of waste does not arise.

5.7. Brief note on conceptual mining plan for the entire lease period base on the geological, mining and environmental considerations:

Conceptual mining plan is prepared with an object of long term systematic development of benches, layouts, selection of permanent structures, depth of quarrying and ultimate pit dimensions, selection of sites for construction of infrastructure, etc.,

The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc.,

As the applicant has applied quarry lease for Five years, the ultimate pit limit (dimension) at the end of this mining plan period is given below:

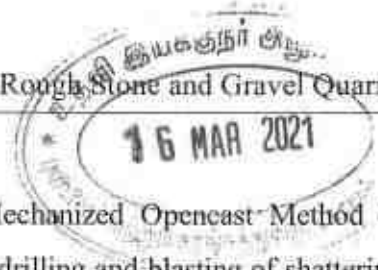
Table - 7

Length (m) (Max)	Width (m) (Max)	Depth(m) (Max)
97	84	41 below ground level

Greenbelt has proposed on the safety zone and Panchayat roads by planting Neem, Pongamia pinnata, Casuarina, etc., trees of native species. All the base line information studies like Air quality monitoring, Noise and vibration monitoring, Water analysis studies will be carried out every year as per the MoEF&CC Norms. Please refer Plate No. III & IV.

It is proposed to engage any local institution to monitor the EIA and EMP during the course of quarrying operation after the grant of quarry lease.

There is no waste anticipated during the entire life of quarry. Hence, backfilling is not possible in this quarry. The quarry area will be fenced with barbed wire fencing also safety bund constructed around the quarry to prevent inadvertent entry of public and cattle (Refer plate no. IV).



6.0 BLASTING

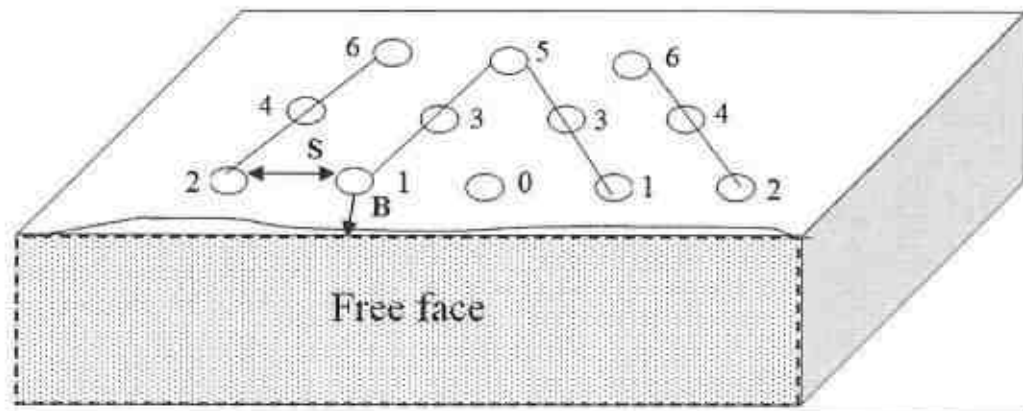
6.1 Blasting pattern:

The quarrying operation is proposed to be carried out by Mechanized Opencast Method in conjunction with conventional method of mining using Jack hammer drilling and blasting of shattering effect for loosening the Rough Stone.

Drilling and blasting parameters are as follows:

Depth of Each hole	:	1.5m
Diameter of hole	:	30-32mm
Spacing between holes	:	1.2m
Burden for hole	:	1.0m
Pattern of hole	:	Zigzag – Multi-rows
Inclination of holes	:	80° from horizontal
Use of delay detonators	:	25 millisecond relays
Detonating fuse	:	“Detonating” Cord

BLASTING PATTERN DRAWING



Staggered “V” Pattern of Blasting Design

Spacing	=	1.2m
Burden	=	1.0m
Depth of the hole	=	1.5m
No of holes proposed per day	=	64 Holes

**6.2 Type of explosives to be used:**

Small Dia. 25mm Slurry explosives are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling or primary blasting is proposed.

6.3 Measures proposed to minimize ground vibration due to blasting:

The quarry is situated more than 300m away from the nearby villages, Controlled blasting measures is being adopt for minimizing ground vibration and fly rock.

Shallow depths jackhammer drilling & blasting is proposed to be carried out with minimum use of explosive mainly to give heaving effect in Rough Stone for easy excavation and to control fly rock.

Delay detonators:

Delay blasting (millisecond delays) permits to divide the shot in to smaller charges, which are detonated in a predetermined millisecond sequence at specific time intervals.

The major advantages of delay blasting are:

- Reduction of ground vibration.
- Reduction in air blast.
- Reduction in over break.
- Improved fragmentation.
- Better control of fly-rock.

Blasting program for the production per day:

No of Holes	= 64 Holes
Yield	= 189 Tons
Powder factor	= 6 Tons/Kg of explosives
Total explosive required	= 32 Kg-Slurry explosives
Charge/ hole	= 0.5 Kg
Blasting at day time only	= 12.00 – 12.30 P.M. (whenever required)

6.4 Storage and safety measures to be taken while blasting:

The applicant will engage authorized explosive agency to carry out the small amount of blasting and it will be supervised by competent and statutory foreman/Permit Mines Manager. The explosives agencies should be having the valid Blaster certificate. He will blast holes in the quarry site. After the completion of Blasting the explosives Agencies will take it out back the remaining quantity of Explosives. The magazine is available at the quarry site to temporarily store the explosives.

**7.0 MINE DRAINAGE****7.1 Depth of water table (based on nearby wells and water bodies):**

The water table in the area is about 70m in summer season and 65m in Rainy season which is observed from the existing private boreholes. The lease applied area is fully covered by Massive Charnockite formation and it is revealed from the adjacent quarries. Hence the Ground Water problem will not arise. If water seepage may occur due to the fracture, the same will be used for Greenbelt.

Table – 8

Type	Distance & Direction	Location
Bore Well	160m Western side	10°54'24.73"N 77° 3'59.54"E

7.2 Arrangements and places where the mine water is finally proposed to be discharged:

The quarry operations are confined to well above the water table during the entire lease period. If water is encountered at quarry due to rain water and seepage, the same will be pumped out by 5HP water pump and discharge to the Green belt development areas. Besides, the water will also be used for dust suppression on haul roads during Haulage of machineries.

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8.0 OTHER PERMANENT STRUCTURES (also shown in the map)**8.1 Habitations/ Villages natham:**

There is no approved habitation within 300m radius from the lease applied area.

8.2 Power Lines (HT/LT):

There is no Power Lines (HT/LT) within 300m radius from the lease applied area.

8.3 Water bodies (river, pond, lake, odai, canal, etc.):

There is no River, Pond, Lake, Odai, Canal, Reservoir located within 50m radius of the lease applied area.

8.4 Archaeological / historical monuments:

There is no Archaeological / historical monuments within 300m radius of the area.

8.5 Road (NH, SH others):

The Nearest National Highway (NH - 544) Salem – Kochi road is situated about 7.0km on the Northwestern side of the lease applied area.

The State Highway (SH-163) Othakalmandapam – Palladam Road is about 3.0km on the Northwestern side of the lease applied area.

The Major District Road (MD-522) Vadasithur - Chettipalayam road is situated about 2.0km on the Southwestern side of the lease applied area.

8.6 Places of worships:

There is no place of worships within the radius of 300m from the lease applied area.

8.7 Reserved forest / forest / social forest / wild life sanctuary etc.:

There is no reserved forest / social forest / wild life sanctuary etc., situated within 500m radius of the lease applied area.

SALIENT FEATURES

Table - 9

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S. No.	Salient Features Present around the site	Prescribed safety distance	If any present within Prescribed distance - Actual Distance and direction from the site															
1.	Railways, Highways, Reservoirs or Canal	50m	None of the above situated within 50m radius.															
2.	Village Road	10m	No Village road is passing within the radius of 10m of the lease applied area.															
3.	Habitation / Village	300m	There is no approved habitation within 300m radius from the lease applied area.															
4.	Adjacent Patta/Govt. Land	7.5m/10m	<table border="1"> <thead> <tr> <th>Direction</th> <th>Classification</th> <th>Safety Distance</th> </tr> </thead> <tbody> <tr> <td>North</td> <td>Patta Land</td> <td>7.5m</td> </tr> <tr> <td>East</td> <td>Patta Land</td> <td>7.5m</td> </tr> <tr> <td>South</td> <td>Patta Land</td> <td>7.5m</td> </tr> <tr> <td>West</td> <td>Patta Land</td> <td>7.5m</td> </tr> </tbody> </table> (Refer Plate No. II).	Direction	Classification	Safety Distance	North	Patta Land	7.5m	East	Patta Land	7.5m	South	Patta Land	7.5m	West	Patta Land	7.5m
Direction	Classification	Safety Distance																
North	Patta Land	7.5m																
East	Patta Land	7.5m																
South	Patta Land	7.5m																
West	Patta Land	7.5m																
5.	Power House, EB line (HT & LT Line)	50m	There is no EB (LT/HT) line situated within 50m radius of the lease applied area.															
6.	Boundaries of the permitted area	7.5m/10m	The boundaries of the permitted areas as follows: North - S.F.No. 279/2C1A East - S.F.No. 279/2C2 South - S.F.No. 280 West - S.F.No. 279/1B2 (Refer Plate No. II).															
7.	Reserve forest / protected area / ECO sensitive area	60m	There is no reserved forest located within the radius of 60m from the lease applied area.															
8.	Protected area / ECO sensitive area / Wild Life Sanctuary / Interstate Border	10km	There is no ECO sensitive Zone / Wild Life Sanctuary / Interstate Border / Critically Polluted Area / HACA / CRZ located within 10km radius of the area.															

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9.0 EMPLOYMENT POTENTIAL & WELFARE MEASURES**9.1 Employment potential (skilled, semi-skilled, un skilled):**

The following manpower's are proposed in the mining plan to carry out the day-to-day quarrying activities, the same employment is maintaining aimed at the proposed production target and also to comply with the statutory provisions of the Metalliferous mines regulations, 1961.

a. Mine official & Competent Persons:

Mines Manager/Mines Foreman	:	1
Mate/Blaster	:	1

b. Machinery Operators

Jack hammer operator	:	6
Excavator Operator	:	1
Tippers Driver	:	2

c. Ordinary Employee

Helper	:	3
Cleaner & Co-Operator	:	3
Security	:	1
Total	:	18

The above manpower is adequate to meet out the production schedule and the machinery strength envisaged in the mining plan and to comply with the statutory provisions of the Mines Safety Regulations. It is been ensured that the labour will not be employed less than 18 years, **No child labour** will engaged or entertained for any kind of quarrying operations. All the labours engaged for quarrying operations will be insured during the quarry lease period.

9.2 Welfare Measures:**a) Drinking Water:**

Packaged drinking water is available from the nearby water vendors in Pachapalayam which is located about 1.0km on the Southeastern side of the lease applied area.

b) Sanitary Facilities:

Hygienic modern Sanitary Facilities already constructed in the safety area as semi permanent structure and it will be maintained periodically.

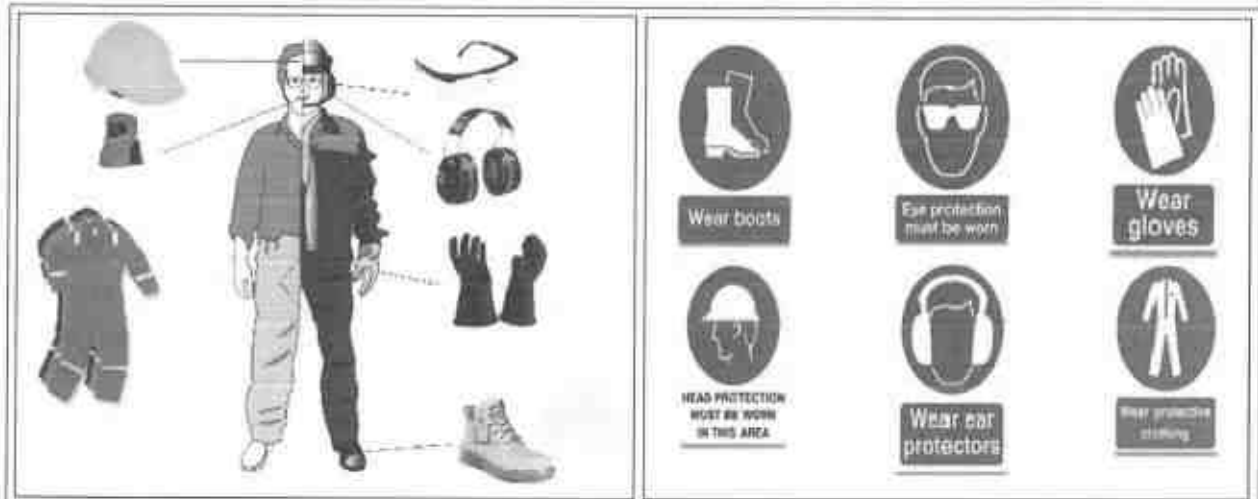
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c) First aid facility:

First aid kits are kept in Mines office room, in case of such eventuality is the victim will be given first aid immediately at the site by the competent and statutory foreman/permit manager/mate will be in charge of first aid and injured person will be taken to the hospital by the applicant's vehicle. Hospital is available in Kinathukadavu located at a distance of 11.0km on the Southwestern side.

d) Labour Health:

Periodically medical check-up related to occupational health safety will be conducted to all the workers in applicant own cost.

e) Precautionary safety measures to the labourers:

- Helmets,
- Mine Goggles,
- Ear plugs,
- Ear muffs,
- Dust mask,
- Reflector jackets
- Safety Shoes

All personnel protective devices will be provided as per the specification approved by Director of mines safety. Periodically medical check-up will be conducted for all workers for any mine health related problems. Proper training and vocational education will be given by qualified and experienced safety officer to all the employees about the safety and systematic Rough Stone quarrying operations. The drillers and workers will be sent for vocational training periodically, to carry out the quarrying operations scientifically and to safe guard the men and machinery and to create awareness about conventional opencast quarrying operations.

PART - B

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10.0 ENVIRONMENT MANAGEMENT PLAN**10.1 Existing Land use pattern:**

The quarry lease applied area is flat terrain. The area is a dry barren land devoid of Agriculture and Habitations. The land is not used for any specific vegetation.

LAND USE PATTERN

Table - 10

Description	Present area (Ha)	Area at the end of this quarrying period (Ha)
Area under quarrying	Nil	0.84.8
Infrastructure	Nil	0.01.0
Roads	Nil	0.02.0
Green Belt	Nil	0.12.8
Unutilized Area	1.13.7	0.13.1
Grand Total	1.13.7	1.13.7

10.2 Water Regime:







It is a simple opencast quarry operation. The quality of water will not be affected due to this quarrying operation. However, mitigation measures will be carried out like Garland drains constructed on all sides of quarry pit to avoid surface run-off rain water entering into the pit.

The waste water discharged to water bodies will be met the standard prescribed under the Environment (Protection) Act - 1986 by The Ministry of Environment, Forest and Climate change.







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10.3 Flora and Fauna:

Table - II

S.No	Name of the plant (Scientific)	Family Name	Common Name	Habit	Picture
1.	<i>Prosopis juliflora</i>	Fabaceae	Seemai karuvelam	Tree	
2.	<i>Azadirachta indica</i>	Meliaceae	Neem, Vembu	Tree	
3.	<i>Cocos nucifera</i>	Arecaceae	Thennai	Tree	
4.	<i>Aloe vera</i>	Asphodelaceae	Katralai	Shrub	
5.	<i>Borassus flabellifer</i>	Arecaceae	Panai	Tree	
6.	<i>Cissus quadrangularis</i>	Vitaceae	Pirandai	Shrub	

List of Fauna

S.No.	Scientific Name	Common Name	Picture
1.	<i>Capra aegagrus hircus</i>	Goat	
2.	<i>Funambulus palmarum</i>	Squirrel	
3.	<i>Bos taurus</i>	Cow	
4.	<i>Danaus plexippus</i>	Striped tiger	
5.	<i>Corvus leuiscantii</i>	Crow	
6.	<i>Agrion sp & Petalura sp</i>	Dragon fly	

10.4 Climatic Conditions:

The area receives rainfall of about 689mm/annum and the rainy season is mainly from Oct - Dec during monsoon. The summer is hot with maximum temperature of 42°C and winter encounters a minimum temperature of 21°C.

10.5 Human settlement:

There are few villages located within 5km radius of the area; the approximate distance, direction and populations are given below:

Table – 12

S.No.	Name of the Village	Approximate distance & Direction from lease applied area	Approximate population
1.	Chinnakuyili	3.0km – NE	1,800
2.	Pachapalayam	1.0km – SE	3,100
3.	Thekani	3.0km – SW	2,000
4.	Chettipalayam	4.0km – NW	19,500

Basic human welfare Amenities such as Health Centre, Schools, Communication Facilities, and Commercial Centres etc., are available at Kinathukadavu located at a distance of 11.0km on the Southwestern side of the area.

10.6 Plan for air, dust suppression:

The air quality will be affected by the Suspended Particulate Matter (SPM) generated by the blasting, jack hammer drilling, Loading and unloading during the Rough Stone quarry operation.

The following Mitigations measures will be carried out:

- Mist Water spraying will be carried out by means of water sprinklers to suppress the dust emission in the Haul roads.
- Vegetations will be formed on the non quarrying area.
- Avoiding spillages during the transportation.

Air quality will be monitored periodically as per Norms and Mitigate measures carried out to prevent dust and Air propagation in to air. The estimated budget for dust suppression would be around Rs.52,000/year.

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10.7 Plan for Noise level control:

The noise level increased due to the Excavation, Drilling, Blasting and Transportation.

Engineering Noise control:

Noise will be created due to the usage of Machineries and Vehicles. The Noise will be controlled in the following manner.

- Selection of new low – noise equipments for the Rough Stone quarry operation.
- Modifications of older equipments.
- Implementation of effective preventive maintenance which reduces noise more than 50%.
- Developing Green belts which act as Acoustic barrier, pollution absorbent and noise controller.
- The drivers will be strictly instructed to move the vehicle during the transportation not exceed 40km per hour.
- Sentries with flags & whistle will posted in village road junction and populated area to control and regulate traffic.

Shallow holes of 32mm diameter and maximum depth of 1.5m will be drilled and conventional low power explosives such as Slurry Explosives, ordinary safety fuse will be used for Rough Stone. Hence, ground vibration and noise pollution i.e., minimal and restricted within the quarry working area.

Noise level monitoring and other Mitigation measures will be carried out to reduce Noise and Vibration. The estimated budget for Noise level monitoring would be around **Rs.2,000/Year**.

10.8 Environmental impact assessment statement describing impact of mining on the next five years:

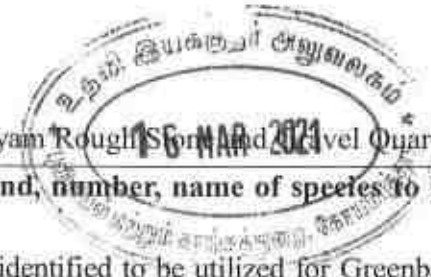
In the mining plan proposed for a production of Rough Stone does not involve deep hole drilling and blasting. Such limited mining activity is not likely to cause any impact adversely on the environment. As far as pollution of air, water and noise concerned, the environmental impact studies will be conducted as per EIA notification issued by MoEF& CC. It is B2 Category mine. The estimated budget would be around **Rs.3,80,000/-**.

10.9 Proposal for waste management:

There is no waste anticipated in this Rough Stone and Gravel quarrying operation. The entire quarried out materials will be utilized (100%).

10.10 Proposal for reclamation of land affected during mining activities and at the end of mining (refilling / fencing etc.):

In the mining plan only to a maximum depth of 41m [2m Gravel + 4m Weathered Gravel + 35m Rough Stone] has been envisaged as workable depth for safe & economic mining during entire lease applied area. The quarry area will be fenced with Barbed wire fencing also safety bund constructed around the quarry to prevent inadvertent entry of public and cattle. There is no waste hence, no proposal for backfilling. The barbed wire fencing cost would be around **Rs.1,26,000/-**.



10.11 Programme of Greenbelt development (indicate extend, number, name of species to be afforested):

The safety zone all along the boundary barrier has been identified to be utilized for Greenbelt development. Appropriate native species of Neem, Pongamia pinnata, Casuarina, etc., trees will be planted in a phased manner as described below.

Table – 13

Year	No. of trees proposed to be planted	Survival %	Area to be covered sq.m.	Name of the species	No. of trees expected to be grown
I	30	80%	256	Neem, Pongamia pinnata, Casuarina, etc.,	24
II	30	80%	256		24
III	30	80%	256		24
IV	30	80%	256		24
V	30	80%	256		24

Nearly 1,280 sq.m area is proposed to use under Greenbelt by planting 210 Numbers of trees during mining plan period with an anticipated survival rate of 80% (Please refer Plate No.III). The estimated budget for plantation and maintenance of Green belt development would be around **Rs. 15,000/-** for the period of five years.

The Greenbelt Development will be formed in around the quarried out top bench, Approach and panchayat road. The cost would be around **Rs. 20,000/-**.

10.12 Proposed financial estimate / budget for (EMP) environment management:

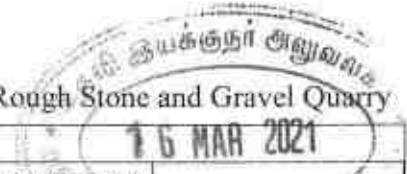
Budget Provision for the Mining Plan period:

Table – 14

S. No	Monitory and Analysis Description	Rate per location	No. of location	Total Charges/ six months	Total Charges/ year
1	Ambient air quality monitoring	6500	4	26000	52000
2	Noise level monitoring	250	4	1000	2000
3	Ground vibration monitoring	1000	2	2000	4000
4	Water sampling and analysis	9000	1	9000	18000
Total EMP Cost/ year					76,000

The EMP cost would be around **Rs. 3,80,000/-** for the period of five years.

A. Project cost / investment									
i) Land cost	<p>The Land value as per the Government Guideline Land cost is calculated as follows,</p> <table border="1"> <thead> <tr> <th>S.F.No</th> <th>Extent</th> <th>Cost/Ha</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>279/2C1B</td> <td>1.13.7</td> <td>11,59,500</td> <td>13,18,351.5</td> </tr> </tbody> </table> <p>Total Land Cost = Rs. 13,18,351.5/- i.e., Rs. 13,19,000 (source : https://tnreginet.gov.in/portal/)</p>	S.F.No	Extent	Cost/Ha	Total	279/2C1B	1.13.7	11,59,500	13,18,351.5
S.F.No	Extent	Cost/Ha	Total						
279/2C1B	1.13.7	11,59,500	13,18,351.5						
ii) Machinery to be used	<p>The following machineries are proposed to meet out the productions. Excavator attached with rock breaker, Tipper, Tractor mounted compressor with jack Hammer and loose tools (Rental Basis)</p>								
iii) Refilling/ Fencing	<p>Fencing will be constructed around the quarry pit to prevent the inadvertent entry of public and cattle cost would be around</p>								
iv) Labourers shed	<p>Labour sheds already constructed as semi permanent structure. The cost is around</p>								
v) Sanitary facility	<p>Adequate latrine and urinal accommodation has provided at conveniently accessible places the cost would be around</p>								
vi) Others items	<p>First aid room & accessories</p>								
vii) Drinking water facility for the labourers	<p>Packaged drinking water will be provided for all the Labours. Drinking water will be readily available at conveniently accessible points during the whole of the working shift the cost would be around</p>								
viii) Sanitary arrangement	<p>The latrine and urinal will keep clean and sanitary condition. The maintenance cost would be around</p>								
ix) Safety kit	<p>All the Safety kit such as Helmet, Earmuffs, Goggles, Reflector Jackets, Safety shoes etc., will be provided to the workers by the applicant own cost which would be around</p>								
x) Water sprinkling	<p>Water will be sprinkled in the haul roads by water sprinklers the cost would be around</p>								



xii) Garland drain	Construction of Garland drain with check dam to prevent surface run-off rain water in to the quarry pit, the construction cost is around	Rs.1,14,000/-
xii) Greenbelt etc.	Greenbelt development and maintenance will be carried out in the boundary barriers the cost would be around	Rs.15,000/-
	Greenbelt development and maintenance will be carried out in the quarried out top benches, approach and panchayat road	Rs.20,000/-
Total Project Cost		Rs.35,94,000/-
B. EMP Cost :- (Per year)		
Air Quality monitoring		Rs. 52,000/-
Water Quality Sampling		Rs. 18,000/-
Noise Monitoring		Rs. 2,000/-
Ground vibration test		Rs. 4,000/-
Total Cost		Rs. 76,000/-
Total EMP Cost for the five years period is Rs.3,80,000/-		
Description		Amount (Rs.)
A. Operational Cost		35,94,000
B. EMP Cost		3,80,000
Total Project Cost (A+ B)		39,74,000
The applicant Indents to involve corporate environment responsibilities (CER) activity like Water Purifier, Medicine Storage rack, Cot and Bed facilities to the nearby Dispensary and Water Purifier and Table facilities to the nearby Government school at 2.0% from the total project cost. The Cost would be around Rs.80,000/- .		80,000
Total Cost		40,54,000
The Total cost would be around forty lakh and fifty four thousand only.		



11.0 PROGRESSIVE QUARRY CLOSURE PLAN

11.1 Introduction:

The Progressive Quarry Closure Plan for Rough Stone and Gravel quarry lease applied area over an extent of 1.13.7 Hectares of patta land in S.F.No. 279/2C1Bof Pachapalayam Village, Sulur Taluk, Coimbatore District, Tamil Nadu State has been prepared for **Tmt.M.Selvathal**, W/o.Meignanam, residing at No. 3/78, Karamadaiyan Thottam, Periyakuyilai, Sulur Taluk, Coimbatore District – 641 201.

11.2 Present Land use pattern:

Land Use Table – 15

Description	Present area (Ha)
Quarrying Pit	Nil
Infrastructure	Nil
Roads	Nil
Green Belt	Nil
Unutilized Area	1.13.7
Grand Total	1.13.7

11.3 Method of Mining:

Open cast Mechanized Mining is being carried out with 5.0 meter vertical bench with a bench width is not less than the bench height for Rough Stone.

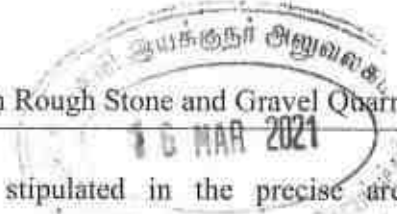
However, as far as the quarrying of Rough Stone is concerned, observance of the provisions of Regulation 106 (2) (b) as above is seldom possible due to various inherent petro genetic factors coupled with mining difficulties. Hence it is proposed to obtain relaxation to the provisions of the above regulation 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.

11.4 Mineral Processing Operations:

The quarried out Rough Stone will be transported by the 20tons capacity Tippers to the needy crushers. Splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy crushers.

11.5 Reasons for closure:

As the mineral is not going to be exhausted during the proposed plan period no immediate closure is planned due to sufficient reserves are available to carry on the activities. Hence, the reason for closure will be discussed in the ensuing mining plan.

**11.6 Statutory obligations:**

The applicant ensures to comply all the conditions stipulated in the precise area communication letter before grant of quarry lease and during the course of quarry operations.

11.7 Progressive quarry closure plan preparation:

Name and address of the Qualified Person who prepared the progressive closure plan and name and address of the executing agency who is involved in the Preparation of progressive quarry closure plan.

Dr.P.Thangaraju M.Sc., Ph.D.,

Qualified Person

No.17, Advaita Ashram Road,

Alagapuram, Salem - 636 004.

Cell: 94433 56539 & 94422 78601

The applicant will himself implement the closure plan; no outside agency will be involved.

11.8 Review of Implementation of Mining Plan including Progressive Closure Plan upto the Final Closure Plan:

Mining Plan and Progressive quarry closure plan are being submitted for the first time. It will be reviewed after five years and review of implementation will be given with next mining plan.

11.9 Closure Plan:**(i) Mined Out Land:**

At the end of mining plan period, about 0.84.8 Ha of area will be mined out. Land use at various stages is given in the table below.

Land Use Table – 16

Description	Present area (Ha)	Area at the end of this quarrying period (Ha)
Area Under Quarrying	Nil	0.84.8
Infrastructure	Nil	0.01.0
Roads	Nil	0.02.0
Green Belt	Nil	0.12.8
Unutilized Area	1.13.7	0.13.1
Grand Total	1.13.7	1.13.7

The Greenbelt Development will be formed in around the quarried out top benches, approach and panchayat road of the lease applied area.

**(ii) Water quality management:**

Following control measures will be adopted for controlling water pollution:-

- Construction of Garland drain with check dams / gully plugs at strategic places to arrest silt wash off from broken up area.
- Collection of surface run-off from broken up area in mine pits for settling and only properly settled excess water from mine pit will be discharged to nearby users. The storm water/ mine water will be used for dust suppression, greenbelt development, etc.
- Periodic analysis of mine pit water and ground water quality in nearby villages.
- The quarried out pit will be allowed to collect rain and seepage water which will act as a reservoir for storage. This water storage will enhance the static level and ground water recharge of nearby wells and it will be used for agriculture purpose to the nearby agriculture lands.
- Domestic sewage from site office & urinals/latrines provided in QL is discharged in septic tank followed by soak pits.

(iii) Air Quality Management:

The proposed mining method is not likely to produce much of dust and fugitive emissions to cause damage to ambient air quality of the area. Workers will be provided with personnel protective equipment like face-mask, earplug/ muffs.

For air pollution management at the progressive quarry closure plan, greenbelt will be developed to prevent and control air pollution.

(iv) Top Soil and Waste Management:

There is no topsoil and waste generated during the proposed plan period. The entire quarried out Rough Stone and Gravel is utilized (100%). Hence, waste management does not arise.

(v) Disposal of mining machinery:

All the Machineries will be engaged on rental basis. Hence, disposal or decommissioning of mining machinery does not arise.

**(vi) Safety & Security:**

Safety measures will be implemented to prevent access in the excavation area an unauthorized persons as per Mine Act 1952, MMR 1961.

- Safety measures will be implemented as per Mine Act 1952, MMR 1961, and Mines Rules 1955.
- Provisions of MMR 1961 shall be strictly followed and all roads shall be wider than the height of the bench or equal to the height of the bench and have a gradient of not more than 1 in 16.
- The bench height will be 5.0m.
- Width of working bench will be kept about 5.0 m for ease of operations and provide sufficient room for the movement of equipments.
- Protective equipment like dust masks, ear-plugs/ muffs and other equipments shall be provided for use by the work persons.
- Notices giving warning to prevent inadvertent entry of persons shall be displayed at all conspicuous places and in particular near mine entries.
- Danger signs shall be displayed near the excavations and proper signal by siren alarm will be given to the public before blasting to prevent accident.
- Security guards will be posted.
- In the event of temporary closer, approaches will be fenced off and notice displayed.

(vii) Disaster Management and Risk Assessment:

This should deal with action plan for high risk accidents like landslides, subsidence, flood, fire, seismic activities, tailing dam failures etc. and emergency plan proposed for quick evacuation, ameliorative measures to be taken etc. The capability of applicant to meet such eventualities and the assistance to be required from the local authorities should be described.

- The mechanized mining activities in the area may involve any high risk accident due to side falls/collapse, flying stones due to blasting etc.
- The complete mining operation will be carried out under the Management and control of experienced and qualified Mines Manager having Certificate of Competency to manage the mines granted by DGMS.
- All the provisions of Mines Act 1952, MMR 1961 and Mines Rules 1955, TNMMCR 1959 and other laws applicable to mine will be strictly complied with.
- During heavy rainfall the mining activities will be suspended.
- All persons in supervisory capacity will be provided with proper communication facilities.
- Competent persons will be provided FIRST AID kits which they will always carry.
- The Greenbelt Development will be formed in around the quarried out top benches and panchayat road of the lease applied area.

(viii) Care and Maintenance during Temporary Discontinuance:

In case of any temporary discontinuance due to court order or due to statutory requirement or any other unforeseen circumstance following measures shall be taken for care, maintenance and monitoring of conditions.

- Notice of temporary discontinuance of work in mine shall be given to the DGMS as per the MMR 1961.
- All the mining machinery shall be shifted to a safe place.
- Entrance to the mine or part of the mine, to be discontinued shall be fenced off. Fencing shall be as per the circular 11/1959 from DGMS.
- Security Guards shall be posted for the safety and to prevent any unauthorized entry to the area.
- Carry out regular maintenance of the facilities/area detailed below in such a way as would have been done as if the mines were operation:
 - Quarry roads and approach roads,
 - Fencing on approach roads,
 - Checking and maintenance of machines and equipment,
 - Drinking water arrangements,
 - Quarry office, first aid stations etc.
- Competent persons shall inspect the area regularly.
- Air, water and other environmental monitoring shall be carried out as per CPCB and IBM Guideline.
- Care and upkeep of plantation shall be carried out on regular basis.
- Status of the working and status monitoring for re-opening of the mines shall be discussed daily.

In case of discontinuance due to any natural calamities/abnormal conditions, mining operation will be restarted as early as possible after completing rescue work, restoring safety and security, repairs of roads etc.

(ix) Economic Repercussion of Closure of Quarry and manpower Retrenchments:

The quarry lease is granted for a period of five years only. As per the production Programme envisaged, there will be no effect on the man power as the majority of persons belong to nearby villages and will have an option either to be available for employment for the next contract/ lease or do the agriculture in their fields.

பாசாபலாயம் கிரவுல் கால்
30 MAR 2021

(x) Time Scheduling For Abandonment:

The lease applied area has enormous potential for continuance of operations even after the expiry of the lease period. The details of time schedule of all abandonment will be given at the time of final closure plan.

(xi) Abandonment Cost:

As at present mining is not going to be closed so abandonment cost could not be assessed. However based on the progressive quarry closure activities during the plan period, cost is assessed as given below:

Land Use Table – 17

ACTIVITY		YEAR					RATE	AMOUNT (Rs.)
		I	II	III	IV	V		
Plantation under safety zone	Nos.	30	30	30	30	30	@100 Rs Per sapling	15,000
	Cost	3000	3000	3000	3000	3000		
Plantation in the quarried out top benches, approach & panchayat road	Nos.	40	40	40	40	40	@300 Rs Per Meter	20,000
	Cost	4,000	4,000	4,000	4,000	4,000		
Wire Fencing (In Mtrs) 420		1,26,000	-	-	-	-	@300 Rs Per Meter	1,26,000
Garland drain (In Mtrs) 380		1,14,000	-	-	-	-	@300 Rs Per Meter	1,14,000
TOTAL								2,75,000

12 ANY OTHER DETAILS INTEND TO FURNISH BY THE APPLICANT 2021

This Mining plan for Rough Stone (Charnockite) and Gravel is under Rules 41 & 42. as per the Amended under Tamil Nadu Minor Mineral Concession Rules, 1959. The provisions of the Mines Act, Rules and Regulations and orders made there under shall be complied within the quarrying operation, so that the safety of the mine, machinery and person will be well protected. Permission, relaxation or exemption wherever required for the safe and scientific quarrying of the deposit will be obtained from the Department of Mines Safety. Any violation pointed out by the inspecting authorities shall be rectified as per the guidelines of the Concerned Department.

Prepared by

Dr. P. Thangaraju
Dr. P. Thangaraju M.Sc., Ph.D.,
Qualified Person

Place: Salem

Date: 10.02.2021



This Mining Plan is Approved
subject to the conditions / stipulation
& indicated in the Mining Plan Approval
Letter No: 5747 / mines / 2020 dt 16-3-21
office of the A.D, Geology & Mining, Coimbatore

This Mining Plan is Approved based on the
incorporation of the particulars specified
in the letter of the commissioner of Geology
and Mining, Chennai ref No: 3863/LC/2012
Dated 19.11.2012 and subjected to further
fulfillment of the condition laid down under
Tamil Nadu Minor Mineral Concession Rules 1959

Dr. P. Thangaraju
10/2/21
ASSISTANT DIRECTOR
DEPARTMENT OF GEOLOGY & MINING
COIMBATORE DISTRICT.

Dr. P. Thangaraju
10/2/21

உதவி இயக்குநர் அலுவலகம்
புவியியல் மற்றும் சுரங்கத்துறை,
மாவட்ட ஆட்சியர் அலுவலக வளாகம்,
கோயம்புத்தூர் - 18.

ந.க.எண்.544/கனிமம்/2020

நாள்:27.01.2021

குறிப்பாணை

பொருள்: கனிமங்களும் குவாரிகளும் - கோயம்புத்தூர் மாவட்டம் -
சூலூர் வட்டம் - பச்சாபாளையம் கிராமம் - புல எண்.
279/2C1B-ல் 1.13.70 ஹெக்டேர் பரப்பளவுள்ள பட்டா
பூமியில் சாதாரணகற்கள் மற்றும் கிராவல் வெட்டியெடுக்க
திருமதி.M.செல்வாத்தாள் என்பவருக்கு - குவாரி குத்தகை
அனுமதி வழங்குவது - தொடர்பாக.

- பார்வை:**
1. திருமதி.M.செல்வாத்தாள், க/பெ.மெய்ஞானம், 3/78,
காரமடையான் தோட்டம், பெரியகுயிலை, சூலூர்,
கோயம்புத்தூர் என்பவரின் விண்ணப்பம் நாள் 24.09.2020
மற்றும் 14.12.2020.
 2. இவ்வலுவலக கடிதம் இதே எண். நாள்: 24.09.2020.
 3. வருவாய் கோட்டாட்சியர், கோயம்புத்தூர் தெற்கு,
அவர்களின் கடித ந.க.எண். 3361/2020/M2 நாள்
20.10.2020.
 4. உதவி புவியியலாளர், புவியியல் மற்றும்
சுரங்கத்துறை, கோயம்புத்தூர் தணிக்கை அறிக்கை
நாள்.15.12.2020.
 5. இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, சென்னை
கடிதம் எண். 1870/எம்.எம்-1/2020 நாள்: 12.08.2020.

பார்வை 1-ல் கோயம்புத்தூர் மாவட்டம், சூலூர் வட்டம், பெரியகுயிலை, 3/78
காரமடையான்தோட்டம் என்ற முகவரியில் வசிக்கும் மெய்ஞானம் அவர்களின்
மனைவி திருமதி.M.செல்வாத்தாள் என்பவர் சூலூர் வட்டம், பச்சாபாளையம்
கிராமம், புல எண்.279/2C1B-ல் 1.13.70 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில்
சாதாரணகற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க குவாரி குத்தகை உரிமம்
கோரி உரிய ஆவணங்களுடன் விண்ணப்பித்துள்ளார்.

மேற்படி மனு தொடர்பாக, கோயம்புத்தூர் தெற்கு வருவாய் கோட்டாட்சியர்
மற்றும் கோயம்புத்தூர் புவியியல் மற்றும் சுரங்கத்துறை உதவி புவியியலாளர்
ஆகியோர் புலத்தணிக்கை மேற்கொண்டு கோயம்புத்தூர் மாவட்டம், சூலூர் வட்டம்,
பெரியகுயிலை, 3/78 காரமடையான்தோட்டம் என்ற முகவரியில் வசிக்கும்
மெய்ஞானம் அவர்களின் மனைவி திருமதி.M.செல்வாத்தாள் என்பவருக்கு சூலூர்
வட்டம், பச்சாபாளையம் கிராமம், புல எண்.279/2C1B-ல் 1.13.70 ஹெக்டேர்
பரப்பளவுள்ள பட்டா பூமியில் சாதாரணகற்கள் மற்றும் கிராவல் குவாரி செய்ய
சில நிபந்தனைகளுடன் பரிந்துரை செய்துள்ளார்கள்.

அனுமதி கோரும் புல எண்.279/2C1B-ஆனது பட்டா எண் 1605-ன் படி
திரு.மெய்ஞானம் அவர்களின் மனைவி திருமதி.செல்வாத்தாள் (மனுதாரர்) என்ற
பெயரில் தனிப்பட்டவாக கிராம கணக்கில் தாக்கலாகியுள்ளது. எனவே மனுதாரர்
மேற்படி நிலத்தில் குவாரி குத்தகை உரிமம் பெற தகுதியுடையவர் ஆவார்.

எனவே, வருவாய் கோட்டாட்சியர், கோயம்புத்தூர் தெற்கு மற்றும் உதவி
புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை, கோயம்புத்தூர் ஆகியோரின்
பரிந்துரைகளின் அடிப்படையில் கோயம்புத்தூர் மாவட்டம், சூலூர் வட்டம்,
பெரியகுயிலை, 3/78 காரமடையான்தோட்டம் என்ற முகவரியில் வசிக்கும்



மெய்ஞானம் அவர்களின் மனைவி திருமதி.M.செல்வாத்தாள் என்பவருக்கு குலூர் வட்டம், பச்சாபளையம் கிராமம், புல எண்.279/2C1B-ல் 1.13.70 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் 1959 ஆம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகளின் விதி 19(1)-ன் படி 5 (ஐந்து) ஆண்டுகளுக்கு சாதாரண கல் மற்றும் கிராவல் மண் வெட்டியெடுக்க கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டு குவாரி குத்தகை வழங்குவதற்குரிய நிலப்பரப்பாக (Precise Area Communication) கருதப்படுகிறது.

நிபந்தனைகள்

1. அருகிலுள்ள பட்டா நிலங்களுக்கும் மற்றும் பொது மக்களுக்கும், எவ்வித இடையூறும் இன்றி சாதாரண கல் மற்றும் கிராவல் குவாரி மேற்கொள்ள வேண்டும்.
2. அருகில் உள்ள பட்டா நிலத்திற்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரிப்பணி மேற்கொள்ள வேண்டும்.

மேலும், தமிழ்நாடு சிறுகனிம சலுகை விதிகள்-1959 விதி எண். 41 மற்றும் 42-ன் படி குவாரிப்பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்க திட்டத்தினை 90 தினங்களுக்குள் சமர்ப்பிக்குமாறும், மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு அதிகார அமைப்பின் அனுமதியினை பெற்று சமர்ப்பிக்கவும் மனுதாரரை கேட்டுக் கொள்ளப்படுகிறது.

உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை
கோயம்புத்தூர்.

பெறுநர்:
திருமதி.M.செல்வாத்தாள்,
க/பெ.மெய்ஞானம்,
3/78, காரமடையான் தோட்டம்,
பெரியகுயிலை,
குலூர், கோயம்புத்தூர்.

27/1/21

කොළඹ නගර සභාව

ANNEXURE II

මහලු: 279

අංක 98
16 MAR 2021
ලබා ගත් දිනය

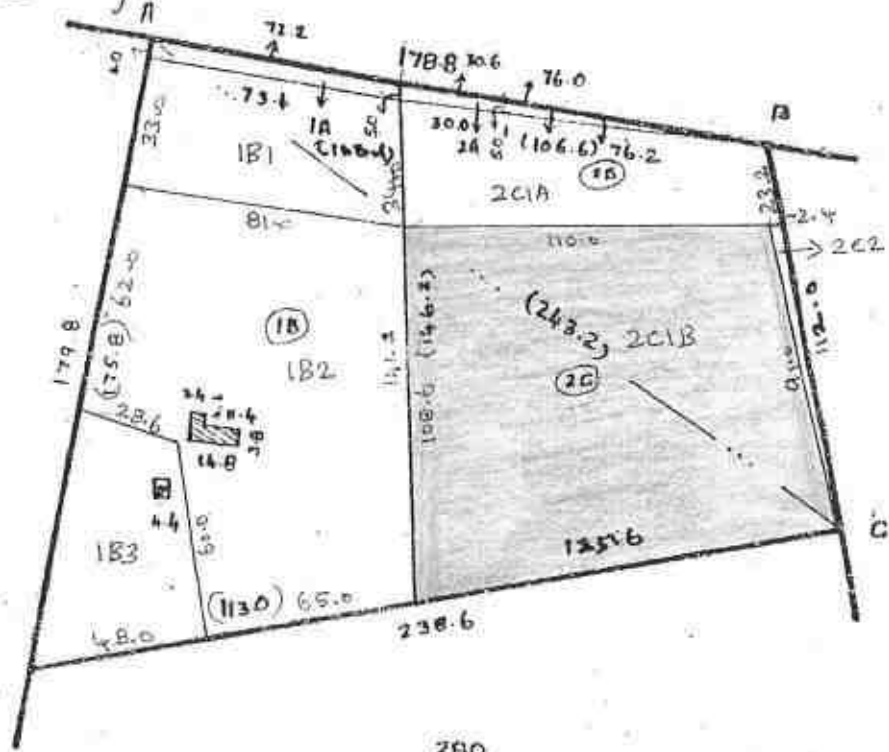
279

මහලු: 279, 960

New subdivisions 1B1, 1B2, 1B3,
2C1A, 2C1B Plotted as per TK/8A/
349/1439. DT: 13.3.2020

New subdivisions 2C1, 2C2
Plotted as per TK/8A/343/142
DT: 2-1-2020

Ch. S. Jayasinghe



286

287

278

280

T. S. Jayasinghe
14.9.20

අංක	විෂය	විස්තරය
(179.8)	අඟුණ	අඟුණ
78.6	30.6	H
70.2	31.0	H
57.2	4.0	W
51.6	26.8	W
D		
A		
(178.8)		
40	76.0	
B		

LEASE APPLIED AREA

2000

மாவட்டம் : கோயமுத்தூர்

கிராமம்

எண் :

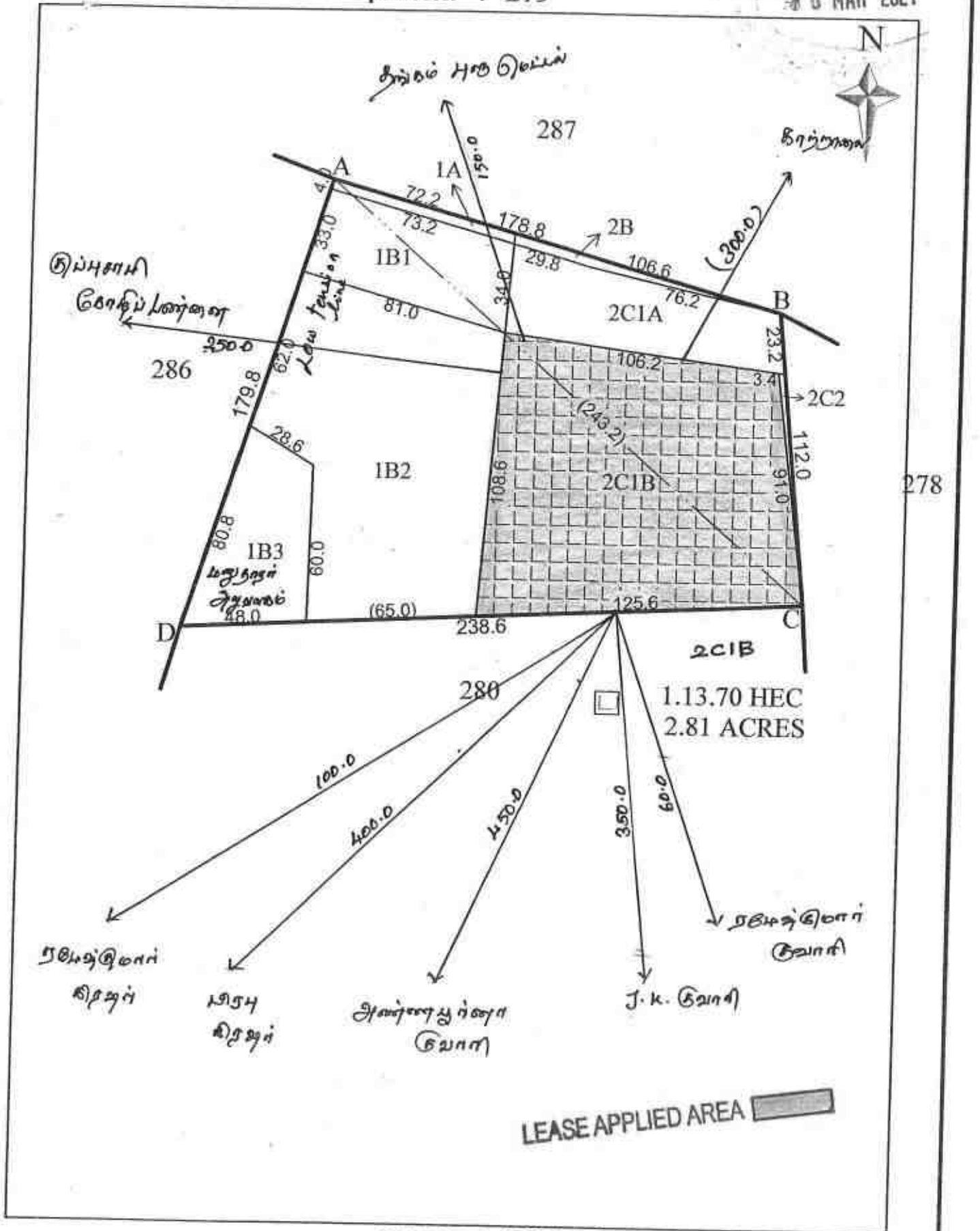
பெயர் : முத்துசாமிசாமி

வட்டம் : சூலூர்

புலஎண் : 279

பரப்பு : 2 ஏ. 96.0

36 MAR 2011



அளவு 1:2000 மி.மீ

Ch. Jay
 உள்ளிட்ட அளவு
 சென்னை 74A
 2

இயக்குநர் அலுவலகம்
16 MAR 2021

பட்டினம் வட்டம் பத்திரகாரர் அலுவலகம்
பட்டினம் 401 மீ. வட்டம் பட்டினம்





தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : கோயம்புத்தூர்

வட்டம் : தூலூர்

வருவாய் கிராமம் : பச்சாபாளையம்

பட்டா எண் : 1605

உரிமையாளர்கள் பெயர்

1. மெய்க்கூடாணம்

மனைவி

செல்வாத்தாள்

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	
279	2C1B	1 - 13.70	2.27	--	--	--	--	2020/0105 /12/125006--2020 /12/10/000066SD -- 17-03-2020
		1 - 13.70	2.27					

குறிப்பு 2 :



1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவோட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 12/10/025/01605/30552 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 14-09-2020 அன்று 11:05:13 AM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்.

திட்டமிடலின் கீழ் கட்டப்படும் தொகைகள் அட்டவணை		திட்டமிடலின் கீழ் கட்டப்படும் தொகைகள் அட்டவணை		திட்டமிடலின் கீழ் கட்டப்படும் தொகைகள் அட்டவணை		திட்டமிடலின் கீழ் கட்டப்படும் தொகைகள் அட்டவணை		திட்டமிடலின் கீழ் கட்டப்படும் தொகைகள் அட்டவணை	
பெயர்	தகவல்	பெயர்	தகவல்	பெயர்	தகவல்	பெயர்	தகவல்	பெயர்	தகவல்
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
279	2015	1,37,92,000	605	பெரியசாலை	பெரியசாலை	பெரியசாலை	பெரியசாலை	பெரியசாலை	பெரியசாலை
		52,89,720	1,86,160						

திருமதி சிவசுமாரி
 14.9.20
 திட்டமிடல் அலுவலர்
 43, அண்ணாமலை
 சென்னை-600 086

ANNEXURE V



ANNEXURE VI

District Coimbatore

Taluk -SULUR

Village - PACHAPALAYAM

15 MAR 2021

Sl. No.	Survey No.	Type	Area (Acres)	Cultivation	No. of Wells	No. of Pumps	No. of Tanks	No. of Dams	No. of Other Sources	Total No. of Sources	Area (Acres)	No. of Wells	No. of Pumps	No. of Tanks	No. of Dams	No. of Other Sources	Total No. of Sources	Remarks	
																			1
FA	SP	0	1.00	1	0	0	0	0	0	0	0.50	0	0	0	0	0	0	0	மற்றும் 2 துளிகள்
FB	FP	1	1.00	1	0	0	0	0	0	0	85.00	2	31	341	0	0	0	0	மயிலத்தாள மற்றும் 3 துளிகள்
G	S	0	1.00	1	0	0	0	0	0	0	10.00	0	31	663	0	0	0	0	முத்துசாமி மற்றும் 7 துளிகள்
Total For Survey Number- 276											8	41.0	25	51					
1A	277-1	0	1.00	1	0	0	0	0	0	0	48.00	4	10	1201	0	0	0	0	1201-விஜயகுமார்
1B	277-1	1	1.00	1	0	0	0	0	0	0	9.50	0	30	1202	0	0	0	0	1202-விஜயகுமார் மற்றும் 1 துளிகள்
1C	277-1	0	1.00	1	0	0	0	0	0	0	11.00	3	07	1203	0	0	0	0	1203-சாமசாமி
2	P	0	1.00	1	0	0	0	0	0	0	37.00	1	02	1203	0	0	0	0	1203-சாமசாமி
3	P	0	1.00	1	0	0	0	0	0	0	28.00	8	13	1203	0	0	0	0	1203-சாமசாமி
Total For Survey Number- 277											6	33.5	17	62					
1A	278-1P	0	1.00	1	0	0	0	0	0	0	48.00	2	98	120	0	0	0	0	120-சிலா டிரைவர்கள் நிரலா இயக்குனர் என மற்றும் 4 துளிகள்
1B	1P	0	1.00	1	0	0	0	0	0	0	51.50	1	84	1162	0	0	0	0	1162-எஸ். ஏ. சகோபர்
2	2	0	1.00	1	0	0	0	0	0	0	7.00	2	19	537	0	0	0	0	537-சுப்பிரமணியன் மற்றும் 1 துளிகள்
3	3	0	1.00	1	0	0	0	0	0	0	11.00	2	22	146	0	0	0	0	146-மாணியப்பன் மற்றும் 4 துளிகள்
Total For Survey Number- 278											4	37.5	9	19					
1A	279-1P	0	1.00	1	0	0	0	0	0	0	3.00	0	08	410	0	0	0	0	410-எஸ். வி. சூரேசுவர் த-டு. சேந்திரன் கவுண்டர், திருவா இயக்குனர்
1B	1P	0	1.00	1	0	0	0	0	0	0	46.00	2	92	120	0	0	0	0	120-சிலா டிரைவர்கள் நிரலா இயக்குனர் என மற்றும் 4 துளிகள்
2A	2P	0	1.00	1	0	0	0	0	0	0	1.00	0	06	410	0	0	0	0	410-எஸ். வி. சூரேசுவர் த-டு. சேந்திரன் கவுண்டர், திருவா இயக்குனர்
2B	2P	0	1.00	1	0	0	0	0	0	0	2.00	0	06	75	0	0	0	0	75-அழகர் கவுண்டர் மற்றும் 2 துளிகள்
C	2P	0	1.00	1	0	0	0	0	0	0	44.00	2	82	120	0	0	0	0	120-சிலா டிரைவர்கள் நிரலா இயக்குனர் என மற்றும் 4 துளிகள்
Total For Survey Number- 279											2	96.0	5	94					
1	280-P	0	1.00	1	0	0	0	0	0	0	91.50	1	84	334	0	0	0	0	334-ஆர்
2	P	0	1.00	1	0	0	0	0	0	0	80.00	1	61	334	0	0	0	0	334-ஆர்
3	P	0	1.00	1	0	0	0	0	0	0	2.50	0	04	265	0	0	0	0	265-துளிகள் மற்றும் 1 துளிகள்
4	P	0	1.00	1	0	0	0	0	0	0	11.50	2	24	46	0	0	0	0	46-சாமசாமி மற்றும் 2 துளிகள்
Total For Survey Number- 280											2	85.5	5	75					
1	281-P	0	1.00	1	0	0	0	0	0	0	83.00	3	66	121	0	0	0	0	121-முனிசிபல்
2	P	0	1.00	1	0	0	0	0	0	0	7.50	1	57	1162	0	0	0	0	1162-எஸ். ஏ. சகோபர்
Total For Survey Number- 281											2	90.5	4	75					
A	P	0	1.00	1	0	0	0	0	0	0	45.50	0	92	135	0	0	0	0	135-சாமசாமி
B	P	0	1.00	1	0	0	0	0	0	0	7.50	3	72	165	0	0	0	0	165-சாமசாமி
A	A.P	0	1.00	1	0	0	0	0	0	0	26.00	0	41	91	0	0	0	0	91-சாமசாமி மற்றும் 1 துளிகள்

T. J. Jeyaraj
14.9.20

142

இந்திய அரசாங்கம்
 Government of India

செல்வத்தல் மேல்நாமம்
 Selvathal Meignanam

பிற்பாடு நாள் DOB: 12/05/1966
 Gender: Female

4163 1748 6934

ஆதார் - சாதாரண மனிதனின் அதிகாரம்

இயக்குநர் அலுவலகம்
 16 MAR 2021

இந்திய அரசாங்கம் அனைத்து இந்திய அமைப்பு
 Unique Identification Authority of India

ஆதார்

முகவரி: W/O: மேல்நாமம், 3/78
 கராமடாயான் சாலை, செரியக்குயிலை
 துறைமுகம், பச்சாபலையம்
 செரியக்குயிலை, கோயம்புத்தூர்
 தமிழ் நாடு, 641201

Address: W/O: Meignanam,
 3/78, KARAMADAYAAN
 THOTTAM,
 PERIYAKUYILAI, SULUR
 TALUK, Pachapalayam,
 Periyakuyilai, Coimbatore,
 Tamil Nadu, 641201

4163 1748 6934

1947
 1800 300 1947

help@uidai.gov.in

www.uidai.gov.in



சென்னைப் பல்கலைக் கழகப் பேரவை 1994 ஆம் ஆண்டு ஏப்ரல் மாதம் நடந்த கனிமகியல் தோல்வி விபரங்களைப் பற்றி அறிவிக்கப்பட்டுள்ளதற்கான அறிவிப்பு

சென்னைப் பல்கலைக் கழகப் பேரவை 1994 ஆம் ஆண்டு ஏப்ரல் மாதம் நடந்த கனிமகியல் தோல்வி விபரங்களைப் பற்றி அறிவிக்கப்பட்டுள்ளதற்கான அறிவிப்பு

The Senate of the UNIVERSITY OF MADRAS hereby makes known that *P. Thangaraju* has been admitted to the Degree of Master of Science, he/she having been certified by duly appointed Examiners to be qualified to receive the same in *Geology* and was placed in the *First* Class, at the Examination held in April 1994.



Given under the seal of the University

செயலாளர், சென்னை
சென்னை, Madras
திகதி: Dated: 25-01-1999

பதிவுகாரர்
Registrar

P.T. Thangaraju
தலைவர், சென்னை
Vice-Chancellor

GOVERNMENT OF INDIA
 MINISTRY OF LABOUR AND REHABILITATION
 OFFICE OF THE DIRECTOR GENERAL OF MINES SAFETY



Certificate of Practical experience granted by the Manager to a candidate for a Manager's / Surveyor's / Foreman's / Over man's / Sirdar's / Mate's / Short firer's / Blaster's Certificate of competency (Restricted) examination under the Metalliferous Mines Regulations 1961.

I T.VENKATARAJAGOPALAN being the Mines Agent of M/S.LIMENAPH CHEMICALS, RAJAPALAYAM OF LIMESTONE PRODUCTS (Thenmali Limestone Mine) do hereby certify that Thiru. P.THANGARAJU, son of S.PERIASAMY (whose signature is appended) worked as a Geologist in the above mine from 02.05.1994 to 30.12.1999. During his term of work aforesaid, he has obtained practical experience as detailed overleaf. The duties connected with his work have involved continuous attendance at the mine and have been efficiently performed by him.

I believe him to be of good character and a fit and proper candidate to be examined for Certificate of Competency.

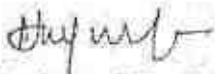
THEMMALI LIME STONE MINES
 10/6/96
 Agent (Mines)
 (Signature with date and official Seal)
 [T.VENKATARAJAGOPALAN]

Mines Agent:

P.O. : ARUKANGULAM

District : TIRUNELVELI

State : TAMIL NADU


 (Signature of Candidate)

(State name of Mineral) : LIMESTONE



PLATE NO:1

Date of Survey : 30.01.2021

APPLICANT:

M. SELVATHAL,
W/o. MEIGNANAM,
No. 3/7B, KARAMADAIYAN THOTTAM,
PERIYAKUYYALAI, SULUR TALUK,
COIMBATORE DISTRICT.

LOCATION OF QUARRY LEASE APPLIED AREA:

S.F. NO : 27B/2C1B.
EXTENT : 1.13.70 Hg.
VILLAGE : PACHAPALAYAM,
TALUK : SULUR,
DISTRICT : COIMBATORE,
STATE : TAMILNADU.

INDEX

Q. L.A. AREA : ●

TOPO SHEET NO. : 38 F/01

LATITUDE : 10° 54' 23.73" N to 10° 54' 27.69" N

LONGITUDE : 77° 04' 04.52" E to 77° 04' 09.17" E

LOCATION PLAN

SCALE : 1:24,00,000

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS
PLATE IS TRUE AND CORRECT TO THE BEST OF MY
KNOWLEDGE BASED UPON THE LEASE MAP
AUTHORITATED BY STATE GOVERNMENT.

M. D. E. ...
QUALIFIED PERSON 146

10° 54' 23.73" N
M. D. E. ...

APPLICANT:

M. SELVATHAL,
W/o. MEIGNANAM,
No. 3/7E, KARAMADAIYAN THOTTAM,
PERIYAKULAI, SULUR TA Q & MAR 2021
COIMBATORE DISTRICT.



LOCATION OF QUARRY LEASE APPLIED AREA:

S.F.NO : 279/201B
EXTENT : 1.13.70 Ha.
VILLAGE : PACHAPALAYAM,
TALUK : SULUR,
DISTRICT : COIMBATORE,
STATE : TAMILNADU.

INDEX

CONVENTIONAL SYMBOLS		
Topographic contour lines		
Water bodies		
Boundaries		
Buildings		
Highways		
Roads		
Canals		
Electric lines		
Telephone lines		
Telegraph lines		
Boundaries of villages		
Boundaries of taluqs		
Boundaries of districts		
Boundaries of States		
Boundaries of India		
Boundaries of the Union Territories		
Boundaries of the States of Jammu and Kashmir, Himachal Pradesh, Punjab, Rajasthan, Gujarat, Madhya Pradesh, Uttar Pradesh, Bihar, West Bengal, Assam, Arunachal Pradesh, Manipur, Mizoram, Tripura, Meghalaya, Nagaland, Assam, West Bengal, Bihar, Uttar Pradesh, Madhya Pradesh, Rajasthan, Gujarat, Punjab, Himachal Pradesh, Jammu and Kashmir		

TOPO SKETCH OF QUARRY LEASE APPLIED AREA FOR 10KM RADIUS

SCALE - 1:100000

PREPARED BY:

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP SUBMITTED BY STATE GOVERNMENT

(Signature)
M. THIRUPPAVATHI
QUALIFIED PERSON



10° 50' 53.06"N



76° 58' 35.55"E

77° 00' 38.33"E

10° 48' 58.30"N

TOPO SHEET NO. : 58 F/01
LATITUDE : 10° 54' 23.73"N to 10° 54' 27.67"N
LONGITUDE : 77° 04' 04.52"E to 77° 04' 09.12"E
10KM RADIUS :

Q.L.APPLIED AREA :

10/1-02/2015-5/01

LANDUSE PATTERN	
DESCRIPTION	PERCENTAGE
ROADS	(10%)
HABITATION	(25%)
TREES	(15%)
AGRICULTURAL LAND	(45%)
QUARRY PIT / CRUSHER	(25%)

OCTOBER TO DECEMBER



PLATE NO: B

Date of Survey : 30.01.2021



1Km Radius
 500m Radius
 G.L. Applied
 TOPO SHEET NO. 36101
 LATITUDE : 10° 54' 23.72"N to 10° 54' 27.47"N
 LONGITUDE : 77° 04' 04.32"E to 77° 04' 09.12"E

APPLICANT:
 Tmt. M SELVATHAL,
 W/o. NEIGNANAM,
 No. 3/78, KARAMADAIYAN THOTTAM,
 PERIYAKUYLAI, SULUR, TALUK,
 COIMBATORE DISTRICT.

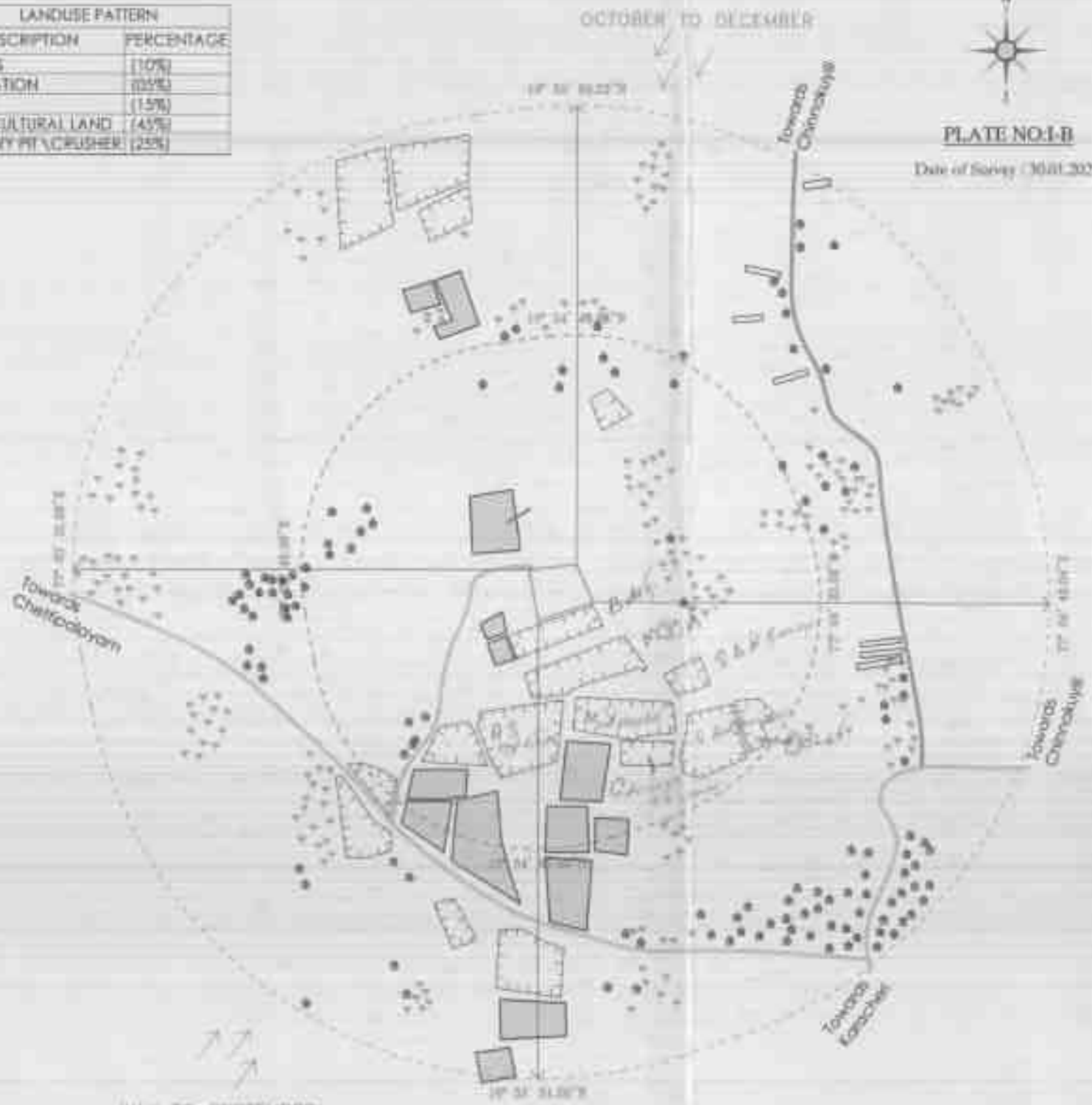
LOCATION OF QUARRY LEASE APPLIED AREA:
 S.F. NO : 279/201B.
 EXTENT : 1.13.70 Ha.
 VILLAGE : PACHAPALAYAM,
 TALUK : SULUR,
 DISTRICT : COIMBATORE,
 STATE : TAMILNADU

INDEX

APPROACH ROAD	
MAJOR ROAD	
VILLAGE ROAD	
HABITATION/INFRASTRUCTURE	
TREES	
AGRICULTURAL LAND	
QUARRY PIT	
WIND DIRECTION	
HABITATION	
CRUSHER PLANT	

ENVIRONMENTAL AND LANDUSE PLAN FOR 1KM RADIUS
 SCALE - 1:10,000

PREPARED BY:
 THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLAN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP SUPPLIED BY STATE GOVERNMENT



JULY TO SEPTEMBER

M. A. சுவாமிநாதன்

(Signature)
 84 A
 (SIGNED TOWN)



PLATE NO: 16

Date of Survey: 30.01.2021

APPLICANT:

Mrs. M. SELVATHAL,
W/o. MEIGNANAM,
No. 3/78, KARAMADAIYAN THOTTAM,
PERIYAKUYILAI, SULUR TALUK,
COIMBATORE DISTRICT.

LOCATION OF QUARRY LEASE APPLIED AREA:

S.F. NO : 279/2C1B.
EXTENT : 1.13.70 Ha.
VILLAGE : PACHAPALAYAM,
TALUK : SULUR,
DISTRICT : COIMBATORE,
STATE : TAMILNADU.

INDEX

Q.L. APPLIED AREA	<input checked="" type="checkbox"/>
NH ROAD	<input type="checkbox"/>
VILLAGE ROAD	<input type="checkbox"/>
APPROACH ROAD	<input type="checkbox"/>

ROUTE MAP

Not To Scale

PREPARED BY:
THIS IS TO CERTIFY THAT THE INFORMATION IN THIS
PLATE IS TRUE AND CORRECT TO THE BEST OF MY
KNOWLEDGE BASED UPON THE LEASE MAP
AUTHENTICATED BY STATE GOVERNMENT.

[Signature]
S. P. THANGARAJU, P. S. O.
QUALIFIED PERSON.



M. S. D. N. S. S. S. S. S.

16/11

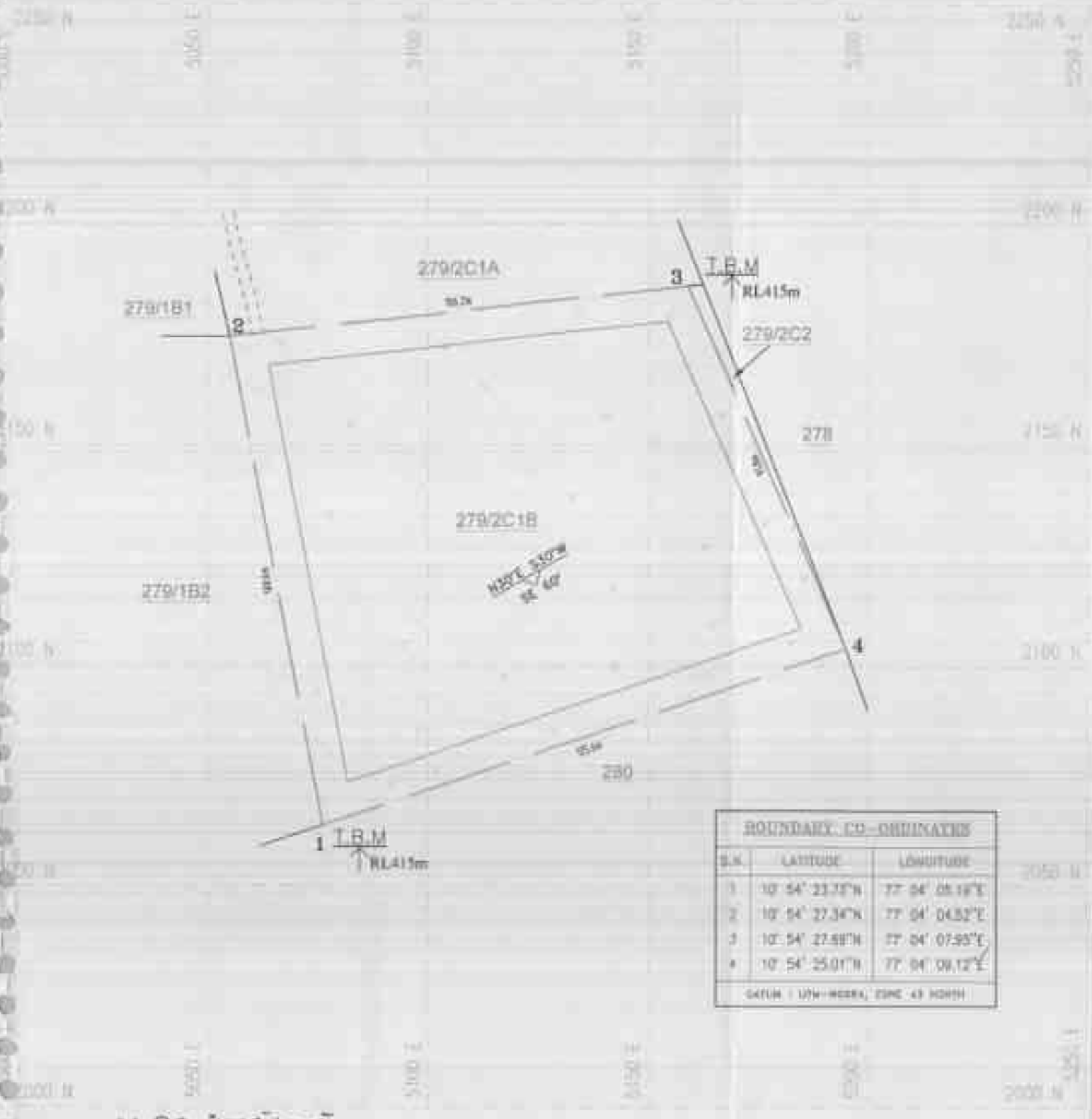


PLATE NO - II
Date of Survey : 30.01.2021

APPLICANT:
Tmt. M.SELVATHAL,
W/o. MEIGNANAM,
No. 3/7B, KARAMADAIYAN THOTTAM,
PERIYAKUYYILAI, SULLUR TALUK,
COMBATORE DISTRICT.

**LOCATION OF QUARRY LEASE
APPLIED AREA:**

S.F.NO : 279/2C1B.
EXTENT : 1.13.70 Ha.
VILLAGE : PACHAPALAYAM,
TALUK : SULLUR,
DISTRICT : COMBATORE,
STATE : TAMILNADU.

INDEX

G.L. APPLIED BOUNDARY	
7.5m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
GRAVEL	
APPROACH ROAD	
STRIKE AND DIP	

BOUNDARY CO-ORDINATES

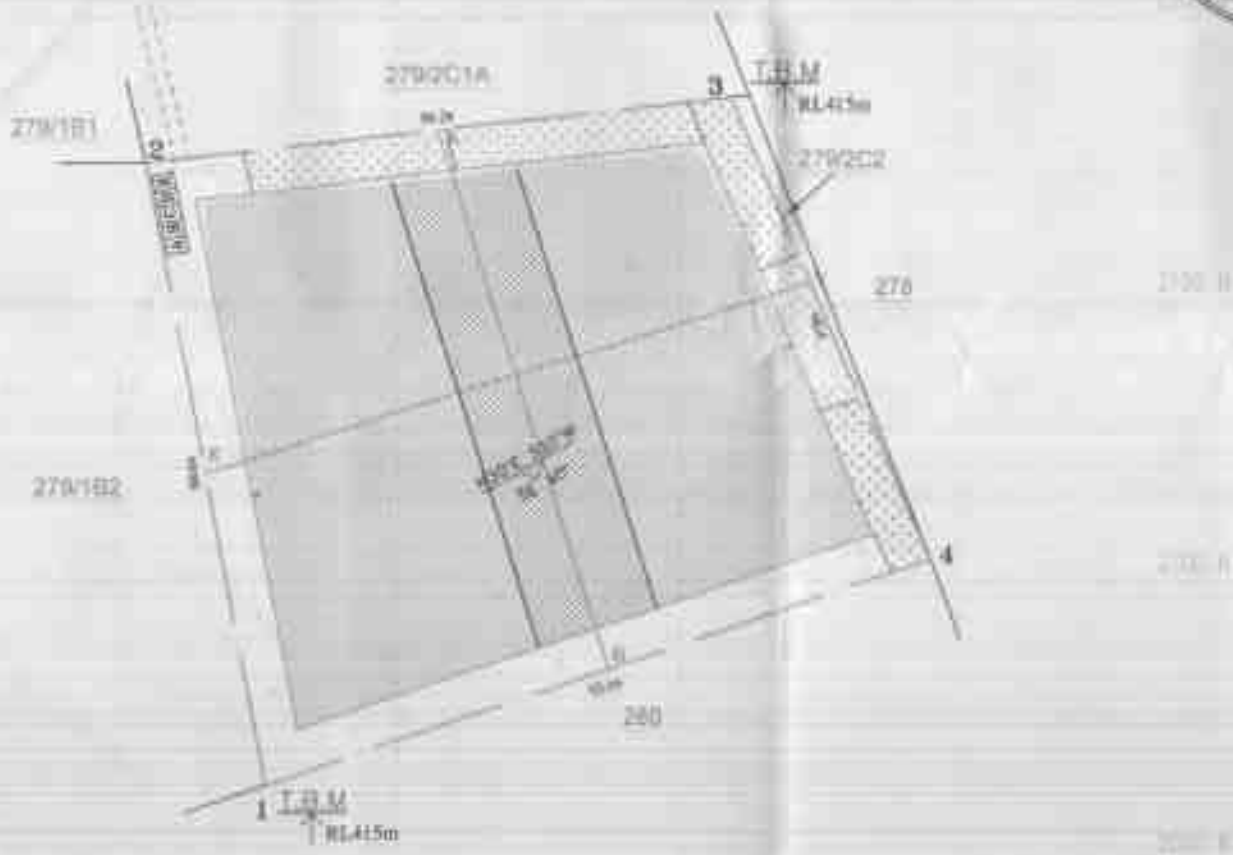
S.N.	LATITUDE	LONGITUDE
1	10° 54' 23.73"N	77° 04' 08.18"E
2	10° 54' 27.34"N	77° 04' 04.52"E
3	10° 54' 27.88"N	77° 04' 07.95"E
4	10° 54' 25.01"N	77° 04' 09.12"E

SCALE : 1/25000, ZONE 49 NORTH

QUARRY LEASE & SURFACE PLAN
SCALE 1 : 1000

PREPARED BY:
THIS IS TO CERTIFY THAT THE INFORMATION IN THIS
PLATE IS TRUE AND CORRECT TO THE BEST OF MY
KNOWLEDGE BASED UPON THE LEASE MAP
AUTHENTICATED BY STATE GOVERNMENT

M. P. Srinivasan
M. P. Srinivasan
QUALIFYING PERSON



BOUNDARY CO-ORDINATES		
LN	LATITUDE	LONGITUDE
1	10° 54' 23.76" N	77° 04' 28.15" E
2	10° 54' 23.34" N	77° 04' 28.50" E
3	10° 54' 27.68" N	77° 04' 27.85" E
4	10° 54' 25.01" N	77° 04' 28.15" E

DATA - CH-4024A, ENE 48 NORTH

PLATE NO - III
Date of Survey - 30/01/2021

APPLICANT:
 SRI. M.SELVATHAL,
 W/O. MEDANAM,
 No. 3/78, KARAMADAIYAN THOTTAM,
 PERIYAKULASULUR TALUK,
 COIMBATORE DISTRICT.

LOCATION OF QUARRY LEASE APPLIED AREA:
 S.F.NO : 279/2018.
 EXTENT : 1.13.70 Hc
 VILLAGE : PACHAPALAYAM,
 TALUK : SULLUR,
 DISTRICT : COIMBATORE,
 STATE : TAMILNADU.

INDEX

GL. APPLIED BOUNDARY	
7.5m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
GRAVEL	
APPROACH ROAD	
STRIKE AND DIP	
ROUGH STONE	
WEATHERED ROCK	

SECTION ALONG X-Y



SECTION ALONG A-B



- | | |
|------------------|--|
| I Y EXCAVATION | |
| II Y EXCAVATION | |
| III Y EXCAVATION | |
| IV Y EXCAVATION | |
| V Y EXCAVATION | |
| I W PLANTATION | |
| II Y PLANTATION | |
| III Y PLANTATION | |
| IV Y PLANTATION | |
| V Y PLANTATION | |

SITE SERVICES (Proposed)
 A - OFFICE
 B - STOREHOUSE
 C - 22KV SUBSTATION
 D - ROAD 100' WIDE
 E - BENCH
 F - APPROACH

PRESENT & POST LAND USE PATTERN

DESCRIPTION	PRESENT AREA (Ha)	AREA AT THE END OF THIS QUARRYING PERIOD (Ha)
WETLANDS QUARRYING	00	0.84.8
INFRASTRUCTURE	00	0.07.0
ROADS	00	0.02.0
GREEN BELT	00	0.13.8
UN-UTILIZED AREA	1.13.7	0.15.7
GRAND TOTAL	1.13.7	1.13.7

TOPOGRAPHY, GEOLOGICAL, YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTIONS
SCALE - 1 : 1000

PREPARED BY:
 SHEET NO. 151
 DATE: 15/03/2021

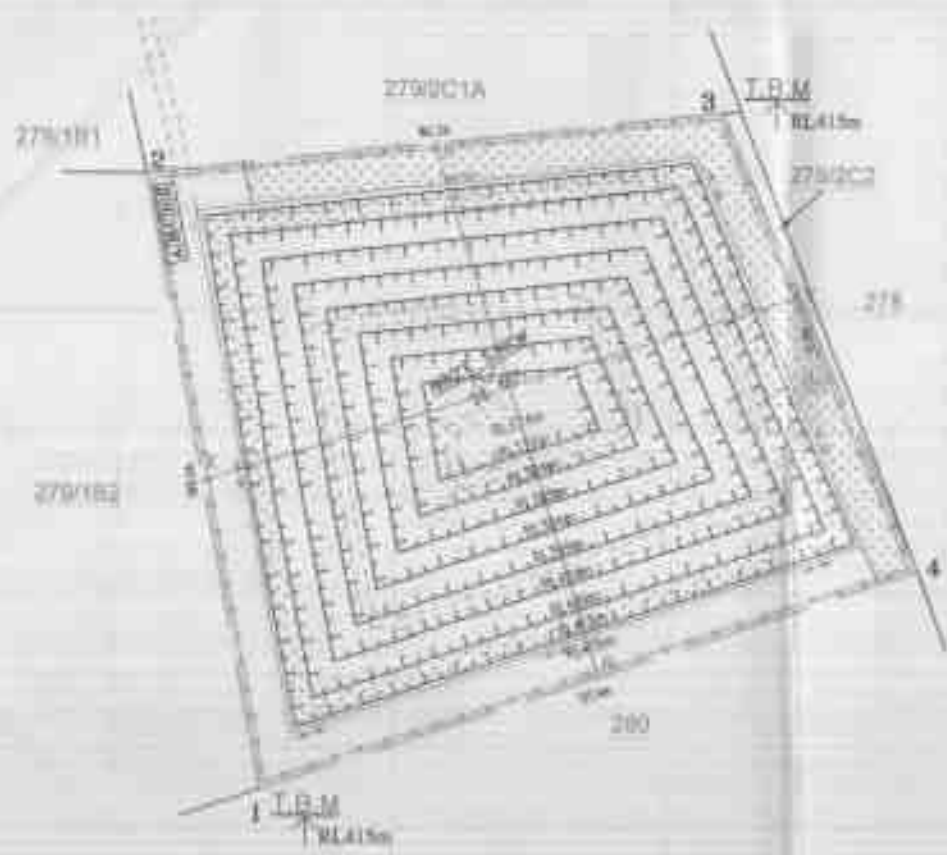


PLATE NO - IV
 Date of Survey - 30.01.2021

APPLICANT
 Mr. M. SELVATHAL,
 W/s. MEIGNANAM,
 No. 3/78, KARAMADAIYAN THOTTAM,
 PERIYAKULAI, SULLUR TALUK,
 COMBATORE DISTRICT.

**LOCATION OF QUARRY LEASE
 APPLIED AREA:**

S.F. NO : 279/201B,
 EXTENT : 1.13.70 Ha.
 VILLAGE : PACHAPALAYAM,
 TALUK : SULLUR,
 DISTRICT : COMBATORE,
 STATE : TAMILNADU.

INDEX

Q1. APPLIED BOUNDARY	—————
2.5m SAFETY DISTANCE	—————
TEMPORARY BENCH MARK	⊕
APPROACH ROAD	⋯⋯⋯
GRAB AND DIP	⚓
QUARRY PIT	
QUARRY ROAD	⋯⋯⋯
EXISTING LANDFORM	—————
OLD SURFACE LEVEL	⋯⋯⋯
FINISHED SURFACE LEVEL	⋯⋯⋯
TREES	⊕⊕
SOIL LAYER	▨
FENCING	⋯⋯⋯
PROPOSED DRAINAGE DRAIN	⋯⋯⋯
PROPOSED WATER STORAGE	⋯⋯⋯

SECTION ALONG X-Y



SECTION ALONG A-B



BOUNDARY CO-ORDINATES

S.N.	LATITUDE	LONGITUDE
1	12° 54' 23.33"N	77° 04' 35.17"E
2	12° 54' 23.34"N	77° 04' 34.57"E
3	12° 54' 23.88"N	77° 04' 33.57"E
4	12° 54' 25.07"N	77° 04' 35.17"E

Scale - 1cm = 10m

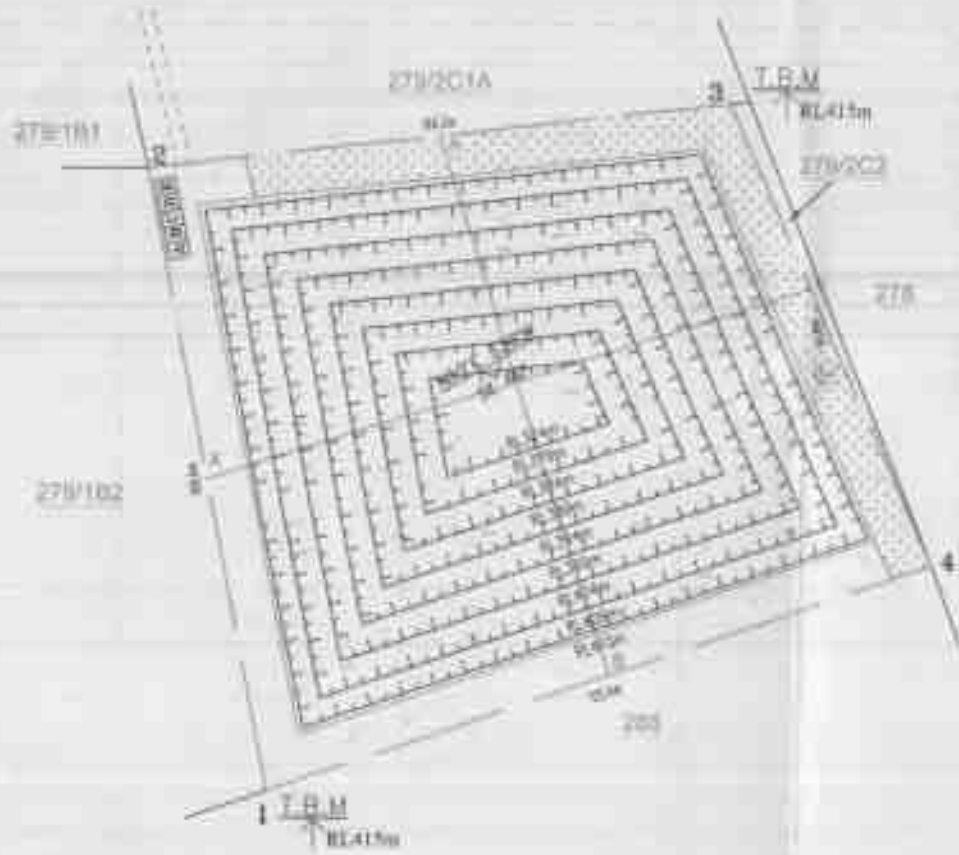
- SURVEYS**
- 1. 2001
 - 2. 2002
 - 3. 2003
 - 4. 2004
 - 5. 2005
 - 6. 2006
 - 7. 2007
 - 8. 2008
 - 9. 2009
 - 10. 2010
 - 11. 2011
 - 12. 2012
 - 13. 2013
 - 14. 2014
 - 15. 2015
 - 16. 2016
 - 17. 2017
 - 18. 2018
 - 19. 2019
 - 20. 2020
 - 21. 2021

Prepared Pit Dimensions (max) = 20x20x10m

**PROGRESSIVE QUARRY
 CLOSURE PLAN & SECTIONS**
 SCALE: 1 : 1000

PREPARED BY:
 Mr. M. SELVATHAL
 W/s. MEIGNANAM
 No. 3/78, KARAMADAIYAN THOTTAM,
 PERIYAKULAI, SULLUR TALUK,
 COMBATORE DISTRICT.

88 A



BOUNDARY CO-ORDINATES		
S.N.	LATITUDE	LONGITUDE
1	10° 54' 23.72" N	77° 54' 05.18" E
2	10° 54' 27.34" N	77° 54' 04.52" E
3	10° 54' 27.88" N	77° 54' 07.88" E
4	10° 54' 25.01" N	77° 54' 05.12" E

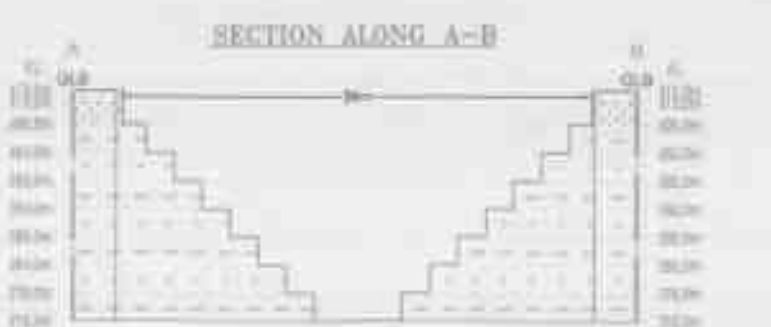
DATE: 15 MAR 2021, TIME: 11:30 AM

PLATE NO - V
Date of Survey - 30.01.2021

APPLICANT
Sri. M.SELVATHAL,
W/o. MEIGNANAM,
No. 3/78, KARAMADAIYAN THOTTAM,
PERIYAKUYYAL, SULLUR TALUK,
COMBATORE DISTRICT.

LOCATION OF QUARRY LEASE APPLIED AREA:
S.F. NO. : 279/201B.
EXTENT : 1.13.70 Hg.
VILLAGE : PACHAPALAYAM,
TALUK : SULLUR,
DISTRICT : COMBATORE,
STATE : TAMILNADU.

INDEX	
Q.L. APPLIED BOUNDARY	—————
7.5M SAFETY DISTANCE	—————
TEMPORARY BENCH MARK	⊕
GRAVEL	▨
APPROACH ROAD	▬
TRIKE AND DIP	⊕
QUARRY PIT	TTTTT
QUARRY ROAD	▬
ROUGH STONE	▨
WEATHERED ROCK	▨



SITE SERVICES
1. SURVEY
2. DESIGN DRAWING
3. PREPARE AND RECORD
4. PREPARE AND ISSUE
5. TRIPLET
6. REVISION

1:4 V. V. RATIO

Ultimate Pit Dimension (max)
= 97m x 84m x 41m

M. Meignanam

CONCEPTUAL PLAN & SECTIONS
SCALE: 1:1000

PREPARED BY:
The Surveyor certifies that the information on this plan is true and correct to the best of his knowledge and belief and is not intended to be used for any purpose other than that for which it is prepared by the Surveyor.

Shyam
S. SHYAM
REGISTERED SURVEYOR
QUALIFIED PERSON

Hydrogeological Report For
Rough Stone and Gravel Quarry Project- 1.13.7Ha of
Patta lands in S.F.No.279/2C1B of Pachapalayam
Village, Suler Taluk, Coimbatore District, Tamil
Nadu State.

HYDROGEOLOGICAL REPORT FOR PACHAPALAYAM

ROUGH STONE AND GRAVEL QUARRY.

1. INTRODUCTION

NAME OF THE APPLICANT WITH ADDRESS-

Name of the applicant : **Tmt.M.Selvathal**
Address : W/o.Meignanam,
No. 3/78, Karamadaiyan Thottam, Periyakuyilai,
Sulur Taluk, Coimbatore – 641 201.
State : Tamil Nadu.
Mobile : +91 98650 44822

DETAILS OF THE AREA-

Land Classification : Patta land
Survey No : 279/2C1B
Extent : 1.13.7 Hectares
Village : Pachapalayam
Taluk : Sulur,
District : Coimbatore

The Client requires detailed information on ground water occurrences at proposed project site of Pachapalayam rough stone and gravel quarry. The objective of the present study is to assess the availability of groundwater and comment on aspects of depth to potential aquifers, aquifer availability and type, possible yields and water quality. For this purpose all available hydrogeological information of the areas has been analyzed, and a geophysical survey was done.

The investigations involved hydrogeological, geophysical field investigations and a detailed study in which the available relevant geological and hydrogeological data were collected, analyzed, collated and evaluated within the context of the Client's requirements.

The data sources consulted were mainly:

- a) Central Ground Water Board (CGWB) Data
- b) State & District Geological and Hydrogeological Reports and Maps.
- c) Technical reports of the area by various organizations.

2. SCOPE OF THE WORKS –

The scope of works includes:

- ❖ Site visits to familiarize with the project areas. Identify any issues that might impact the Ground Water Scenario due to proposed mining activities.
- ❖ To obtain, study and synthesize background information including the geology, hydrogeology and existing borehole data, for the purpose of improving the quality of assessment and preparing comprehensive hydrogeological reports,
- ❖ To carry out hydrogeological evaluation and geophysical investigations in the selected sites in order to determine potential for groundwater at project site.
- ❖ To prepare hydrogeological survey reports in conformity with the provisions of the rules and procedure outlined by the Central Ground Water Board (CGWB), by Assessment of water quality and potential infringement of National standards, Assessment of availability of groundwater and Impact of proposed activity on aquifer, water quality and other abstractors.

3. BACKGROUND INFORMATION

Geographical information of the study area-

The investigated site falls in the Toposheet No: 58 - F/01 Latitude between 10° 54' 23.73"N to 10° 54' 27.69"N and Longitude between 77° 04' 04.52"E to 77° 04' 09.12"E on WGS datum-1984.

GEOMORPHOLOGY

Coimbatore district forms part of the upland plateau region of Tamil Nadu with many hill ranges, hillocks and undulating topography with a gentle slope towards east except for the hilly terrain in the west. The undulating topography with innumerable depressions, are used as tanks for storage of rainwater for agriculture.

The prominent geomorphic units in the district are 1) Structural hills, 2) Ridges, 3) Inselbergs, 4) Bazada, 5) Valley fill, 6) Pediment, 7) Shallow Pediments and 8) Deep Pediments.

The Nilgiris on the northwest and Anamalai on the south are the important ranges, which attain a height of over 2513m above mean sea level (MSL) and the highest elevation in the valleys adjoining the hills is 600 M above MSL. The 'Palghat Gap', which is an east-west trending mountain pass, is an important physiographic feature located in the western part of the district.

Soils

The soils of Coimbatore district can be broadly classified into 6 major soils types viz, Red calcareous Soil, Black Soil, Red non-calcareous, Alluvial and Colluvial Soil, Brown Soil, and Forest Soil. About sixty per cent of the district is covered by red soils, of which red calcareous soil is predominant. They occupy most parts of Palladam, Coimbatore, Mettupalayam and Udumalpettaluks. Medium to deep red calcareous soils are found mainly in Pollachi and Udumalpettaluks. Parts of Palladam, Avinashi and Udumalpettaluks are occupied by red non-calcareous soils.

The highlands in Coimbatore, Palladam and Avinashitaluks are mostly occupied by the black soils, which are dark gray to grayish brown in colour.

The Alluvial soils are found in small patches along the Noyil river mainly in the upper reaches. The Colluvial soils are found mainly in Chinnathadagam and Chitrachavadi sub-basins and as scattered patches at the foothills of the Anaimalai. The Forest soils are confined to the reserve forest area and have a surface layer of organic matter.

Rainfall and Climate

The district receives the rain under the influence of both southwest and northeast monsoons. The northeast monsoon chiefly contributes to the rainfall in the district and summer rains are negligible.

Rainfall data from six stations over the period 1901-2000 were utilized and a perusal of the analysis shows that the normal annual rainfall over the district varies from about 550mm to 900mm. It is the minimum around Suler (550 mm) in the eastern part of the district. It gradually increases towards south and attains a maximum around Anaimalai hills.

The district enjoys a tropical climate. The weather is pleasant during the period from November to January. Mornings in general are more humid than the afternoons, with the humidity exceeding 78% on an average. In the period June to November the afternoon humidity exceeds 66% on an average. In the rest of the year the afternoons are drier, the summer afternoons being the driest. The period from April to June is generally hot and dry. The temperature recorded varies from 11.7°C to 42.6°C.

GEOLOGY

Regional Geology of Coimbatore District-

The district is occupied by Charnockite Group of rocks consisting of Charnockite, pyroxene granulites and associated magnetite quartzite, the Knodalite Group comprising gametiferous – sillimanite gneiss, calc-granulite, crystalline limestone, sillimanite quartzites and associated migmatitic gneisses. The fissile hornblende gneisses (Peninsular gneiss –

younger phase) of Bhavani Group with enclaves of schistose, micaceous and amphibolitic rocks, fuchsitge – kyanitequartzites, ferruginous quartzite (Satyamangalam Group) intruded by a number of ultramafic and basic rocks and granites are seen in the Northern portions of the district especially around Mettupalayam, Avinashi and Northern areas of Coimbatore. The granites are Proterozoic age and occupy the Western end and Eastern Part of the District as separate bodies and are recognized as Maruthamalai Granite and Punjapuliyampatti Granites respectively. The quaternary alluvium is seen in the West and Northwestern areas of Udumalaipettai and Western areas of Coimbatore town. The alluvium is more than 30m thick in the Chinnathadagam valley northwest of Coimbatore and in the Siruvani valley west of Coimbatore. In the Udumalaipettaitaluk area, it overlies the kankar deposit.

It is revealed the Coimbatore district is occupied by the rocks of Sathiyamangalam, Peninsular gneissic complex-I and Charnockite group of Archaean age, Peninsular Gneissic Complex-II of Archaean to Palaeoproterozoic age, Basic intrusive of Mesoproterozoic age, Younger intrusive of Neoproterozoic age and recent alluvium.

The Peninsular gneissic complex-I comprising hornblende biotite gneiss and granite area the major rock types exposed. Hornblende biotite granite is medium to coarse grained and mesocratic and considered to be retrograded product of product of Charnockite – Pyroxene granulite. It is medium grained, White to pale pink colored with disseminations of limonitised magnetite. The white colored granite appears to be older and the pink colored cuts across the white colored granite. The younger phase of coarse grained granite occur as thin stringers and lesser in the southern part. The peripheral part of granite close to the gneiss is granitic in nature.

STRATIGRAPHY SUCCESSION

Lithology	Group	Super Group	Age
Gypseous clay			Holocene
Granite	Acid intrusives		Neoproterozoic
Dolerite /basic dyke	Basic intrusives		Mesoproterozoic
Quartzofeldspathic Gneiss Garnet.		Peninsular Gneissic complex- II	Archaean to Palaeoproterozoic
Hornblende biotite gneiss			
Charnockite		Southern Granulite Complex	

Grey Hornblend Biotite gneiss		Peninsular Gneissic complex-I	Archaean
Gabbro	Sitampundi		
Amphibolite	Mettupalayam Complex		
Magnetite Quartzite			
Talc – Termolite – Actinolite Schist	Sathiyamanagalam Group		

4. GEOPHYSICAL INVESTIGATION METHODS

A variety of methods are available to assist in the assessment of geological sub-surface conditions. The main emphasis of the fieldwork undertaken was to determine the thickness and composition of the sub-surface formations and to identify water-bearing zones. This information was principally obtained in the field using, and vertical electrical soundings (VES). The VES probes the resistivity layering below the site of measurement. This method is described below.

Resistivity Method

Vertical electrical soundings (VES) were carried out to probe the condition of the sub-surface and to confirm the existence of deep groundwater. The VES investigates the resistivity layering below the site of measurement.

Basic Principles

The electrical properties of rocks in the upper part of the earth's crust are dependent upon the lithology, porosity, and the degree of pore space saturation and the salinity of the pore water. Saturated rocks have lower resistivity than unsaturated and dry rocks. The higher the porosity of the saturated rock, or the higher the salinity of the saturating fluids, the lower is the resistivity. The presence of clays and conductive minerals also reduces the resistivity of the rock.

The resistivity of earth materials can be studied by measuring the electrical potential distribution produced at the earth's surface by an electric current that is passed through the earth. Current is moved through the subsurface from one current electrode to the other and the potential difference is recorded as the current passes. From this information, resistivity values of various layers are acquired and layer thickness can be identified.

The apparent resistivity values determined are plotted as a log function versus the log of the spacing between the electrodes. These plotted curves identify thickness of layers. If there are multiple layers (more than 2), the acquired data is compared to a master curve to determine layer thickness.

This method is least influenced by lateral in-homogeneities and capable of providing higher depth of investigation.

The resistance R of a certain material is directly proportional to its length L and cross-sectional area A , expressed as:

$$R = R_s * L/A \text{ (in Ohm)}$$

Where R_s is known as the specific resistivity (characteristic of the material and independent of its shape or size)

With Ohm's Law,

$$R = dV/I \text{ (Ohm)}$$

Where dV is the potential difference across the resistor and I is the electric current through the resistor. The specific resistivity may be determined by:

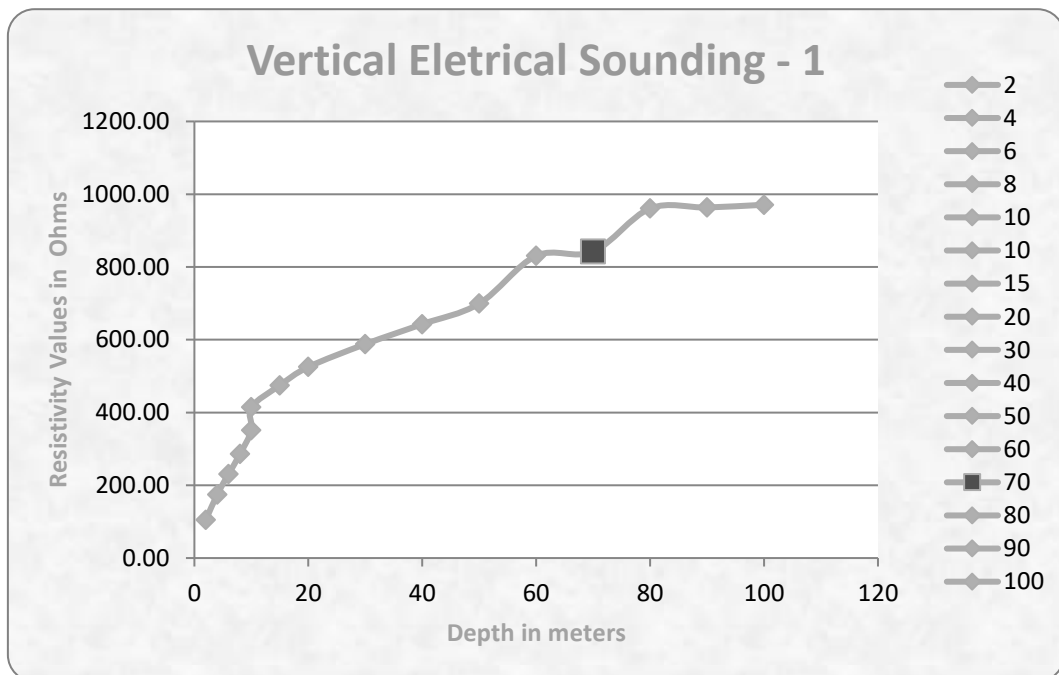
$$R_s = (A/L) * (dV/I) \text{ (in Ohm m)}$$

Vertical Electrical Sounding (VES)

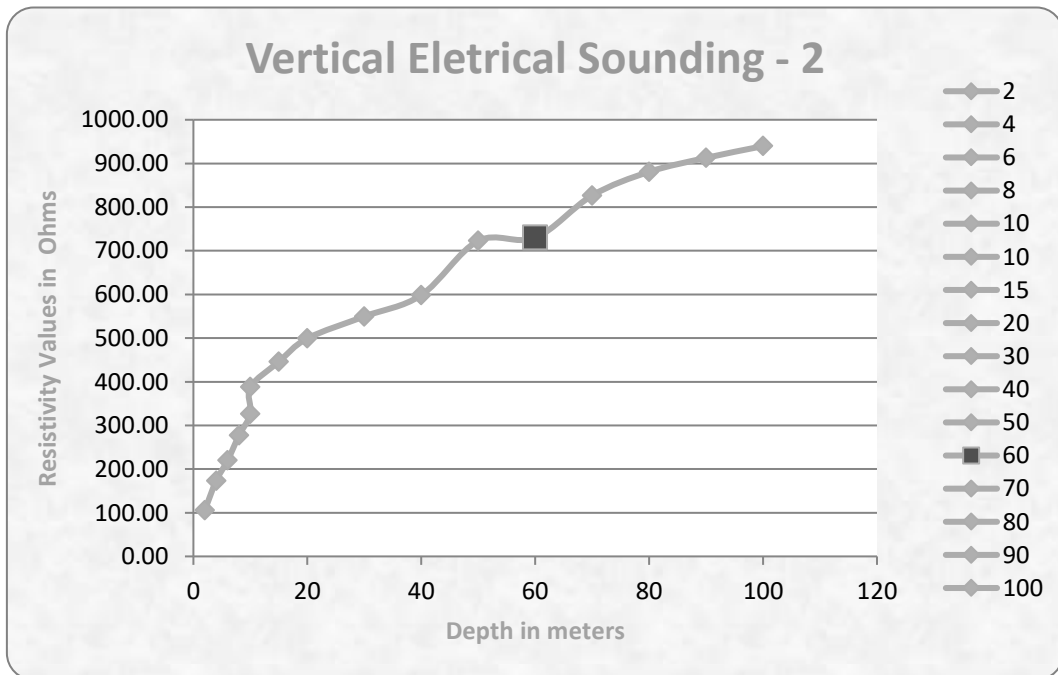
When carrying out a resistivity sounding, current is led into the ground by means of two electrodes. With two other electrodes, situated near the center of the array, the potential field generated by the current is measured. From the observations of the current strength and the potential difference, and taking into account the electrode separations, the ground resistivity can be determined. During a resistivity sounding, the separation between the electrodes is step-wise increased (known as a Schlumberger Array), thus causing the flow of current to penetrate greater depths. When plotting the observed resistivity values against depth on double logarithmic paper, a resistivity graph is formed, which depicts the variation of resistivity with depth. This graph can be interpreted with the aid of a computer, and the actual resistivity layering of the subsoil is obtained. The depths and resistivity values provide the hydro geologist with information on the geological layering and thus the occurrence of groundwater.

Vertical Electrical Sounding Data's and Graphs

STATION-1					
GPS Coordinates - 10°52'51.21"N 77° 2'58.85"E					
S.No	Ab/2(m)	Mn/2(m)	Geometrical Factor (G)	Resistance Value in Ohms	Apparent Resistance in Ohms
1	2	1	4.71	22.26	104.84
2	4	1	23.55	7.40	174.27
3	6	1	54.95	4.20	230.79
4	8	1	98.91	2.89	285.85
5	10	1	155.45	2.26	351.32
6	10	5	23.55	17.60	414.48
7	15	5	62.80	7.56	474.77
8	20	5	117.75	4.46	525.17
9	30	5	274.75	2.14	587.97
10	40	5	494.55	1.30	642.92
11	50	5	777.15	0.90	699.44
12	60	5	1122.55	0.74	830.69
13	70	5	1530.75	0.55	841.91
14	80	5	2001.75	0.48	960.84
15	90	5	2535.55	0.38	963.51
16	100	5	3132.15	0.31	970.97

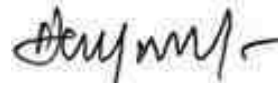


STATION-2					
GPS Coordinates - 10°52'46.94"N 77° 2'59.42"E					
S.No	Ab/2(m)	Mn/2(m)	Geometrical factor (G)	Resistance Value in Ohms	Apparent Resistance in Ohms
1	2	1	4.71	22.46	105.79
2	4	1	23.55	7.36	173.33
3	6	1	54.95	4.00	219.80
4	8	1	98.91	2.80	276.95
5	10	1	155.45	2.10	326.45
6	10	5	23.55	16.46	387.63
7	15	5	62.80	7.10	445.88
8	20	5	117.75	4.24	499.26
9	30	5	274.75	2.00	549.50
10	40	5	494.55	1.21	598.41
11	50	5	777.15	0.93	722.75
12	60	5	1122.55	0.65	729.66
13	70	5	1530.75	0.54	826.61
14	80	5	2001.75	0.44	880.77
15	90	5	2535.55	0.36	912.80
16	100	5	3132.15	0.30	939.65



5. Conclusion –

Based on the available information and the geophysical investigations it is concluded that the project area is considered to have medium groundwater potential. Productive aquifers are expected at depth of 80m to 85m where minor fractures are observed and shallow aquifers are expected above 65m-70m BGL. The ultimate pit limit as per the approved mining plan depth is 41m (2m Gravel + 4m Weathered Gravel + 35m Rough Stone) below ground level, which will have no impact on the Ground Water.



Dr. P. Thangaraju, M.Sc., Ph.D.,

Govt. Approved Hydro Geologist

M/s. Geo Exploration and Mining Solutions,

Regd. Office: No. 17, Advaita Ashram Road,

Alagapuram, Salem – 636 004, Tamil Nadu

Mobile: +91 - 94433 56539

E-Mail: infogeoexploration@gmail.com

அனுப்புநர்
திரு.செ.தனலிங்கம்,எம்.எஸ்.சி. ம.பில்,
வருவாய் கோட்டாட்சியர்,
கோயம்புத்தூர் தெற்கு.

பெறுநர்
மாவட்ட ஆட்சியர்,
கோயம்புத்தூர்.

ந.க.எண் : 3361/2020/அ2.

நாள் : 20.10.2020

அபயர்

பொருள் : கனிமங்களும் சுரங்கங்களும் - கோயம்புத்தூர்
மாவட்டம் - குலூர் வட்டம் - பச்சாபாளையம் கிராமம் -
கிராமம் - புலஎண் 279/2C18 காலை - 1.13.70
ஹெக்டேர் பரப்புள்ள பட்டாபூமி - சாதாரண கற்கள் மற்றும்
கிராவல் மண் வெட்டியெடுக்க குவாரி குத்தகை உரிமம் கோருதல் -
தொடர்பாக.

பார்வை : 1)செல்வாத்தாள் (திருமதி.)M க./பெ.மெஞ்ஞானம்
கவுண்டர் என்பவரது விண்ணப்பம் நாள்:
28.09.2020
2)கோயம்புத்தூர் மாவட்ட ஆட்சியரின் கடிதம்
ந.க.544/கனிமம்/2020, நாள் : 24.09.2020
3)இவ்வலுவலக ந.க. இதே எண்.
நாள் : 06.10.2020.
4)குலூர் வட்டாட்சியரின் அறிக்கை.
ந.க.3508/2020/அ2. நாள் : 15.10.2020

கோயம்புத்தூர் மாவட்டம், குலூர் வட்டம், பச்சாபாளையம் கிராமம், புல எண்
279/2C18 காலையில் 1.13.70 ஹெக்டேர் பரப்புள்ள பட்டா பூமியில் சாதாரண கற்கள் மற்றும்
கிராவல் மண் வெட்டியெடுக்க, திருமதி.M.செல்வாத்தாள் க./பெ.மெஞ்ஞானம் என்பவர் பார்வை
1-இல் காணும் விண்ணப்பம் செய்துள்ளது தொடர்பாக, பார்வை 4-இல் காணும் குலூர்
வட்டாட்சியரின் அறிக்கை வரப்பெற்றுள்ளதையடுத்து, எனதறிக்கையினைப் பின்வருமாறு
சமர்ப்பித்துக் கொள்கிறேன்.

கோயம்புத்தூர் மாவட்டம், குலூர் வட்டம், பச்சாபாளையம் கிராமம், புல எண்
279/2C18 காலையில் பு.ஹெ.1.13.70 பரப்புள்ள நிலமானது கிராம பட்டா எண்.1605-இல் பட்டா
விண்ணப்பதாரர் திருமதி, செல்வாத்தாள் க./பெ.மெஞ்ஞானம் என்பவரின்
பாத்திரப்பட்டுள்ளது.

விண்ணப்பதாரர் மேற்படி நிலத்தில் சாதாரண கற்கள் மற்றும் கிராவல்
வெட்டியெடுக்க உத்தேசித்து விண்ணப்பம் செய்துள்ளார்.

மேலும், விண்ணப்பதாரர் கனிம வரி நிலுவை எதுவும் இல்லை எனவும், வருமான
வரி நிலுவை இல்லை எனவும் இருபது ரூபாய் முத்திரைத் தாளில் சான்றுறுதி ஆவணம்
எழுதிக் கொடுத்துள்ளார்.

குத்தகை உரிமம் கோரும் பச்சாபாளையம் கிராமம், புல எண் 279/2C18 காலைக்கு,

1.ஊடக்கில் 150 மீட்டர் தொலைவில் தங்கும் புளுமெட்டல்ஸும், 300 மீட்டர் தொலைவில்
காற்றாலைபும்.

- 2.மேற்குப்பகுதியில் புல எண்.280 காலையில், 100 மீட்டர் தொலைவில் ரமேஷ்குமார் கிரஷும், 400 மீட்டர் தொலைவில் பிரபு கிரஷும், 450 மீட்டர் தொலைவில் ஆன்னபூரண குவாரியும், 350 மீட்டர் தொலைவில் J.K.குவாரியும், 60 மீட்டர் தொலைவில் ரமேஷ்குமார் குவாரியும்.
- 3.கிழக்குப் புல எண் 278 காலையும்.
- 4.மேற்குப்பகுதியில் 250 மீட்டர் தொலைவில் குப்புசாமி கோழிப்பண்ணையும், எல்லைகளாக அமைந்துள்ளன.

குத்தகை உரிமம் கோரும்,

1. மேற்படி பூமியில் அரசு புறம்போக்கு நிலம் ஏதும் இல்லை.
2. மேற்படி பூமியிலிருந்து 300 மீட்டர் சுற்றளவில் நத்தம் குடியிருப்பு பகுதிகளோ, அங்கரிக்கப்பட்ட வீட்டுமனைகளோ ஏதுமில்லை.
3. மேற்படி பூமியானது நகர்ப்புற உச்சவரம்பு சட்டம் 1978-ன் கீழ் கவரப்படவில்லை
4. மேற்படி பூமியானது நில சீர்திருத்த சட்டம் 1961-ன் கீழ் கவரப்படவில்லை
5. மேற்படி பூமியிலிருந்து 300 மீட்டர் சுற்றளவுக்கு நத்தம் குடியிருப்புகளோ, அங்கரிக்கப்பட்ட வீட்டுமனைகளோ ஏதும் இல்லை.
6. மேற்படி பூமியில் கோவில், மசூதி மற்றும் தேவாலயம் ஆகிய வழிபாட்டுத்தலங்கள் ஏதும் இல்லை.
7. மேற்படி பூமியில் புராதானச் சின்னங்களோ அல்லது விலையுயர்ந்த மரங்களோ ஏதும் இல்லை.
8. மேற்படி பூமியிலிருந்து 300 மீட்டர் சுற்றளவில் தேசிய மற்றும் மாநில நெடுஞ்சாலைகள் ஏதுமில்லை.

விண்ணப்பதாரரின் கோரிக்கை தொடர்பாக பச்சாபாளையம் கிராமத்தில், கடந்த 28.09.2020 அன்று அ1 அறிவிப்பு சார்பு செய்யப்பட்டதில் நாளது தேதி வரை ஆட்சேபனை ஏதும் எப்பிரகாரத்தினாலும் மேலும் பொதுமக்கள் வாக்குமூலம் பெறப்பட்டுள்ளது.

எனவே, கோயம்புத்தூர் மாவட்டம், குவார் வட்டம், பச்சாபாளையம் கிராமம், புல எண் 279/2C1B காலையில் 1.13.70 ஹெக்டேர் பரப்புள்ள பட்டா நிலத்தில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க, திருமதி.M.செல்வாத்தாள் க./பெ.மெஞ்ஞானம் என்பவருக்கு சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க, குத்தகை உரிமம் வழங்கலும் என்பதைப் பணிஷன் தெரிவித்துக்கொள்கிறேன்.

இணைப்பு தொடர்புடைய ஆவணங்கள்

//உண்மை நகல் / ஆணைப்படி//

தங்கள் உண்மையுள்ள,
(ஓம்) செ.தனலிங்கம்
வருவாய் கோட்டாட்சியர்
கோயம்புத்தூர் தேற்க

நேர்முக உதவியாளர்

22
24/11/2021

புலத்தணிக்கைக் குறிப்பு

தணிக்கை அலுவலர்	:	வருவாய் கோட்டாட்சியர், கோயம்புத்தூர் தெற்கு
தணிக்கை நாள்	:	16.10.2020
தணிக்கை கிராமம்	:	பச்சாபாளையம் கிராமம்
தணிக்கை புலங்கள்	:	279/2C1B
தணிக்கையின் நோக்கம்	:	கனிமங்களும் சுரங்கங்களும் - கோயம்புத்தூர் மாவட்டம் - குலூர் வட்டம் - பச்சாபாளையம் கிராமம் - புலஎண் 279/2C1B காலை- 1.13.70 ஹெக்டேர் பரப்புள்ள பட்டாபூமி - சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க குவாரி குத்தகை உரிமம் கோருதல் - தொடர்பாக.
தணிக்கையின் போது உடனிருந்தவர்கள்	:	உள்வட்ட நிலவருவாய் ஆய்வாளர்,செலக் கரிச்சல் கிராம நிருவாக அலுவலர், பச்சாபாளையம் கிராமம் *****

கோயம்புத்தூர் மாவட்டம், குலூர் வட்டம், பச்சாபாளையம் கிராமம், புல எண் 279/2C1B காலையில் 1.13.70 ஹெக்டேர் பரப்புள்ள பட்டா பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க, திருமதி.M.செல்வாத்தாள் க/பெ.மெய்க்ஞானம் என்பது விண்ணப்பம் செய்துள்ளது தொடர்பாக, குலூர் வட்டாட்சியரின் அனுமதி பெறப்பெற்றுள்ளதையடுத்து, 16.10.2020 அன்று மேற்காண் புலமானது என்னால் புலத்தணிக்கை செய்யப்பட்டது.

கோயம்புத்தூர் மாவட்டம், குலூர் வட்டம், பச்சாபாளையம் கிராமம், புல எண் 279/2C1B காலையில் பு.ஹெ.1.13.70 பரப்புள்ள நிலமானது கிராம பட்டா எண்.1605-இன் படி விண்ணப்பதாரர் திருமதி. செல்வாத்தாள் க/பெ.மெய்க்ஞானம் என்பவருக்குப் பாத்தியப்பட்டுள்ளது.

விண்ணப்பதாரர் மேற்படி நிலத்தில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க உத்தேசித்து விண்ணப்பம் செய்துள்ளார்.

மேலும், விண்ணப்பதாரர் கனிம வரி நிலுவை எதுவும் இல்லை எனவும், மதுவரி வரி நிலுவை இல்லை எனவும் இருபது ரூபாய் முத்திரைத் தாளில் சான்றுகூட்டுதல் வழி எழுதிக் கொடுத்துள்ளார்.

குத்தகை உரிமம் கோரும் பச்சாபாளையம் கிராமம், புல எண் 279/2C1B காலைக்கு,

1.வடக்கில் 150 மீட்டர் தொலைவில் தங்கம் புளுமெட்டல்ஸம், 300 மீட்டர் தொலைவில் காற்றாஸையும்,

2.தெற்குப்பகுதியில் புல எண் 280 காலையில், 100 மீட்டர் தொலைவில் ரமேஷ்தாமா கிரஷ்டும், 400 மீட்டர் தொலைவில் பிரபு கிரஷ்டும், 450 மீட்டர் தொலைவில் அன்னபூர்ணா குவாரியும், 350 மீட்டர் தொலைவில் J.K.குவாரியும், 100 மீட்டர்

தொலைவில் ரமேஷ்குமார் குவாரியும்,

3.கிழக்கில் புல எண் 278 காலையும்;

4.மேற்குப்பகுதியில் 250 மீட்டர் தொலைவில் குப்புசாமி கோழிப்பண்ணையும்.

எல்லைகளாக அமைந்துள்ளன.

குத்தகை உரிமம் கோரும்.

1. மேற்படி பூமியில் அரக புறம்போக்கு நிலம் ஏதும் இல்லை.
2. மேற்படி பூமியிலிருந்து 300 மீட்டர் சுற்றளவில் நத்தம் குடியிருப்பு பகுதிகளோ, அங்கீகரிக்கப்பட்ட வீட்டுமனைகளோ ஏதுமில்லை.
3. மேற்படி பூமியானது நகர்ப்புற உச்சவரம்பு சட்டம் 1978-ன் கீழ் கவரப்படவில்லை.
4. மேற்படி பூமியானது நில சித்திரத்த சட்டம் 1961-ன் கீழ் கவரப்படவில்லை.
5. மேற்படி பூமியிலிருந்து 300 மீட்டர் சுற்றளவுக்கு நத்தம் குடியிருப்புகளோ, அங்கீகரிக்கப்பட்ட வீட்டுமனைகளோ ஏதும் இல்லை.
6. மேற்படி பூமியில் கோவில், மசூதி மற்றும் தேவாலயம் ஆகிய வழிபாட்டுத்தலங்கள் ஏதும் இல்லை.
7. மேற்படி பூமியில் புராதானச் சின்னங்களோ அல்லது விலையுயர்ந்த மரங்களோ ஏதும் இல்லை.
8. மேற்படி பூமியிலிருந்து 300 மீட்டர் சுற்றளவில் தேசிய மற்றும் மாநில நெடுஞ்சாலைகள் ஏதுமில்லை.

விண்ணப்பதாரரின் கோரிக்கை தொடர்பாக பச்சாபாளையம் கிராமத்தில் கடந்த 28.09.2020 அன்று அஃ அறிவிப்பு-சார்பு செய்யப்பட்டதில் நாளது தேதி வரை ஆட்சேபனை ஏதும் வரப்பெறவில்லை. மேலும் பொதுமக்கள் வாக்குமூலம் பெறப்பட்டுள்ளது.

எனவே, கோயம்புத்தூர் மாவட்டம், குலூர் வட்டம், பச்சாபாளையம் கிராமம், புல எண் 279/2C18 காலையில் 1.13.70 ஹெக்டேர் பரப்புள்ள பட்டா நிலத்தில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க, திருமதி.M.செல்வாத்தாள் க./பெ.மெஞ்சூனம் என்பவருக்கு சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க, குத்தகை உரிமம் வழங்கலாம் என்பதைத் தெரிவித்து, கோயம்புத்தூர் மாவட்ட ஆட்சியருக்குக் கடித வரைவு அனுப்பவும்.

வருவாய் கோட்டாட்சியர்,
கோயம்புத்தூர் தெற்கு.

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336/2020/ஆ

அனுப்புநர்:

பெறுநர்:

திருமதி.ஜெ.மீனாகுமாரி,
வட்டாட்சியர்,
குலூர்.

வருவாய் கோட்டாட்சியர்
கோயம்புத்தூர் தெற்கு.

ந.க:3508/2020/A2

நாள்: 15.10.2020

ஐயா.



கனிமங்களும் - சுரங்கங்களும் - கோயம்புத்தூர் மாவட்டம் -
குலூர் வட்டம் - பச்சாபாளையம் கிராமம் - மஜரா
பெரியகுயிலி எனும் முகவரியில் வசிக்ரும் திருமதி.
செல்லாத்தாள் க/பெ.மெய்ஞ்ஞானம் என்பவர்
க.ச.எண்.279/2C1B காலையில் புறேக் 1.13.70 ஏர்ஸ்
பரப்பில் கல்தவாரி/உரிமம் கோரியது அறிக்கை
அனுப்புதல் - தொடர்பாக

- 1.திருமதி. செல்லாத்தாள் க/பெ.மெய்ஞ்ஞானம்நாள்.06.06.2020
- 2.பச்சாபாளையம் கிராம நிர்வாக அலுவலர் அறிக்கை
நாள்.13.10.2020
- 3.செலக்கரிச்சல் நில வருவாய் ஆய்வாளர் அறிக்கை
நாள்.13.10.2020

கோயம்புத்தூர் மாவட்டம், குலூர் வட்டம், பச்சாபாளையம் கிராமம், மஜரா
பெரியகுயிலி எனும் முகவரியில் வசிக்ரும் திருமதி. செல்லாத்தாள் க/பெ.மெய்ஞ்ஞானம்
என்பவர் மேற்படி கிராமம் க.ச.எண்.279/2C1B காலையில் பு.ஹேக் 1.13.70 ஏர்ஸ் பரப்பில்
கல்தவாரி அமைக்க உரிமம் கோரியது தொடர்பாக எனதுறிக்கையினை கீழ்க்கண்டவாறு
பணிவுடன் அனுப்பி வைக்கிறேன்.

மேற்படி பச்சாபாளையம் கிராமம், புல எண்.279/2C18-ல் நெ.காலையில்
பு.ஹே.1.13.70 விஸ்தீரணமுள்ள பூமியானது கிராம பட்டா எண்.1645 ல் படி அனுப்பி
திருமதி. செல்லாத்தாள் க/பெ.மெய்ஞ்ஞானம் என்பவருக்குப் பாத்தியப்பட்டுள்ளது.

மேற்படி பிரஸ்தாப புலத்தின் எல்லைகளாக

1.வடக்கில் 150 மீட்டர் தொலைவில் தங்கம் புலமெட்டலையும், 300 மீட்டர்
தொலைவில் காற்றாலையும்,

2.கிழக்கில் க.ச.எண்.278 நெ.காலையும்,

3.தேற்குப்பகுதியில் க.ச.எண்.280 நெ.காலையில், 100 மீட்டர் தொலைவில் ரமேஷ்குமார் கிரஷும், 400 மீட்டர் தொலைவில் பிரபு கிரஷும், 450 மீட்டர் தொலைவில் அன்னபூர்ணா குவாரியும், 350 மீட்டர் தொலைவில் J.K.குவாரியும், 60 மீட்டர் தொலைவில் ரமேஷ்குமார் குவாரியும்,

4.மேற்குப்பகுதியில் 250 மீட்டர் தொலைவில் குப்புசாமி கோழிப்பண்ணையும், எல்லைகளும் அமைந்துள்ளன.

மேற்படி பிரஸ்தாப புலத்தின் மீது உயர் மின்னழுத்தக் கம்பிகள் ஏதும் செல்லவில்லை. சுமார் 300 மீட்டர் சுற்றளவில் கிராம நத்தமோ, புராதனச்சின்னங்களோ, வழிபாட்டுத்தலங்களோ, விலை உயர்ந்த மரங்களோ ஏதுமில்லை. மேற்படி புலத்திலிருந்து 300 மீட்டர் சுற்றளவிற்குள் தேசிய மற்றும் மாநில நெடுஞ்சாலைகள் ஏதும் செல்லவில்லை.

மேற்படி பிரஸ்தாப புலமானது நிலச்சீர்திருத்தச்சட்டம் 1961 மற்றும் மற்றும் நகர்ப்புற நில உச்சவரம்புச்சட்டம் 1978-ன் கீழ் கவரப்படவில்லை.

மேற்படி மனுதாரரின் கோரிக்கை தொடர்பாக பச்சாபாளையம் கிராமத்தில் கடந்த 28.09.2020 அன்று அ1 அறிவிப்பு சார்பு செய்யப்பட்டதில் நாளது தேதி வரை ஆட்சேபனை ஏதும் வரப்பெறவில்லை. மேலும் பொதுமக்கள் வாக்குமூலம் பெறப்பட்டுள்ளது.

எனவே, மனுதாரர் திருமதி.செல்லாதாள் க/பெ.மெய்ஞ்ஞானம் என்பவர் மேற்படி கிராமம் க.ச.எண்.279/2C1B காலையில் பு.ஹெக் 1.13.70 ஏர்ஸ் பரப்பில் கல்குவாரி அமைக்க உரிமம் வழங்கலாம் என்பதைப் பணிவுடன் தெரிவித்துக்கொள்கிறேன்.

தங்கள் உண்மைபுள்ள

வட்டாட்சியர்
குலூர்.


15/10/2020

இணைப்பு.ஆலணங்கள்.

புலத்தணிக்கை குறிப்பு

இடம் : பச்சாபாளையம் கிராமம்

நாள் : 10.2020

கோயம்புத்தூர் மாவட்டம், குலூர் வட்டம், பச்சாபாளையம் கிராமம், ஈழநாடு பெரியகுயிலி எனும் முகவரியில் வசிக்கும் திருமதி. செல்வத்தாள் க/பெ.மெய்க்ஞானம் என்பவர் மேற்படி கிராமம் க.ச.எண்.279/2C1B காலையில் பு.ஹெக் 1.13.70 ஏர்ஸ் பரப்பில் கல்குவாரி அமைக்க உரிமம் கோரியது தொடர்பாக பிரஸ்தாபு புலமானது இன்று என்னால் தணிக்கை செய்யப்பட்டது.

மேற்படி பச்சாபாளையம் கிராமம், புல எண்.279/2C1B-ல் நெ.காலையில் பு.ஹெ.1.13.70 விஸ்தீரணமுள்ள பூமியானது கிராம பட்டா எண்.1605-ன் படி மனுதயார் திருமதி. செல்வத்தாள் க/பெ.மெய்க்ஞானம் என்பவருக்குப் பாத்தியப்பட்டுள்ளது.

மேற்படி பிரஸ்தாபு புலத்தின் எல்லைகளாக

1.வடக்கில் 150 மீட்டர் தொலைவில் தங்கம் புலமெட்டல்ஸம், 300 மீட்டர் தொலைவில் காற்றாலைபுறம்,

2.கிழக்கில் க.ச.எண்.278 நெ.காலையும்,

3.தெற்குப்பகுதியில் க.ச.எண்.280 நெ.காலையில், 100 மீட்டர் தொலைவில் ரமேஷ்குமார் கிரஸ்தும், 400 மீட்டர் தொலைவில் பிரபு கிரஸ்தும், 450 மீட்டர் தொலைவில் அன்னபூர்ணா குவாரியும், 350 மீட்டர் தொலைவில் J.K குவாரியும், 60 மீட்டர் தொலைவில் ரமேஷ்குமார் குவாரியும்,

4.மேற்குப்பகுதியில் 250 மீட்டர் தொலைவில் குப்புசாமி கோழிப்பண்ணையும், எல்லைகளாக அமைந்துள்ளன.


மேற்படி பிரஸ்தாபு புலத்தின் மீது உயர் மின்னழுத்தக் கம்பிகள் குதார் செல்லவில்லை. சுமார் 300 மீட்டர் சுற்றளவில் கிராம நகரமே, புராதனச்சின்னங்களே,

வழிபாட்டுத்தலங்களோ, விலை உயர்ந்த மரங்களோ ஏதாவில்லை. மேற்படி புலத்திலிருந்து 300 மீட்டர் சுற்றளவிற்குள் தேசிய மற்றும் மாநில நெடுஞ்சாலைகள் ஏதும் செல்லவில்லை.

மேற்படி பிரஸ்தாப புலமானது நிலச்சீர்திருத்தச்சட்டம் 1961 மற்றும் மற்றும் நகர்ப்புற நில உச்சவரம்புச்சட்டம் 1978-ன் கீழ் கவரப்படவில்லை.

மேற்படி மனுதாரரின் கோரிக்கை தொடர்பாக பச்சாபாளையம் கிராமத்தில் கடந்த 28.09.2020 அன்று அ1 அறிவிப்பு சார்பு செய்யப்பட்டதில் நாளது தேதி வரை ஆட்சேபனை ஏதும் வரப்பெறவில்லை. மேலும் பொதுமக்கள் வாக்குமூலம் பெறப்பட்டுள்ளது.

மனுதாரர் திருமதி.செல்லாத்தாள் க/பெ.மெய்ஞ்ஞானம் என்பவருக்கு மேற்படி கிராமம் க.ச.எண்.279/2C1B காலையில் புறேக 1.13.70 பரப்பில் கல்குவாரி அமைக்க உரிமம் வழங்கலாம் என்பதை தெரிவித்து கோயம்புத்தூர் வகுவாய் கோட்டரிசியர் கோயம்புத்தூர் தெற்கு அவர்களுக்கு கடித வரைவு தயார் செய்து வைக்கவும்.


வட்டாட்சியர்,
குண்டூர்.

கோவை மாவட்டம், திருச்சி வட்டம், பச்சையப்பா
 கிராமம் லட்சுமி மயம் குடி ஒன்றிய சேவையில் தங்கி
 மலையாளத்தில் லட்சுமி மயம் குடி ஒன்றியம் த.ச. 279/2010
 ம.ச.காணல் 4.000 1.13.70 மின் படிப்பில் சன் இவர்
 2010 கோவையில் மின் ஹாண்டிங்ஸ் லட்சுமி மயம் குடி
 ஒன்றிய சேவையில் தங்கியிருக்கிறார்.


கோவை மாவட்டம் ஹாண்டிங்ஸ் லட்சுமி மயம் குடி
 ஒன்றியத்தில் கோவை மயம் குடி ஒன்றியம் த.ச. 279/2010
 ம.ச.காணல் 4.000 1.13.70 மின் படி பட்டி எண் 1605.0
 லு சேவையில் படிப்பில். கோவை மயம் குடி ஒன்றியம்
 படிப்பில் சன் இவர் 2010 கோவை கோவை. கோவை மயம் குடி
 ஒன்றிய 150 மாவட்டம் தங்கி 40 மாவட்டம் 300
 மின் மாவட்டம் சேவையில், சிபி 400 மயம் குடி
 278 ம.ச.காணல், கோவை மயம் குடி 250 மின் மாவட்டம்
 சிபி 400 கோவை மயம் குடி மயம் குடி த.ச. 200
 ம.ச.காணல் 100 மின் மாவட்டம் 200 மயம் குடி
 தங்கி 400 மின் மாவட்டம் மயம் குடி தங்கி
 450 மின் மாவட்டம் சேவையில் சேவையில்,
 350 மின் மாவட்டம் J.K. சேவையில், 60 மின்
 மாவட்டம் 200 மயம் குடி சேவையில் 150 மயம் குடி
 சேவையில்.

1. கோவை மயம் குடி மயம் குடி மயம் குடி தங்கி.
2. கோவை மயம் குடி தங்கி 300 மின் சேவையில்
 தங்கி 150 மயம் குடி மயம் குடி, சேவையில்
 தங்கி லட்சுமி மயம் குடி தங்கி.
3. கோவை மயம் குடி 150 மயம் குடி 1961 மயம் குடி
 சேவையில்.

- 4. கி.சி.பி. யூனியன்கள் 1200000 ரூபாய் செலவு செய்து 1978-80 க்கு சம்பளப்படிக்கலை
- 5. கி.சி.பி. யூனியன் கோவை, லட்சுமி, இராமநாயகம் லஞ்சம் லஞ்சப்பாட்டு துறை ஹாதுவாக சிபிஐகளை, விசயநகரத்து லஞ்சகளை குடிமகனாக
- 6. கி.சி.பி. யூனியன் 300 லட்சம் சிபிஐகளை இதுவ லஞ்சம் லஞ்சகளை குடிமகனாக


தனது லஞ்சகளை கோவை கச. 279/2013

பி.கி.பி.யில் ஹாதுவாக 1.13.70 ஏன் ஹாதுவாக சிபிஐகளை சிபிஐகளை 2010ல் ஹாதுவாக சிபிஐகளை சிபிஐகளை சிபிஐகளை சிபிஐகளை


 13.10.2013
 வருவாய் ஆய்வாளர்
 செலக்கரிச்சல உள் வட்டம்,
 தூண்டி வட்டம்.

பி.கி.பி.
 வட்டமகிளா சிபிஐகளை
 சிபிஐகளை

பெரும் சந்தேகங்களை பத்திரமாதாரம்
செய்துள்ள சீர்திருத்தப் பணிகளை மேலும் விரைவில்
முடிவாக வைத்துக் கொடுக்கும் வகையில்
பத்திரமாதாரம் சீர்திருத்தப் பணிகளை மேலும்
விரைவில் முடிவாக வைத்துக் கொடுக்கும்
வகையில் நடவடிக்கை எடுக்கப்படுகிறது.


வருவாய் ஆய்வாளர்
செலஞ்சாலை உள் வட்டம்,
கூலார் வட்டம்.

ദേശീയ സർവ്വകലാശാലകളിലെ
 വിദ്യാർത്ഥികൾക്കായി കേരള സർവ്വകലാശാലയിൽ
 വിദ്യാർത്ഥി വിദ്യാർത്ഥി സൗകര്യങ്ങൾ ഉണ്ടാക്കുന്ന
 പ്രവർത്തനങ്ങൾ.

കേരള സർവ്വകലാശാലകളിലെ വിദ്യാർത്ഥികൾക്കായി
 കേരള സർവ്വകലാശാലയിൽ വിദ്യാർത്ഥി വിദ്യാർത്ഥി
 സൗകര്യങ്ങൾ ഉണ്ടാക്കുന്ന പ്രവർത്തനങ്ങൾ
 നമ്പ. 279/2013 ന്നു കേരള സർവ്വകലാശാലകളിലെ
 വിദ്യാർത്ഥി വിദ്യാർത്ഥി സൗകര്യങ്ങൾ ഉണ്ടാക്കുന്ന
 പ്രവർത്തനങ്ങൾ നമ്പ. 279/2013 ന്നു കേരള സർവ്വകലാശാലകളിലെ
 വിദ്യാർത്ഥി വിദ്യാർത്ഥി സൗകര്യങ്ങൾ ഉണ്ടാക്കുന്ന
 പ്രവർത്തനങ്ങൾ നമ്പ. 279/2013 ന്നു കേരള സർവ്വകലാശാലകളിലെ
 വിദ്യാർത്ഥി വിദ്യാർത്ഥി സൗകര്യങ്ങൾ ഉണ്ടാക്കുന്ന

- 1) കേരള സർവ്വകലാശാലകളിലെ വിദ്യാർത്ഥികൾക്കായി
- 2) T. Kattick St. Anthony's College T. K
- 3) T. Kattick St. Anthony's College T. K
- 4) V. Kattick St. Anthony's College T. K
- 5) R. Kattick St. Anthony's College T. K

5

6) S. S.

7) R. P. R.

8) V. K. S. A. K. V.

9) V. K. " " " " S.

10) N. S. A. R. R.

Handwritten signature and address in Malayalam script.

SENTHIL EXPLOSIVES

20, PANCHAYAT OFFICE STREET, SULUR, COIMBATORE - 641 402

Date 25/11/2022

To

M.Selvathal,
W/o.Meignanam,
No.3/78,Karamadaiyan Thottam,
Periyakuyilai ,Sulur Taluk,
Coimbatore District-641201.

Sir,

Sub: Regarding blasting work using Explosives in your proposed quarry.

We are having explosives license in from 22 holding No.E42667 situate in survey number SF.NO: 126/2(V) NO:80, Sulur village, Sulur Taluk, Coimbatore District, our office functioning at address. Senthil Explosives ,20, Panchayat office street, Sulur, Coimbatore-641402.

We are enacting 4 explosives vans for transporting detonators and class: 2 separately for our magazine to our work site and well experienced and licensed blasters and mate for safe blasting work since 5 years without untoward incident.

We are willing to undertake blasting work on contract basic at your proposed quarry at SF.No's: 279/2C1B,Pachapalayam Village, Sulur Taluk , Coimbatore District,Tamilnadu.

Enclosure: 1. Licence Copies

For SENTHIL EXPLOSIVES



Partner

अनुमति प्रारूप एस. ई.-3 | LICENCE FORM LE-3

(विस्फोटक नियम, 2008 की अनुसूची 4 के भाग 1 के अनुच्छेद 3(क) से (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 रखने के लिए
Licence to possess: (c) for use, explosives of class 1, 2, 3, 4, 5 or 7 in a magazine



अनुमति सं. (Licence No.): E/HQ/TN/23/377(E42667)
वार्षिक फीस रूपाए (Annual Fee Rs): 9800/-

1. Licence is hereby granted to

M/s Senthil Explosives, (अधिभोगी / Occupier : S.S. SAKTHIVELU), 20, PANCHAYAT OFFICE STREET, SULUR, COIMBATOR
Dist, Town/Village - , SULUR, District-COIMBATORE, State-Tamil Nadu, Pincode - 641402

को अनुमति अनुदत्त की जाती है।

2. अनुमतिधारी की प्राथिकता | Status of licensee : Partnership Firm

3. अनुमति निम्नलिखित प्रयोजनों के लिए विधिमान्य है।
Licence is valid only for the following purpose.

possess for use of Slurry Explosives, Safety Fuse, Detonating
Detonators, - के उपयोग के लिए

4. अनुमति विस्फोटकों के निम्नलिखित किस्मों, प्रकार और मात्रा के लिए विधिमान्य है।
Licence is valid for the following kinds and quantity of explosives: -- (क) (a)

क्र. सं. 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.	Slurry Explosives	2, 0	0	4900 Kg
2.	Safety Fuse	6, 1	0	20000 Mtrs
3.	Detonating Fuse	6, 2	0	10000 Mtrs
4.	Detonators	6, 3	0	44800 Nos.

(ख) किसी एक कलेंडर मास में खरीदे जाने वाले विस्फोटक की मात्रा (अनुच्छेद 3(ख) और (ग) के अधीन अनुमति के लिए)
(b) Quantity of explosives to be purchased in a calendar month (applicable for licence under article 3(b) and (c))

20 times
as above.

5. निम्नलिखित रेखाचित्र (रेखाचित्रों) से अनुमति परिसर की पुष्टि होती है।
The licensed premises shall conform to the following drawing(s).

रेखाचित्र क्र. (Drawing No.) E/HQ/TN/23/377(E42667)
दिनांक (Dated) 20/01/2022

6. अनुमति परिसर निम्नलिखित पते पर स्थित है। The licensed premises are situated at following address:

Survey No(s). 126/2(v) No. 80, ग्राम (Town/Village) : SULUR

पुलिस थाना (Police Station) : COIMBATORE

जिला (District)
दूरभाष (Phone)

COIMBATORE

राज्य (State)
ई-मेल (E-Mail)

Tamil Nadu

पिनकोड (Pincode)
फैक्स (Fax)

7. अनुमति परिसर में निम्नलिखित सुविधाएं अंतर्भूत हैं।
The licensed premises consist of following facilities

: a main magazine room, a lobby and a detonator storage room.

8. अनुमति समग्र - समग्र पर सफासंशोधित विस्फोटक अधिनियम, 1884 और उनके अधीन विरचित विस्फोटक नियम, 2008 के उपबंधों, शर्तों और अतिरिक्त शर्तों और निम्नलिखित उपबंधों के अधीन रहते हुए अनुदत्त 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, 2008 framed there under and the conditions, additional conditions and the following Annexures.

- उपसूची क्रम सं. 5 में पथा कथित रेखाचित्र (खनन, सड़िर्माण संबंधी और अन्य विवरण दर्शित करते हुए)।
Drawings (showing site, constructional and other details) as stated in serial No. 5 above
- अनुमति प्राधिकारी द्वारा सहा. करित इस अनुमति 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 अनुमति तारीख 31 मार्च 1993 तक विधिमान्य रहेगी। This licence shall remain valid till 31st day of March 1993.

यह अनुमति, अधिनियम या उसके अधीन विरचित नियमों या अनुसूची V के भाग 4 के प्रति निर्दिष्ट सेट-VII के अधीन तथा उपबर्णित इस अनुमति की शर्तों का अतिक्रमण करने या यदि अनुमति परिसर योजना या उससे संलग्न उपबंध में दर्शित विवरण के अनुरूप नहीं पाए जाने पर निलंबित या प्रतिबंधित की जा सकती है, जहां वह लागू है।
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 - 23/09/1991

मुख्य विस्फोटक नियंत्रक | Chief Controller of Explosives

Amendments :

- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 27/08/2013
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 29/08/2018
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 07/01/2019
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 20/01/2022

नवीनीकरण के पृष्ठान के लिए स्थान
Space for Endorsement of Renewal

नवीकरण की तारीख Date of Renewal	समाप्ति की तारीख Date of Expiry	अनुमति प्राधिकारी के हस्ताक्षर और स्टांप Signature of licensing authority and stamp
08/02/2019	31/03/2024	S/- H. Chief Controller of Explosives, South Circle, Chennai

कानूनी चेतावनी : विस्फोटकों को गलत ढंग से खताने 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.

Digitally signed by Dr T L. Thandapani
Reason: Licence No. : E/HQ/TN/22/377
Location: Chennai (E42667)
Date: 2022.01.20 04:27:36 +05:30

சான்றி

கோவை மாவட்டம் சூலூர் வட்டம்

பச்சாபாளையம் கிராமம் கதவு எண் 3/78

காரமலையாண் கோயில் மரபடிபாலை சூலூர் எண்
முதலாமல் உசித்தும் வரும் மய்க்காமை மணலு

உதவ்வந்தான் என்பவருக்கு கோவை மாவட்டம்
சூலூர் வட்டம் பச்சாபாளையம் கிராமம் 44 எண்

279/2013 உதவியால் 4.11.70 - 1.13.70

உதவியுள்ள புகளாணி பந்தசாலை பத்திரஎண்

308/1967 படியம் பட்டி எண் 1605 படியம்

பந்தியப்பிட்டி. மேற்படி புகளாணி சிந்த 300 கிட்டி

சிந்தாமல், இடியாருப்புகள், ககவல்கள் மந்தம்

பள்ளிக்கூடம் ஏதும் கிள்ள என் சான்றி

சான்றிப்புகளாணி

V. Jayaram 17.11.2022

கிராம நிர்வாக அலுவலர்

43, பச்சாபாளையம்,

சூலூர் வட்டம்

**TOPOGRAPHICAL VIEW OF PACHAPALAYAM ROGH STONE
AND GRAVEL QUARRY LEASE APPLIED AREA**



Name of the Applicant : M.Selvathal,
W/o. Meignanam,
Address : No. 3/78, Karamadaiyan Thottam,
Periyakuyilai, Sulur Taluk,
Coimbatore District – 641 201.

Location:

S.F.No. : 279/2C1B
Extent : 1.13.7 Ha
Village : Pachapalayam
Taluk : Sulur
District : Coimbatore

Signature of the Applicant

M. Selvathal

M.Selvathal

J. Anand Prasad
(Village Administrative Officer) 16/2/2024
Attestation
ச. அனந்த் பிரசாத்

From
Dr.A. Kalaiselvan,
Assistant Director(i/c)/
Joint Director
Dept of Geology and Mining,
Coimbatore.

To
Thiru.S.A.Ganesan,
S/o.S.R.Arumugam,
No.12/4C, Arima Nagar,
Kalangal Road, Sulur,
Coimbatore District.

Rc.No.181/Mines/2019, Dated: 02.12.2019

Sir,

Sub: Mines & Minerals - Minor Mineral - Coimbatore District - Sulur Taluk - Pachapalayam Village - over an extent of 2.03.0 hectares of patta land - Survey Nos.273/2A and 281/2 - Application preferred by Thiru.S.A.Ganesan S/o.S.R.Arumugam for quarrying Roughstone and Gravel - Submission of mining plan for approval - Approved - Regarding.

- Ref: 1. Quarry lease application dated 06.03.2019 preferred by Thiru.S.A.Ganesan, S/o.S.R.Arumugam, No.12/4C, Arima Nagar, Kalangal Road, Sulur, Coimbatore District.
2. District Collector, Coimbatore Letter Rc.No.181/Mines/2019, Dated: 19.10.2019.
3. Mining Plan submitted by Thiru.S.A.Ganesan dated: 19.11.2019.

In response to the precise area communicated by the District Collector, Coimbatore, the applicant Thiru.S.A.Ganesan vide reference 3rd cited has submitted three copies of mining plan for the area applied for the grant of quarry lease for Roughstone and Gravel over an extent of 2.03.0 hectares of patta land in Survey Nos.273/2A and 281/2 of Pachapalayam Village, Sulur Taluk, Coimbatore District.

2. The mining plan submitted for the grant of quarry lease for Roughstone and Gravel over an extent of 2.03.0 hectares of patta land in Survey Nos.273/2A (1.25.0 Hec) and 281/2 (0.78.0 Hec) of

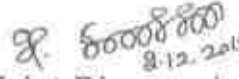
Pachapalayam Village, Sular Taluk, Coimbatore District has been verified in detail.

3. As per the guidelines/ instructions issued by the Commissioner of Geology and Mining, Chennai vide letter Rc.No.3868/LC/2012, dated 19.11.2012, the mining plan is hereby approved, subject to the following conditions:


- (i) The mining plan is approved without prejudice to any other Law applicable to the quarry lease from time to time whether such laws are made by the Central Government, State Government or any other authority.
- (ii) This approval of the mining plan does not in any way imply the approval of the Government in terms or any other provisions of the Mines and Minerals (Development and Regulation) Amended Act, 2015, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Explosives Act, 1884 (Central Act IV of 1884) and the Rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.
- (iii) The mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
- (iv) As per the District Collector, Coimbatore letter Rc.No.181/Mines/2019, Dated: 19.10.2019 the following conditions have been incorporated in the Mining Plan .

- a) A safety distance of 7.5 meters should be provided all along the boundary of the area applied for lease.
- (v) Quarrying shall be done as per the approved Mining Plan and that the mining plan is approved without prejudice to any other law applicable to the quarry lease from time to time whether such laws are made by the Central Government, State Government or any other authority.

Encl: Two copy of Approved Mining Plan.


2.12.2019
Joint Director /
Assistant Director (i/c),
Dept. of Geology and Mining,
Coimbatore.

Copy submitted to:


2/12/19

The Director of Geology and Mining, Chennai-32.

MINING PLAN

10 APR. 2015

INCLUDING ENVIRONMENT MANAGEMENT PLAN FOR ROUGHSTONE AND GRAVEL QUARRY

*(Prepared under provisions of TNMMCR, 1959 and Amended Minor Minerals
Conservation and Development Rules 19(2), 2010)*

Extent : 1.34.5 HECTARES
S.F.No. : 280/1 (P) & 280/2 (P)
Village : PACHAPALAYAM
Taluk : SULUR
District : COIMBATORE
State : TAMIL NADU

Applicant

THIRU.B.SAKTHIVEL
S/o.Balakrishnan,
Pachapalayam, Periyakuyilai-Post,
Chettipalayam,
Sulur Taluk, Coimbatore District.
Pin Code : 641 201.
PH: 98422-89955.

3877

1.34.5

Prepared by

S.SURIYAKUMAR,
M.Phil.(Geology),F.C.C.(Mining), PGDBA,
PGDIPC (Industrial Pollution Control)
Recognized Qualified Person
Reg. No. RQP\MAS\013\87\A
3/216, K.S.V.Nagar, Narasothipatti, SALEM-4.
Phone (0427) 2440446, Cell: 098427-29655
www.suriyaminig.com

MARCH-2015

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(a)

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(i)



CONSENT LETTER FROM THE APPLICANT

The Mining Plan in respect of Rough Stone & Gravel Quarry over an extent of 1.34.5 Hectares S.F. NO. 280/1 (P) & 280/2 (P), Hectares Pachapalayam Village, Sulur Taluk, Coimbatore District, Tamil Nadu State has been prepared by **Shri. S.Suriyakumar** Recognized Qualified Person, Reg.No.**RQP\MAS\013\87\A**

I request the Dept. of Geology and Mining, Coimbatore District to make further correspondence regarding modifications of the mining Plan with the said Recognized Person on this following Address,

S.SURIYAKUMAR,
M.Phil.(Geology),F.C.C.(Mining), PGDBA,
PGDIPC (Industrial Pollution Control)
Consultant – Geology, Mining & Environment
3/216,K.S.V.Nagar,Narasothipatti,
Alagapuram Post, Salem - 636 004.
Phone (0427) 2440446, Cell : 98427 29655

I hereby under take that all modifications so 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 respects.

Place : Salem

Date : 18.03.2015


Signature of the Applicant

(ii)



THIRU.B.SAKTHIVEL

S/o.Balakrishnan,
Pachapalayam, Periyakuyilai-Post,
Chettipalayam (Via),
Sulur Taluk,Coimbatore District.
Pin Code : 641 201.
PH: 98422-89955.

DECLARATION OF MINE OWNER

The Mining Plan in respect of Rough Stone & Gravel quarry over an extent of 1.34.5Hectares in S.F.NO: 280/1 (P) & 280/2 (P), Pachapalayam village, Sulur Taluk of Coimbatore District, Tamil Nadu has been prepared with my consultation and I have understood the contents and agree to implement the same in accordance with the Mining Laws.

Place : Salem

Date : 18.03.2015

A handwritten signature in black ink, appearing to read "D. Sakthivel".

Signature of the Applicant

(iii)

S.SURIYAKUMAR,

M.Sc.,M.Phil (Geo),F.C.C.(Min),PGDBA,DIPC.

Recognized Qualified Person,

3/216,K.S.V.Nagar, Narasothipatti, Salem - 636 004.

www.suriyaminig.com, Email : suriyakumar_mining@yahoo.co.in

Phone (0427) 2440 446, Cell : 98427 - 29655.



CERTIFICATE

This is to certify that the provisions of Minor Minerals Conservation and Development Rules, 2010 (MMCDR) have been observed in the Mining Plan for Pachapalayam Rough Stone quarry in S.No. 280/1 (P) & 280/2 (P), Sulur Taluk of Coimbatore District over an extent of 1.34.5Hectares, Tamil Nadu State applied by Thiru.B.Sakthivel S/o Balakrishnan, residing at Pachapalayam, Periyakuyilai-Post Chettipalayam (Via), Sulur Taluk, Coimbatore district for fresh quarry lease.

Wherever specific permissions/exemptions/relaxations or approvals are required, the applicant will approach the concerned authorities of State and Central Governments for granting such permissions etc.

Certified

Place : Salem

Date : 18.03.2015


Signature of Recognized Qualified Person

S. SURIYAKUMAR,
Recognised Qualified Person
Reg. No.RQP/MAS/013/87/A

(iv)

S.SURIYAKUMAR,

M.Sc.,M.Phil. (Geo),F.C.C.(Min),PGDBA,DIPC.

Recognized Qualified Person,

3/216,K.S.V.Nagar, Narasothipatti, Salem - 636 004.

www.suriyaminig.com, Email : suriyakumar_mining@yahoo.co.in

Phone (0427) 2440 446, Cell : 98427 - 29655.



CERTIFICATE

Certified that in preparation of Mining Plan for Rough Stone & Gravel quarry over an extent of 1.34.5Hectares in S.No. 280/1 (P) & 280/2 (P) of Pachapalayam Village, Sulur Taluk, Coimbatore District, Tamil Nadu prepared for by Thiru.B.Sakthivel S/o Balakrishnan, residing at Pachapalayam, Periyakuyilai-Post Chettipalayam (Via), Sulur Taluk, Coimbatore district covers all the provisions of Mines Act, Rules, and Regulations etc. made there under and whenever specific permissions are required the applicant will approach the Director of Mines safety, Chennai. The standards prescribed by DGMS in respect of Miners Health will be strictly implemented.

Certified

Place : Salem

Date : 18.03.2015

A handwritten signature in black ink, appearing to read 'S. Suriyakumar'.

Signature of Recognized Qualified Person

S. SURIYAKUMAR,

Recognised Qualified Person

Reg. No.RQP/MA3/013/87/A

MINING PLAN



FOR ROUGH STONE AND GRAVEL QUARRY

OVER AN EXTENT OF 1.34.5HECTARES IN SF. NO. 280/1 (P) & 280/2 (P)

PACHAPALAYAM VILLAGE, SULUR TALUK, COIMBATORE DISTRICT,

TAMIL NADU

EXECUTIVE SUMMARY:

1. The Applicant, **Thiru.B.Sakthivel S/o Balakrishnan**, residing at Pachapalayam, Periyakuyilai-Post Chettipalayam (Via), Sulur Taluk, Coimbatore district has applied for grant of permission for quarrying rough stone and gravel located in S.F. No. 280/1 (P) & 280/2 (P), Extent of 1.34.5Hectares,Patta land, Pachapalayam Village of Sulur Taluk, Coimbatore District, Tamil Nadu.
2. The District Collector, Coimbatore in his letter reference No. **Rc 264/2014/MM-1 Dated 10.03.2015** has directed the applicant **Thiru B.Sakthivel S/o Balakrishnan** to get approved Mining Plan and Environmental clearance certificate from the state Environmental Impact Assessment Authority (SEIAA) for grant of rough stone & Gravel quarry lease in S.F. No. 280/1 (P) & 280/2 (P), over an Extent of 1.34.5Hectares,patta land, Pachapalayam Village of Sulur Taluk, Coimbatore district, Tamil Nadu for a period of **Five years**.
3. Accordingly, Mining Plan is prepared under Rule 12 of Tamil Nadu Minor Minerals Concession Rules, 1959 and Minor Mineral Conservation and Development Rules, 2010 for quarrying rough stone & Gravel with due consideration of environmental parameters so as to obtain Environmental Clearance (EC) form State EIA Authority (SEIAA), Chennai region as per the Memorandum dated.18.5.2012 from MOEF.
4. Geological reserves of rough stone is estimated as **60882M³** and recoverable reserves is estimated as **26458M³** of rough stone up to a depth of **50m** and there is no gravel reserves is estimated as the entire area is exposed for quarrying.
5. Production Schedule is proposed as **24239M³** rough stone for Five years or **4848M³** per annum or **16M³** or **3 loads (Each of 6M³)** per day for the **300 working day per year** by open cast mining.

6. safety measures under mechanized loading as per the provisions of Reg. 106 (2) (b) Metalliferous Mines Regulation, 1961 and other labour welfare Amenities as per the Mines Rules, 1955 and amended DGMS circulars to be followed strictly.

Environmental Aspects:

- i) **Forest** : There is no reserve forest around 15kms radius.
- ii) **Interstate Boundary**: The interstate boundary is located about 35 kms away on the Western side.
- iii) **National Park/Wild life sanctuary**: There is no wild life sanctuary/ National park within 15Kms radius from the project site area under the Wildlife (Protection) Act, 1972.
- iv) **Coastal Regulation Zone**: The quarry is located far away from sea coast more than 100Kms.

Hence, the project doesn't attract the C.R.Z. Notification, 1991. Therefore the project seeks clearance only from SEIAA, under B2 Category.

- 7) 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 and control of fly rock missiles
 - iv) Avoid uneven rat hole mining and follow scientific and systematic mining by safe bench system of open cast mining.
 - v) Unnecessary Land degradation should be avoided or damaged land should be reclaimed or rehabilitated.
 - 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 tack 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 7.5m prescribed by the Dept. of Geology and Mining from adjacent infrastructures should be strictly adhere to,
 - x) There will not be any hindrance or disturbance to the people living on en route\ nearby my quarry site while transporting the mined out material and due to mining / quarrying activities.
 - xi) The required insurance will be taken in the name of the labours working in my quarry site.

- xii) And any other conditions as stipulated by the concerned authorities should be followed to protect the environment.

INTRODUCTION :

The projects less than 5 Hectares are classified under B2 category for the purpose of Environmental clearance. Extracting minor minerals from an area of less than 5 hectares will need environment clearance from the Union ministry of environment and forests (MOEF) as per the EIA (Environmental Impact Assessment) notification, 2006 from State level EIA Authority.

To ensure compliance of Supreme Court order of February 27, 2012, it had now been decided that all mining projects of minor minerals irrespective of the size of the lease would henceforth require prior environment clearance. Accordingly the mining plan is prepared for systematic and scientific mining and to obtain Environmental clearance under state level EIA Authority.

The applicant, **Thiru.B.Sakthivel S/o Balakrishnan**, residing at Pachapalayam, Periyakuyilai-Post, Chettipalayam (Via), Sular Taluk, Coimbatore district is an individual having vast experience and skill on quarrying of rough stone & Gravel. He has applied for fresh grant of Quarrying lease to the state government over an extent of 1.34.5 Hectares in S.F.No.280/1 (P) & 280/2 (P) in, patta land Pachapalayam Village, of Sular Taluk, Coimbatore District, Tamil Nadu.

Under the provisions of EIA Notification, 2006 and introduction of Minor Mineral conservation and development Rules, 2010 and other circulars and amendments, the mining plan is prepared for approval from district authorities of Dept. of geology and Mining, Coimbatore.

1.0 GENERAL

1.1 a) Name and address of the applicant: Thiru.B.Sakthivel

b) Address : S/o Balakrishnan
Pachapalayam,Periyakuyilai-Po,
Chettipalayam (Via), Sular Taluk,
Coimbatore District, TN.
PINCODE: 641 201

c) Contact No. : 98422-89955

d) Status : Individual

1.2 a) Mineral which the applicant intends to mine: **Ordinary Rough stone & Gravel**

b) Precise Area communication letter details: Fresh quarry Lease. Precise Area

communication letter No. **Rc. 264/2014/MM-1 Dated 10.03.2015** issued by the District Collector, Coimbatore is enclosed in Annexure-V

c) Period of Permission\ lease to be granted: **Requested for 5 years**

d) Name, address and Reg.no. of RQP who prepared the mining plan

Name : **S.SURIYAKUMAR**
M.Sc., M.Phil (Geology). F.C.C. (Mining),
PGDBA, DIPC (Industrial Pollution Control).

Address : **Suriya Mining Services,**
3/216, K.S.V. Nagar,
Narasothipatti,
Alagapuram Post,
Salem - 636 004.

Web site : www.suriyaminig.com

E-mail : suriyakumar_mining@yahoo.co.in,
suriyakumarsemban@gmail.com

Phone : 0427 - 2440446

Fax : 0427 - 2444297

Mobile : +91 9842729655

Regn. No.(IBM) : RQP/MAS/013/87/A.

Validity : Valid up to 08.11.2021



2.0 LOCATION

a) Details of the area

The area applied for mining lease is an elevation of 410meters above MSL. It is represented in the Survey of India Topo sheet No.**58 F/1** and lies latitude at $10^{\circ}54'23.09''N$ and longitude of $77^{\circ}04'06.87''E$.

b) Latitude and Longitude of all Pillars reading:

CODE	LATTITUDE	LONGITUDE
A	$10^{\circ}54'20.97''N$	$77^{\circ}04'03.56''E$
B	$10^{\circ}54'23.18''N$	$77^{\circ}04'03.55''E$
C	$10^{\circ}54'24.96''N$	$77^{\circ}04'09.16''E$
D	$10^{\circ}54'23.33''N$	$77^{\circ}04'10.33''E$

State & District	Taluk	Village	S.F.No.	Extent (Ha)
Tamil Nadu, Coimbatore	Sulur	Pachapalayam	280/1(P)	0.72.5
			280/2(P)	0.62.0
Total =				1.34.5 Ha

Route:

Coimbatore $\xrightarrow{7\text{Kms}}$ Pothanoor $\xrightarrow{9\text{Kms}}$ Site $\xrightarrow{1\text{Kms}}$ Periyakuyilai



The area is accessible from Coimbatore via Pothanoor by 7kms southern side and 9kms away on western side of the Periyakuyilai Village. The SH- road the site is situated about 1kms on the southern side with connecting Palladam-Coimbatore. There is a village road located nearby the site on the northern side for transport of materials.

c) Classification of the Area: Patta land- Rocky -Rythwari land

d) Ownership occupancy of applied area (Surface rights): Consent Patta land

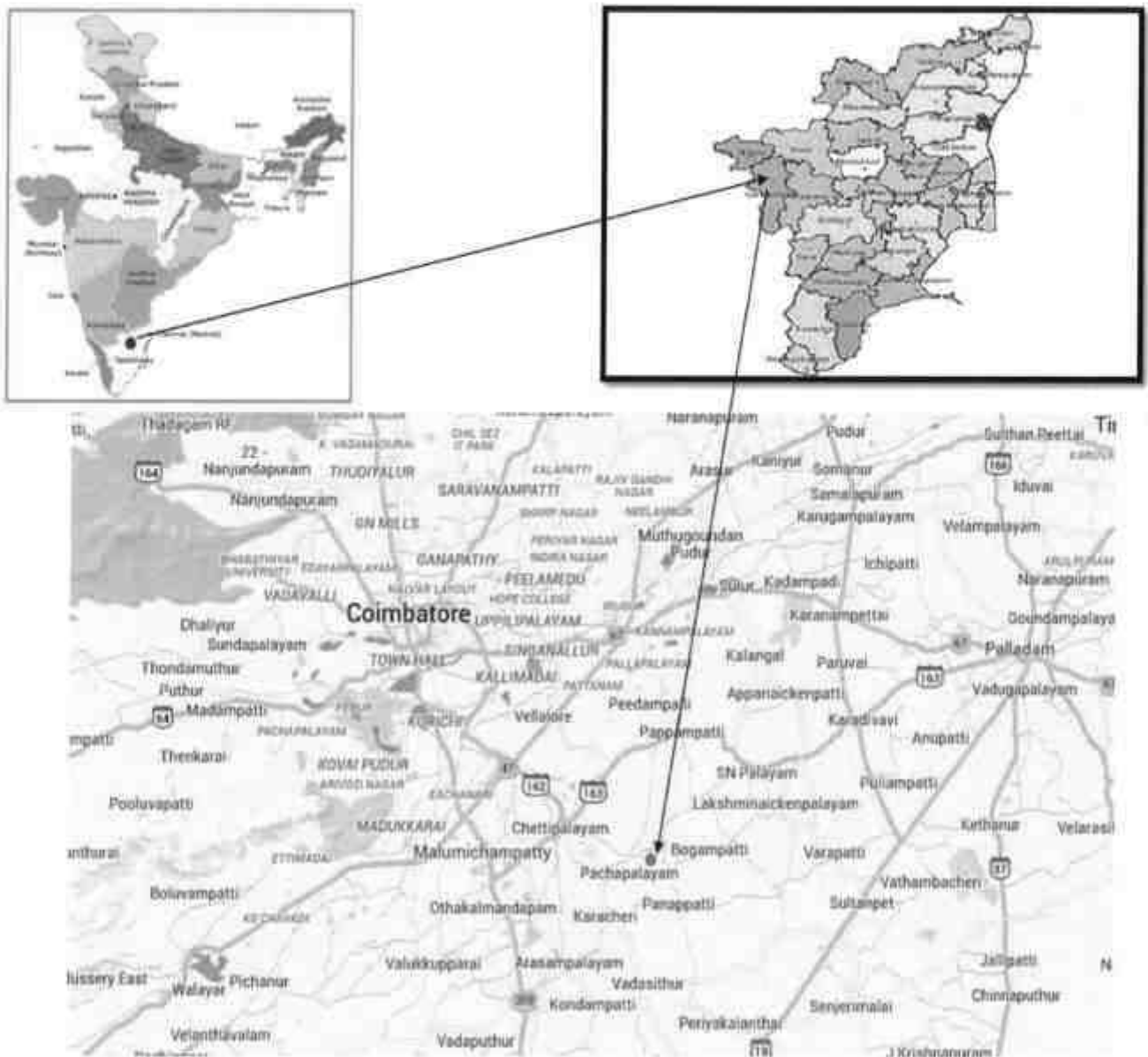


Fig.1 Showing Location and route map of applied area for Quarry lease

e) Existence of Railway Line if any nearby and approximate distance

Nearest Railway Junction is Pothanoor at a distance of 10kms. Details of infrastructures and communication are given in the table below,



S. No.	Particulars	Location	Approximate Distance in Kms
1.	Post office	Periyakuyilai	1
2.	Town (Taluk Head)	Sulur	15
3.	Police Station	Chettipalayam	3
4.	Fire Station	Coimbatore South	18
5.	Govt. Hospital	Chettipalayam	3
6.	School	Periyakuyilai	1
7.	DSP Office	Coimbatore South	18
8.	Railway Station	Pothanoor	10
9.	Nearest Airport	Coimbatore	20
10.	Union	Sulur	15
11.	Villages		
	i) North	Kallapalayam	6
	ii) South	Periyakuyilai	1
	iii) East	Idaiyarpalayam	6
	iv) West	Chettipalayam	2

PART - A



3.0 GEOLOGY AND MINERAL RESERVES

3.1 Brief description of topography and general geology of the area:

3.1.1: Topography:

The area of quarry lease is an elevated to a height of 410m above MSL and quarry has reached a depth of 45m above MSL. There is no top soil from the lease area.

Water table is located at a depth of 60m from the surface in the adjacent open well. Temperature of the region is reported to be 19.5°C to a max. of 35.5°C during summer. Rain fall of this area is about 650-1450mm during monsoons in a year.

There is no monument or area of public interest is found in the vicinity and there are no approved buildings within 500m radius. The area applied lease is surrounded by two rough stone quarries.

It is shown in the satellite image (Fig.2) as well as in the Environment Plan.

3.1.2 REGIONAL GEOLOGY:

Coimbatore district is underlain by a wide range of high grade metamorphic rocks of the peninsular gneissic complex. These rocks are extensively weathered and overlain by recent valley fills and alluvium at places. The geological formations found in the district are Khondalite, Calc-granulite, complex gneiss mainly Hornblende-Biotite and crystalline limestone, Dolerite, Charnockite, Granite gneiss, Granite and Syenite, Pegmatite, and Quartzite veins. The generalized stratigraphic succession of the geologic formations met within this district is as follows:

Age	Rock formation
Recent to sub-recent	Soil, Alluvium
Archaean	Granite, hornblende, biotite gneiss, garnet sillimanite gneiss, quartzite and charnockite.



Fig. 3 Google Image showing ML boundary of proposed Quarry site

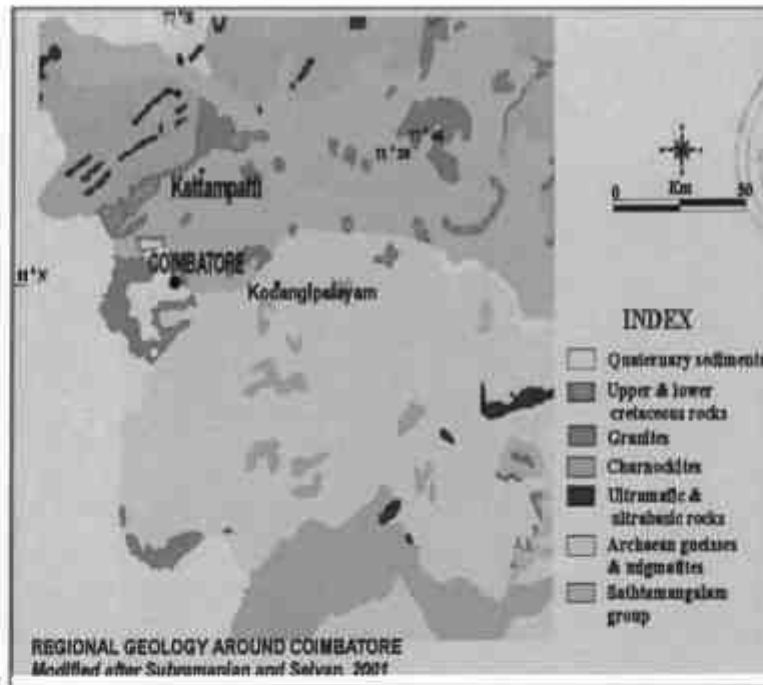


Fig. 4 Regional geology around Coimbatore

Recent to Sub recent: Solis, Alluvium, Laterites, Colluvium and Kankar.

Archaean : Syenite, Granite, Hornblendebiotitegneiss, garnet Sillimanite, Gneiss, quartzites and charnockite.

3.1.3 GEOLOGY OF THE PRECISE AREA

The rock type found in the area applied for lease is Charnockite which contain mostly Quartz and microcline feldspar with some ferromagnesian minerals



- ↑ Top Layer - - Recent
- Charnockite (Blue metal) - - Archaean
- Peninsular Gneiss - - Archaean



3.2 DETAILS OF EXPLORATION

Already carried out :

There is pit adjacent to this area on eastern side where the charnockite is well exposed. The applied area has geological continuity of the adjacent quarry. The existing pit dimension is under,

EXISTING PIT DIMENSION			
PIT	L(m)	W(m)	D(m)
I	176	61	14-45

No detail mapping was carried out except work done by Dept.of.Geology and Mining or GSI.

3.3 METHOD OF ESTIMATION OF RESERVES

The geological and recoverable reserves of rough stone are estimated by cross-sectional Methods up to a depth of 50m from 410 -360m above mean sea level. Two quarries are under operation within 500m radius. Recovery of Charnockite is taken as 95% and 5% shall be fines, mining losses and safe benches.

Ultimate Pit Dimensions (m)			
Bench	L	W)	Ht
I	192m	62m	13m
II	179m	53m	13m
III	167m	41m	7m
IV	136m	41m	6m
V	135m	24m	6m
VI	47m	17m	5m
TOTAL			50m

a) GEOLOGICAL RESERVES

The geological reserves is estimated by cross-sectional methods as 60882 M³ of rough stone up to a depth of 50m, having considered the depth of mining, recovery, safety barriers etc. A detail of estimation of geological reserves is given in the Annexure I.



b) RECOVERABLE RESERVES

The mineable\recoverable reserves is estimated by cross-sectional method having considered the recovery factor, depth of mining, safety barriers etc., The mineable reserves is estimated as 26458M³ of rough stone and there is no topsoil or Gravel. Most of the area is exposed for quarrying being an old quarry site. Details of estimation of mineable reserve are given in Annexure II.

The overall pit slope is taken as 60° from the horizontal. The recovery factor is taken as 95% from the top bench up to the bottom.

The life of the mine is computed as 5 years at an average production rate of 4848M³ per annum.

4.0 MINING

4.1) Mining Methods :

Open cast method of mechanised mining will be adopted to extract and rough stone & Gravel. Since there is an existing quarry adjacent to this quarry on northern side working faces of the adjacent quarry shall be advanced on the northern side to make continuity so that the road facilities could be used for systematic development of proposed quarry too as shown in the production plan (Plate-VI-VII). All mine design parameters like semi-permanent roads, direction of advancement, development work, formation of working faces, approach road to various benches for movement of dumpers, Selection and recruitment of man power, machineries, construction of infrastructures, selection of dump sites for waste etc shall be taken into account for proper scientific quarrying.

4.2 Mode of working:

Open cast mechanised mining using Hydraulic excavators and tippers combination will be adopted to recover the sizeable rough lumps for crushing into required size in the crushing plant from 75mm jelly to 10mm chips. Working plans and sections showing the layout of faces and direction of mining are given in Plate VI-VII.

Top soil \overburden materials shall be removed prior to development of rough stone working benches.

BENCH DESIGN PARAMETERS AND FENCING:

While developing the width not less than the height shall be maintained the rough stone working benches shall be 6m height as equal to the height of the excavator boom and width more than 6m for safe movement of machineries and slope shall not be more than 60°.

PROPOSED BENCH DIMENSIONS (M)

Ultimate Pit Dimensions (m)			
Bench	L	W)	Ht
I	192m	62m	13m
II	179m	53m	13m
III	167m	41m	7m
IV	136m	41m	6m
V	135m	24m	6m
VI	47m	17m	5m
TOTAL			50m



S2 fencing (without closing or gate) shall be constructed at the top of high benches from inadvertent entry of persons or cattle fields. In case of road closing or entry of pit G1 fencing (parapet) should be formed as a safe practice to control trespasses.

4.3 PROPOSED BENCH HEIGHT AND WIDTH

As per Reg.106 (2) (b) of MMR,1961,the bench height is designed as 6m and width as 6m but in the case of non - moving permanent stable benches the width shall be less than 6m due to lack of space for development. The bench height is designed equal to height of boom of the excavator. In this connection the applicant should obtain necessary permission from DGMS whenever he deviate from the standard norms of bench design.

4.4 Details of Overburden\ Mineral Production proposed for the first five years

The development involves only removal of rejects some fines and waste rocks to be generated out of production. About 5% of total excavation is estimated to be the rejects\waste to win the saleable rough stone. The annual production is proposed as 4848 M³ per annum for the first five years.

Year	Pit. Nos	Over Burden	ROM (Rough stone)	Saleable ore/Mineral	Sub grade ore/ Mineral	Mineral Rejects	Ore to waste ratio
First	I	----	4200	3990	-----	210	1 : 0.05
Second	I	----	4736	4499	-----	237	1 : 0.05
Third	I	----	5000	4750	-----	250	1 : 0.05
Fourth	I	----	5549	5271	-----	278	1 : 0.05
Fifth	I	----	6029	5728	-----	301	1 : 0.05
TOTAL		----	25514	24239	-----	1276	1 : 0.05

The proposed rate of production when mine is fully developed shall be about 4848 M3 of saleable rough stone per annum.

Production schedule is given in the Annexure III and production planning is shown in Plates VI-VIA. Composite Plan and year wise section are given in Plate VII.

Pit dimensions for the first five years

YEAR	L (m)	W(m)	D(m)	Volume	Recovery @95% (m ³)	Reject @5% (m ³)
I	29.17	24	6	4200	3990	210
II	32.89	24	6	4736	4499	237
III	34.72	24	6	5000	4750	250
IV	85	5	7	2975	2826	149
	39	11	6	2574	2445	129
V	39	5	6	1170	1112	59
	36	4	6	864	821	43
	47	17	5	3995	3795	200
TOTAL				25514	24239	1276

Total Production for the Fifth Years = **24239m³**

Ore waste ratio = 1276 / 24239 = 1 : 0.052

4.5 Machineries used:

The machineries proposed to purchase or hire for use in mines for systematic operation and development of quarry to augment the proposed production are given in Annexure IV.

Drilling :

Drilling of shot-holes will be carried out using compressor and Jack Hammers combination. Depth of holes shall be 1-2m. The spacing shall be 0.75m and burden shall be 0.60m from the preface.

To achieve a correct blasting geometry certain amount of trial blast is prerequisite to effect a perfect pre-determined fragmentation and fly rock control. In case of heavy blasting qualified Mine manager has to be appointed for proper calculation of powder factor and control blasting sequencing and arrangement of explosives etc.

Details of Drilling equipments are tabulated below,

Type	Nos.	Dia. Of Hole	Size /Capacity	Make	Motive Power	H.P.
Jack Hammer	6	32mm	Hand held	Atlas Copco 2 Nos.	Diesel	60

c) Loading Equipment :

Loading of waste and rough stone shall be done by Excavator into 10 tonners tippers from the working place periodically. Such waste and rough stone & Gravels shall be dumped in the site earmarked for dumping as shown in the Plates VIII - X. The applicant is proposed to engage two Hydraulic excavators with 1.2 Metric 16 tons capacity and two tippers of 15 tonnes capacity for internal transport of rejects from the working face to the dumps. Details of Loading equipments are tabulated below,

Type	Nos.	Bucket Capacity (MT)	Make	Motive Power	H.P.
Hydraulic excavator	1 No.	1.20 M ³	Hyundai	Diesel	210



Fig .7a): Hydraulic Excavator



Fig.b): Tipping Truck

d) Transportation :

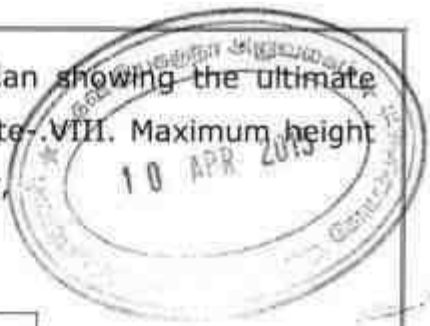
Transport of Rejects and waste shall be done by Tippers of 15tonne capacity,

Type	Nos.	Size/ Capacity (MT)	Make	Motive Power	H.P.
Tipper	2	15 M.T.	AMW	Diesel	110

4.6 DISPOSAL OF OVER BURDEN \WASTE

Waste and rough stone for crushing will be removed periodically by hydraulic excavator and tipper combination. No generation of top soil / waste for next five years. Charnockite rejects which amounts to 5% of the total excavation, about 1276 M³ will be

generated for the first five years. The final mine closure plan showing the ultimate depth of mining and ultimate pit configuration is given in Plate-VIII. Maximum height and spread of dumps for the first five years are given as under,



DUMP DIMENSION FOR THE FIRST FIVE YEARS

Reject	1276M ³
--------	--------------------

All rejects\waste shall be dumped within the lease hold area as per the Plates VIII-X. The rough stone will be stacked at the entry of mine within the lease boundary for transport to crushing units.

4.7 FINAL MINE CLOSURE PLAN

Final mine closure plan is prepared with an object of long-term systematic development of quarry bench, formation of stable dumps with proper grading and terracing, safe guards to control wash outs, plantation of trees for dust control, soil erosion, noise barrier etc. Suitable fencing on unsafe places at the top of open cast workings shall be arranged to prevent inadvertent entry. All these information are shown in Plate -VIII.

Ultimate Pit Dimension : The ultimate pit size is designed based on certain practical factors such as the economical depth of mining, safety zones, permissible area etc., The Ultimate pit of the mine is given as under,

Ultimate Pit Dimensions (m)			
Bench	L	W)	Ht
I	192m	62m	13m
II	179m	53m	13m
III	167m	41m	7m
IV	136m	41m	6m
V	135m	24m	6m
VI	47m	17m	5m
TOTAL			50m

However during extraction of blocks each bench will be of 6m height with 60° slope for proper quarrying.

The quantum of excavation is estimated as 27850M³ to a depth of 50m from the surface. Of which the rejects up to the ultimate pit limit is estimated as 1392M³. Shall be

sold for filling purposes and rejects shall be accommodated in the lease area. Details of ultimate dump dimensions (m) are given as under,

ULTIMATE DUMP DIMENSION END OF THE MINE

Reject	1392M ³
--------	--------------------

Reserves = 27850M³
 Total Volume of Excavation up to = 26458M³
 Ultimate pit Limit with 50m depth



5.0 BLASTING

5.1 Blasting Pattern

The massive formation shall be broken into pieces of portable size by drilling and blasting using jack hammers and shot hole blasting. Powder factor of explosives for breaking such hard rock shall be in the order of 6-7 tones per Kg. of explosives. Blasting parameter proposed to be adopted for shot holes shall be,

Depth (m) * Burden (m)* Spacing (m) = Volume (Metric tonnes)
 1.00 x 0.60 x 0.75 = 0.45 Metric tonnes
 Quantity of rock broken = 0.45 x 2.6 = 1.17 MT
 Blasting efficiency @90% = 1.17 x 90% = 1.05 MT/hole
 Charge per hole shall be = 140 gms of 25 mm dia cartridge.
 Quantity of rock broken per day = 16.15 M³ or 40 M.T.
 Requirement of explosives per day = 5.0 Kgs
 @ 7 M.T. per Kg of explosives
 No. of holes to be drilled per day = 40/1.05= 38 Holes

5.2 Types of Explosives :

Following explosives are recommended for efficient blasting with safe practice,

S.No.	Description	Class / Division	Type	Size
1.	Slurry	class - 3	Nitro compound	25 x 200
2.	Detonators	class - 6	Ordinary and Elec (OD & ED)	6.5 x 32
3.	Safety fuse	class - 6 Div - 1	Blue sump fuse coils of 10 mts each	

The Powder factor for waste rock development shall be 7 Tonnes per Kg. of explosives.

5.3 measures proposed to minimize ground vibration due to blasting

The following steps shall be adopted to control ground vibration which result out of blasting operation,

- i) Geometry of blasting pattern like burden, spacing and inclination of hole should be,

Burden (m)*	Spacing (m)	Inclination
0.60	x 0.75	70°

- ii) Do not Use Ammonium nitrate fuel oil mixture for shot holes which cause for high fly of rocks in view critical diameter problem. Use only high strength explosives like slurry in the form of cartridge.
- iii) To control vibration abatement use delay or relay arrangements with specific charges,
- iv) Charge per hole should exceed the powder factor designed for each hole based on quantum of blasting, strength of rocks, fracture pattern etc,
- v) In case any objection from the villagers, open a long trench in the direction of blasting near lease boundary to a depth of 2m to control longitudinal waves (P-waves) which cause for damaging infrastructures at superficial depth,
- vi) If any building with in 50m adopt muffle blasting in addition to above procedures and charge per blast shall not exceed 2kgs as specified by DGMS,
- vii) Any other method of safety measures shall be advised to the applicant as and when required by the qualified Mine Manager.

5.4 STORAGE OF EXPLOSIVES

The applicant is advised to store the explosives as per the Indian Explosives Act, 1958 and the Explosive Rules,1983. Necessary permissions should be obtained from the Joint Controller of Explosives to store and uses of explosives in the quarry in the magazine permit under Form -23 or Agreement shall be made with holder of Form-22 who can supply and fire explosives as per safety practices. However blasting in the mines or quarry shall be done as per the MMR, 1961 under the supervision of Mines Blaster certificate holder, appointed under Reg.160 of Metalliferous Mines regulations,1961.

6.0 MINE DRAINAGE :

6.1 Depth of water Table :

The ground water table is reported as 60m depth in nearby wells on the lower elevations. The quarry shall be above the water table, so it may not affect the ground water.

6.2 Arrangements and Place where the mine water is finally proposed to be discharged

Surface is sloping due east and the rain water during season shall flow to the natural tracks. In case of slurry water it should be allowed to settle in a pit before passing through the natural drainage system. If necessary settling tank has to be constructed to desilt before leaving the quarry premises so that the natural drainages shall not be silted. Percolation of rain water into ground water may be allowed through a sump at any one corner of the pit for recharging of ground water level. Water to be pumped out of quarry shall be potable and it will not have impact over the quality of the water regime.

7.0 OTHER PERMANENT STRUCTURES

7.1 Habilitation :

The following villages are found in the buffer zone with population as per 2011 census. The Pachapalayam Population of 2933 Persions.

<u>Direction</u>		<u>Villages</u>	<u>Distance</u>	<u>Population</u>
North	-	Kallapalayam	6 Kms	4796
South	-	Periyakuyilai	1 Kms	5196
West	-	Chettipalayam	3 Kms	3998
East	-	Idaiyarpalayam	6 kms	2548

7.2 Power lines :

There is no HT line nearby the site. A LT power line is found 100m away on the western side, supplying power to the crusher units.

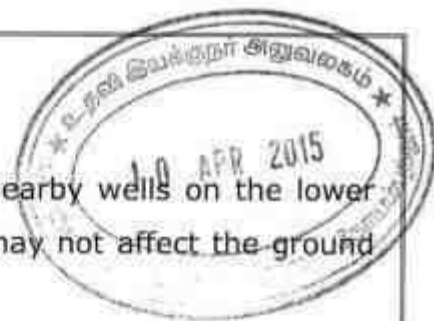
7.3 Water bodies :

Water table is located at a depth of 60m.No pond or lake is located within 500m radius.

7.4 Archaeological\Historical monuments

No other infrastructures like places of special interest like temples, architects, Sanctuaries etc are found in the 500m radius.

7.5 Road : The SH- road the site is situated about 1kms on the southern side with connecting Palladam-Coimbatore. There is a village road located nearby the site on the northern side for transport of materials.



[Signature]
ASSISTANT DIRECTOR

DEPARTMENT OF GEOLOGY & MINING
COIMBATORE DISTRICT

7.6 Place of worship : No place of worship is found in the vicinity

7.7 Reserves Forest\Forest\ social forest\ wild life sanctuaries etc

There is no reserve forest near by the site. No wild life sanctuaries are found around 15kms.

7.8 Any other structures : Nil

8. EMPLOYMENT POTENTIAL & WELFARE MEASURES

8.1 Employment Potential

Management and supervisory personal.

For the purpose of Mines safety under the provisions of MMR, 1961 under the Mines Act, 1952. The Mining Engineer so appointed should have First\ Second class Mine Manager certificate to act as a Manager of the Mine as per the Mining laws. To supervise daily, of all workings and the persons employed therein the First\second class Manager so appointed must be assisted by a Foreman certificate holder. Wherever the workers are employed more than 10, it is preferred to have a qualified Mining Mate to keep all the production workers directly under his control and supervision.

A mines clerk shall also be appointed to keep the registers and record of the mine and make necessary entries for the persons employed in the mines.

Labor skilled, semi-skilled and un-skilled.

i) Skilled

Operator : 1 No.

ii) Semi-skilled

Driver : 2 No.

iii) Unskilled

Musdoors\ Labours : 5 Nos.

Cleaners : 3

Office boy : 1

Total Labours = 12

Management and supervisory staffs 3

Total employees = 15

An average $24239M^3$ of materials would be handled for five years. Considering $4848M^3$ per annum/ $16M^3$ or **3loads** (Each of $6M^3$) per day for **300 working day per year** by open cast mining.

8.2 Welfare Measures

a) Drinking Water :

Whole some drinking water shall be provided as per the Mines Rules, 1955. Quantity for Drinking and utilities is 2.0KLD. Dust suppression and Green belt of water is 4.0KLD. Minimum quantity of 6.0KLD has to be maintained as per the Rule. Drinking water is obtained by Mineral water industries by water canes. Dust suppression and green belt is obtained from the open wells of proponent site.

b) Sanitary facilities :

Surface latrines and urinals shall be constructed at convenient places for use of labours as per the provisions of Rule (33) of the Mines Rules, 1955 separately for males and female. The scale of latrine shall be one for every 50 employees for the purpose of calculating the number of latrines. Washing facilities shall also be arranged as per the Rule (36) of MR, 1955.

f) First Aid facility :

Being a small mine First station as per provisions under Rule (44) of the Mines Rules 1955 will be provided with facilities as per the third schedule as prescribed. Qualified First Aid personnel should be appointed or nominated to attend emergency first aid treatment.

g) Labour Health:

Periodic medical examination has to be made for occupational health once in a year in addition to attending medical treatment of occupational injuries under Rule 45 (A).

h) Precautionary safety measures to the Labourers :

Safety provisions like helmet, goggles, safety belt, safety shoes etc have to be provided as per the circulars and amendments made for Mine labours under guidance of DGMS.

f) The Child labour Employment :

As per the Mines Act, 1952, no child labour below 18 years of old a shell be engaged for any work in the quarry.



PART - B

9.0 ENVIRONMENT MANAGEMENT PLAN

9.1) Existing Land use Pattern :

The area is composed of Charnockite and exposed in the old pit and it is elevated about 410m above mean sea level. Elevation of the area is just 2-5m above the ground level.

The Existing **land use pattern** is previews mining years given in a tabular form as below,

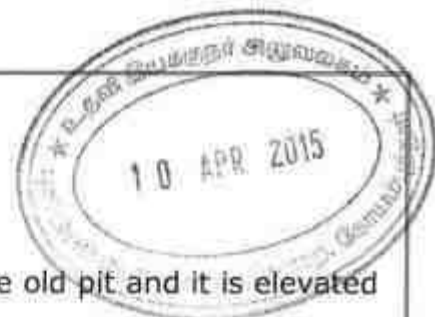
	Land Use	Extent (Hac.)	% of Use
i)	Old Pit area	1.05.50	78%
ii)	Labour Shed and Office	0.00.80	1%
iii)	Road	0.06.50	5%
iv)	Safety and Plantation Area	0.15.00	11%
v)	Virgin	0.06.70	5%
Total Lease Area		1.34.5Hac	100

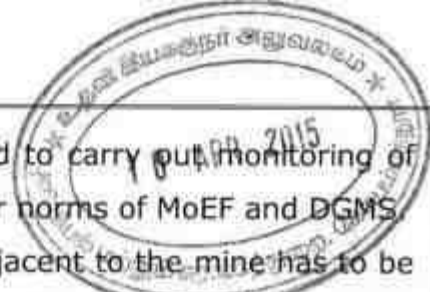
The **land use pattern** is next five years given in a tabular form as below,

	Land Use	Extent (Hac.)	% of Use
i)	Mining area	1.05.50	78%
ii)	Safety and Plantation Area	0.15.00	11%
iii)	Road	0.06.50	5%
iv)	Labour Shed and Office	0.00.80	1%
v)	Dumps	-----	----
vi)	Virgin	0.06.70	5%
Total Lease Area		1.34.5Hac	100

Water Regime:

Water table is located at a depth of 60m. Water drawn from the tube and open wells are potable and the villagers are using such water for a long period. No adverse health hazardous was reported due to quality of water like flurosis. TDS, COD, BOD, Salinity, hardness etc have to be tested by the applicant within one year for consumption of water by the mine workers one sample each from open and tube wells. Mean while mineral water shall be supplied in canes for drinking purposes or RO systems shall be provided.





ii) Air quality: Air sampling was not done. It is proposed to carry out monitoring of Dust raise by periodical air sampling for every season as per norms of MoEF and DGMS.

iii) Water quality: A water sample from the open well adjacent to the mine has to be taken to assess hardness, salinity, colour, specific gravity, PH, turbidity, COD, BOD, fluorine etc.

iv) Noise levels: Threshold sound level is reported as 55dB.

v) Vibration levels: No activity to test vibration of longitudinal waves and its peak particle velocity.

vi) Water Regime : No water bodies found nearby.

vii) Public building, Places and Historical monuments :

There is no houses or habitations are situated around 500m radius. A few labour shed is found 15m on the northeastern side of which will not be affected by blasting as the applicant follows controlled blasting procedures. No infrastructures like places of special interest like temples, architects, Sanctuaries etc are found in the 500m radius.

9.2 Flora and Fauna :



Fig.8 Flora grown at the site

Flora is represented by herbs and shrubs of local species and free regional trees and their botanical terms are given as under with numbers.

Fauna is represented by rabbits, rat, scorpion, millipedes etc

9.3 Climatic Conditions:

Generally sub-tropical climatic condition prevails throughout the district and there is no sharp variation in climate. The temperature slowly rises to its maximum in summer up to May and afterwards shows a gradual decline. The maximum temperature ranges from 36°C to 41°C and the minimum temperature varies from 14°C to 31°C. The mean daily temperature during summer (May) varies from 33°C to 40°C and the mean

daily temperature during winter varies from 15°C to 36°C. This district receives rain both in south west and north east monsoon. The north east monsoon contributes more especially during October and November. The average annual rainfall of this district is 647.2 mm from four distinct seasons' viz., winter, hot weather period, south-west monsoon and north-east monsoon. The season-wise normal rainfall data are given in Table 1. There are 36 rain gauge stations spread over the district and are maintained by different organisations. A general overview of rainfall pattern, as recorded in the rainfall stations indicates that the precipitation is mostly uncertain, uneven or unequally distributed. As per meteorological standards, deviation of plus 20% or more is excess rainfall, between minus 19.9% and plus 19.9% is normal rainfall, minus 20% to minus 59.9% is deficient rainfall and below minus 60% is scanty. The normal rainfall of Coimbatore district is given in Table I & II

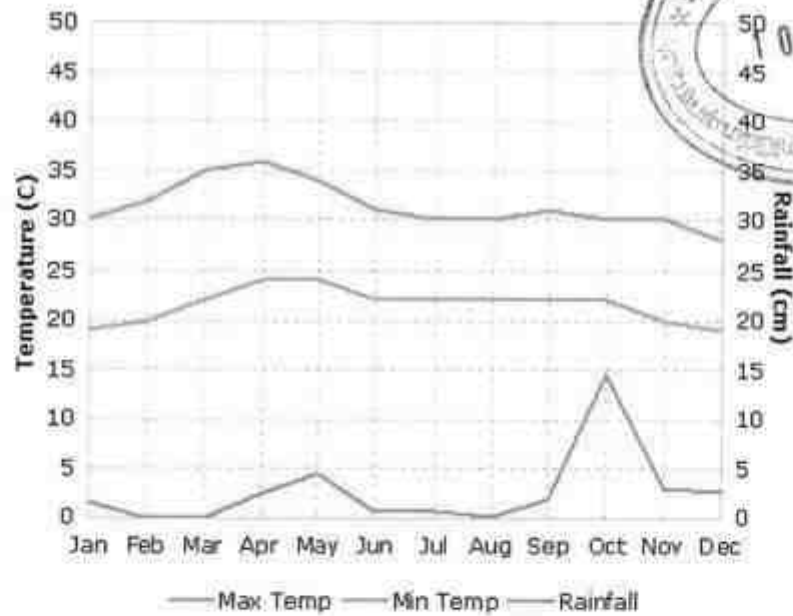
Table -I

Season wise normal rainfall of Coimbatore District Seasons	Period	Rainfall (mm)	Percentage
Winter	January-February	25.6	3.96
Hot weather period	March - May	135.1	20.87
South - West monsoon	June- September	158.3	24.46
North - east monsoon	October-December	328.2	50.71

Table -II

Rainfall of Coimbatore district – June – May

S.No	Taluk	Mean annual rainfall mm	SW monsoon (Jun - Sep)	NE monsoon (Oct - Dec)	Winter (Jan - Feb)	Summer (Mar - May)
			%	%	%	
1.	Coimbatore North and South	640	28.4	49.1	1.9	20.6
2.	Coimbatore South	797	18.3	51.1	6.8	23.8
3.	Avinashi	720	29.7	45.0	1.4	23.9
4.	Palladam and Tiruppur	524	21.0	50.3	3.1	25.6
5.	Mettupalayam and Valparai	842	47.2	33.6	1.4	17.8
6.	Udumalpet	573	22.7	50.6	3.5	23.2
Mean		682.5	28.8	45.9	3.1	22.2



9.4 Human settlement :

The following villages are found in the buffer zone with population as per 2011 census. The Pachapalayam Population of 2933 Persons.

Direction		Villages	Distance	Population
North	-	Kallapalayam	6 Kms	4796
South	-	Periyakuyilai	1 Kms	5196
West	-	Chettipalayam	3 Kms	3998
East	-	Idaiyarpalayam	6 kms	2548

9.6 Plan for air and dust suppression

Base line information on ambient air quality, noise and water has to be collected test SPM, SO₂, NO_x and CO both in core and Buffer Zones.

9.7 Plan for Noise level control

Noise level has to be studied prior to mining and after opening the quarry for production. Ambient noise level on threshold is 55db. Vibration may be negligible due to absence of heavy deep hole blasting.

9.8 ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

Impact of mining on environment will be

- i) Dust generation,
- ii) Temporary storage and utilization of top soil
- iii) Land degradation
- iv) Stabilization and vegetation of dumps
- v) Adverse effect on water regime
- vi) Socio-economic benefits arising out of Mining
- vii) Noise and Vibration

i) Dust:

Dust expected to be generated from drilling, hauling roads, place of excavation etc will be suppressed by periodical wetting of land by 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, glozes etc as per the Mines Act.

Noise and Vibration: Generation of noise from blasting shall be controlled by delay arrangements in blasting and use of proper quantity of explosives and strength. Protective devices shall be provided for use of persons employed in the vicinity. Wherever the noise level is found in excess of the stipulated limits (85db), necessary protective devices like ear plug, mask will be provided to the employees exposed to such noisy and dusty conditions.

Vibration is not tested being a small quarry with production less than $16M^3/3$ Loads per day. No deep hole blasting is adopted and only small dia explosives are used for breaking the hard rock and boulders. Where ever necessary muffle blasting shall be followed to control fly rocks from blasting.

ii) Temporary storage and Utilization of Top Soil :

Top soil shall be dumped along lease boundary on the eastern side for plantation purposes over inactive dumps after five years of operation.

iii) Proposal for reclamation land affected by mining activities during and at the end mining lease period.

Land degradation is unavoidable in quarrying, also it was an old quarry and further land gradation is involved except developing the pit. The depth of rough stone deposit is not known. However for economical planning the depth is taken as 50m from the top. Immediate reclamation of land does not arise for this deposit. However the pit will be used for miscellaneous purposes like fish bond etc., after completion of mining. All waste and reject materials will be dumped as per the mining plan on the along lease boundary. The pit will be used as recharge tank for sourcing ground water potential.

iv) Stabilization and Vegetation of Dumps:

The materials to be dumped shall be very hard in nature and it does not require any grading separately. The materials like rough stone rejects shall be graded automatically during dumping by Excavator and tipper combinations. Part of top soil will be spread over the Non-active dumps along the slope and edges to plant tree sapling to

form vegetal cover over the dumps. Such vegetal cover will prevent erosion of dumps during rainy seasons.

Cutting of Trees : There is no much chance for cutting of trees. On the other hand the applicant proposes to plant more trees as per the mining plan, to plant at least 30 trees per annum.



v) Measures for minimizing adverse affect on water regime :

No surface water bodies nearby. Ground water level is more than 60m on the regional scale. However the fracture zones if any in the hard rock formation should not be opened otherwise it may cause percolation of ground water through joints and fractures and deplete the recuperation in the open and tube wells.

The ground water quality must be tested once in a year for its physical, chemical and biological parameters for analysis of 23 elements.

The water to be pumped out will be very pure and potable and therefore it will not affect any water regime of the area. Depth of mining is also moderate and it does not affect even the ground water table.

vi) Socio-economic benefits arising out of Mining :

The mining operation will create an employment of about 15 persons, of which 90 % will be from local people (Son of Soil). After development of mine from this area, not only provide employment opportunities but also the industrial culture and civilization to the village people in addition development of several ancillary units like work shop, general stores etc .Neighbor villages like Perikuyilai, Chettipalayam, Pachapalayam etc will be getting economic benefit and employment security.

9.9 Proposal for Waste Management :

The Rough stone waste is hard and porous and it will not produce any waste which will pollute the ground water. More than 95% of materials shall be crushed down to various sizes and fines shall also be screened and washed for material sand. No much waste available even for dumping.

9.10 Reclamation of Land affected during mining activities and at the end of mining

The mining is proposed to an average height of 50meters. The mine area shall be fenced on top of open cast working with type S1 fencing. Low lying area with water logging shall be used for Fish culture. No immediate proposal for closure of pit as the rough stone persists still at deeper level.

9.11 Programme of Afforestation :

Local trees like neem, coconut, nelli, casuarina, teak etc will be planted along the lease boundary and avenues as well as over Non-active dumps at a rate of 30 trees per annum with interval 5m in between. The rate of survival expected to be 80% in this area. Land use and Afforestation Plan is given Plate X. Density of trees shall be 1000 per Hectares. The program of tree planting is given as under

Year	Place	Types of Trees	Number	Rate of Survival
I	Lease Boundary & Dump	Casuarinas, Teak & Eucalyptus etc.,	30	80 %
II	Lease Boundary & Dump	Casuarinas, Teak & Eucalyptus etc.,	30	80 %
III	Lease Boundary & Dump	Casuarinas, Teak & Eucalyptus etc.,	30	80 %
IV	Lease Boundary & Dump	Casuarinas, Teak & Eucalyptus etc.,	30	80 %
V	Lease Boundary & Dump	Casuarinas, Teak & Eucalyptus etc.,	30	80 %

9.12 Proposed financial estimate / budget for (EMP) Environment Management

a) Project cost / investment

i)	Land Cost	:	Rs 35,00,000
ii)	Machinery to be used	:	Rs 30,00,000
iii)	Refilling / Fencing	:	Rs 80,000
iv)	Labourers Shed	:	Rs 90,000
v)	Sanitary facility	:	Rs 50,000
vi)	Other items	:	Rs 50,000

Total **Rs 67.70Lakhs**

b) Expenditure

i)	Drinking water facility for the labourers	=	Rs1,00,000
ii)	Sanitary arrangement	=	Rs 50,000
iii)	Safety kits,	=	Rs 50,000
iv)	Dust control	=	Rs 50,000
v)	Afforestation etc.	=	Rs 75,000

Total **Rs 3.25lakhs**

10. MINE CLOSURE PLAN

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

Humus top soil shall be used for rehabilitation and afforestation purposes. In case of steep slopes, fencing shall be made to control, inadvertent entry of animals and local persons. The mine out area shall be used for storage of rain water with proper barricade which will help recharge of regional ground water table. No major dumps, however plantation shall be made over small dumps to prevent soil erosion\wash outs and help ecological balance.

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

Fencing shall be made around open cast working as per DGMS circulars with S1 type fencing. No back filling is proposed in the Mine closure Plan. Green belt development shall be made along Lease boundary as per Plate X.

10.3 Mitigation measures to be undertaken for safety and restoration / reclamation of the already mined out area

The area applied is a fresh area and the old pit located nearby shall be advance to make safe operation and win the material at deeper level with safe benches.

11. Any other details intend to furnish by the applicant :

The rough stone of this area is also called as Charnockite rock or blue metal. The geological reserves and mineable reserves are estimated as **60882M³** and **26458M³** of rough stone respectively for the permissible area up to a depth of **50m**. Systematic mining with proper orientation of working faces and blasting techniques will improve safety and eco-friendly environment.

(Appraised)

B. S. Srinivas
10/4/15

ASSISTANT DIRECTOR
DEPT. OF GEOLOGY & MINING
GOIMBATORE DISTRICT

S. Suriyakumar
S. SURIYAKUMAR,
Recognised Qualified Person
Reg. No. RQP/MAS/013/87/A



GEOLOGICAL RESERVES

ANNEXURE-I

by

Cross Sectional Method

SECTION	L (m)	W(m)	D(m)	Volume	Recovery @95% (m ³)	Reject @5% (m ³)
AB-X1Y1	7	2	11	154	146	8
	8	13	4	416	395	21
	9	19	8	1368	1300	68
	91	51	6	27846	26454	1392
AB-X2-Y2	5	48	30	7200	6840	360
	30	9	13	3510	3335	176
	28	9	6	1512	1436	76
	92	48	5	22080	20976	1104
TOTAL				64086	60882	3204

TOTAL GEOLOGICAL RESERVES (50m) = 60882 M³

S. Suriyakumar

S. SURIYAKUMAR,
Recognised Qualified Person,
Reg. No. RQP/MAS/013/87/A

MINEABLE RESERVES

by

Cross Sectional Method

ANNEXURE-II 10 APR 2015

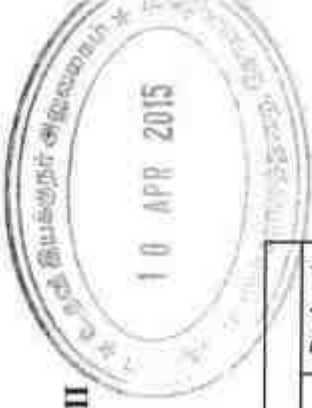
SECTION	BENCH	L (m)	W(m)	D(m)	Volume	Recovery @95% (m ³)	Reject @5% (m ³)
AB-X1Y1	IV	71	24	6	10224	9713	511
	III	85	5	7	2975	2826	149
	IV	16	39	6	3744	3557	187
AB-X2Y2	V	4	36	6	864	821	43
		28	36	6	6048	5746	302
	VI	47	17	5	3995	3795	200
TOTAL					27850	26458	1392

Total Mineable Reserves (50m) = 26458 M³

S. Suriyakumar

S. SURIYAKUMAR,
Recognised Qualified Person
Reg. No. RQP/MAS/013/87/A

ANNEXURE-III



YEARWISE PRODUCTION AND DEVELOPMENT						
YEAR	L (m)	W(m)	D(m)	Volume	Recovery @95% (m ³)	Reject @5% (m ³)
I	29.17	24	6	4200	3990	210
II	32.89	24	6	4736	4499	237
III	34.72	24	6	5000	4750	250
IV	85	5	7	2975	2826	149
	39	11	6	2574	2445	129
V	39	5	6	1170	1112	59
	36	4	6	864	821	43
	47	17	5	3995	3795	200
TOTAL				25514	24239	1276

TOPSOIL : NIL

Total Production for the Five Years = **24239m³**

Ore Waste Ratio = 1276/24239 = 1:0.052

S. Suriyakumar
 S. SURIYAKUMAR,
 Recognised Qualified Person
 Reg. No. RQP/MAS/013/87/A



ANNEXURE IV

LIST OF MACHINERIES

TYPE	MAKE	SIZE /CAPACITY(MT)	NO'S
Jack Hammer	Atlas Copco	32mm	6
Tipper	AMW	15 MT	2
Hydraulic Excavator	Hundai	1.2	1

S. SURIYAKUMAR,
Recognised Qualified Person
Reg. No. RQP/MAS/013/87/A

ASSISTANT DIRECTOR
DEPARTMENT OF GEOLOGY & MINING
COIMBATORE DISTRICT

ANNEXURE - V



From
Tmt. Archana Patnaik, I.A.S.,
District Collector,
Coimbatore District,
Coimbatore

To
Thiru. B. Sakthivel,
S/o. Balakrishnan,
Pachapalayam,
Periyaquili post,
Chettipalayam, Coimbatore

R.C. 264 / 2014 / MM-1 Dated 10.03.2015

Sir,

Sub Mines & Minerals – Minor Mineral – Rough Stone and Gravel – Application preferred by Thiru. B. Sakthivel for quarrying Rough stone and Gravel in patta land S.F. No. 280/1 (P) (0.72.5) and 280/2 (P) (0.62.0) - totally over an extent of 1.34.5 Hectares - patta land - in Periaquili hamlet - Pachapalayam village - Sulur Taluk - Coimbatore District – application processed – precise area communicated – for preparing Mining Plan – Reg.

- Ref
1. Thiru. B. Sakthivel, S/o. Balakrishnan quarry lease application dated 12.6.2014.
 2. Revenue Divisional Officer, Coimbatore letter R.C. No. 4253 / 2014 / A2 dated 28.8.2014.
 3. Deputy Director (i/c), Geology and Mining, Coimbatore field inspection report dated 23.9.2014.

In the reference 1st cited above, Thiru. B. Sakthivel, S/o. Balakrishnan, Chettipalayam, Coimbatore District has applied for Roughstone and Gravel quarry lease in S.F. No. 280/1 (P) (0.72.5) and 280/2 (P) (0.62.0) totally over an extent of 1.34.5 Hectares patta land in Periaquili hamlet in Pachapalayam village, Sulur Taluk, Coimbatore District. He has requested quarry lease for rough stone for a period of 5 years. The applicant Thiru. B. Sakthivel has remitted Rs.1,500/- towards application fees and enclosed the original amount remitted challan along with all the required documents to grant lease in his favour.

மாண்புமிகு உயர்நீதிமன்றம்

ANNEXURE - VI

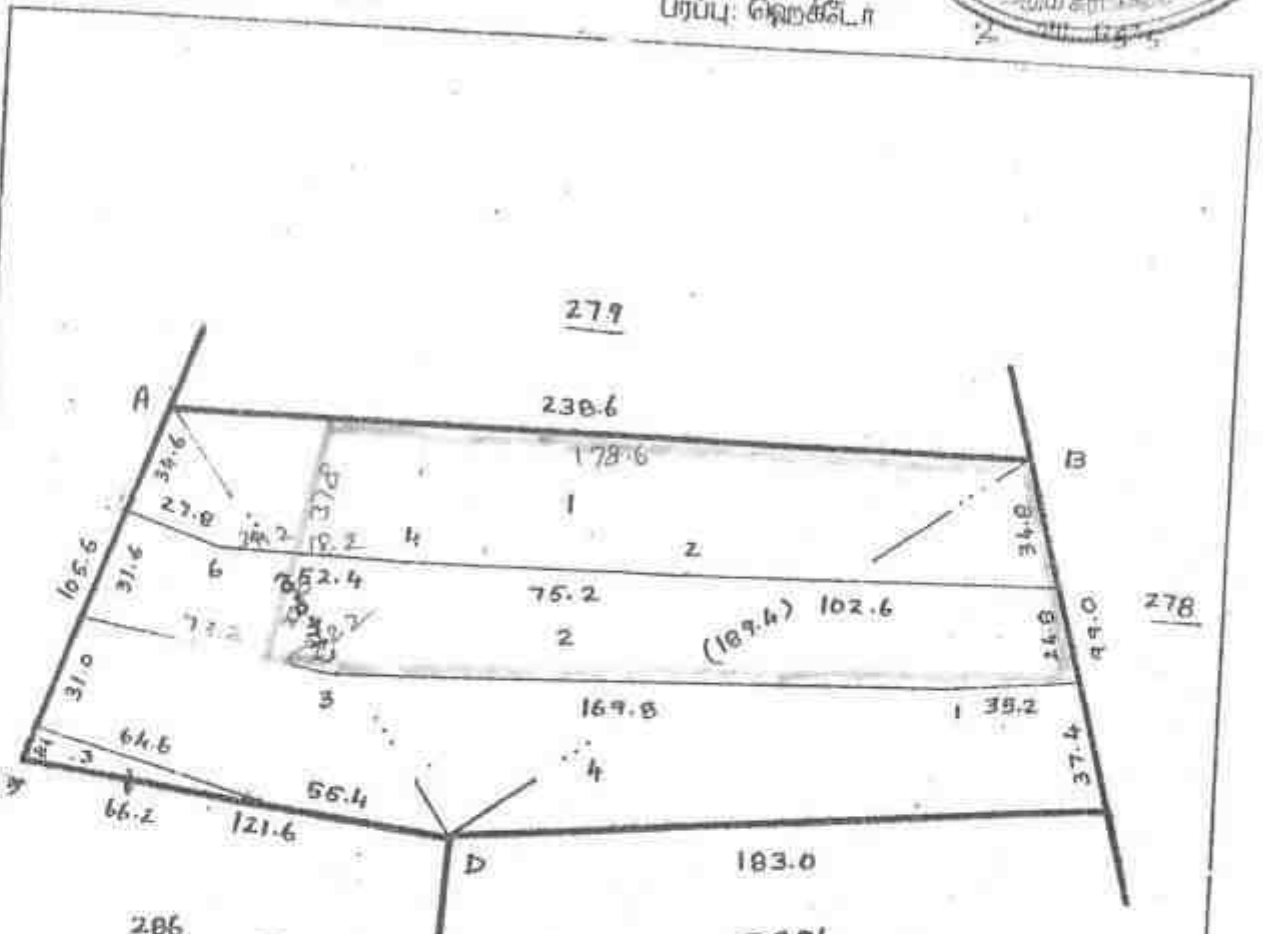


மாண்புமிகு உயர்நீதிமன்றம்

சீரமைப்பு

புல எண். 280

பரப்பு: சென்னை



286

சீரமைப்பு சீரமைப்பு

S. SURIYAKUMAR,
Recognised Qualified Person
Reg. No. RQP/MAS/013/87/A

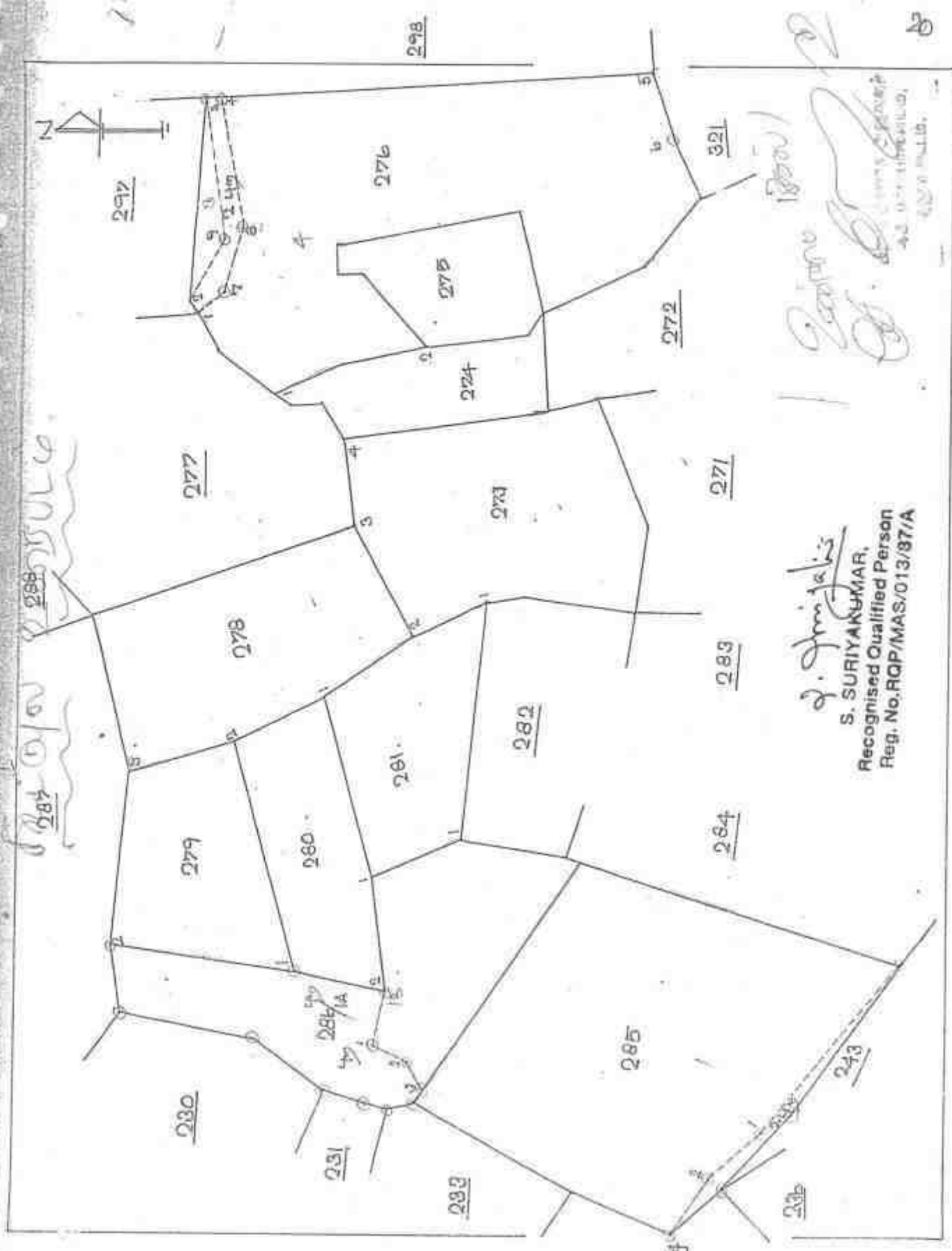
		A		
		(140.0)		
6	10.4	100.2		
5	89.0	82.8		
		67.6	30.6	4
3	1.8	54.2		
		D		
		(189.4)		
		96.8	24.6	2
1	42.0	50.2		
C	93.6	32.2		
		B		

சீரமைப்பு சீரமைப்பு
43, பச்சையாண்டி,
சென்னை.

அளவு. 1:2000

சீரமைப்பு: 5 பச்சையாண்டி
21.7.84

ANNEXURE



Handwritten signatures and notes.

S. Suriyakumar
S. SURIYAKUMAR,
Recognised Qualified Person
Reg. No. RQP/MAS/013/87/A

Handwritten notes on the left margin.

WT

ANNEXURE - VIII
தமிழ்நாடு அரசு



11/5/2014



நில அளவை ஆவணம் - மட்டா

இ.எண் 10(1) பரிவு

வசூலாயத்துறை, கோயமுத்தூர் மாவட்டம்

மட்டம் : குறுள்

கிராமம் : பச்சாபாயைம்

மட்டா எண் 334

உட்கிராமங்கள் பெயர்

I சக்திவேல்

கணவன்

கிதா

புல எண்ணம் உட்கிராமம்	நட்செய்		புட்செய்		மற்றவை	
	பரப்பு	நிலை	பரப்பு	நிலை	பரப்பு	நிலை
	ஹெக்டேர் - ஏர்	ரூ - பை	ஹெக்டேர் - ஏர்	ரூ - பை	ஹெக்டேர் - ஏர்	ரூ - பை
280 1	-		- 91.50	1.84	-	
280 2	-		- 80.00	1.61	-	
	-		1 - 71.50	3.45	-	

10/025/334.00/1.00 21/05/2014 6:28:24P

TAHSILDAR
SULUR

S. SURIYAKUMAR,
Recognised Qualified Person
Reg. No. RQP/MAS/013/87/A



भारतीय गैर न्यायिक

बीस रुपये

रु.20

Rs.20

TWENTY
RUPEES

INDIA

INDIA NON JUDICIAL

தமிழ்நாடு தமில்நாடு TAMIL NADU

04AB 359770

No. : 40580. B. சக்திவேல்.

Date: 05-06-2014. சூழார்

M. DORAISWAMY
"STAR WINDOW"
19-A, STATE BANK ROAD,
COIMBATORE - 641 018
No. 7883/31/27/2014

சம்மதக் கடிதம்

கோயம்புத்தூர் மாவட்டம், பச்சாபாளையம், பெரியகுயிலை (அஞ்சல்), செட்டிப்பாளையம், கோயம்புத்தூர் மாவட்டம் என்ற விலாசத்தில் வசிக்கும் திரு.பி.சக்திவேல் மனைவி எஸ்.கீதா ஆகிய எனக்கு கோயம்புத்தூர் மாவட்டம், சூலூர் மாவட்டம், பச்சாபாளையம் கிராமம் க.எண்.280/1 ல் 0.91.5 ஹெக்டேர் மற்றும் 280/2 ல் 0.80.0 ஹெக்டேர் ஆக மொத்தம் 1.71.5 ஹெக்டேர் பரப்பு காலைகள் பட்டா எண்.234 ன் படி எனக்கு தனியாக பாத்தியப்பட்டது. மேற்படி காலையில் 1.34.5 ஹெக்டேர் பரப்பில் கிரேவல் / சாதாரணக்கற்கள் உடைக்க பச்சாபாளையம், பெரியகுயிலை (அஞ்சல்), செட்டிப்பாளையம், கோயம்புத்தூர் மாவட்டம் என்ற விலாசத்தில் வசிக்கும் திரு.பாலகிருஷ்ணன் மகன் பி.சக்திவேல் என்பவருக்கு ஐந்து ஆண்டுகளுக்கு கல் குவாரிக்கு தேவையான கல் மற்றும் கிரேவல் எடுக்க எனக்கு எந்தவிதமான ஆட்சேபமையும் இல்லை என்பதை பட்டாதாரராகிய நான் இந்த பிராமணத்தின் மூலம் தெரிவித்துக் கொள்கிறேன்.



K. RADHAKRISHNAN,
B.Sc., B.L., P.G.D.P.M.,
ADVOCATE & NOTARY,
Off: 28-A, Gopalapuram 3rd Street
COIMBATORE-641 018.
Res: 244, Lingappa Chetty Street,
COIMBATORE-641 061.

G. O Ms No: 516/7 8 2012

இப்படிக்கு

S. Suresh

S. Suriyakumar

S. SURIYAKUMAR,
Recognised Qualified Person
Reg. No. RQP/MAS/013/87/A

மணிக் குடிப்புப் பஞ்சியு! - ANNEXURE



கோவை மாவட்டம் துயர் வட்டம்

43. பச்சாபாளையம் கிராமம் மக்கள்
 பெரியவிலையில் உரிமை சந்தைல் மணிக்
 கிராம சம்பவகந்த பாத்தியப்பட்டு யுதயில்
 கல் வேல்கை அழகு கிராம சந்தைல் சம்பவம்
 கோரிய மறுகி உரிமைகள் மறு உரிமை
 கிராமிகல் பஞ்சியு.

சந்தைல் மணிக் கிராம சம்பவகந்த
 29 கிராமம் க.ச. மண் 280/1 கில் 0.91.50 ம
 யுத துயர் சார்புகை கிய பக்கி மண்
 4743/2005 கில் மறுபுல், க.ச. 280/2 கில்
 0.80.00 மண் யுத துயர் சார்புகை கிய
 மறுகி மண் 2398/2006 கில் மறுபுல் பாத்தியப்
 பட்டி சூல். 29 கிராமிகல் மறுகி
 கோவை மாவட்ட சிபியர் மண் மறுகி
 க.ச. மண் 471/2001/M.M2 மண் 28.9.11
 கில் மறு கல் வேல்கை அழகு கிராமிகல்
 அழகு கிராமம் 27.9.14 மண் மறுகி.

29 கிராமிகல் மறுபுல் கல் இமர்
 மறுகி கிராமிகல் கிராமிகல் சந்தைல்
 அழகு கோபகன் மறுபுல் மறுகி மறுகி
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 மறுகி மறுகி. 29 மறுகி மறுகி 3006

एक नवीकृत

10 NOV 1993

Renewed up to.....

एक नवीकृत
Renewed up to.....

10 NOV 1991

APR 2015

P. Pravin Kumar
18/11/87

प्रवीण कुमार निम्बलकर

Regional Controller of Mines

भारतीय खान भूरो

INDIAN BUREAU OF MINES

Regional Controller of Mines,
INDIAN BUREAU OF MINES
Ministry of Steel, Mines & Coal
MADRAS**CERTIFICATE OF RECOGNITION AS
QUALIFIED PERSON TO PREPARE MINING PLANS**

(Under Rule 22 (c) of Mineral Concession Rules 1960)

Shri S. SURIYAKUMAR resident

of 5/626 H, SELVAM MANSION, KAMARAJ NAGAR, SALEM - 5 , son

of SHRI. A. SEMBAN , having given satisfactory
evidence of his qualifications and experience is hereby granted recognition
under Rule 22 (c) of the Mineral Concession Rules, 1960 as a Qualified
Person to prepare Mining Plans.

His registration number is

RQP / MAS / 013 / 87 / A

This recognition is valid for a period of two years
ending 11.11.1989

Place: MADRAS

Date: 12.11.1987

P. Pravin Kumar
Regional Controller of Mines
Indian Bureau of Mines
MADRAS.

MINING PLAN

FOR

GRANT OF ORDINARY STONE QUARRY LEASE IN PATTALANDS

STATE : Tamil Nadu
EXTENT : 3.84.0 Hectares
S.F. No. : 285/1B2, 285/3,286/2,
VILLAGE : Pachapalayam
TALUK : Sulur
DISTRICT : Coimbatore

APPLICANT

Thiru. R.S.SENTHIL KUMAR,
31, Sathyamoorthy Road,
Ram Nagar,
Coimbatore -641009.

BY

VB MINING CONSULTANCY

SALEM

(1)

CONSENT LETTER FROM APPLICANT

The Mining plan has been prepared for grant of lease for quarrying ordinary stone (Blue metal) in S.F.No. 285/1B2, 285/3,286/2 over an extent of 3.84.0 hectares in Pachapalayam Village of Sulur Taluk, Coimbatore District, TamilNadu State has been prepared by Shri.S.DHANASEKAR, Recognized Qualified Person, Reg.No. RQP\MAS\225\2011\A.


I request the Deputy Director of Department of Geology and Mining, Coimbatore to make further correspondence regarding modification of the Mining Plan with the said Recognized Person on this following Address,

S.DHANASEKAR, M.Sc.,
RQP\MAS\225\2011\A
113/35C1, Buddanagaiyer Street,
Salem - 636 001.

I hereby undertake that all modifications so made in the Mining Plan by the Recognised Qualified Person may be deemed to have been made with my knowledge and consent and shall be acceptable to me and binding on me in all respects.

Place : Coimbatore

Date : 18.01.2013


Signature of the Applicant


DEPUTY DIRECTOR
GEOLOGY AND MINING
COIMBATORE

Thiru. R.S.SENTHIL KUMAR,
31, Sathyamoorthy Road
Ram Nagar,
Coimbatore -641009.

DECLARATION OF MINE OWNER

The Mining Plan for ordinary stone quarry lease applied area over an extent of 3.84.0 Hectares in S.F.No. 285/1B2, 285/3,286/2, in Pachapalayam village of Sulur Taluk, Coimbatore District, Tamil Nadu State has been prepared with my consultation and I have understood the contents and agree to implement the same in accordance with the Mining Laws.

Place : Coimbatore

Date : 18.01.2013



Signature of Applicant

S.DHANASEKAR, M.Sc(Geo).,
Recognised Qualified Person,
113/35C1, Buddanagaiyer Street,
Salem - 636 001.
Phone : 94433 65832.

CERTIFICATE


The applicant Thiru.R.S.Senthilkumar has prepared an application for grant of ordinary stone quarry lease in S.F.No. 285/1B2, 285/3,286/2, over an extent of 3.84.0 hectares in Pachapalayam village of Sulur Taluk, Coimbatore District, TamilNadu State and certify that the provisions of Tamil Nadu Minor Mineral Conservation and Development Rules, 1959 have been observed in the Mining Plan.

Wherever specific permissions/exemptions/relaxations or approvals are required, the applicant will approach the concerned authorities of State Governments for granting such permissions etc.

Certified

Place : Salem

Date : 18-01-2013


Signature of Recognized Qualified Persons

S. DHANASEKAR
RQP/MAS/225/2011 A

(iv)

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S.NO	DESCRIPTION	PAGE NO.
I)	LIST OF ANNEXURES	(a)
II)	LIST OF PLANS AND SECTIONS	(b)
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	INTRODUCTION	1
01.	GENERAL INFORMATION	2
02.	LOCATION	3
03.	GEOLOGY AND MINERAL RESERVES	4
04.	MINING	7
05.	BLASTING	10
06.	MINE DRAINAGE	13
07.	OTHER PERMANENT STRUCTURES	14
08.	EMPLOYMENT POTENTIAL & WELFARE MEASURES	15
	PART - B	
09.	ENVIRONMENTAL MANAGEMENT PLAN	18
10.	MINE CLOSURE PLAN	24
11.	ANY OTHER DETAILS	24

(a)

ANNEXURES

S.NO	DESCRIPTION	PAGE NO.
01.	GEOLOGICAL RESERVES	I
02.	FIVE YEARWISE DEVELOPMENT AND PRODUCTION	II
03.	MINEABLE RESERVES	III
04.	LIST OF MACHINERIES	IV
05.	GOVERNMENT LETTER	V
06.	LAND RECORDS	VI
07.	RQP CERTIFICATE	VII

(b)

LIST OF PLANS AND SECTIONS

S.NO	DESCRIPTION	PLATE NO.
01.	LOCATION PLAN KEY PLAN	I
02.	ROUTE MAP	I(A)
03.	LEASE PLAN	II
04.	SURFACE PLAN	III
05.	GEOLOGICAL PLAN	IV
06.	GEOLOGICAL CROSS SECTION	IV (A)
07.	PRODUCTION AND DEVELOPMENT PLAN	V
08.	CROSS SECTIONS OF PRODUCTION AND DEVELOPMENT PLAN	V (A)
09.	LAND USE AND AFORESTATION PLAN	VI
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MINING PLAN FOR GRANT OF ORDINARY STONE QUARRY LEASE IN PATTALANDS

INTRODUCTION

The applicant Thiru. R.S.Senthilkumar, Coimbatore is an individual applied for ordinary stone (Blue Metal) quarry lease in S.F.No. 285/1B2, 285/3, 286/2 over an extent of 3.84.0 Hectares in Pachapalayam Village, Sulur Taluk in Coimbatore District. The applicant is having vast experience in quarrying rough stone (Blue Metal) for the last 10 years.

The area applied for lease area was already held under roughstone quarry lease and the details are given below.

S. No	Name of the lease holder	Taluk	Village	S.F.No	Extent in hectares	Collector's proceeding No.	Lease period
1.	Yoganathan	Sulur	Pachapalayam	286/1B1A	0.59.5	1121/97/XI dated 20.10.1997	5 years 20.10.97 to 19.10.02
2.	R.R.Subbaiyan	Sulur	Pachapalayam	285/3, 286/1B1B, 286/2	3.88.0	409/2001/MM2 dated 24.05.2001	5 years 24.05.01 to 23.05.06
3.	R.S.Senthilkumar	Sulur	Pachapalayam	285/1B2, 285/3, 286/1B1A, 286/1B1B, 286/2	4.47.5	0675/2006/XI dated 27.06.2006	5 years 27.06.06 To 26.06.11

Blue metal is the commercial name of basic rock geologically termed as "Charnockite". These rock occur mostly as sheets, boulders and massive bodies. The charnockite rock contains mostly quartz and feldspar with ferromagnesian minerals like pyroxene (hypersthene). The presence of hypersthene minerals in the charnockite rock shows bluish colour of the rock.

1. GENERAL INFORMATION:

1.1

- a) Name of the applicant : Thiru R.S. Senthilkumar
- b) Address of the Applicant
(with Phone No. & e-mail) : 31, Sathyamoorthy Road,
Ram Nagar,
Coimbatore – 641 009,
Ph no. 0 98422 59519
Email id : senthilsubbian@rediffmail.com
- c) Status of the Applicant
(Individual /Company/ Firm) : Individual

1.2

- a) Mineral which the applicant intends to mine : Ordinary stone (Blue Metal)
- b) Precise area communication letter details received from the competent authority of the Government

The District Collector, Coimbatore is his letter Ref. No. 509/2011/MM2 dated 27.11.2012 has directed the applicant Thiru.R.S.Senthilkumar to get the Environmental Clearance Certificate from the State Environment Impact Assessment Authority.

Mining plan is prepared for systematic development and scientific exploration of roughstones and also to protect the ecology and environment.

- c) Period for which quarry lease is required : Five years.

d) Name and address of the RQP/Authorised person to prepare the mining plan.

Name : S.Dhanasekar M.sc.,
 Address : 113/35c1, Buddanagaiyer Street,
 Salem – 636 001

e) Details of the area applied for the lease.

State & District	Taluk	Village	SF.No.	Extent (Hec)	Owner ship
Tamil Nadu & Coimbatore	Sulur	Pachapalayam	285/1B2	0.69.0	Patta land
			285/3	0.98.5	
			286/2	2.16.5	
TOTAL				3.84.0	

2. LOCATION

a) The area applied for lease is located at a distance of about 1 km away from Pachapalayam Village towards south. Good tar road is available from Coimbatore via Ukkadam and Chettipalayam Village. The distance between Coimbatore to Pachapalayam Village is 20 km.

b) The area applied for roughstone quarry lease is surrounded by

North - J.K. Quarry
 South - SRA Crusher
 West - Velusamy Quarry
 East - Chinnasamy Quarry

This area is represented by the Toposheet Number 58 F /3 with the co-ordinates of Latitude N10°54'15" and Longitude E77°04'02".

Location map showing route and boundaries is given in Plate I.

Shahid 19/03/13

DEPUTY DIRECTOR
GEOLOGY AND MINING
PUNJAB



Existing pit of the quarry is shown above



Untapped portion of the surface area is shown above

PART – A

3. GEOLOGY AND MINERAL RESEARVES

3.1. Brief description of the topography and general geology of the area:

The Coimbatore district is underlain by a wide range of high grade metamorphic rocks of the peninsular gneissic complex. These rocks are extensively weathered and overlain by recent valley and alluvium at places.

The geological formations found in the district are khondalite, calc granulite complex gneiss, charnockite, granite gneiss, granite, pegmatite and quartz veins.

The generalized stratigraphic succession of the geologic formations met within this district is as follows:

Recent to sub-recent	:	Soils Alluvium Laterite Colluvium and kankar
Archaean	:	Granite, hornblende biotite gneiss, quartzites and charnockite.

The area applied for lease is an undulating terrain with gentle slope towards south. The variation in water table observed as 20 – 25 mts during summer and winter respectively. The sub tropical climate prevails throughout the area (i.e) the maximum temperature ranges from 36°C to 41°C and the minimum temperature ranges from 14°C to 31°C.

The photograph showing the existing quarry pit and the unfapped portion of the surface area.

3.2. Details of exploration already carried out if any

The area applied for lease was already held under roughstone quarry lease and the average dimensions of the pits are given below.

- | | | | | |
|-----------------|---|-----------|---|-----------|
| 1. Length 101 m | x | width 80m | x | depth 25m |
| 2. Length 65 m | x | width 39m | x | depth 15m |
| 3. Length 54 m | x | width 30m | x | depth 16m |
| 4. Length 30 m | x | width 30m | x | depth 25m |

Soil and weathered rock formation is noticed for a depth of 4 to 5 meters. below which charnockitic rock is found.

3.3 Estimation of reserves.

a) Geological reserves with geological sections on a scale of 1:1000/ 1:500

The Geological reserves is estimated for the area is allowed for quarrying by the cross sectional method is as 640630 m³ up to a depth of 24.5 mts , having considered the depth of quarrying. Details of estimation of geological reserves are given in the Annexure I.

b) Mineable and Recoverable reserves

The Mineable and Recoverable reserves of ordinary stones are estimated for the area is allowed for quarrying by the cross sectional method is as 347787 m³ and 313008 m³ respectively up to a depth of 24.5 mts, having considered the depth of quarrying, recovery factor, safety barriers etc. Details of estimation of geological reserves are given in the Annexure I.

The recovery percentage is taken as 90%. On the basis of recovery percentage, the recoverable reserves are calculated as 313008 m³.

4. MINING

4.1 Method of Mining (opencast/ underground)

Opencast method of mining shall be adopted for exploitation of charnockite blue metals or jelly in this area. The open pit quarry is structured as steps often termed as benches. Therefore, it is proposed to form benches and roads as per Plates IV & V .

4.2 Mode of working (mechanized, semi mechanized, manual)

The mode of working is fully mechanized because the material is hard to handle as manual.

The mechanized method of mining using shot hole drilling with the help of compressor and jack hammers, smooth blasting, block lifting using cranes and waste and ore removal using Hydraulic excavator and tippers combination. Working plans and sections are showing the lay our faces and directions of quarrying / mining are given in plate VI.

The economical depth of quarrying is taken as 24.5 mts considered the several field aspects such as limit of lease boundary and depth of quarrying. Benches are designed to exploit the jelly/ blue metals by conventional methods, 7.5 mts height and 7.5 mts width except top soil which is designed at 1m height with a slope of 60°.

4.3 Proposed bench height and width.

As is open cast mechanized quarry, the pit is structured as benches. For quarrying roughstone, it is proposed to leave 7.5mts as bench height and 7.5 mts as bench width for scientific method of mining.

The applicant is proposed to produce roughstone and to transport to his stone crushing unit for making stone jelly as per the market requirements.

4.4 Indicate the Overburden /Mineral production expected pit wise as detailed below(composite plan and section showing pit layout, dumps, disposal of waste if any etc.)

Years	Length	Width	Depth	Bulk Density	Volume	Recovery	Reject
I year	40	32.05	7.5	2.6	25000	22500	2500
II year	40	32.05	7.5	2.6	25000	22500	2500
III year	40	32.05	7.5	2.6	25000	22500	2500
IV year	38	34	7.5	2.6	25194	22675	2519
IV year	38	34	7.5	2.6	25194	22675	2519
					125388	112850	12538

Development of Top soil:

96m (L) X 40m (W) X 2m (D) = 7680 MT

The top soil is removed initially and it is proposed to dump on the Southern side of the lease area.

4.5 Machineries used

a) For mining

Compressor, Jack hammers, Hydraulic excavators and tippers combinations are required for mining the charnockite / blue metal/ jelly quarry.

b) Loading equipment

Loading of produced raw materials and waste materials shall be done by Hydraulic excavators into 10 tonnes tippers. Such wastes generated during mining periods are dumped in the south western side of the lease applied area.

One Hydraulic excavators with 1.2m³ capacity and one tipper with 10 tonnes capacity for internal transport of wastes from the working face to the dump area.

Details of loading equipment are tabulated as below:

Type	No.	Bucket capacity	Make	Power	H.P
Hydraulic excavator	2	1.2 m ³	L&T or Ex200	Diesel	120

c) Transportation (includes within the mine and mine to destination)

Transport of raw materials and waste shall be done by Tipper of 10 tonnes capacity.

Type	No.	Size / capacity	Make	Power	H.P
Tipper	3	10 M.T	Ashok Leyland	Diesel	110

4.6 Disposal of overburden / waste

The overburden of the applied area is Soil and weathered rock. This topsoil is removed initially and dumped on the Southern side of the lease area.

The wastes are generated during the mining period is proposed to dump on the South Eastern side of the lease applied area.

4.7 Brief note on conceptual mining plan for the entire lease period based on the geological , mining and environmental considerations.

Conceptual mining plan is prepared with an object of long term systematic development of bench layouts, selection of top soil dump, selection of waste dump so as to avoid remanding, settling roads, to determine the ultimate pit limit, depth of mining and ultimate pit slope, selection of sites for construction of infrastructures etc.,

Ultimate Pit Dimension:

Top Soil	-	Along the lease boundary	-	32570 m ³
Rejects	-	Backfilling	-	34779 m ³

The ultimate pit size is designed as based on certain field aspects such as the economical depth of mining, safety barriers, permissible area of quarrying/mining etc.,

The ultimate pit of the Quarry/ Mine is given as below:

	Length (m)	Width (m)	Depth (m)
PIT I	200	140	-2
	193	137	-7.5
	180	120	-7.5
	162	102	-7.5
Total			-24.5 m
PIT II	90	60	-2
	78	50	-7.5
	62	40	-7.5
	42	30	-7.5
Total			-24.5

However, during extraction of materials each bench will be of 7.5 mts height and width of 7.5 mts is to be maintained.

The volume of excavation during the Mining plan period is estimated as 347787 m³ to a depth of 24.5 mts. Of which, the wastes up to the ultimate pit limit is estimated as 34779 m³. The entire wastes /rejects shall be refilling in the working pit.

5. BLASTING

5.1. Blasting pattern

The controlled Blasting technique will be adopted to open a predetermined crack of the block from the rock body. Shot hole with 32-36 mm dia which are drilled by line drilling and Jack hammers at a spaced interval will be initiated suitably with any one or more of the following methods.

i) Drilling

Drilling of shot holes will be carried out using compressor and Jack hammer combination. Depth of holes shall be 4 m or 5m depend upon the height of the bench. The spacing shall be regular interval that too depends upon the depth of the hole drilled. To obtain a correct blasting geometry certain amount of trial blast is prerequisite to effect a perfect pre determined crack to release the block from the parent rock.

Details of Drilling equipments are given below:

Type	No	Diameter of hole size	Size/capacity	Make	Power	H.P
Jack hammer	3	32mm	Hand held	Atlas	Diesel	60

ii) Pre- splitting

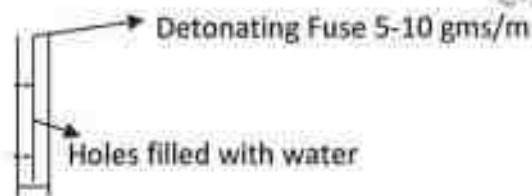
iii) Crushing blasting with low strength and very low diameter cartridges by axial priming or standard diameter cartridge with intermittent stemming materials.

iv) Water impulsion with detonating cords of sufficient power, Preferably 12 grams per metre to develop cracks along the line of drilling.

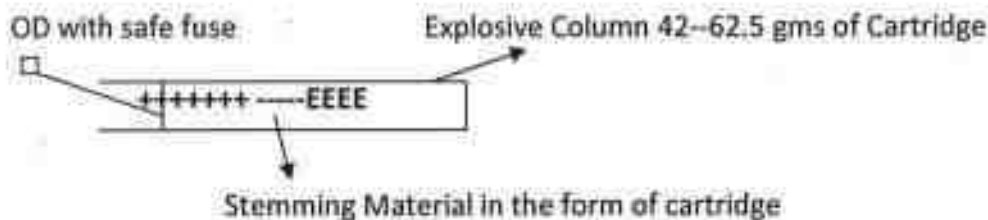
a) Broad Blasting Parameter

- Diameter of the hole = 32-36 mm
- Spacing = 60 cms approx
- Depth = 4-5 mts approx
- Charge / Hole = D.Cord with water or
70 gms of gun powder or gelatine.

Charging of Vertical Holes



Charging of Horizontal Holes



In watery holes, the water pressure that are developed while initiating the detonating fuse will act as a cushion to move the blocks and form a line of crack. In other cases, small vibration created by low explosives open the artificial hear plane/ tensional crack formed by a line of drilling. Some times wedges are used to cut the major blocks into smaller sizes after drilling of holes to a depth of 30-40 cms. Then the blocks are dressed to desire sizes.

5.2. Types of explosives to be used

Common explosives used to develop a line or crack along the line of drilling are

- Detonating Fuse or cord with 10gms or Expl /metre.
- Low explosives like Gun powder or 70 gms of gelatine cartridges
- Ordinary detonator, class – 6
- Safety fuse, class – 6

5.3. Measures proposed to minimize ground vibration due to blasting

As per Moore A.J & Richards A.B, investigate whether 8ms (milliseconds) delay time between blast holes (which has been used over the past decades as a "rule of thumb" by blasting engineer), should still be used with the introduction of electronic firing system.

The minimum recommended delay time of 8ms was introduced to minimize ground vibration by avoiding constructive interference of blast vibration waves and hence its impact or amplitude.

In case of electronic detonators, which are inherently much more accurate delays (+/- 0.2 milliseconds delay) to minimize the ground vibration.

5.4. Storage and safety measures to be taken while blasting

The applicant is advised to store the explosives as per the Indian Explosives Act, 1958. The explosives to be used in mines being a small quantity, the District collector may be approached to keep the stocks not exceeding 5kgs at time or any other quantity permitted by the concerned authorities in a portable magazine of S & B types

6. MINE DRAINAGE

6.1. Depth of water table (based on nearby wells and water bodies)

The depth of the water table in the surrounding area is noticed at 25 mts from the surface. This water table is fluctuated due to seasonal variation. The mining does not disturb the ground water.

6.2. Arrangement and places where the mine water is finally to be discharged

The ground water may not raise immediately shallow mining. The rain water percolation and collection shall be less than 300 lpm and it shall be pumped about periodically by a stand by diesel powered centrifugal pump motivated with 7.5 H.P. Motor. The quality of water is potable and it is not contaminated any hazardous things. So this ground water can be pumped into the adjacent agricultural fields.

7. OTHER PERMANENT STRUCTURES (also shown in the map)

7.1 Habitations

A few sheds are located in the south western side of the lease ^{applied} area. Mining operation will not affect because those sheds are 150 mts away from the lease area.

7.2 Power lines (HT/ LT)

One LT line is passing from shed which is located south western side of the lease area and it passing towards the Crusher. Those LT is at a distance of 100 mts away from the mining area and the mining work does not disturb this LT line.

7.3 Water bodies (river, pond, lake, odai, channel etc.)

No water bodies are found in the nearby the lease applied area.

7.4 Archaeological / historical monuments

The vicinity of the site area there is no historical monument or archaeological features in this area.

7.5 Road (NH , SH others)

There are no state highways and national highways nearby the lease applied area.

7.6 Places of worship

There is no particular place of worship in the place.

7.7 Reserved forest / Forest / Social forest / Wild life sanctuary etc.)

There is no reserved forest, social forest and wild life sanctuaries in the surrounding area.

7.8 Any other structures

No other permanent structures in this area.

8. EMPLOYMENT POTENTIAL & WELFARE MEASURES

The mine / Quarry shall be operated with a system of deploying heavy machineries like hydraulic excavator, cranes for required places etc., a Qualified Mining Engineer as per Rule 38(1)(a), 1999 should be appointed to perform the duties specified to him under these provisions.

For the purpose of Mines safety under the provisions of MMR, 1961 under the Mines Act, 1952 the Mining Engineer so appointed should have either First or Second class Mine Manager certificate to act as a Manager of the Mines or Quarry as per the Mining laws.

To supervise daily, of all workings and the persons employed there in the First class Manager so appointed must be assisted by a Second class Manager of a Foreman certificate holder.

Whenever the workers are employed more than 10, it is preferred to have a qualified Mining Mate to keep all the production workers directly under his control and supervision.

A Mining clerk shall be appointed to keep the registers and record of the Mine and make necessary entries for the persons employed in the Mines/Quarry.

8.1. Employment potential (skilled, semi skilled and unskilled)

The following labours are proposed to work in the quarry/ mines.

Skilled

- Operators : 6
- Mechanic : 1

Semi skilled

- Drillers : 8
- Compressor : 2
- Driver : 1

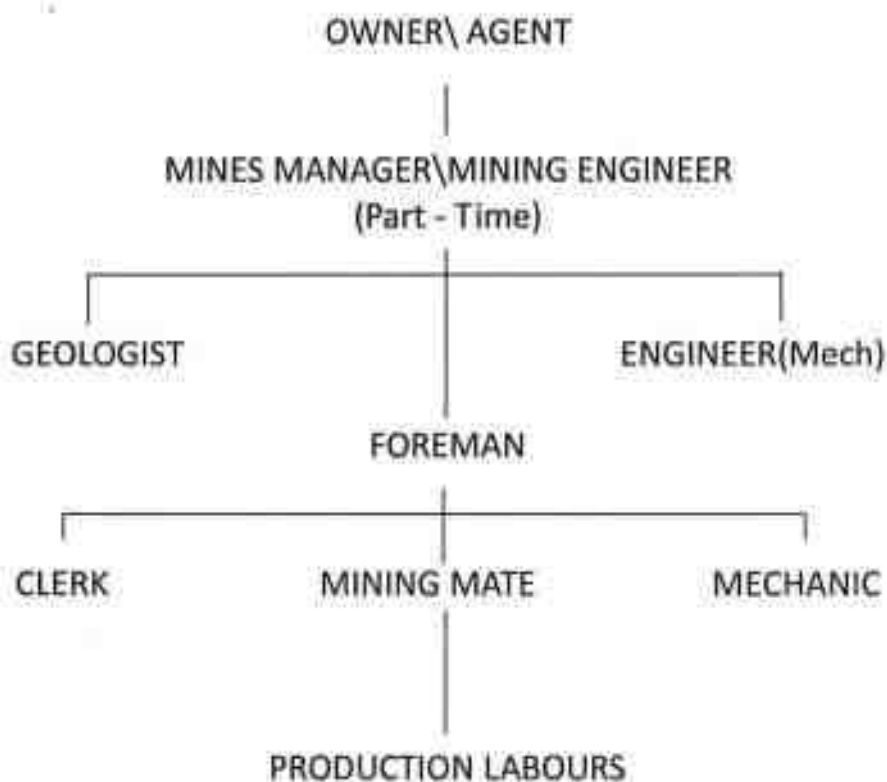
Unskilled		
Dresser	:	10
Office boy	:	1
Total labours	:	29
Management and		
Supervisory staffs	:	2
Total employees	:	31


 DEPUTY DIRECTOR
 GEOLOGY AND MINING
 COIMBATORE

The labours have to be properly organized under the supervision of qualified persons and therefore the following organization is proposed for implementation.

ORGANISATION CHART

(Proposed)



8.2. Welfare measures

As per the Mines rules , 1961 as a welfare amenities for Mine labourers, all such infra structure facilities are proposed to arrange as follows:

a) Drinking water

The applicant has arranged drinking water for their labours by the way of making bore hole point and compressor.

b) Sanitary facilities

Sanitary facilities will be proposed for workers in the Western side of the lease applied area mentioned in the site services which is shown in plates V, VI, VII and IX.

c) First aid facility

First aid room will be proposed in the southern side of the lease area. Shown in plates V, VI, VII and IX.

d) Labour health

Labour health will be taken care by the lessee.

e) Precautionary safety measures to the labourers

All the precautionary safety measures will be taken before the execution of the quarrying / Mining lease.

PART – B

9. ENVIRONMENT MANAGEMENT PLAN

9.1. Existing land use pattern

The lease applied area is comprised of charnockite, composed of Hypersthene granite with some bushes. Water table of the area is said to be fluctuated between 20–25 m during a year.

The existing land use pattern is given below:

S.L.No.	Description	Present area in Ha	Area at the end of present MP/MS period	Area at the end of life of period
1.	Mining (Quarry)	1.80.0	0.45.0	3.21.7
2.	Waste dump	Nil	0.10.0	0.20.0
3.	Office and infra structure	Nil	Nil	Nil
4.	Mine road	0.03.0	Nil	0.03.0
5.	Area under plantation	Nil	0.04.0	0.18.3
6.	Unutilized area	2.01.0	3.25.0	0.21.0
	TOTAL	3.84.0	3.84.0	3.84.0

9.2. Water regime

It is a dry area, there is no surface water body nearby this applied area. Water table is located at a depth of 25 m due to recent rains.

9.3. Flora and Fauna

Flora :- Represented y few bushes

Fauna :- -Absent-

9.4. Climatic conditions

The rainfall data of Coimbatore district in a year is 550 mm to 600 mm. This district enjoys a tropical climate. The weather is pleasant during the period from November to January. The period from April to June is generally hot and dry.

9.5. Human settlement

The nearby villages with their population and distance are given below:

Name of the village	Direction	Distance from Quarry	Population
Periyakuilli	East	2 kms	1500
Chettipalayam	North west	3 kms	2000
Chinnakuilli	North	2 Kms	1800
Thekani	South	8 kms	2500

9.6. 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 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, gloze etc as per the Mines Act.

9.7. Plan for noise level control

Sound level meter should be used during mining operations at the site of source of noise generation, in the places of machinery such as operators cabin, drilling site etc., No where the noise level should exceed the permissible limit of 80db for during more than 8 hours.

9.8. Environmental impact assessment statement describing impact of mining on the next five years

Factors to be considered for EIA include,

- a) Land degradation
- b) Air Quality (as per Air Act)
- c) Water Quality (as per Water Act)

Land degradation:

Land degradation by cutting trees and removal of fertile soil do not arise. Proposed land usages for the next five years shall be less than 1.00 hectare. Afforestation will be started during the first year of mining operation.

Air Quality (as per Air Act) :

Air quality survey using High volume samples has to be conducted to study dust fall rate, size of particles and concentration (SPM). Survey stations to be selected should be near drilling site, haul road etc in core and buffer zones at near by site around 500m and 1000 m radius.

Water Quality (as per Water Act)

Water samples have to be drawn in bore wells and sump during mining operation and tested to find the suitability of drinking water for human. The mine water to be pumped in to the natural channels from the mines sump should also be tested before discharge. In case of slurry water, the water should be treated in the settling tank. The decanted water alone should be allowed to enter into natural channels. There is no chemicals of high metals are found in this area. However greasy and oily materials should be used properly and should not be allowed to take by rain water into natural channels.

9.9. Proposal for waste management

The wastes are generated during mining period is proposed to dump in the South East side of the lease area.

Dump dimension is as follows:

Length = 35.43 mtrs

Width = 30 mtrs

Height = 7 mtrs

Bulk density = 1.68

= $35.43 \times 30 \times 7 \times 1.68$

= 12538 Tonnes

Please refer Plate No. V, VI, VII.

9.10. Proposal for reclamation of land affected during mining activities and at the end of mining (refilling /fencing etc.)

The charnockite rock deposit is deep seated origin. However for economical mine planning, the depth is taken as 24.5 mts from the surface. First 2 mtr is top soil and next 22.5 mts is the charnockite body. Immediate reclamation does not raise for this type of deposit.

However, pit will be used for miscellaneous purposes like fish bond after completion of mining.

9.11. Programme of afforestation (indicate extent, number, name of species to be afforested)

Local trees like tamarind, casuarinas etc will be planted along the lease boundary and avenues as well as over Non active dumps at a rate 50 trees per annum with interval of 5m in between.

The rate survival expected 70% in this area. Land use and afforestation plan is shown in plate VI.

9.12. Proposed financial estimate / budget for (EMP) environment management:-

a) Project cost / investment

i) Land cost

Total lease applied area is 3.84.0 hectares. (i.e.) 9.48 acres

Total cost of the land is $9.48 \times \text{Rs } 50,000/-$ (Rs 50,000/ acre)

= Rs 4,74,000/-

ii) Machinery to be used

One tipper cost = Rs 15,000,00/-

Jack Hammer and

Compressor = Rs 5,00,000/-

iii) Refilling / fencing

Fencing will be proposed after getting the mining lease.

Lay of fencing around 9.48 acres is Rs 3,00,000/-

iv) Labourers shed

For 35 labours, shed will be proposed in the southern side of the lease area.

Cost of making shed is Rs 1,50,000/-

Please refer plate V,VI,VII and IX

v) Sanitary facility

Sanitary facility will be proposed in the southern side of the lease area. Cost of making is Rs 50,000/-

Please refer plate V,VI,VII and IX

vi) Other items

-Nil-

b) Expenditure:

i) Drinking water facility for the labourers

Drinking water for the labourers, the lessee should make bore well in adjacent to the mine area. For this the expenditure will be around 1 lakh.

ii) sanitary arrangement

For constructing rest room for sanitary purposes, the cost comes around Rs 50,000/-

iii) safety kids

Any incidents happen during the mining operation, the lessee is advised to construct the First aid room in the southern side of the lease area. Cost of first aid thing is Rs 5,000/-

iv) water sprinkling (if necessary)

Not necessary.

v) Afforestation

Already 50 plants proposed per year. For this afforestation work, Rs 10,000/- is required to maintain the plantation work.

Project cost :

Investment : Rs 29,74,000/-

Expenditure : Rs 65,000/-

10. MINE CLOSURE PLAN

10.1. Steps proposed for phased restoration, reclamation of already mined out areas

As the recovery percentage of the material is 90%. Hence refilling is not possible.

After expiry of the lease period, the lessee will be advised to make fencing particularly around the area covered under quarry pit.

10.2. Measures to be undertaken on mine closure act and rules

As per Mine closure act and rules, the lessee should follow the lease condition.

10.3. Mitigation measures to be undertaken for safety and restoration / reclamation of the already mined out area.

For safety measures, fencing will be laid around the mined pit. Restoration is not possible because of high recovery percentage of the mineral. Top soil is also 2m thick and it is used to make a bund along the lease boundary and for road formation.

11. ANY OTHER DETAILS INTEND TO FURNISH BY THE APPLICANT.

- a) Permission will be obtained from the concerned authorities to extract the roughstone available in between the barrier of the adjacent quarry / land with the consent of the adjacent quarry / land owner.
- b) The applicant will endeavour every attempt to win the ordinary stone economically without affecting the ecology and environment in addition to carryout systematic development of the quarry.

ANNEXURE - I


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GEOLOGICAL RESERVE BY CROSS SECTIONAL METHOD

Total lease hold area : 3.84.0 hectares
 Average proposal depth of mining : 24.5 m
 Bench height : 7.5 m
 Recovery : 90%

Plate refer IV & IV A

Section	Length (m)	Width (m)	Depth (m)	Volume m ³	Bulk density	Total Reserve In MT
X1-Y1 AB	115	73	22.5	1888875	2.6	491107
X1-Y1 CD	132	73	22.5	216810	2.6	563706
X2-Y2 AB	113	50	22.5	127125	2.6	330525
X1-Y1 CD	96	110	22.5	237600	2.6	617760
TOTAL				770422		2003098

Already excavated (Average)

Section	Length (m)	Width (m)	Depth (m)	Volume m ³	Bulk density	Total Reserve In MT
X1-Y1 AB	78	68	13	68452	2.6	179275
X1-Y1 CD	104	45	13	60840	2.6	158184
TOTAL				129792		337459
				640630		1665639

Balance geological Reserve : 1665639 MT


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ANNEXURE - II

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YEAR-WISE PRODUCTION FOR THE ENSUING FIVE YEARS PERIOD

Refer Plate V & V A

Section	Length (m)	Width (m)	Depth (m)	Volume m ³	Bulk density	Total reserve In MT	Recoverable production 90% (In MT)	Mineral rejects (10%) In MT
I year	40	32.05	7.5	9615	2.6	25000	22500	2500
II year	40	32.05	7.5	9615	2.6	25000	22500	2500
III year	40	32.05	7.5	9615	2.6	25000	22500	2500
IV year	38	34	7.5	9690	2.6	25194	22675	2519
V year	38	34	7.5	9690	2.6	25194	22675	2519
						125388	112850	12538

Development (Top soil) = $96 \times 40 \times 2 = 7680\text{m}^3$

Total production for five year = 12538m^3

Ore to waste ratio = $112850/20218 = 1: 5.58$


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ANNEXURE - III


 DEPUTY DIRECTOR
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MINEABLE RESERVES BY CROSS SECTION METHOD

Total lease hold area : 3.84.0 hectares
 Average proposed depth : 24.5 8m
 Bench height : 7.5m
 Recovery : 90%

Plate refer IX & IX A

	Bench	Length (m)	Width (m)	Depth (m)	Volume m ³	Bulk density	Total Reserve (In MT)	Recoverable reserve 90% (In MT)	Mineral rejects 10% (In MT)
X1-Y1 A-B	II	44	6	7.5	1980	2.6	5148	4633	515
	III	40	6	4.5	1080	2.6	2808	2527	281
	III	114	53	3.0	18126	2.6	47128	42415	4713
	IV	102	43	7.5	32895	2.6	85527	76974	8553
X2-Y2 A-B	II	101	10.0	7.5	75750	2.6	196950	177255	19695
	III	92	90	7.5	62100	2.6	161460	145314	16146
	III	83	80	7.5	49800	2.6	129480	116532	12948
X1-Y1 C-D	II	17	5	2.5	212	2.6	552	496	56
	III	97	23	5.0	11155	2.6	29003	26103	2900
	III	97	52	2.5	12610	2.6	32786	29507	3279
	IV	85	43	7.5	27412	2.6	71272	64145	7127
X2-Y2 C-D	II	83	43	7.5	26767	2.6	69594	62635	6959
	III	75	32	7.5	18000	2.6	46800	42120	4680
	IV	66	20	7.5	9900	2.6	25740	23166	2574
TOTAL				347787		904246	813822	90426	

Development of Top soil:

X1 - Y1 (A- B) : 45 x 20 x 2 = 1800
 X2 - Y2 (A- B) : 106 x 103 x 2 = 21836
 X1 - Y1 (C- D) : 40 x 16 x 2 = 1280
 X2 - Y2 (C- D) : 89 x 43 x 2 = 7654

 = 32570

Mineable reserves : 904246
 Recoverable : 813822
 Reject : 90426
 Ore waste ratio : 813822 / 122996 = 1:7.3


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ANNEXURE - IV


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LIST OF MACHINERIES

S.No.	Description	Capacity	Number
01.	Compressor XA 175	7.5 kg/cm Pr	1
02.	Jack Hammers	32 - 36 mm dia	5
03.	Hydraulic Excavator EX300	1.7 m3	1
04.	Tipper	10 Mt	2


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RQP/MAS/225/2011/A

மாஸ்டர் ஆட்சியர் அலுவலகம்,
கோயம்புத்தூர் - 18.

ந.க.எண்.509/2011/எம்.எம்-2

நாள் 27.11.2012

குறிப்பாணை

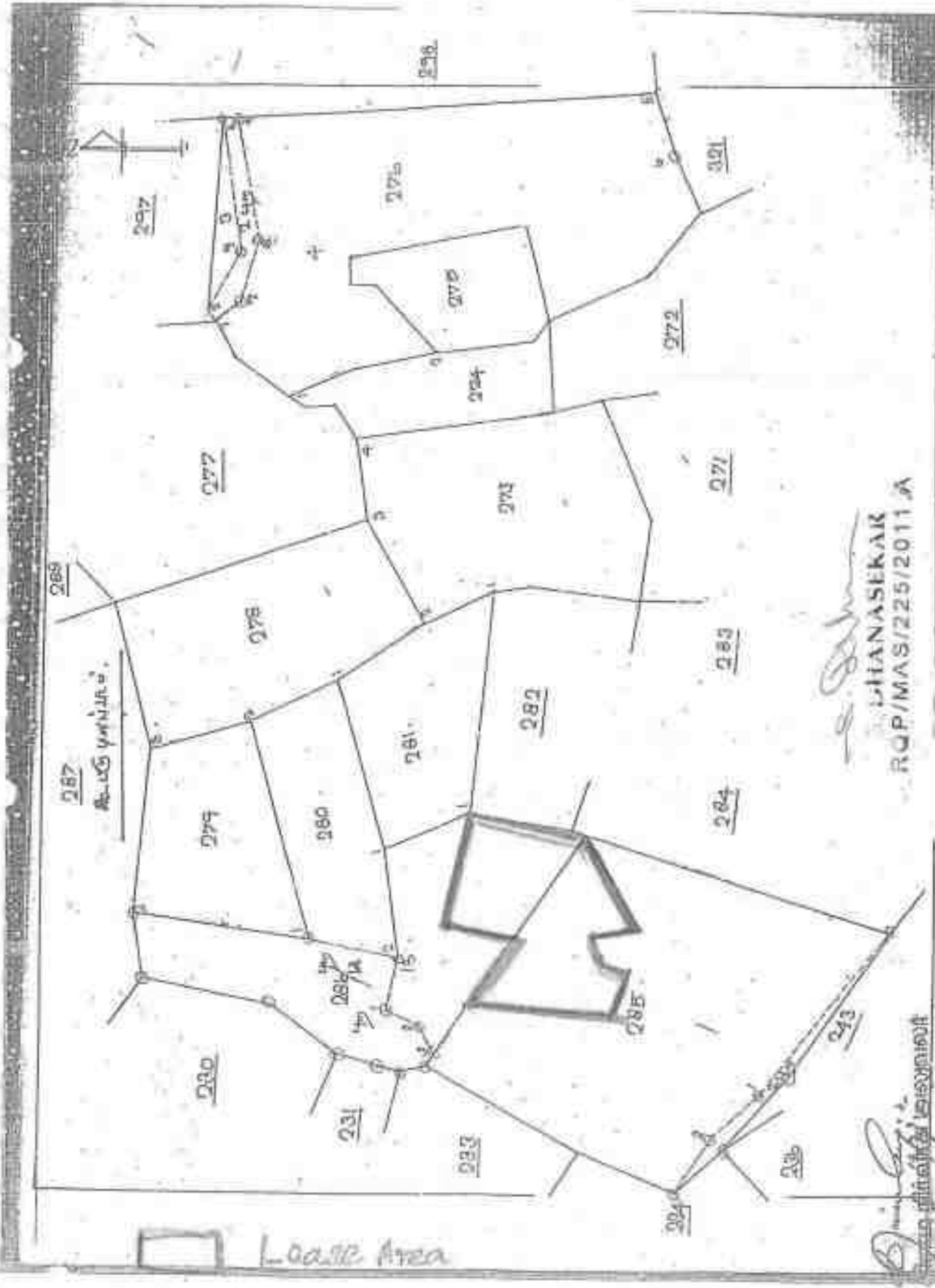
பொருள் : கனிமங்களும்-குவாரிகளும்- கோயம்புத்தூர் மாஸ்டர், குலூர் வட்டம், பச்சாபாளையம் கிராமம், க.ச.285/1912 ல் 0.69.0 ஹெக்டேர், 285/3 ல் 0.98.5 ஹெக்டேர் மற்றும் 286/2 ல் 2.16.5 ஹெக்டேர் ஆக மொத்தம் 3.84.0 ஹெக்டேர் பரப்பில் கிரேவல் மற்றும் சாதாரணக்கற்கள் வெட்டியெடுக்க குத்தகை உரிமம் கோரி திரு.ஆர்.எஸ்.செந்தில்குமார் என்பவர் விண்ணப்பம் செய்துள்ளது - தொடர்பாக.

- பார்வை :**
- 1) திரு.ஆர்.எஸ்.செந்தில்குமார் என்பவரது விண்ணப்ப நாள் 15.07.2011.
 - 2) கோயம்புத்தூர் வருவாய் கோட்டாட்சியர் அறிக்கை ஒ.மு.4665/2011/அ3 நாள் 02.09.2011.
 - 3) கோயம்புத்தூர், புலியாடி மற்றும் கரங்கத்துறை, துணை இயக்குநர் புலத்தளிக்கை அறிக்கை நாள் 11.10.2011.
 - 4) மத்திய அரசு கடிதம் (கற்றுக்குழல் மற்றும் வணம்) 11011/47/2011/1A-11 (M) நாள் 18.05.2012
 - 5) அரசு கடிதம் எண்.4719/MMC1/2012-2/தொழில்துறை நாள் 03.08.2012.
 - 6) திரு.ஆர்.எஸ்.செந்தில்குமார் என்பவரின் 17.10.2012 நாள்ிட்ட கடிதம்.
 - 7) மற்றும் இதர தொடர்புடைய ஆவணங்கள்.

திரு.ஆர்.எஸ்.செந்தில்குமார் என்பவர் கோயம்புத்தூர் மாஸ்டர், குலூர் வட்டம், பச்சாபாளையம் கிராமம், க.ச.285/1912 ல் 0.69.0 ஹெக்டேர், 285/3 ல் 0.98.5 ஹெக்டேர் மற்றும் 286/2 ல் 2.16.5 ஹெக்டேர் ஆக மொத்தம் 3.84.0 ஹெக்டேர் பரப்பில் உள்ள மட்டா நிலத்தில் கிரேவல் / சாதாரணக்கற்கள் வெட்டியெடுக்க குத்தகை உரிமம் கோரி மனு செய்திருந்தது தொடர்பாக கோயம்புத்தூர் வருவாய் கோட்டாட்சியர் மற்றும் துணை இயக்குநர்,

DEPUTY DIRECTOR
GEOLOGY AND MINING
COIMBATORE

-123-



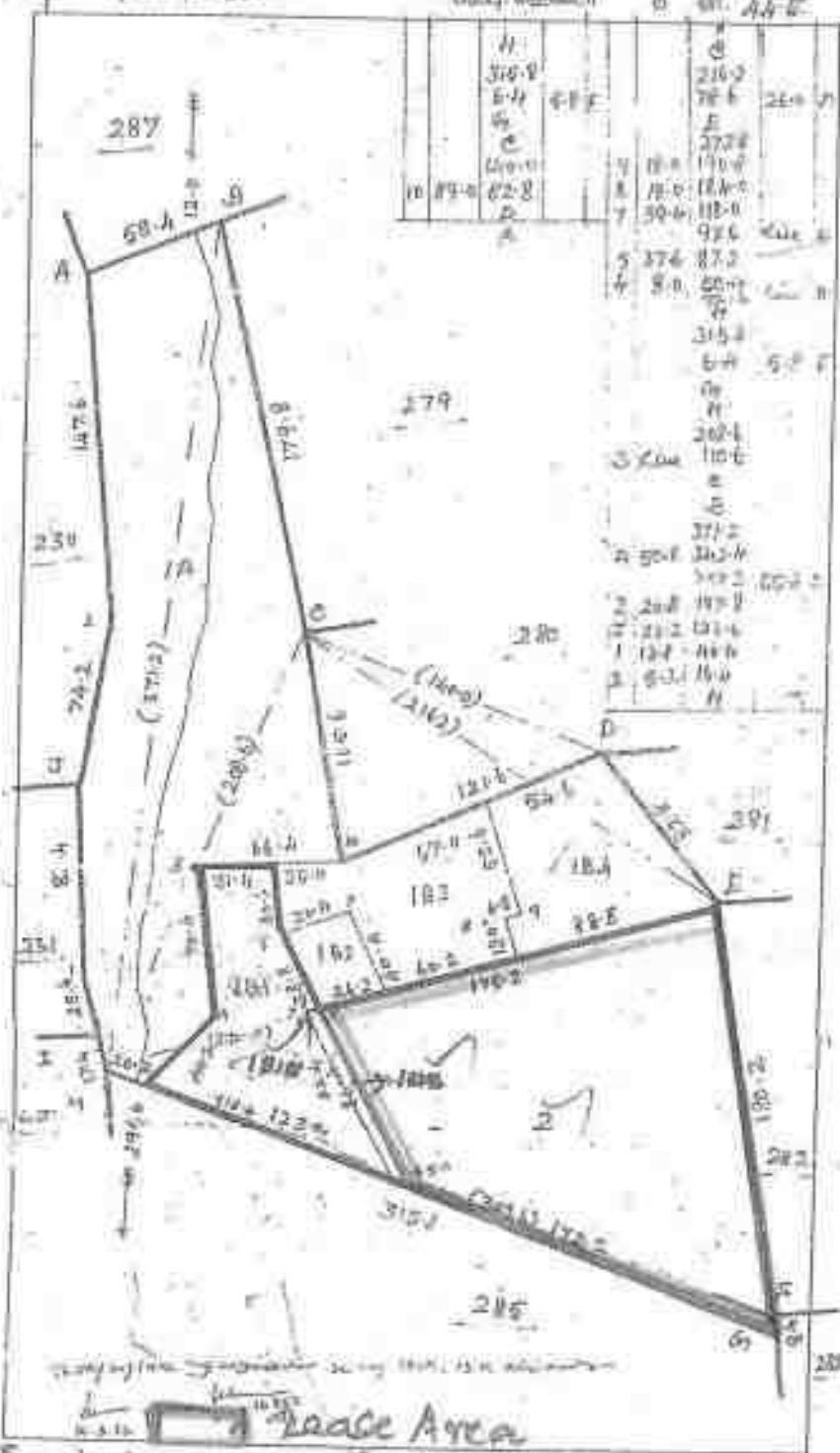
P. Hanasekar
P. HANASEKAR
RQP/MAS/225/2011 A

P. Hanasekar
பி. ஹானசேகர்
பி. ஹானசேகர்
குஜர் என்.பி.டி

Loose Area

DEPARTMENT OF
GEOLOGY AND MINING
COIMBATORE.

சென்னை, 28.6.1977
 மாவட்டம், கோவை, 286.
 கி.மீ. 5.25
 கி.மீ. 11.50



சுமார் 14/7/77
 மாவட்ட நிர்வாக அதிகாரிகள்
 பஞ்சாயத்தாணாளர் கி.மீ. 11.50
 கோவை மாவட்டம்

Lease Area
 Scale: 1:2000
 Surveyed on 14.7.77

S. DHANASEKAR
 RQP/MAS/225/2011

புதுவை. திருவாரூர் மாவட்டம்

புதுவை. திருவாரூர் மாவட்டம்

புதுவை. 285

DEPUTY DIRECTOR
GEOLOGY AND MINING
COIMBATORE

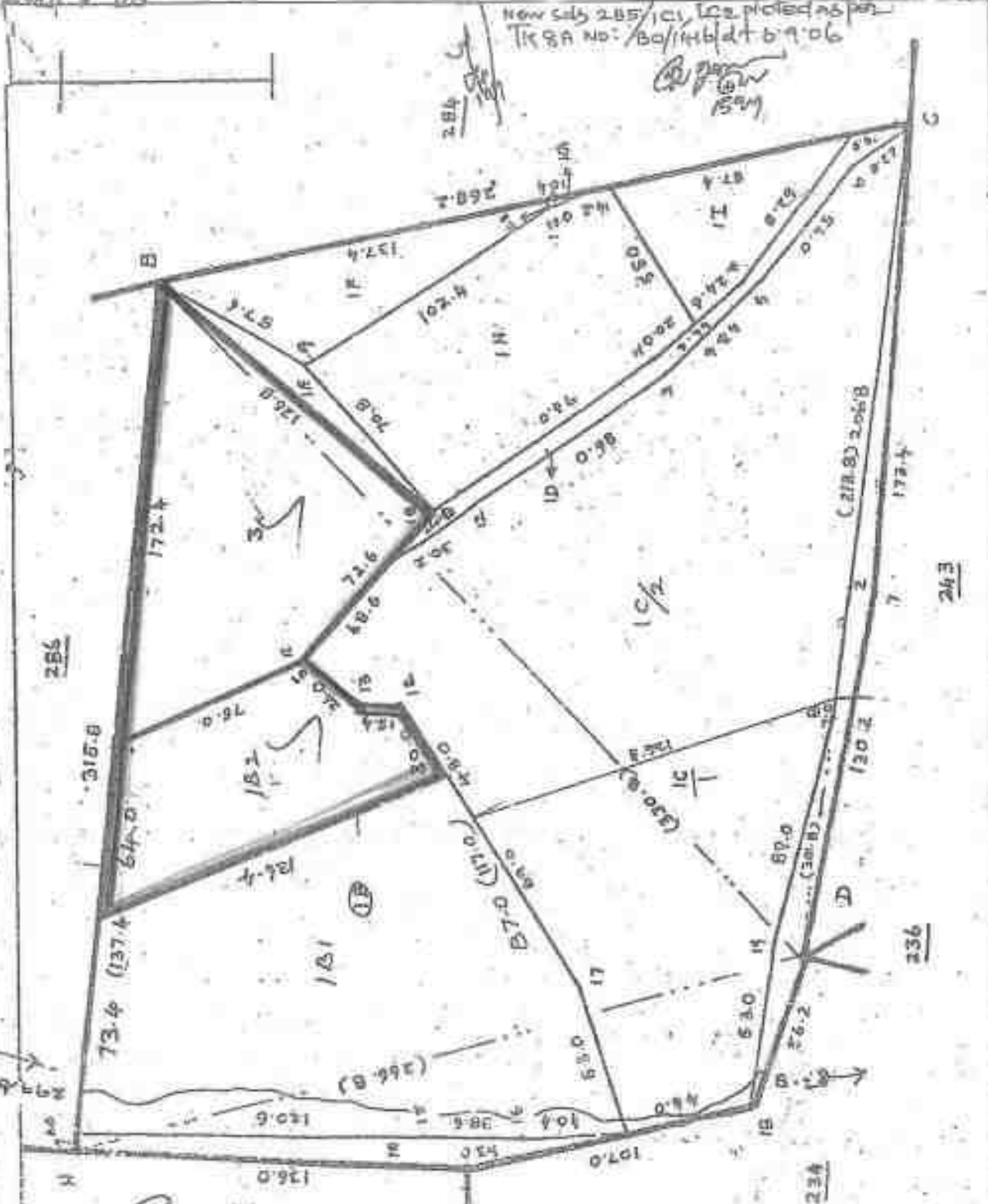
புதுவை. 285

புதுவை. 770

119

Now sds 285/1, 122 plotted as per
TRSA NO: 80/144/dt 6.9.06

(Signature)
15/11/11



(Signature)
11/11/11

புதுவை திருவாரூர் மாவட்டம்
செயலாணையம் திருவாரூர்
குலவர் என். பி. மீ

Lease Area sub dn 101-102 plotted as per TRSA NO: 80/144/dt 6.9.06

புதுவை. 285

(Signature)
11/11/11

S. DHANASEKAR
ROP/MAS/225/2011 A

10/07/2011

பிரிவுக் கல்



DEPUTY DIRECTOR
GEOLOGY AND MINING
CUIMBATORE

10/7/11

103

நில அளவைத் துறை - ப.ஊ.ப.

பிளான் 1011 பக்க

கருவாய்க்குன்று, வேலமுத்தூர் மாவட்டம்

ப.ஊ.ப. : 178

கிராம - மதுரைமாமலை

ப.ஊ.ப. எண் 178

உ.பொதுமன்றக் கமிட்டி

[பிளான் எண்]

நிலம்

அளவை எண்]

பிளான் எண்	பிளான்	பிளான்		பிளான்		பிளான்	
		அளவை	நிலம்	அளவை	நிலம்	அளவை	நிலம்
		சென்டி. - ஏ	ச. - ம	சென்டி. - ஏ	ச. - ம	சென்டி. - ஏ	ச. - ம
285	1B2	-		- 69.00	1.38	-	
285	1D	-		- 12.00	0.24	-	
285	3	-		- 98.50	2.00	-	
286	1B1B	-		- 4.00	0.08	-	
286	2	-		2 - 16.50	4.38	-	
		-		4 -	8.08	-	

10/025/178.00/1.00-04/07/2011 : 21/58A

Handwritten signature and stamp of the Deputy Director, Geology and Mining, Coimbatore.



S. DHANASEKAR
RQP/MAS/225/2011 A

சென்னை மாநகராட்சி குவார்டர்ஸ் வட்டம் 43, பச்சையாணையம் கிராமத்தின் கரீடில் உள்ள 'அ' பிரிவினருடைய 125 -
 அளவுக்கு சரிமான அட்டை


DEPUTY DIRECTOR
GEOLOGY AND MINING
COIMBATORE

நிலையின் அளவு மீட்டர்கள்	சரிமான அட்டை எண்	அட்டை எண்	அட்டை எண்	அட்டை எண்	அட்டை எண்	அட்டை எண்	அட்டை எண்	அட்டை எண்	அட்டை எண்	
									9	10
225/3	225/3	225/3	225/3	225/3	225/3	225/3	225/3	225/3	225/3	225/3
225/3	225/3	225/3	225/3	225/3	225/3	225/3	225/3	225/3	225/3	225/3
225/3	225/3	225/3	225/3	225/3	225/3	225/3	225/3	225/3	225/3	225/3
225/3	225/3	225/3	225/3	225/3	225/3	225/3	225/3	225/3	225/3	225/3
225/3	225/3	225/3	225/3	225/3	225/3	225/3	225/3	225/3	225/3	225/3


 கிராம நிர்வாக அலுவலர்
 43, பச்சையாணையம் கிராமம்,
 குவார்டர்ஸ் வட்டம்

சரிமான அட்டை
 எண்

மேல்குறிப்பிட்ட
 அட்டை


S. DIYANASEKAR
 RQP/MAS/225/2011 A



**CERTIFICATE OF RECOGNITION AS
QUALIFIED PERSON TO PREPARE MINING PLANS**
(Under Rule 22 C of Mineral Concession Rules 1960)

Sri S. DHANASEKAR resident of Old No.6, New No.8/3, Kullappan Street, Opp. Indian Bank Lane, Omalur P.O., Salem - 635 455, son of Sri A. SUBRAMANIAM having given satisfactory evidence of his qualifications and experience is hereby granted recognition under Rule 22C of the Mineral Concession Rules, 1960 as a Qualified Person to prepare Mining Plans.

His registration number is

RQP/MAS/225/2011/A

Recognition is valid for a period of ten years ending 12.01.2021.

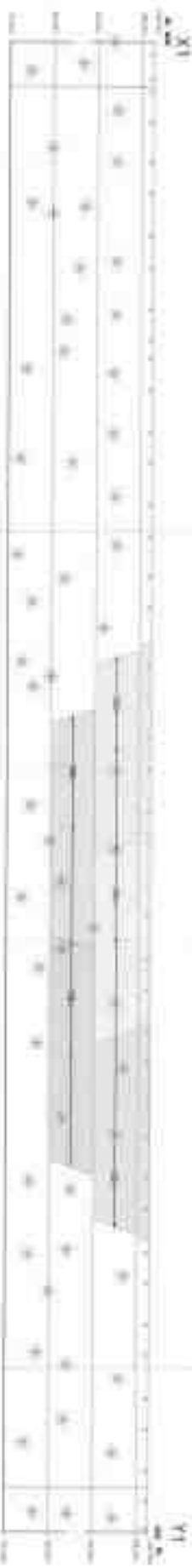
Regional Controller of Mines
Indian Bureau of Mines
Chennai Region

Place: Chennai
Date: 13.01.2011

S. DHANASEKAR
RQP/MAS/225/2011/A



 DEPARTMENT OF TRANSPORTATION
 STATE OF NEW JERSEY



SECTION ALONG - XI-YI



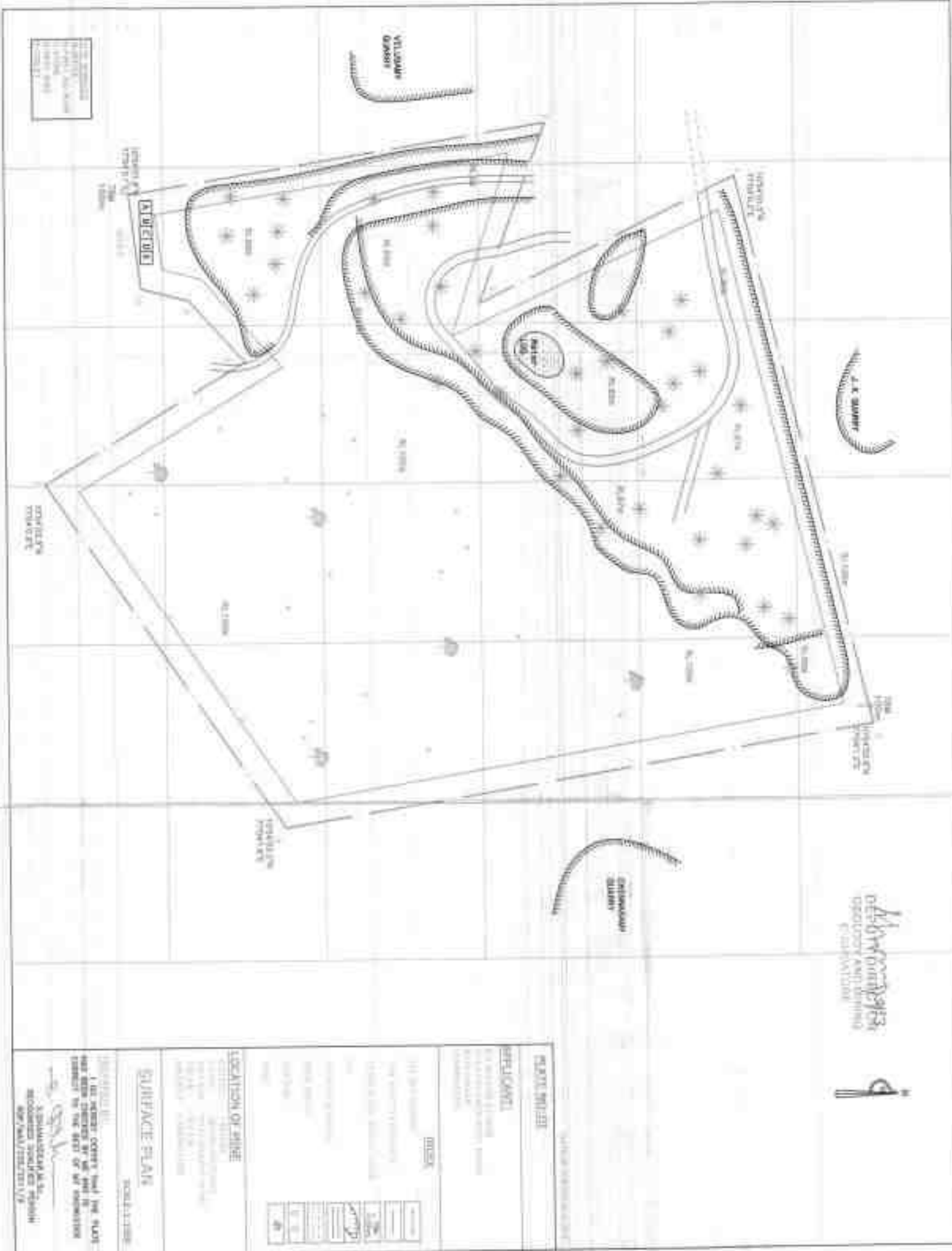
SECTION ALONG - A-B

Subgrade	1.00	1.00	1.00
Base	1.00	1.00	1.00
Surface	1.00	1.00	1.00
Shoulder	1.00	1.00	1.00
Subtotal	4.00	4.00	4.00

ALL DIMENSIONS ARE IN FEET AND INCHES
 UNLESS OTHERWISE SPECIFIED
 ALL DIMENSIONS ARE TO FACE UNLESS
 OTHERWISE SPECIFIED
 ALL DIMENSIONS ARE TO FACE UNLESS
 OTHERWISE SPECIFIED

PROJECT NO. 10-00000000
 SHEET NO. 10-00000000
 DATE 10-00-00

10-00-00
 10-00-00
 10-00-00



1. All points shown here are based on a survey conducted by the Department of Surveying and Mapping, Government of Alberta, and are shown for information only. The Department of Surveying and Mapping is not responsible for any errors or omissions in this plan.

[Signature]

3. Stantec Consulting Ltd.
 10000 146th Street, Edmonton, Alberta T5C 2E8
 780/443-2323

LOCATION OF MINE

SURFACE PLAN

Scale 1:50,000

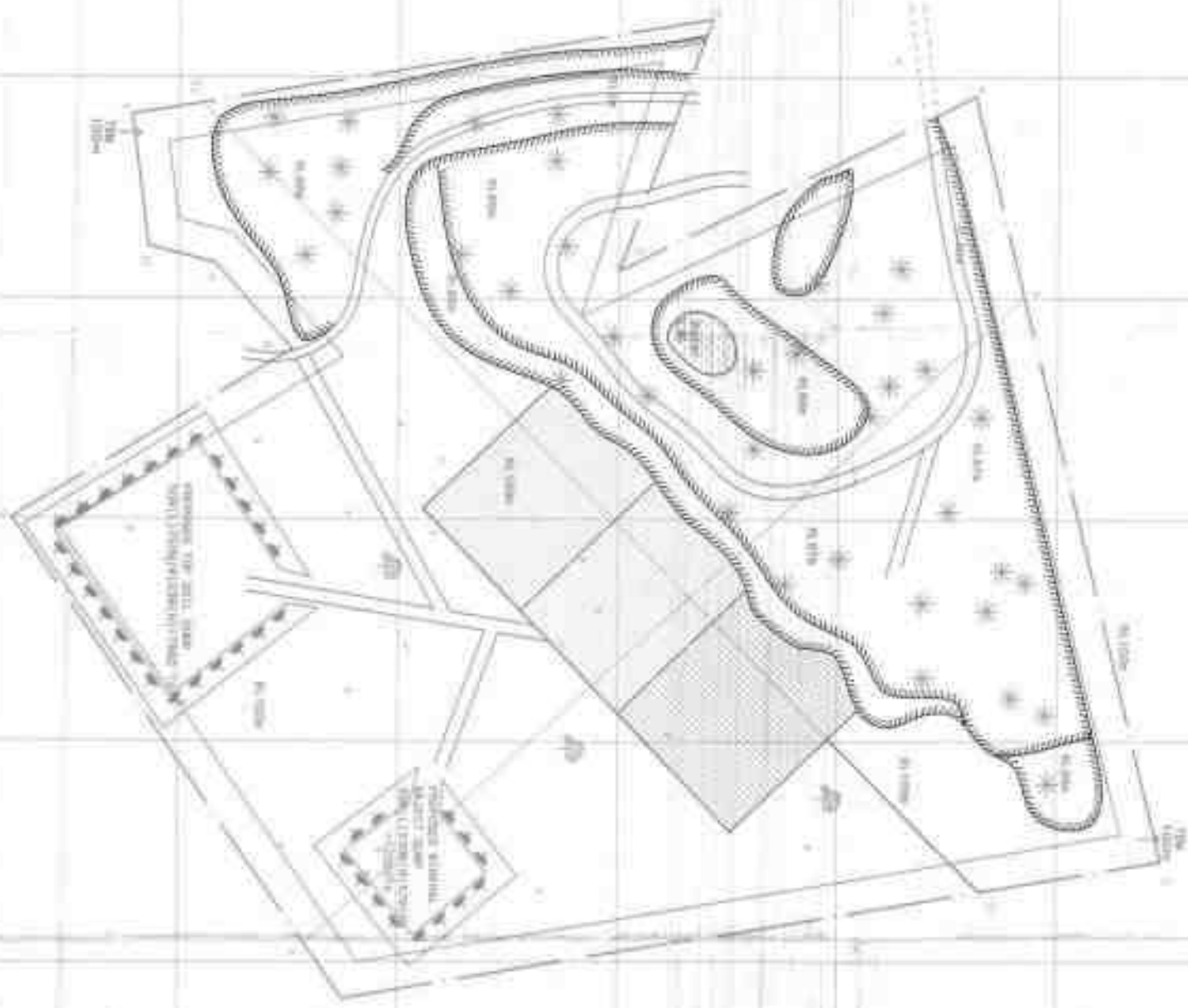
NO.	DESCRIPTION	DATE
1	Original Survey	1988
2	Revised Survey	1992
3	Final Survey	1995

REPORT PREPARED BY

STANTEC CONSULTING LTD.

10000 146th Street, Edmonton, Alberta T5C 2E8
 780/443-2323

Alberta
 Energy and Environment
 Energy and Environment
 Energy and Environment



2012-2013 IMPROVED	<input type="checkbox"/>
2013-2014 IMPROVED	<input type="checkbox"/>
2014-2015 IMPROVED	<input type="checkbox"/>
2015-2016 IMPROVED	<input type="checkbox"/>
2016-2017 IMPROVED	<input type="checkbox"/>

1 YEAR PLANTATION	<input type="checkbox"/>
2 YEAR PLANTATION	<input type="checkbox"/>
3 YEAR PLANTATION	<input type="checkbox"/>
2 YEAR PLANTATION	<input type="checkbox"/>
1 YEAR PLANTATION	<input type="checkbox"/>

PLATE INDEX

ASSESSMENT

TO BE REVIEWED BY THE
 PLANNING BOARD
 AND THE BOARD OF
 SUPERVISORS

INDEX

10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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LOCATION OF CE HOUSE

STANDARD DEVELOPMENT AND
 PRODUCTION PLAN
 SHEET 11000

1. DO NOT SCALE DRAWING. THE PLAN
 HAS BEEN CHECKED BY THE
 COMMITTEE TO THE BEST OF
 KNOWLEDGE

[Signature]
 S. SCHWARTZ
 REGIONAL SERVICE REGION
 07/24/2017 11:17 A

Shaw-Welby
 NEILY DIRECTOR
 GEOLOGY AND MINING
 COLUMBIA

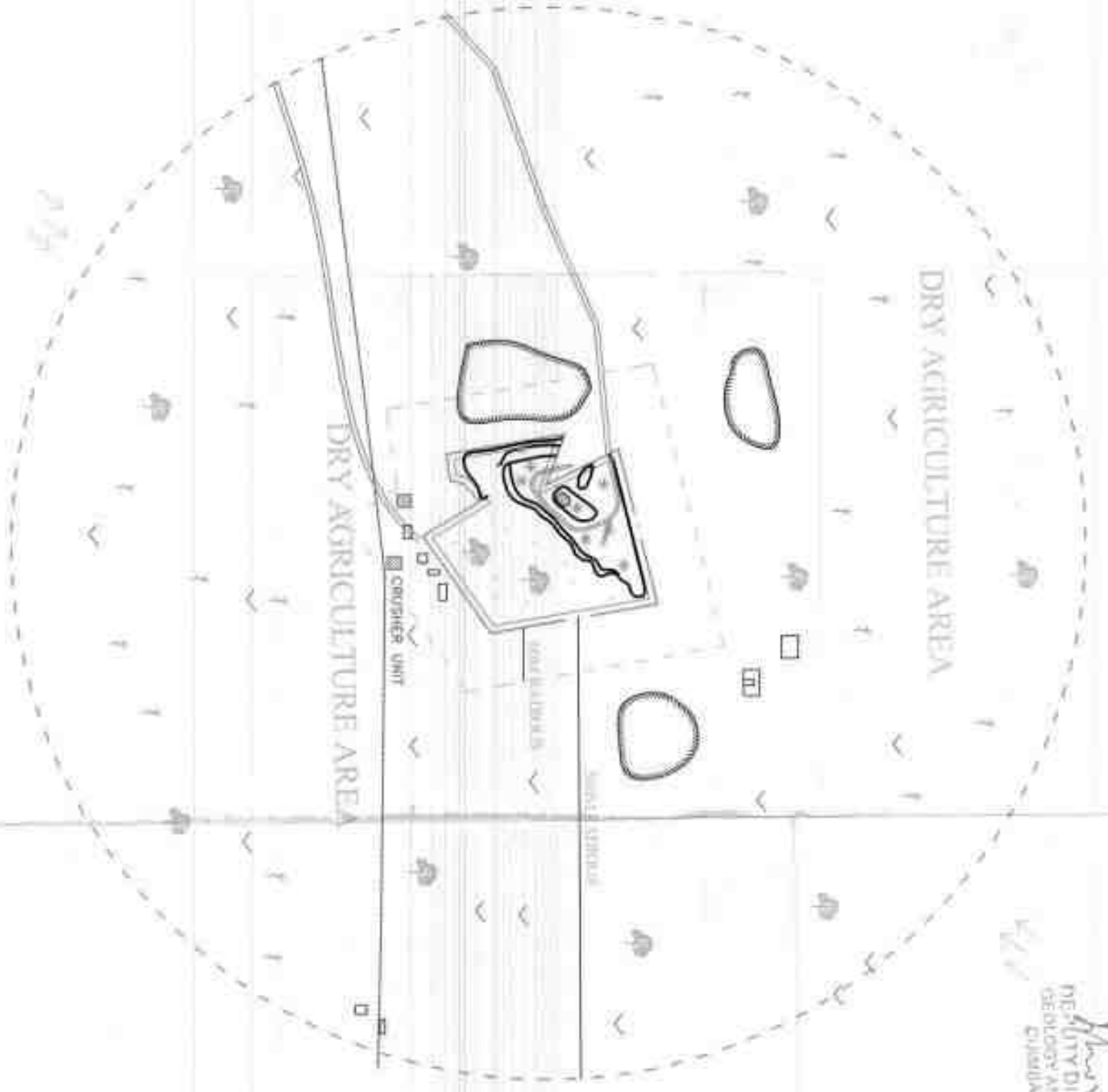


PLATE NO: VIII

AGRICULTURE

AGRICULTURE
 AGRICULTURE
 AGRICULTURE
 AGRICULTURE

LOCATION OF MINE

CRUSHER UNIT
 TAILINGS
 VILLAGE ROAD
 EXISTING AND PROPOSED QUARRY
 WIND PROTECTION
 TAILING
 INFRASTRUCTURE
 LT WIRE
 CRUSHER UNIT

INDEX

- M.C. SQUADRY
- SAFETY DISTANCE
- 500m RADIUS
- 50m RADIUS
- VILLAGE ROAD
- EXISTING AND PROPOSED QUARRY
- WIND PROTECTION
- TAILING
- INFRASTRUCTURE
- LT WIRE
- CRUSHER UNIT

ENVIRONMENT PLAN

SCALE: 1:5000

PREPARED BY:

I DO HEREBY CERTIFY THAT THE PLAN HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE.

S. MANASSERAN, M. Sc.
 REGISTERED QUARTERMASTER
 MOP/MSL/225/2011/A



Shanin
துணை இயக்குநர்
புவியியல் & சுரங்கத்துறை
கோயம்புத்தூர் - 18.

MINING PLAN FOR PACHAPALAYAM ROUGH STONE QUARRY

(PREPARED UNDER RULE 12 OF MINOR MINERAL CONSERVATION AND DEVELOPMENT RULES, 2010 & AS PER AMENDMENT UNDER TAMILNADU MINOR MINERAL CONCESSION RULES, 1959)

IN

LOCATION OF THE QUARRY LEASE APPLIED AREA

EXTENT : 1.73.0 Ha,
S.F.NO : 282/1A, 282/1B (P),
VILLAGE : PACHAPALAYAM,
TALUK : SULUR,
DISTRICT : COIMBATORE,
STATE : TAMIL NADU.

FOR

APPLICANT

Thiru.K.CHINNASAMY,
S/o.Kaliyappa Gounder,
Korai Thottam,
Kangayampalayam,
Sulur Taluk,
Coimbatore District - 641 401.


PREPARED BY

M.Ithikhar Ahmed, M.Sc., F.G.S., M.B.A., M.M.E.A.,
Recognized Qualified Person
RQP/MAS/183/2004/A

No. 95/1, Kailash Nagar, Brindavan Road,
4th Cross East, Fairlands, Salem - 16
Cell: 94433 56539, 94422 78601,
E-mail: ifthiahmed@gmail.com
geothangam@gmail.com

K.Chinnasamy,
S/o.Kaliyappa Gounder
Korai Thottam,
Kangayampalayam,
Sulur Taluk,
Coimbatore District - 641 401




தலைவர் இயக்குநர்
புவியியல் & கரங்கத்துறை
கோயம்புத்தூர் - 18.

CONSENT LETTER FROM APPLICANT

The Mining Plan in respect of Rough Stone Quarry in S.F.No 282/1A (0.45.5Ha), 282/1B (P) (1.27.5Ha) over an extent of 1.73.0 Ha Patta land in Pachapalayam Village, Sulur Taluk, Coimbatore District, Tamilnadu State has been prepared by


M.Ithikhar Ahmed, M.Sc., F.G.S., M.B.A., M.M.E.A.,
RQP/MAS/183/2004/A

I request the District Collector, Coimbatore to make further correspondence regarding the modification of the Mining Plan with the said recognized qualified person at his following address.

M.Ithikhar Ahmed, M.Sc., F.G.S., M.B.A., M.M.E.A.,
No, 95/1, Kailash Nagar,
Brindavan Road, 4th Cross East,
Fairlands, Salem - 16.
Cell: 94433 56539, 94422 78601.

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 respects.

Signature of Applicant

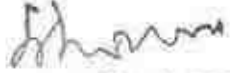

K.Chinnasamy

Place: Sulur
~~Coimbatore~~

Date: 09.04.2013.

K.Chinnasamy,
S/o.Kaliyappa Gounder,
Korai Thottam,
Kangayampalayam,
Sulur Taluk,
Coimbatore District - 641 401.




துணை இயக்குநர்
புவியியல் & சுரங்கத்துறை
கோயம்புத்தூர் - 18.

DECLARATION OF THE APPLICANT

The Mining Plan in respect of Rough Stone Quarry in S.F.No 282/1A (0.45.5Ha), 282/1B (P) (1.27.5Ha) over an extent of 1.73.0 Ha Patta land in Pachapalayam Village, Sulur Taluk, Coimbatore District, Tamilnadu State 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.

Signature of Applicant



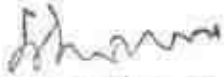
K.Chinnasamy

Place : ^{Sulur} ~~Thrippur~~.

Date :09.04.2013



M.Ithikhar Ahmed, M.Sc., F.G.S., M.B.A., M.M.E.A.,
No, 95/1, Kailash Nagar,
Brindavan Road, 4th Cross East,
Fairlands, Salem - 16.
Cell: 94433 56539, 94422 78601.


துணை இயக்குநர்
புவியியல் & சுரங்கத்துறை
கோயம்புத்தூர் - 18.

CERTIFICATE FROM THE RECOGNIZED QUALIFIED PERSON

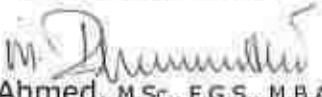
Certified that the Provisions of Mines Act, Rules and Regulations and Orders made there under have been observed in the preparation of Mining Plan for Rough Stone Quarry in S.F.No 282/1A (0.45.5Ha), 282/1B (P) (1.27.5Ha) over an extent of 1.73.0 Ha Patta land in Pachapalayam Village, Sulur Taluk, Coimbatore District, Tamilnadu State has been prepared for

Thiru. K.Chinnasamy,
S/o.Kaliyappa Gounder,
Korai Thottam,
Kangayampalayam,
Sulur Taluk,
Coimbatore District - 641 401.

Whenever specific permissions/ exemptions/ relaxations and approvals are required, the applicant will approach the concerned authorities of Director General of Mines Safety (DGMS), No. 5, IInd Street, Block - AA, Anna Nagar, Chennai-40, Tamilnadu for such permissions/exemptions/relaxations and approvals.

It is also certified that information furnished in the mining plan are true and correct to the best of my knowledge.


RQP SIGNATURE


M.Ithikhar Ahmed, M.Sc., F.G.S., M.B.A., M.M.E.A.,
RQP/MAS/183/2004/A

Place: Salem
Date: 13.04.2013



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Mining Plan for Rough Stone

**MINING PLAN FOR ROUGH STONE QUARRY
OVER AN EXTENT OF 1.79.0 HA IN PACHAPALAYAM VILLAGE, SULUR TALUK,
COIMBATORE DISTRICT, TAMILNADU**

(Prepared Under Rule 12 of Draft Minor Mineral Conservation and Development Rules, 2010 and as per Amendment under Tamilnadu Minor Mineral Concession Rules, 1959)

INTRODUCTION

The present Mining Plan and Environmental Management plan is prepared for Thiru.K.Chinnasamy, S/o. Kaliappa Gounder Residing at Koratthottam, Kangeyampalayam, Sulur Taluk, Coimbatore District.

The application was meritoriously processed by the District Collector, Coimbatore passed an order vide Rc.No. 708/2011/M.M-2 dated 08.04.2013 to obtain an approved mining plan and Environmental Clearance from the State Level Environment Impact Assessment Authority, Tamil Nadu. All the conditions stipulated in the precise area communication letter have been considered for preparing this mining plan.

1. GENERAL INFORMATION

1.1	a)	Name of the applicant	Thiru. K.Chinnasamy
	b)	Address of the applicant (with phone No. & e-mail)	Address : S/o.Kaliappa Gounder Koral thottam,, Taluk : Sulur District : Coimbatore Pin : 641 401 Mobile No : 98422 09189
	c)	Status of the applicant (Individual / Company / Firm)	The applicant is an Individual.
1.2	a)	Mineral which the applicant intends to mine	Rough Stone.
	b)	Precise area communication letter details received from the Competent authority of the Government	Rc.No. 708/2011/M.M-2 dated 08.04.2013 from The District Collector, Coimbatore.
	c)	Period of permission / lease to be granted	The applicant applied for permission for a period of 5 years only.
	d)	Name and address of the RQP / Authorized person preparing the mining plan	Name :M. Ifthikhar Ahmed, M.Sc., F.G.S., M.B.A., M.E.A., Address : 95/1, Kailash Nagar, 4 th Cross East, Brindavan Road, Fairlands, Salem - 16. Mobile : 94422 78601& 94433 56539 Tele Fax : 0427- 2431989 Reg No : RQP/MAS/183/2004/A Valid up to : 11.01.2014 Email : ifthiahmed@gmail.com.



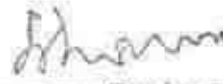
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2. LOCATION

a)	Details of the area with location map	There are no villages within the radius of 500m, The area bounded by following villages, Chinnakuyili 5km (NE), Chettipalayam 4Km (NW), Ponnakani 4km (SE), Thekani 4km (SW). Please refer the Location of permanent structures map enclosed as plate No VI.
i)	District, Taluk and village	Coimbatore District, Sulur Taluk and Pachapalayam Village.
ii)	Survey Numbers	282/1A and 282/1B
iii)	Extent (in hectares)	1.73.0 Ha
b)	Classification of the area (Ryotwari/ Poramboke / others)	Patta land (Barren land) which is not fit for vegetation/ Cultivation.
c)	Ownership / Occupancy of the applied area (surface right)	It's a Patta land owned by the applicant vide patta No. 538 (S.F.No 282/1A) and 145 (S.F.No 282/1B)
d)	Toposheet No. with latitude and longitude	Topo sheet No. 58/F 01 Latitude N 10°54'16" Longitude E 77°01'10"
e)	Existence of public road / Railway line, if any nearby and approximate distance	There is a Metal road from the area connecting to the Chettipalayam - Periyakulam village road on the South Western side. The Nearest Railway line Coimbatore - Dindigul (Via pollachi) which is about 8km on the Eastern side of the area.




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3. GEOLOGY AND MINERAL RESERVES

<p>3.1</p>	<p>Brief description of the Topography and general Geology of the area (with plans)</p>	<p>The lease applied area is a slightly undulated terrain which is covered with top soil. The thickness of the top soil is 1m followed by massive rocky outcrops of Charnockite admixed partially with Granitic Gneissic Rocks. These rocks are best suited for Rough stone Quarrying and will meet out the standards required for construction industries. The massive Charnockite formations are clearly visible from the existing pit. The area has been in quarrying operation earlier, the fresh Exposures of Charnockite is clearly inferred followed by 1m (Avg) top soil. The slope is gentle towards Western side. The altitude of the area is 422m (Maximum) from MSL.</p> <p>Only seasonal cultivation is done. In some areas, agriculture is done with lift irrigation. Water table is found at a depth of 45Mts in summer and at 40Mts in rainy seasons. Average annual rainfall is about 900mm during NE monsoon.</p> <p>Charnockite forms the oldest rock formations, in which batholiths of Granitic Gneiss lies over. On regional scale the Charnockite body trends N40°E-S40°W with dipping towards SE.</p> <p>The general geological sequences of the rocks in this area are given below</p> <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">AGE</th> <th style="text-align: left;">FORMATION</th> </tr> </thead> <tbody> <tr> <td>Recent</td> <td>Quarternary to Recent Sediments (Top soil)</td> </tr> <tr> <td>Archaean</td> <td>- Charnockite Peninsular Gneiss.</td> </tr> </tbody> </table>	AGE	FORMATION	Recent	Quarternary to Recent Sediments (Top soil)	Archaean	- Charnockite Peninsular Gneiss.
AGE	FORMATION							
Recent	Quarternary to Recent Sediments (Top soil)							
Archaean	- Charnockite Peninsular Gneiss.							
<p>3.2</p>	<p>Details of exploration already carried out if any</p>	<p>No exploration was carried out. Massive Charnockite formations are clearly visible from existing old pit.</p>						



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3.3	<p>Estimation of reserves</p> <p>a) Geological reserves with geological sections on a scale of 1:1000 / 1:2000</p>	<p>As far as Rough stone (Charnockite) are concerned, the only practical method is the systematic geological mapping and delineation of Rough stone within the field and careful evaluation of body luster, physical properties, engineering properties, commercial aspects etc.,</p> <p>The Resource and Reserves of the Rough stone (Charnockite) area is computed on cross section method. Totally four sections are drawn, one section is drawn Horizontally as (X-Y), (Length Wise) and another three sections is drawn Vertically as (A-B), (C-D), (E-F) to cover the maximum area considered for lease.</p> <p>The Topographical, Geological plan and sections demarcated the commercial marketable Rough stone (Charnockite) deposit has been prepared in 1:1000 and vertical as 1:500 scale (please refer the Topography, Geological plan and sections Plate No- V.</p>
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Geological Resources (Plate No. V)

Dimensions

Maximum Length = 122m
 Maximum width = 89m
 Maximum Depth = 31m

Table-1

GEOLOGICAL RESOURCES							
Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in Cbm	Recoverable Reserve in Cbm (100%)	Top soil
XY-AB	I	77	89	1	6853		6853
	II	77	89	5	34265	34265	
	III	77	89	5	34265	34265	
	IV	77	89	5	34265	34265	
	V	77	89	5	34265	34265	
	VI	77	89	5	34265	34265	
	VII	77	89	5	34265	34265	
TOTAL						205590	6853



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XY-CD	I	48	80	1	3840		3840
	II	48	80	5	19200	19200	
	III	48	80	5	19200	19200	
	IV	48	80	5	19200	19200	
	V	48	80	5	19200	19200	
	VI	48	80	5	19200	19200	
	VII	48	80	5	19200	19200	
TOTAL						115200	3840
XY-EF	I	122	53	1	6466		6466
	II	122	53	5	32330	32330	
	III	122	53	5	32330	32330	
	IV	122	53	5	32330	32330	
	V	122	53	5	32330	32330	
TOTAL						129320	6466
GRAND TOTAL						450110	17159

Total Geological Resources of Rough Stone : 450110 Cbm
 Top soil : 17159 Cbm

The quarrying operation was carried out for a dimension of Length 110mtrs width 45mtrs, depth 25m. The applied area is surrounded by Roughstone Quarries Adjacent to the applied area already quarrying operation was carried out in S.F.No 282/2A2 By Thiru V.Gopalakrishnan.
 The area applied for lease was already carried out for Roughstone quarrying operation.

Mining Plan for Rough Stone

Available Mineable (Recoverable Reserves)

The available Recoverable reserves are calculated by detecting 7.5m safety distance from the adjacent patta lands and Bench loss.

Dimensions

Maximum Length = 69m
Maximum width = 73m
Maximum Depth = 31m



AVAILABLE MINEABLE RESOURCES							
Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in Cbm	Recoverable Reserve in Cbm (100%)	Top soil
XY-AB	I	69	73	1	5037		5037
	II	68	70	5	23800	23800	
	III	63	60	5	18900	18900	
	IV	58	50	5	14500	14500	
	V	53	40	5	10600	10600	
	VI	48	30	5	7200	7200	
	VII	43	20	5	4300	4300	
TOTAL						79300	5037
XY-CD	IV	18	41	5	3690	3690	
	V	18	31	5	2790	2790	
	VI	18	21	5	1890	1890	
	VII	48	11	5	2640	2640	
TOTAL						11010	
GRAND TOTAL						90310	5037


The available Recoverable reserves have been computed as 90310Cbm of rough stone at the rate of 100% recovery up to depth of 31mts. The top soil of 1m would be around 5037Cbm which will be removed and preserved on the boundary barrier for afforestation.

As the lease period is recommended for five years, only 31m (30m Charnockite and 1m Top soil) depth from ground profile has been considered for safe and systematic quarrying operation.

4. MINING

4.1	Method of mining (opencast / underground)	Open cast Semi-Mechanized Mining with 5.0 meter vertical bench with a bench width of not less than 5.0 meter is being proposed. However, as far as the quarrying of Rough stone (Charnockite) 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.
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4.2	Mode of working (mechanized, semi mechanized, manual)	<p>The Rough Stone is proposed to quarry at 5m bench height & width with conventional opencast semi- mechanized method. The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of Rough stone to the needy crusher. The production of Rough stone (Charnockite) in this quarry involves the following method which is typical for Rough Stone quarrying in contrast to other major mineral mining.</p> <p>Splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone (spouls) from pithead to the needy crushers.</p> <p>Occasionally hydraulic excavators are attached with rock breakers for fragmentation to avoid secondary blasting.</p> <p>The primary boulders thus splitted are removed from the pits by excavators and further made to smaller sizes by rock breakers attached in excavators.</p> <p>It is a conventional, opencast semi mechanized method of mining.</p>
4.3	Proposed bench height & width	Height 5.0m & Width 5.0m.
4.4	Indicate the overburden / mineral production expected pit wise as detailed below (composite plan and section showing pit layout, dumps, disposal of waste if any etc.)	<p>The overburden is in the form of top soil which is found about 1mts (Avg.) followed by fresh massive Charnockite formation. This top soil is removed safely and preserved all along the boundary barrier for afforestation and Green belt development. There is no interburden found in the area. There is no waste anticipated in the Rough stone quarrying, the entire quarried out material will be sold to required customers at different categories.</p> <p>The composite topographic cum Geological plan and sections indicating the Pit lay out preservation of top soil, Green belt development are shown in Plate No-V.</p>



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YEARWISE PRODUCTION TABLE

YEARWISE RESOURCES								
Year	SECTION	Bench	Length	Width	Depth	Volume	Recoverable	Top soil
I YEAR	XY-AB	I	48	73	1	3504		3504
		II	48	70	5	16800	16800	
		TOTAL						16800
II YEAR	XY-AB	I	21	73	1	1533		1533
		II	20	70	5	7000	7000	
		III	30	60	5	9000	9000	
		TOTAL						16000
III YEAR	XY-AB	III	33	60	5	9900	9900	
		IV	25	50	5	6250	6250	
	XY-CD	IV	18	41	5	3690	3690	
TOTAL						19840		
IV YEAR	XY-AB	IV	33	50	5	8250	8250	
		V	53	40	5	10600	10600	
	XY-CD	V	18	31	5	2790	2790	
TOTAL						21640		
V YEAR	XY-AB	VI	48	30	5	7200	7200	
		VII	43	20	5	4300	4300	
	XY-CD	VI	18	21	5	1890	1890	
		VII	48	11	5	2640	2640	
TOTAL						16030		
GRAND TOTAL						90310	5037	

4.5	Machineries to be used	
	a) For mining	It is proposed to use the following machineries for quarrying Rough stone. <ol style="list-style-type: none"> 1. Excavator (Model EX 200) of 0.9Cbm bucket capacity (with Rock breaker attachment). 2. Jack hammer 30-35mm dia 3. Compressor (model Atlas 400/200) (3 jackhammer capacity) 4. Tractor mounted compressor (1 jack hammer capacity).
	b) Loading equipment	Excavator (Model EX 200) of 0.9Cbm bucket capacity (with bucket attachment).
	c) Transportation (includes within the mine and mine to destination)	Tipper 2 Nos of 10/20 tons capacity (from quarry to needy crushers).
4.6	Disposal of overburden / waste	The overburden is in the form of top soil which is found about 1mts (Avg.) followed by fresh massive Charnockite formation. This top soil is removed safely and preserved all along the boundary barrier for afforestation and Green belt development. There is no proposal for disposal of top soil.



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4.7 Brief note on conceptual mining plan for the entire lease period base on the geological, mining and environmental considerations

Conceptual mining plan is prepared with an object of long term systematic development of benches, layouts, selection of permanent structures, depth of quarrying and ultimate pit dimensions, selection of sites for construction of infrastructure, etc.,

The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc.,

As the applicant has applied quarry lease for five years, the ultimate pit limit (dimension) at the end of lease period is given below.

Table-2

Description	SECTIONS	Length (Max)	Width (Max)	Depth (Max)
Conceptual	XY-AB	70	74	31
	XY-CD	48	65	31
	XY-EF	114	36	26

Afforestation has proposed on the 7.5m safety barrier on the Eastern side side by planting neem trees of native species. All the base line information studies like air quality monitoring, Noise and vibration monitoring, Water analysis studies will be carried out every year as per the MOEF Norms. Please refer plat No.V.

5. BLASTING

5.1 Blasting pattern

The quarrying operation will be carried out by Semi Mechanized Opencast Method in conjunction with conventional method of mining using Jack hammer drilling and blasting for shattering effect and loosen the Rough stone.

Drilling and Blasting
Drilling and blasting parameters are as follows
 Depth of Each hole :1.2m-1.6m
 Diameter of hole :30-35mm
 Spacing between holes :1.0m
 Burden for hole :1.0m
 Pattern of hole :Zigzag
 Inclination of holes :80°from horizontal
 Use of delay detonators:25milli second delays.
 Detonating fuse : "Detonating" Cord
 Hole pattern :Staggered in two to three rows



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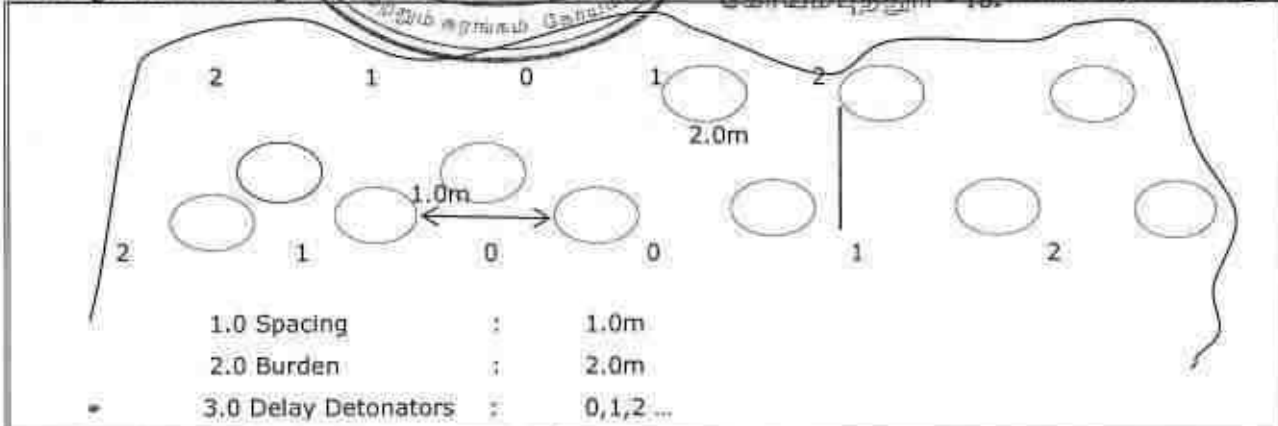
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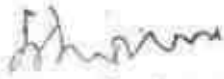


5.2	Type of explosives to be used	Small Dia. 25mm Slurry explosives are proposed to be used for shattering and heaving effect for removal and winning of Rough stone. No deep hole drilling or primary blasting is proposed.
5.3	Measures proposed to minimize ground vibration due to blasting	<p>The quarry is situated more than 2Km from the nearby villages, Controlled blasting measures will be adopted for minimizing ground vibration and fly rock. Shallow depths jackhammer drilling & 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.</p> <p>Yield = 20 Tons Powder factor = 3 tons/Kg of explosives Total explosive required = 6.7Kg- Slurry explosives Charge/ hole = 1.0 Kg Blasted at day time = 6 p.m. Charge per delay = 7.20 Kg.</p>
5.4	Storage 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/Permit Mines Manager.

6. MINE DRAINAGE

6.1	Depth of water table (based on nearby wells and water bodies)	The quarry operation proposed upto a depth of 31m from the ground profile. The water table is at 40m BGL in rainy season and 45m 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.
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6.2	Arrangements and places where the mine water is finally proposed to be discharged	Quarry operations are confined well above the water table during the five year plan period or entire lease period. If water is encountered at due to rain water and seepage, the same will be pumped out by 5HP water pumps to the afforestation and Green belt development areas. Besides the water will also be used for dust suppression on haul roads during Haulage of machineries;
-----	---	---

7. OTHER PERMANENT STRUCTURES (also shown in the map)

7.1	Habitations / village natham	There are no villages within the Radius of 500m.
7.2	Power lines (HT/ LT)	There is no HT/LT line within the radius of 500m.
7.3	Water bodies (river, pond, lake, odai, canal, etc.,)	There is no major water bodies like river, pond, odai etc., within 500m radius from the area.
7.4	Archaeological / historical monuments	There is no Archaeological / historical monuments within 500m radius from the area.
7.5	Road (NH, SH others)	The National Highway (NH-209) Coimbatore-Dindigul (Via Pollachi) is about 10Km on the Western side of the area. The State Highway (SH-19) Pollachi - Palladam is about 12km on the Southern side of the area. The Chettipalayam village is the nearest village and the distance between Chettipalayam and the applied area is about 6Km towards East. The Chettipalayam village is located about 25Km away from the Coimbatore Railway station.
7.6	Places of worship	There is no place of worships within the Radius of 500m.
7.7	Reserved forest / forest / social forest / wild life sanctuary etc.	There is no Reserved forest / forest / social forest / wild life sanctuary etc., within radius of 500m.

8. EMPLOYMENT POTENTIAL & WELFARE MEASURES

8.1	Employment potential (skilled, semi skilled, unskilled)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">a. <u>Skilled labour</u></td> </tr> <tr> <td>Mine Foreman/</td> <td></td> </tr> <tr> <td>Permit Mines Manager</td> <td style="text-align: right;">: 1</td> </tr> <tr> <td>Excavator operator</td> <td style="text-align: right;">: 1</td> </tr> <tr> <td>Co- operator</td> <td style="text-align: right;">: 1</td> </tr> <tr> <td>Jack hammer operator</td> <td style="text-align: right;">: 6</td> </tr> <tr> <td>Blaster/ mate</td> <td style="text-align: right;">: 1</td> </tr> <tr> <td>b. Semi-skilled</td> <td style="text-align: right;">: 2</td> </tr> <tr> <td>watchman</td> <td style="text-align: right;">: 1</td> </tr> <tr> <td>c. Unskilled- helper</td> <td style="text-align: right;">: 1</td> </tr> <tr> <td>Total</td> <td style="text-align: right;">: 14</td> </tr> </table>	a. <u>Skilled labour</u>		Mine Foreman/		Permit Mines Manager	: 1	Excavator operator	: 1	Co- operator	: 1	Jack hammer operator	: 6	Blaster/ mate	: 1	b. Semi-skilled	: 2	watchman	: 1	c. Unskilled- helper	: 1	Total	: 14
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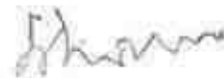


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8.2	Welfare measures	
	a) Drinking water	Packaged drinking water is available from the nearby approved water vendors in Chettipalayam village which is about 4Km on the North Western side of the area.
	b) Sanitary facilities	Hygienic modern Sanitary facilities will be constructed with in the quarrying area as permanent structure and it will be maintained periodically.
	c) First Aid facility	First aid kits are kept in Mines office room, in case of any eventualities the victim will be given first aid immediately at the site and injured person will be taken to the hospital. Hospital is available at distance of 4Km (NW) in Chettipalayam the competent and Statutory foreman/ permit manager will be in charge of first aid.
	d) Labor Health	Periodically medical checkup related to occupational health safety will be conducted to all the workers in applicants own cost.
	e) Precautionary safety measures to the laborers	All the quarry workers will be provided with safety equipments like helmets, Mine Goggles, Ear plugs, Ear muffs, Dust mask, reflector jackets and Safety Shoes as personal protective device as per the specification approved by Director of mines safety. Periodically medical checkup will be conducted for all workers for any mine health related problems. Proper training and induction will be given by qualified and experienced safety officer to all employees about the safe and systematic Rough stone quarrying operations. The drillers and workers will be sent for vocational training periodically to carry out the quarrying operations scientifically to safe guard the men machinery and mineral and to create awareness of conventional opencast quarrying operations.




 துணை இயக்குநர்
 புவியியல் & சுரங்கத்துறை
 கோயம்புத்தூர் - 13.

Mining Plan for Rough Stone

Pachapalayam Village

PART - B

9. ENVIRONMENT MANAGEMENT PLAN

9.1	Existing landuse pattern	<p>The quarry lease applied area a slightly undulated terrain. The area is a dry barren land devoid of Agriculture and Habitations. The land is not used for any specific vegetation. The Rough stone formation is followed by 1m(Avg.) Top soil.</p> <p style="text-align: center;">LAND USE TABLE</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Description</th> <th>Present Area (Ha.)</th> <th>Area at the end of lease period (Ha.)</th> </tr> </thead> <tbody> <tr> <td>Quarrying Pit</td> <td>0.91.1</td> <td>1.38.0</td> </tr> <tr> <td>Top soil dump</td> <td>Nil</td> <td>0.28.0</td> </tr> <tr> <td>Infrastructure</td> <td>Nil</td> <td>0.01.0</td> </tr> <tr> <td>Roads</td> <td>0.02.0</td> <td>0.01.0</td> </tr> <tr> <td>Green Belt</td> <td>Nil</td> <td>0.05.0</td> </tr> <tr> <td>Unutilized</td> <td>0.79.9</td> <td>Nil</td> </tr> <tr> <td>Grand Total</td> <td>1.73.0</td> <td>1.73.0</td> </tr> </tbody> </table>	Description	Present Area (Ha.)	Area at the end of lease period (Ha.)	Quarrying Pit	0.91.1	1.38.0	Top soil dump	Nil	0.28.0	Infrastructure	Nil	0.01.0	Roads	0.02.0	0.01.0	Green Belt	Nil	0.05.0	Unutilized	0.79.9	Nil	Grand Total	1.73.0	1.73.0
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Grand Total	1.73.0	1.73.0																								
9.2	Water regime	<p>Ground water occurrence in this area is 45mt depth. The quarrying is restricted up to 31m from ground profile; hence the quarry operation will not be affected by the ground water.</p>																								
9.3	Flora and fauna	<p>There are no trees observed in the area. Thorny bushes, Neem and Palm are found in around the area. No plants of botanical interest or animals of zoological interest are noticed.</p>																								
9.4	Climatic conditions	<p>The area receives rainfall of about 900mm/per annum and the rainy season is mainly from Oct - Jan during North East, monsoon. The summer is hot with maximum temperature of 40°C and winter encounters a minimum temperature of 23°C.</p>																								
9.5	Human settlement	<p>There are no habitations within 500m radius. There are few villages located in this area within 5km radius of quarry site, the approximate distance and population are given below.</p> <p style="text-align: center;">Table - 3</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-left: auto; margin-right: auto;"> <thead> <tr> <th>S.No</th> <th>Name of the Village</th> <th>Approximate distance & Direction from lease</th> <th>Approximate population</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Chinnakuyili</td> <td>5km - NE</td> <td>5000</td> </tr> <tr> <td>2.</td> <td>Chettipalayam</td> <td>4km - NW</td> <td>10000</td> </tr> <tr> <td>3.</td> <td>Ponnakani</td> <td>4Km - SE</td> <td>3000</td> </tr> <tr> <td>4.</td> <td>Thekani</td> <td>4Km-SW</td> <td>5000</td> </tr> </tbody> </table> <p>Basic human welfare Amenities such as Health Center, Schools, Communication Facilities, and Commercial Centers etc are available at Coimbatore located at a distance of 21kms on the North Western side of the area.</p>	S.No	Name of the Village	Approximate distance & Direction from lease	Approximate population	1.	Chinnakuyili	5km - NE	5000	2.	Chettipalayam	4km - NW	10000	3.	Ponnakani	4Km - SE	3000	4.	Thekani	4Km-SW	5000				
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குணை இயக்குநர்

புவிமியல் & சுரங்கத்துறை Pachapalayam Village

Mining Plan for Rough Stone

9.6	Plan for air dust suppression	The Air quality will be affected during the quarrying period due to blasting and jack hammer drilling, which will be within prescribed limits. Air quality will be monitored periodically as per Norms and Mitigation Measures will be carried out to prevent dust and Air propagation in to air. Mist Water spraying will be carried out to suppress dust. The estimated budget for dust suppression would be around Rs 50,000/
9.7	Plan for noise level control	Shallow holes of 32mm diameter and 1.5m depth will be drilled and conventional low power explosives such as Slurry Explosives, ordinary safety fuse only will be used for of rough stone. Hence, ground vibration and noise pollution will be minimal and restricted within the quarry workings. Noise level monitoring and other Mitigation measures will be carried out to reduce Noise and Vibration. The estimated budget for Noise level monitoring would be around Rs 20,000/ Afforestation is proposed on the boundaries which will act as a Acoustic barrier.
9.8	Environmental Impact assessment statement describing impact of 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. It is B2 Category mine. The estimated budget would be around Rs. 5, 15,000/-
9.9	Proposal for waste management	There is no waste in this rough stone quarry operation.



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துணை இயக்குநர்

முனியியல் & சுரங்கத்துறை

கோயம்புத்தூர் - 18

Pachapalayam Village

Mining Plan for Rough Stone

9.10	Proposal for reclamation of land affected during mining activities and at the end of mining (refilling / fencing etc.)	In the proposed mining plan only 31m depths from general ground profile has been envisaged as workable depth for safe & economic mining during the lease period. Hence, after quarry reaches ultimate pit limit (for this lease period) of 31m depth, fencing will be constructed around the quarried pits to prevent inherent entry of the public and cattle. There is no proposal for reclamation and rehabilitation. The barbed wire fencing cost would be around Rs 1,00,000/-																																				
9.11	Programme of afforestation (Indicate extend, number, name of species to be afforested)	<p>The 7.5 mts safety distance along the lease boundary in the Eastern side has been identified to be utilized for afforestation. Appropriate native species with long canopy of neem trees will be planted in a phased manner as described below.</p> <p style="text-align: center;">Table - 4</p> <table border="1" data-bbox="686 918 1420 1176"> <thead> <tr> <th>Year</th> <th>No. of trees proposed to be planted</th> <th>Survival %</th> <th>Area to be covered Sq.m</th> <th>Name of the species</th> <th>No. of trees expected to be grown</th> </tr> </thead> <tbody> <tr> <td>I</td> <td>10</td> <td>80%</td> <td>100</td> <td>Neem</td> <td>8</td> </tr> <tr> <td>II</td> <td>10</td> <td>80%</td> <td>100</td> <td>Neem</td> <td>8</td> </tr> <tr> <td>III</td> <td>10</td> <td>80%</td> <td>100</td> <td>Neem</td> <td>8</td> </tr> <tr> <td>IV</td> <td>10</td> <td>80%</td> <td>100</td> <td>Neem</td> <td>8</td> </tr> <tr> <td>V</td> <td>10</td> <td>80%</td> <td>100</td> <td>Neem</td> <td>8</td> </tr> </tbody> </table> <p>Nearly 500 Sqm area is proposed to use under afforestation by planting 10 nos. of neem trees during every year with an anticipated survival rate of 80%. The afforestation plan is shown in Plate No.V. The estimated budget for plantation and maintenance of Green belt development would be around Rs 30,000/- for a period of five years.</p>	Year	No. of trees proposed to be planted	Survival %	Area to be covered Sq.m	Name of the species	No. of trees expected to be grown	I	10	80%	100	Neem	8	II	10	80%	100	Neem	8	III	10	80%	100	Neem	8	IV	10	80%	100	Neem	8	V	10	80%	100	Neem	8
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V	10	80%	100	Neem	8																																	
9.12	Proposed financial estimate / budget for (EMP) environment management:	<p>Budget Provision for the entire quarrying period.</p> <table border="0" data-bbox="678 1556 1420 1792"> <tr> <td>Air Quality Sampling</td> <td>=</td> <td>Rs. 50,000/-</td> </tr> <tr> <td>Water Quality Sampling</td> <td>=</td> <td>Rs. 50,000/-</td> </tr> <tr> <td>Noise Monitoring</td> <td>=</td> <td>Rs. 20,000/-</td> </tr> <tr> <td>Ground vibration test.</td> <td>=</td> <td>Rs. 20,000/-</td> </tr> <tr> <td>Total Cost</td> <td>=</td> <td>Rs.1,40,000/-</td> </tr> </table>	Air Quality Sampling	=	Rs. 50,000/-	Water Quality Sampling	=	Rs. 50,000/-	Noise Monitoring	=	Rs. 20,000/-	Ground vibration test.	=	Rs. 20,000/-	Total Cost	=	Rs.1,40,000/-																					
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தலை இயக்குநர்
புலியியல் & சுரங்கத்துறை

கோயம்புத்தூர் - 18. Pachapalayam Village

Mining Plan for Rough Stone

Project cost / investment			
i)	Land cost	Rs. 3, 00,000/- per Hectare = For 1.27.5 hectare	Rs. 3,82,500/-
ii)	Machinery to be used	Excavator (Ex-200) = Tippers (14,00,000X2) = compressor with jack hammer and loose tools =	Rs. 25,00,000/- Rs. 28,00,000/- Rs. 6,00,000/-
iii)	Refilling / Fencing	Fencing =	Rs. 1,00,000/-
iv)	Laboureres shed	Labour shed =	Rs. 1,00,000/-
v)	Sanitary facility	Sanitary facilities =	Rs. 1,00,000/-
vi)	Others items	First aid room & accessories =	Rs. 1,00,000/-
		Total Cost =	Rs. 66,82,500/-
(a) Expenditure			
i)	Drinking water facility for the laborers		Rs. 1,50,000/-
ii)	Sanitary arrangement,	Maintenance	Rs. 25,000/-
iii)	Safety kits		Rs. 10,000/-
iv)	Water sprinkling		Rs. 3,00,000/-
v)	Afforestation etc.		Rs. 30,000/-
		Total Cost =	RS. 5,15,000/-
		Total EMP Estimated Cost around	= Rs. 6,55,000 /-
		Total Project estimated Cost around	=Rs. 66,82,500/-
		TOTAL estimated EMP & Project Cost around	= Rs.73,37,500/-
(The total cost of the project including EMP Cost is about Seventy three lakh, thirty-three thousand five hundred rupees only)			
10. MINE CLOSURE PLAN			
10.1	Steps proposed for phased restoration, reclamation of already mined out areas	This is the fresh lease, 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.	
10.2	Measures to be under taken on mine closure as per Act & Rules	Measure will be taken as per Act & Rules There is no proposal for back filling, reclamation and rehabilitation. The quarry pit will be fenced by barbed wire to prevent inherent entry of public and cattle. The quarried out pit will be allowed to collect rain and seepage water which will act as a reservoir for storage. This water storage will enhance the static level and ground water recharge of nearby wells.	



தலைவர் இயக்குநர்
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Mining Plan for Rough Stone

Pachapalayam Village

10.3	MITIGATION MEASURE TO BE UNDERTAKEN FOR SAFETY AND RESTORATION / RECLAMATION OF THE ALREADY MINED OUT AREA.	
	<p>AIR QUALITY: Air quality will be degrade due to the drilling, blasting, mining operation and transportation.</p>	<p>Mitigation measures: Drilling will be carried out by wet drilling mode to control the dust propagation into the air.</p> <p>Blasting will be carried out on limited scale. Mist Water spraying on haul road is proposed to prevent the dust propagation into the air.</p>
	<p>NOISE AND VIBRATION: The noise will be formed due to the drilling, blasting, loading and movement of Machineries.</p>	<p>The applicant has proposed to carry out the plantation on the safety barriers to prevent Noise besides wet drilling will be practiced to prevent dust. All the machineries will be maintained in good conditions as per RTO and TNPCC Norms to prevent Noise, Smoke and vibration.</p>
	<p>WATER REGIME :</p>	<p>The quarry operation (31m depth) is well above the water table (Summer in 45m and rainy seasons in 40m), hence the water table will not be affected in any manner.</p> <p>The seepage and rain water will be drained out from the pit by the 5H.P motor pump and will be discharged through filter media to boundary barrier for afforestation and excess water will be sprayed on haul roads to prevent dust propagation in to the atmosphere.</p> <p>The rough stone quarry will not produce any harmful toxic effluence in the form of solid liquid or gas.</p>
	<p>HUMAN HEALTH & SAFETY: Dust will be limited due to the mine operation.</p>	<p>All the labours will be provided with safety equipment's like helmet, Safety Goggles, Ear muff, Hand glouse, safety jacket, safety belt, and Mine boots etc., at applicant own cost, as per the specifications of Director of mines safety. The competent qualified person foreman/Permit Mines Manager will provide first aid and will take care of small & minor injuries. If any accident happens, the victim will be taken to the nearby hospital by the applicants van which is always kept in the mines office. The hospital is about 4km in Chettipalayam village.</p>



துணை இயக்குநர்
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கோயம்புத்தூர் - 18.

Mining Plan for Rough Stone

Pachapalayam Village

11. ANY OTHER DETAILS INTEND TO FURNISH BY THE APPLICANT:

This mining plan for Rough stone (Granitic Gneiss) is prepared as per the draft Minor Mineral conservation and Development Rules, 2010 and amendment by the Tamil Nadu Minor Mineral Concession Rules, 1959. The provisions of the Mines Act, Rules and Regulations and orders made there under shall be complied with, so that the safety of the mine, machinery and person will be well protected. Permission, relaxation or exemption wherever required for the safe and scientific quarrying of the deposit will be obtained from the Department of Mines Safety. Any violation pointed out by the inspecting authorities shall be rectified as per the guidelines of the Department.

RQP SIGNATURE

M. Iftikhar Ahmed, M.Sc., F.G.S., M.B.A., M.E.A.,
RQP/MAS/183/2004/A

Place: Salem
Date: 15.04.2013



ந.க.எண்.708/2011/எம்.எம்-2

மாவட்ட ஆட்சியர் அலுவலகம்,
கோயம்புத்தூர் - 18.

நாள் 08.04.2013

துணை இயக்குநர்
புவியியல் & சுரங்கத்துறை
கோயம்புத்தூர் - 18.

குறிப்பாணை

பொருள் : கனிமங்களும் - குவாரிகளும் - கோயம்புத்தூர் மாவட்டம்
சூலூர் வட்டம் - பச்சாபாளையம் கிராமம், 282/1ஏ ல்
0.45.5 ஹெக்டேர் மற்றும் க.ச.282/1பி (பகுதி) ல் 1.27.5
ஹெக்டேர் ஆக மொத்தம் 1.73.0 பரப்பில்
சாதாரணக்கற்கள் வெட்டியெடுக்க குத்தகை உரிமம்
கோரி திரு.கே.சின்னச்சாமி என்பவர் விண்ணப்பம்
செய்துள்ளது - தொடர்பாக.

- பார்வை :**
- 1) திரு.கே.சின்னச்சாமி என்பவரது விண்ணப்ப நாள்
29.09.2011 மற்றும் 27.02.2013.
 - 2) கோயம்புத்தூர் வருவாய் கோட்டாட்சியர் அறிக்கை
ஒ.மு.7225/2011/அ3 நாள் 19.03.2012 நாளிட்ட அறிக்கை
இவ்வலுவலகத்தில் பெறப்பட்ட நாள் 22.03.2013.
 - 3) கோயம்புத்தூர், புவியியல் மற்றும் சுரங்கத்துறை,
துணை இயக்குநர் புலத்தணிக்கை அறிக்கை நாள்
19.12.2012.
 - 4) மத்திய அரசு கடிதம் (சுற்றுச்சூழல் மற்றும் வனம்)
11011/47/2011/1A-11 (M) நாள் 18.05.2012
 - 5) அரசு கடிதம் எண்.4719/MMC1/2012-2/தொழில்துறை
நாள் 03.08.2012.
 - 6) மற்றும் இதர தொடர்புடைய ஆவணங்கள்.

திரு.கே.சின்னச்சாமி என்பவர் கோயம்புத்தூர் மாவட்டம்,
சூலூர் வட்டம், பச்சாபாளையம் கிராமம், க.ச.282/1ஏ ல் 0.45.5 ஹெக்டேர் மற்றும்
க.ச.282/1பி (பகுதி) ல் 1.27.5 ஹெக்டேர் ஆக மொத்தம் 1.73.0 ஹெக்டேர் பரப்பில்
உள்ள பட்டா நிலத்தில் சாதாரணக்கற்கள் வெட்டியெடுக்க குத்தகை உரிமம் கோரி
மனு செய்திருந்தது தொடர்பாக கோயம்புத்தூர் வருவாய் கோட்டாட்சியர் மற்றும்
துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை ஆகியோரின் அறிக்கையை
பெறப்பட்டு பரிசீலனைச் செய்யப்பட்டது.

உ.ம. கோபுரம்

உ.ம. பஞ்சலம்

பு.எண். 282



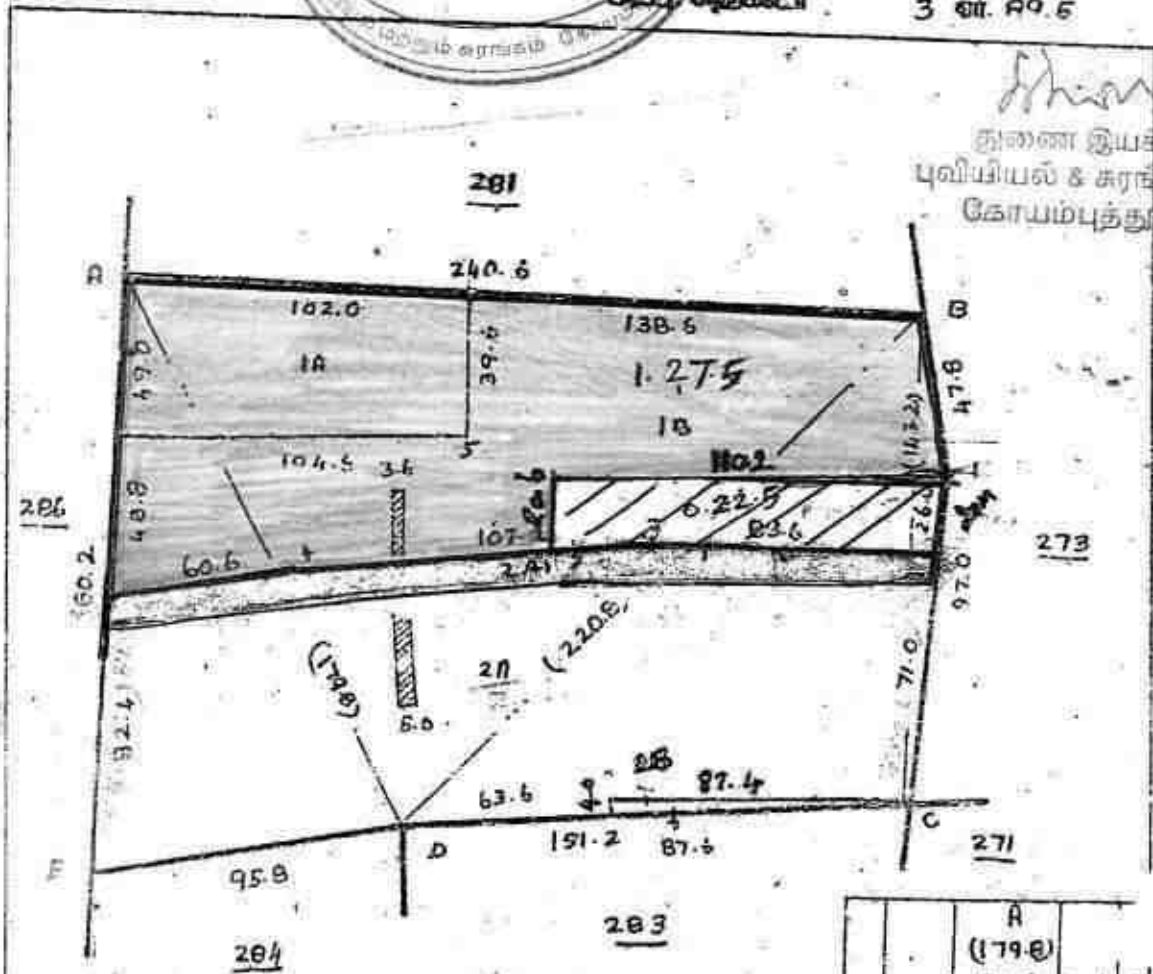
கிராமம்

எண் 98 123 ANNEXURE

பெயர். பச்சையம் 23

பஞ்சலம்

3 ஏ. 99.5



சுணை இயக்குநர்
புவியியல் & கரட்கத்துறை
கோயம்புத்தூர் - 18.

A	(179.8)		
	94.4	70.4	5
	80.8	74	4
	90.6	426	H
	69.8	340	H
	65.6	324	H
	32.8	198	H
D	(220.8)		
	106.8	64	3
B			
D	(151.2)		
	87.6	40	2
C	(143.2)		
1	100	46.8	
		B	

□ - கல் இடை அளவு 2mm Dia.

சுமேஷ்
கிராம நிர்வாக அலுவலர்
43, பச்சையம் கிராமம்
குலார் வட்டம்

சுமேஷ்
2-8-84

அளவு. 1:2000

வரைபடிவர் : சி. பச்சையம்
21.7.84

LEASE APPLIED AREA

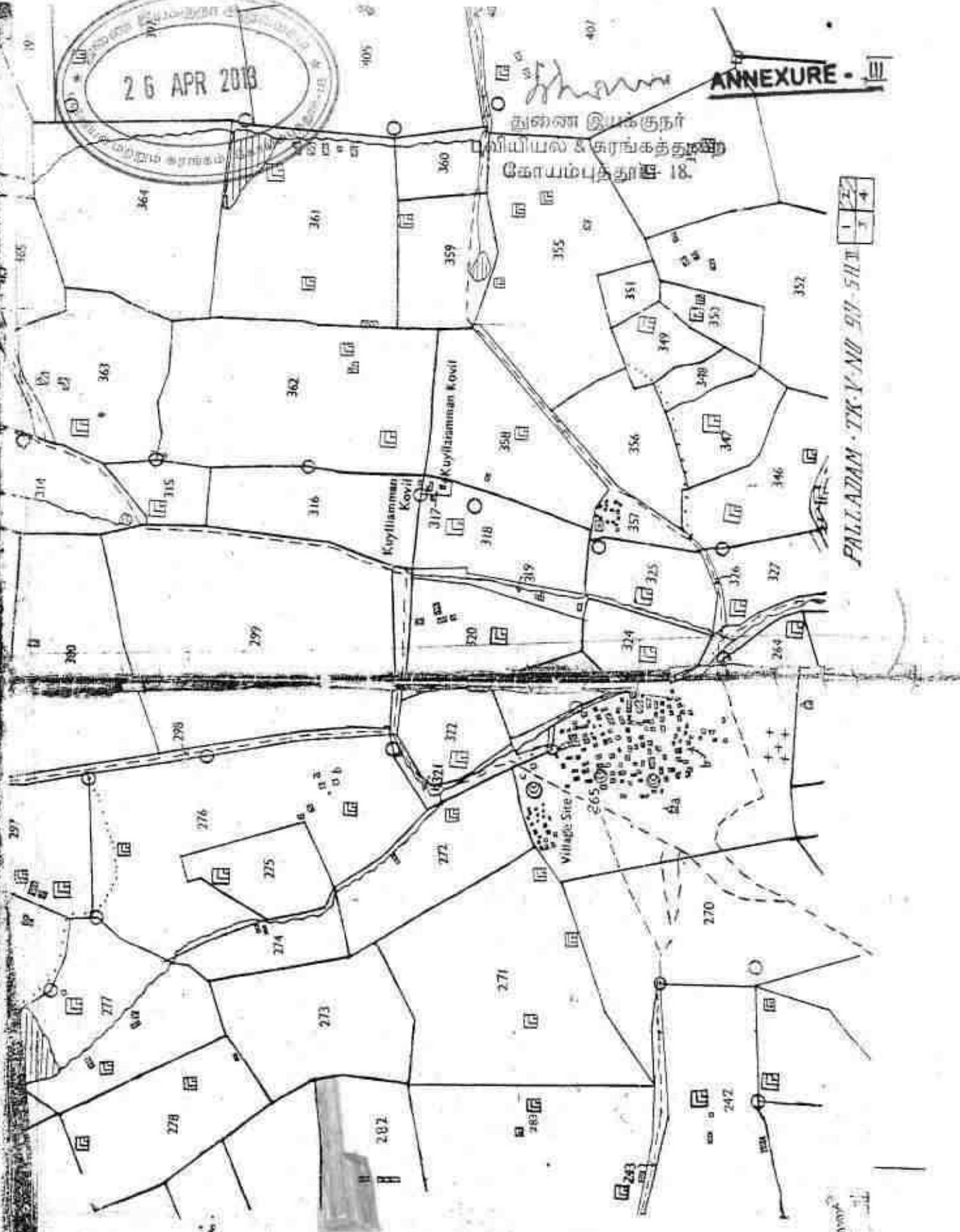
26 APR 2013

ANNEXURE - III

திருவை இயக்குநர்
விவியல & சூரங்கத்துறை
கோயம்பத்தூர் - 18.

1	2
3	4

PALLAZAN - TK-V NO 911-511



இயக்குநர்: திருவை
 தலைவர்: சிவசுந்தரி
 துணை: A. சி. சி. சிவசுந்தரி
 கூடுதல் துணை:

LEASE APPLIED AREA

திருவை இயக்குநர்
 விவியல & சூரங்கத்துறை
 கோயம்பத்தூர் - 18.

10/3/2010



தமிழ்நாடு அரசு



18796
ANNEXURE - IV A 9

பக்கம் எண் : 1 of 1

இ.எ.என் 10(1) (3) வி
வட்டம் : சூலூர்

நில அளவை ஆவணம் - மட்டா
வருவாய்த்துறை, கோயம்புத்தூர் மாவட்டம்
சிராமம் : பச்சாபாளையம்

திணை இயக்குநர்
புவியியல் & சுரங்கத்துறை
கோயம்புத்தூர் - 18.

மட்டா எண் : 538

உரிமையாளர்கள் பெயர்

I காளியப்ப கவுண்டர்

தந்தை

சின்னச்சாமி

புல எண்ணுய் உட்பிரிவு	தளபொ		புளபொ		மற்றவை	
	பரப்பு ஹெக்டேர் - ஏர்	திணை ரூ - பை	பரப்பு ஹெக்டேர் - ஏர்	திணை ரூ - பை	பரப்பு ஹெக்டேர் - ஏர்	திணை ரூ - பை
282 1A	-	-	- 45.50	0.92	-	-
			- 15.50	0.92	-	-

10/025/538.00/1.00 10/03/2010 1:38:37P

திணை இயக்குநர்
தலைமைபுதித்துத் துணை வட்டாட்சியர்
சூலூர் வட்டாட்சியர் அலுவலகம் - சூலூர்
கோயம்புத்தூர் மாவட்டம்



10/3/2010



தமிழ்நாடு அரசு



ANNEXURE - IV A1

பக்கம் நெ : . 1 of 1

[Handwritten Signature]

துணை இயக்குநர்
புவியியல் & சுரங்கத்துறை
கோயம்புத்தூர் - 18.

இ.எண் 10(1) பிரிவு

நில அளவை ஆவணம் - பட்டா
வருவாய்த்துறை, கோயமுத்தூர் மாவட்டம்

மாவட்டம் : சூலூர்

கிராமம் : பச்சபாளையம்

பட்டா எண் 145

உரிமையாளர்கள் பெயர்

1 காளியப்ப கவுண்டர்

தந்தை

சின்னாச்சாமி

புல எண்ணம் உட்பிரிவும்	நட்செய்		புன்செய்		மற்றவை	
	பரப்பு ஹெக்டேர் - ஏர்	நிலை ரூ - பை	பரப்பு ஹெக்டேர் - ஏர்	நிலை ரூ - பை	பரப்பு ஹெக்டேர் - ஏர்	நிலை ரூ - பை
282 1B	-	-	1 - 50.00	3.02	-	-
			1 - 50.00	3.02		

10/025/145.00/1.00 10/03/2010 1:40:13P

[Handwritten Signature]
தலைமையிடத்துக்குள்ளே வட்டாபிப்பா
சூலூர் வட்டாபிப்பா அலுவலகம் - சூலூர்
கோயம்புத்தூர் மாவட்டம்





ANNEXURE - IVc

[Signature]
 துணை இயக்குநர்
 புவியியல் & கரங்கத்துறை
 கோயம்புத்தூர் - 18.

கோவை வட்டம் : கிராம நிர்வாக அலுவலர்
 கிராமம் : 43, பச்சாபாளையம்
 கிராமத்தின் மேல்பகுதியை
 அடங்காது உள்ளதால்

1	2	3	4	5	6	7	8	9	10	11	12
தமிழக அரசு நிலைய பகுதி பெயர்	பகுதி பெயர்	அளவு (ஏக்கர்)	அளவு (சதுர மீட்டர்)	அளவு (சதுர மீட்டர்)	அளவு (சதுர மீட்டர்)	அளவு (சதுர மீட்டர்)	அளவு (சதுர மீட்டர்)	அளவு (சதுர மீட்டர்)	அளவு (சதுர மீட்டர்)	அளவு (சதுர மீட்டர்)	அளவு (சதுர மீட்டர்)
1	2	3	4	5	6	7	8	9	10	11	12
1	2	3	4	5	6	7	8	9	10	11	12
1	2	3	4	5	6	7	8	9	10	11	12
1	2	3	4	5	6	7	8	9	10	11	12
1	2	3	4	5	6	7	8	9	10	11	12

கிராம நிர்வாக அலுவலர்
 கிராம நிர்வாக அலுவலர்
 43, பச்சாபாளையம் கிராமம்
 குலூர் வட்டம்

25 APR 2013
 கிழக்கு மாகாண சபை
 ANNEXURE 200Rs VII



திருவாரூர் டீமர்

தமிழ் நாடு:-

சட்டம் - 5621

நாள் - 28.8.79

K. சிவசாமி சாமி. சிவசாமி சாமி

E. S. Santhamoni

ச. சவு. சாதிநாமணி,

சாதி பதிவு:

முத்தியூர் தலைநகர். திருவாரூர்.
 குரவர்.



கீழ்க்கண்ட 3630 கிராமங்கள்

12/150

1979 ல் க்கண்ட 18 30 கிராமங்களில் பல்லாட்சி சபை
 கல் பட்டியல் கல் பட்டியல் கல் பட்டியல் கல் பட்டியல்
 கல் பட்டியல் கல் பட்டியல் கல் பட்டியல் கல் பட்டியல்
 கல் பட்டியல் கல் பட்டியல் கல் பட்டியல் கல் பட்டியல்
 கல் பட்டியல் கல் பட்டியல் கல் பட்டியல் கல் பட்டியல்
 கல் பட்டியல் கல் பட்டியல் கல் பட்டியல் கல் பட்டியல்
 கல் பட்டியல் கல் பட்டியல் கல் பட்டியல் கல் பட்டியல்
 கல் பட்டியல் கல் பட்டியல் கல் பட்டியல் கல் பட்டியல்
 கல் பட்டியல் கல் பட்டியல் கல் பட்டியல் கல் பட்டியல்
 கல் பட்டியல் கல் பட்டியல் கல் பட்டியல் கல் பட்டியல்

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29/6/31
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செய்துள்ளார்

1928-1929 க்கான பண 3/3326
செய்துள்ளார்

செய்துள்ளார்

1928-1929 க்கான பண 3/3326
செய்துள்ளார்

1928-1929 க்கான பண 3/3326
செய்துள்ளார்





துணை இயக்குநர்
புவியியல் & சுரங்கத்துறை
கோயம்புத்தூர் - 18. 200Rs



இருநூற்று ரூபாய்

தமிழ் நாடு:-
எண். 5622
நாள். - 28.8.79

H. சிவசாமி சிவசுவாமிவேலு

S. S. Santhamani
ஈ. எஸ். சந்திரமணி,
எச் பி.ஐ.டி
முத்திரைத்தாள் அப்பெயர்
பேரர்.



செய்துள்ள சிவசுவாமிவேலு பரிசீலனையின் படி கீழ்க்கண்ட
 சிவசுவாமிவேலு பரிசீலனையின் படி கீழ்க்கண்ட
 3630 ரூபாய் கிணையத்தகவலைக் கீழ்க்கண்ட
 கிணையத் தொகை ரூபாய் முன்று ஆயிரத்து
 ஆறு ஆறு ரூபாய்தான் இருமபுள் செலவுக்
 காண கிணையத்தை சரிசெய்தல் முடியும்
 இவன் தொகை மீட்டல்கள் தொகுத்து கிணைய
 யை கண்டு சென்ற சிவசுவாமிவேலு பரிசீலனையின்
 படி கீழ்க்கண்ட சிவசுவாமிவேலு பரிசீலனையின்
 படி கீழ்க்கண்ட சிவசுவாமிவேலு பரிசீலனையின்
 படி கீழ்க்கண்ட சிவசுவாமிவேலு பரிசீலனையின்
 படி கீழ்க்கண்ட சிவசுவாமிவேலு பரிசீலனையின்
 படி கீழ்க்கண்ட சிவசுவாமிவேலு பரிசீலனையின்
 படி கீழ்க்கண்ட சிவசுவாமிவேலு பரிசீலனையின்
 படி கீழ்க்கண்ட சிவசுவாமிவேலு பரிசீலனையின்

26 APR 2013

துணை இயக்குநர்
புவியியல் & சுரங்கத்துறை
கோயம்புத்தூர் - 4R560nP



தமிழ் நாடு -
பொது - 5630
நாள் - 28.8.79

பிணிக் குவியல் மலர்
K. பிணிக் குவியல் மலர்

E. S. Santharamani



செந்திரசேகரன் கிணிக் குவியல் மலர்
மலர் 5630
நாள் 28.8.79
பிணிக் குவியல் மலர்
K. பிணிக் குவியல் மலர்
E. S. Santharamani
TAMIL NADU STATE POST OFFICE, KARAIKAL, 1974

செந்திரசேகரன் கிணிக் குவியல் மலர்
மலர் 5630
நாள் 28.8.79
பிணிக் குவியல் மலர்
K. பிணிக் குவியல் மலர்
E. S. Santharamani
TAMIL NADU STATE POST OFFICE, KARAIKAL, 1974

2.11.79



Shan
துணை இயக்குநர்
புவியியல் & கரங்கத்திணை
கோயம்புத்தூர் - 8.

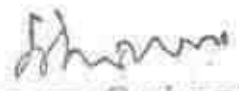
பச்சாடா மலை அந்திமாமல். க.ச. 4.283/1
மேகாதி ரா 4-84 க்கு 3-94 விபர
துவர ரா 3-63 க்கு 3-00 க்கு
கையிர்ணாதுயிற் புகியல் மரவகை மரவகை
மரவகை மரவகை மரவகை மரவகை. 227
பெருந்திணை மரவகை மரவகை 3630 க்கு

• உத்தரவு •

இந்தக் காரணம்
~~செய்தல்கள்~~ 5/00 மரவகை மரவகை மரவகை
M-புதுளியப்பள்ளி 5/00 மரவகை மரவகை

Written by Siva Sundaram 5/00 Muthuvendal
Analaivudaliv Sulem




 துணை இயக்குநர்
 நிர்வாக & கரங்கத்தறை
 கோயம்புத்தூர் - 18.

5
 1.4.81
 1.21.82
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 115
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 4.000
 4.88 ரூபாய்/சென்னை
 சென்னை
 1025 37
 94
 188

7
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 1.00
 சென்னை
 1081 215
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 190



26 APR 2013

1000Rs.



Shanmugam
சுணை இயக்குநர்
புவியியல் & சுரங்கத்துறை
கோயம்புத்தூர் - 18.

Handwritten notes and a circular stamp. The notes include "15/10/11" and "10/12/89". The circular stamp is partially legible and appears to be a seal of an official.

சுரமம் ரூபாய் 43,000.00

மார்க்கட் மதிப்பு ரூபாய் 43,560.00

1989ம் வருடம் டிசம்பர் மாதம் 16 தேதி, பல்வடம் ஈட்டம், பச்சாபாளையம் திராமம் கல்பாண்டி வசிக்கல் பவர் காரியப்பகவக்டர் அவர்கள் குமாரசர் தே. சிங்கசாயி அவர்களுக்கு,

பெக்ஷை நகர், மின்னியாக்கம், ராஜராஜி நகர், 12, ரெகனி பதருவில் வசிக்கும் ரக்ஷக் அவர்கள் குமாரசர் என்னியர் சூர். பழனிப்பன்-(1), பல்வடம் ஈட்டம், பச்சாபாளையம் திராமம் மஜரா பெரியகுயிலையில் வசிக்கும் ரக்ஷக் அவர்கள் குமாரசர் பயிர் சூர். சகீமுதம்-(2) ஆகிய நகர்கல் இருவரும் ரெகர்ஷை ஈறுதி கவச்சக் கொடுத்த கிராம சாசனம்.

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KP Antaniappa - 2020m kanna.

12. 6/10/2020 (15/10/2020) 13/10/2020.

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26 APR 2013

1000Rs



துணை இயக்குநர்
புவியியல் & சுரங்கத்துறை
கோயம்புத்தூர் - 18.

R.1000

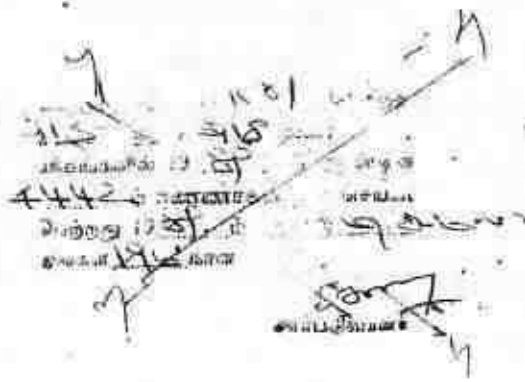


-2-

எச்சுக்கு 8.3.1982 தேதிய துயார் சப்.ரி.ஆய் 1-913-119-380/1982 நெ. கிராம சாசனப்படி சயார்ஜித கணகலில் பாத்தியப்பட்டு நாங்கள் சர்வ சதந்திரத்தின் அடிப்படையில் எழுதின கீழ்க்காணும் சொத்து நான்கு தேதியில் நாங்கள் தக்கசுக்கு ரூபாய் 43,000.00க்கு கிராமம் செல்த கொடுத்த,

எங்கள் குடும்பச் செலவிற்காக இந்தக் கிராமத் தொகை ரூபாய் 3 நாற்பத்தி மூன்றாயிரமும் கீழ்க்காணும் சாட்சிகள் மூன்பட நான்கு தேதியில் நாங்கள் தக்கசுக்கும் ரொகிதமால்பு பெற்றுக் கொண்டபடியால்,

1. *[Handwritten signature]*
2. *[Handwritten signature]*



26 APR 2013

1000Rs.



Handwritten signature
தாணை இயக்குநர்
பிரியல் & சுரங்கத்த
கோயம்புத்தூர் - 18

Handwritten notes and a circular stamp. The notes include the name 'K. S. Srinivasan' and other illegible text. A circular stamp is visible on the right side.

-3-

கிரயச் சொத்தையும் நாளடி தேதியில் தங்களுக்கு கவாதீனம்
செய்து கொடுத்திருக்கிறோம்.

அதை இலிமேஸ் தாங்களே புத்திர பெளத்திர பாரம் பரியந்தம்,
காவாதி வினியோக விக் கிரயங்களுக்கு ரொக்கியமாய் சர்வ சுதந்திரத்தடக்
ஆண்டு அபவித்தக் கொள்ளவும்.

கிரயச் சொத்தைக் குறித்து இலிமேஸ் எங்களுக்காவது, எங்கள்
தளநு வாரிகளுக்குக்காவது லாகொரு பாத்திய சம்பந்தமும், பித்தொடர்த்தியும்
கிளையாது.

1. K. S. Srinivasan
- 2.

26 APR 2013

750Rs.



Handwritten signature and text in Tamil: 'சுயமேவ ஜயதே' and 'கோயம்புத்தூர் - 18.'

Handwritten text in Tamil: '13/0 - 1/1/13' and 'சுயமேவ ஜயதே'.



சீற்காணம் சொத்திப்பேரில் எவ்வித வில்லங்கமும் இல்லையென்ற உறுதியாய்ச் சொல்லுகிறோம்.

அப்படி ஏதாவது வில்லங்க விவகாரம், ரெகிட்டால் அதை நாங்களே முன்விட்டோம், எங்கள் ஊதர சொத்ததைக் கொண்டு, எங்கள் சொந்தச் சொலவில் தீர்த்துக் கொடுக்க உரிமையர்கள்.

சீற்காணம் முடிக்கு நாளடை தேதியில் தங்கள் பெயருக்கு பட்டா ராஜினாமாவும் செய்து கொடுத்திருக்கிறோம்.

1. M. S. S. S. S.
2. S. S. S. S.

26 APR 2013

750Rs.



Shan
துணை இயக்குநர்
பிரியல் & சுரங்கத்து
கோயம்புத்தூர் - 18.

Handwritten notes in Tamil script, including the number 1212.



-5-

சொத்தி விபரம்

திருப்பூர் பதிவு மாவட்டம், சூலார் ஞானப் பதிவு மாவட்டம்,
பல்லடம் வட்டம் -

பச்சாபாளையம் கிராமத்தில் -

க.ச.பு.282/1 நெ.காலை ஏ.4.84க்குத் தரம் ரூ.3.92.

இதில் -

காலியப்பகவுட்டர் பழக்கம்	...	வடக்கு
		மேற்கு
281 நெ. காலைக்கும்	...	தெற்கு
286/2 நெ.காலைக்கும்	...	கிழக்கு

1. *Handwritten note*
2. *Handwritten note*



Handwritten signature
 துணை இயக்குநர்
 மியல் & சுரங்கத்துறை
 கோயம்புத்தூர் - 18.

B-7A -

Handwritten notes and signatures in Tamil script.



-6-

இதன் மத்தியில் -

ஏ. 1.21க்குத் தரம் ரூபாய் 0.98. இந்த விலைமுள்ள
 பழியும்,

இசுலீன் மாவடை, மரவடை, கல்மன் வடைகளும், 265/1 நெ.
 நதகம் புறம்போக்கிலிருந்து 271, 273, 281 நெ. காலைகள்
 வழியாகவும், 272/2, 272/1, 274/1, 274/2, 281, 273
 ஆகிய காலைகள் வழியாகவும் செல்லும் 20 லினில் அகலமுள்ள தூரக்கு
 மாடும் தடல்களையும், கால்நடைகள், வண்டி, வாகனாதிகள்வகையரா ஒட்டிக்
 கொள்ளும் தடபாத்தியமும் சகிதம்.

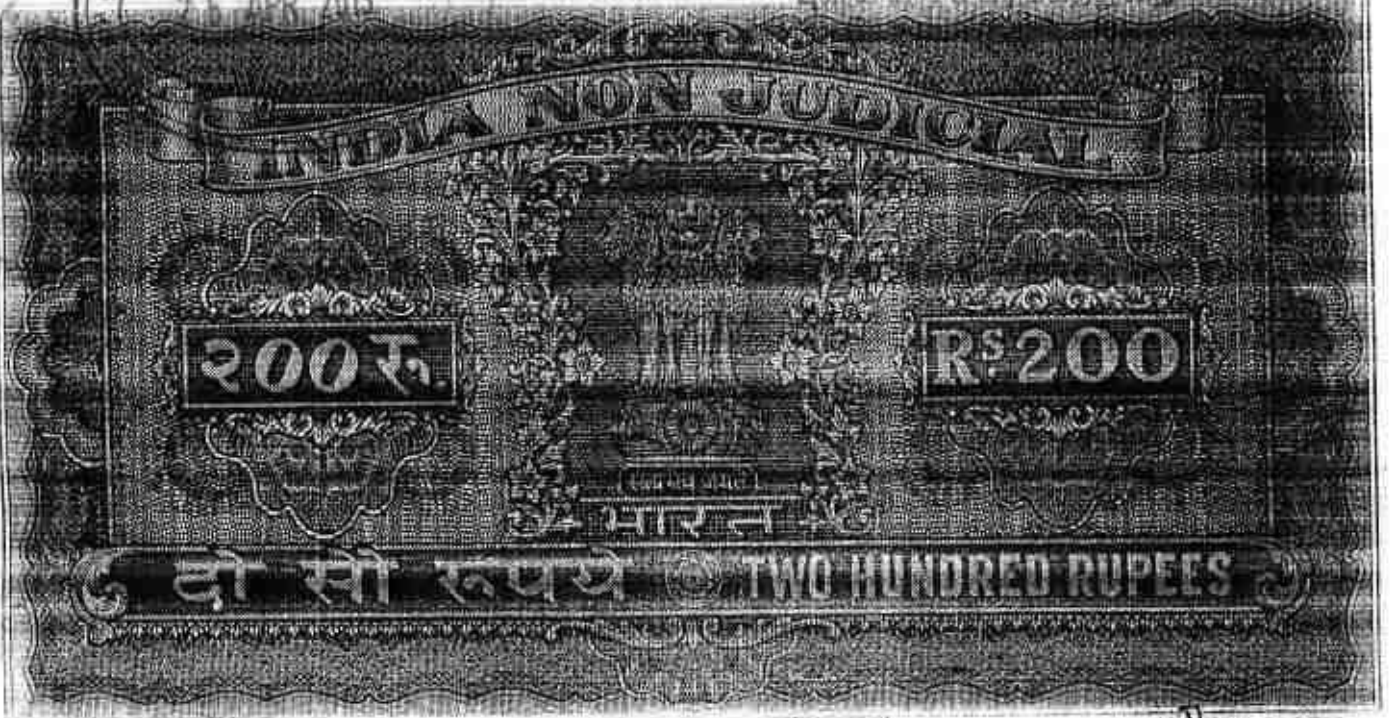
1.

2.

26 APR 2013

துணை இயக்குநர்
புலியியல் & தாங்கத்தலை

200Rs.



P. 2101 - RGA

09-10-09
17-12-09

சென்னை மாநகராட்சி
செயலகம்

REGISTRAR OFFICE
SINGANAILUR-CDE



-7-

இது தொடர்பான பதிவுகள் பதிவு செய்யப்பட்டுள்ளன. இ
சமீபத்தில் பதிவு செய்யப்பட்ட பதிவுகள் எல்லாவுக்கும்.

1. ரிசிட்டர்

2. ரிசிட்டர்



40 Rs.

Shan
 துணை இயக்குநர்
 பி.யல் & கரங்கத்துறை
 கோயம்புத்தூர் - 18.



-8-

உப சொத்தின் தற்கால மார்க்கட் மதிப்பு ரூபாய் 43,560.00

1. *10000*
2. *33560*

ஏட்டாளிகள் :-

1) *[Signature]*

த/பெ. கருப்பசுவாமிநாதர்,
 கார்த்திகம்பாளையம்

2) *[Signature]*

த/பெ. செல்வசுவாமிநாதர், பெரியகுயிலை
 பச்சையப்பாளையம் (கி)

பக்கிரம் கபாலித்தவர் :-

[Signature]

K. KAMATCHINATHAN
 No. 5 A, KUMARASAMY THEVAR,
 7, GANGANICKER LANE,
 BULUR,
 K. No. 4 B5/KEP/06

குடும்பத்தினவரின் பெயர் / முகவரி		2. சிலிண்டரின் எண்ணிக்கை	
சின்னச்சாமி கா ப.எண் : 2/74 பு.எண் : 2/165 காங்கயம்பாளையம் காங்கயம்பாளையம் ப.எண் (வ), 641401 ப.எண் (வ) கோயம்புத்தூர்		இரண்டு	
		3. குடும்பத்தினவரின் நபர்கள்	
		பெரியவர்கள்	4
		சிறியவர்கள்	0
பெயர்	வயது	பெயர்	வயது
சின்னச்சாமி கா	53		
சாரதாதேவி சி	43		
விஜய் சி	23		
ராமஜி சி	21		

தஞ்சை இயக்குநர் 13 / G / 1164767

புவியியல் & சார்பகத்துறை

கோயம்புத்தூர் - 18.

குடும்ப அட்டை Family Card
2005 - 2009உணவுப்பொருள் வழங்கல் மற்றும் நுகர்வோர்
பாதுகாப்புத்துறைCivil Supplies and Consumer Protection
Department

அரிசி

ப.எண் (வ)

கடை/ம/வார்டு	நெரு எண்	பழைய கதவு எண்	புதிய கதவு எண்
002	001	2/74	2/165
கடை எண்	கடையின் பெயர்		அபதீவுறு எண்
KP081	காங்கயம்பாளையம்		645

0386353 - 13KKP081009 - 13G122300 - June 2005



ANNEXURE - IX



[Signature]
சுஜா இயக்குநர்
புவியியல் & சுரங்கத்துறை
கோயம்புத்தூர் - 18.

**CERTIFICATE OF RECOGNITION AS
QUALIFIED PERSON TO PREPARE MINING PLANS**
(Under Rule 22 C of Mineral Concession Rules 1960)

*Shri. M. Ifithikhar Ahmed resident of 5/175 A Shanthi
Nagar, Chinnakollapatty, Kannankuruchi (PO), Salem - 636 008, Tamilnadu, son
of Mr. A. Magbul Jan having given satisfactory evidence of his qualifications and
experience is hereby granted recognition under Rule 22C of the Mineral Concession
Rules, 1960 as a Qualified Person to prepare Mining Plans.*

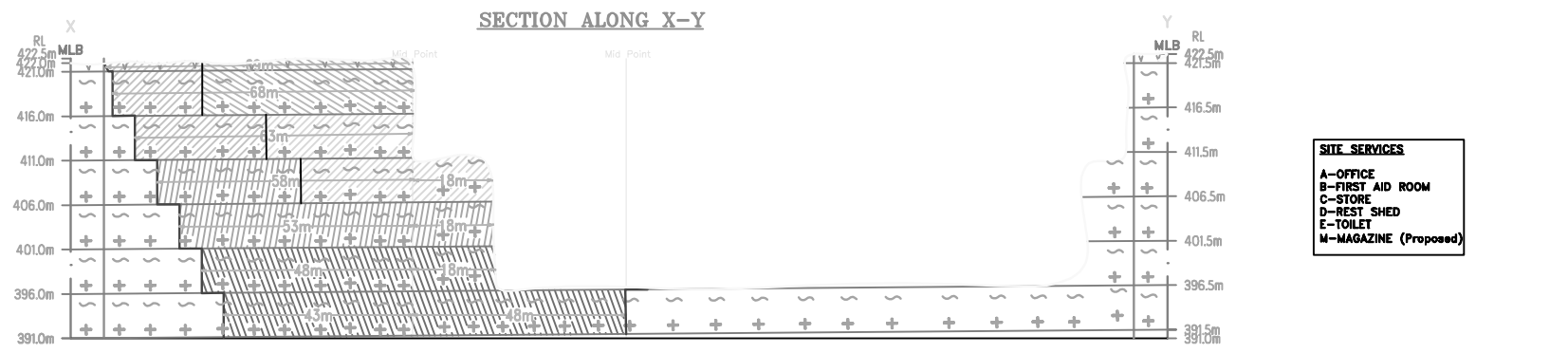
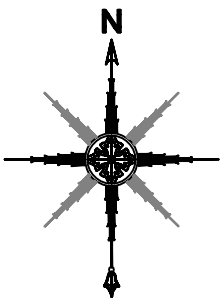
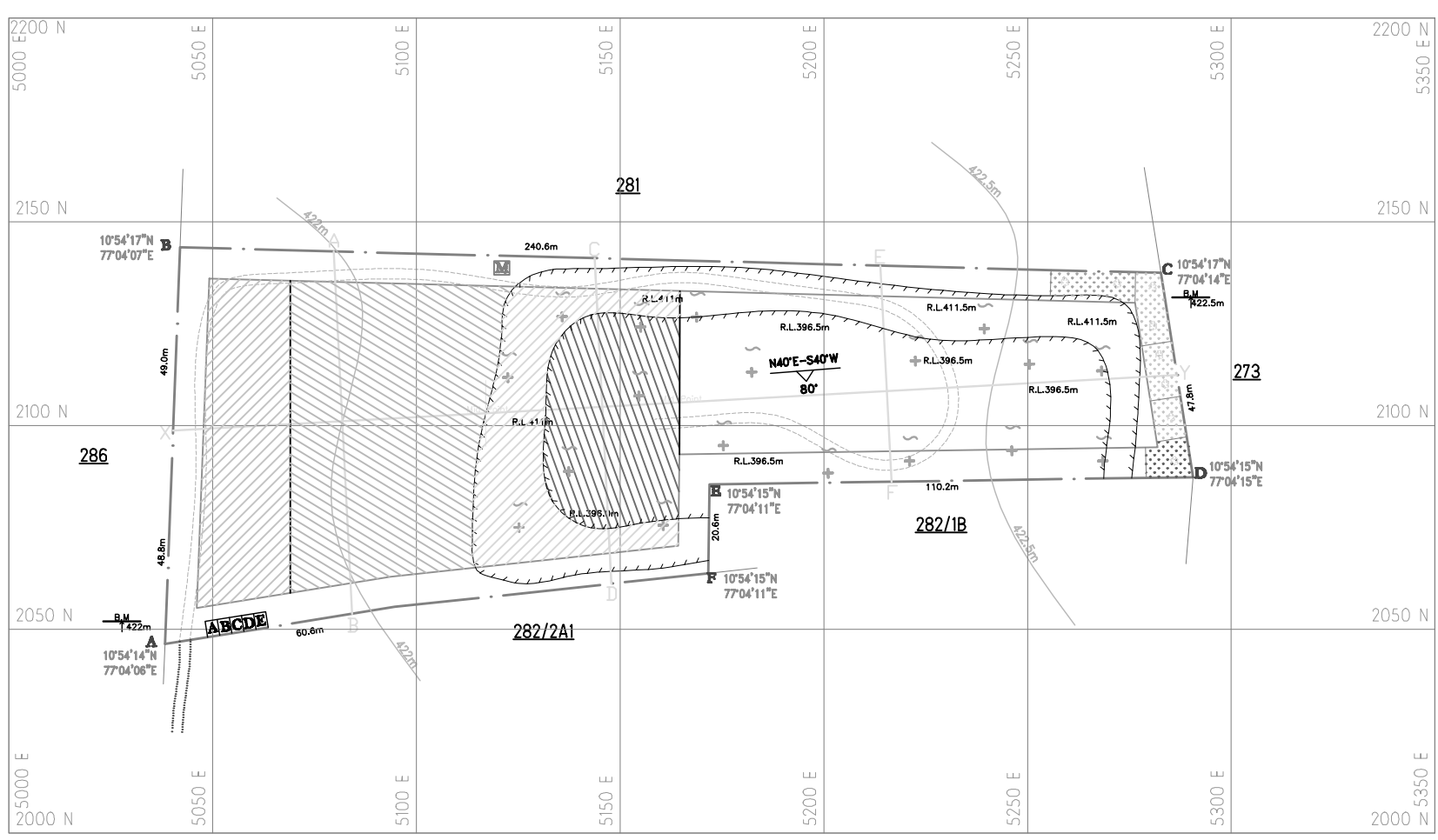
His registration number is

RQP/MAS/183/2004/A

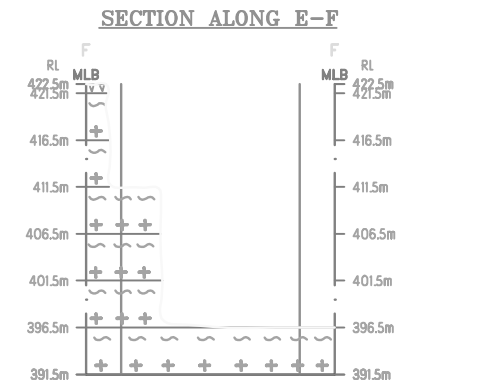
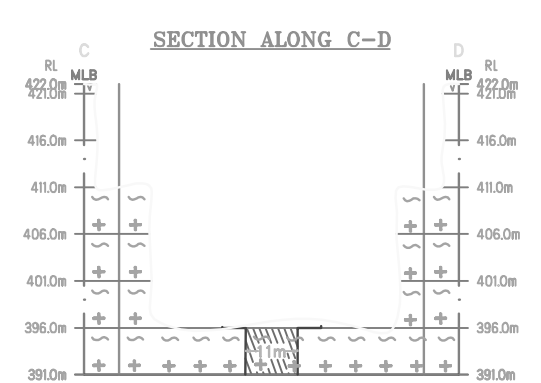
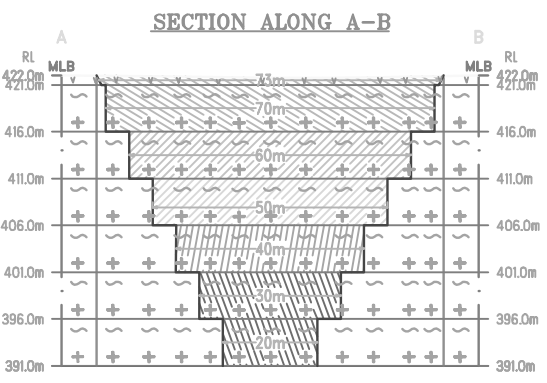
*This recognition is valid for a period of ten years ending
11.01.2014.*

*Place : Chennai
Date : 12.01.2004*

[Signature]
Regional Controller of Mines
Indian Bureau of Mines
Chennai Region



SITE SERVICES
 A-OFFICE
 B-FIRST AID ROOM
 C-STORE
 D-REST SHED
 E-TOILET
 M-MAGAZINE (Proposed)



PRESENT & POST LAND USE PATTERN

DESCRIPTION	PRESENT AREA (Ha)	AREA AT THE END OF THIS QUARRYING PERIOD (Ha)
QUARRYING PIT	0.91.1	1.38.0
DUMP	Nil	-
INFRASTRUCTURE	Nil	0.01.0
ROADS	0.02.0	0.01.0
GREEN BELT	Nil	0.05.0
UN-UTILIZED AREA	0.79.9	0.28.0
GRAND TOTAL	1.73.0	1.73.0

- | | |
|---------------------------------------|-------------------------------------|
| I - Yr PROPOSED AREA TO BE QUARRIED | 1st- Yr PROPOSED AREA TO BE PLANTED |
| II - Yr PROPOSED AREA TO BE QUARRIED | 2nd-Yr PROPOSED AREA TO BE PLANTED |
| III - Yr PROPOSED AREA TO BE QUARRIED | 3rd-Yr PROPOSED AREA TO BE PLANTED |
| IV - Yr PROPOSED AREA TO BE QUARRIED | 4th-Yr PROPOSED AREA TO BE PLANTED |
| V - Yr PROPOSED AREA TO BE QUARRIED | 5th- Yr PROPOSED AREA TO BE PLANTED |

PLATE No-V
 Date of survey : 10.04.2013

APPLICANT:
 THIRU.K.CHINNASAMY,
 S/O.KALIYAPPA GOUNDER,
 KORATHOTTAM,
 KANGAYAMPALAYAM,
 SULLUR TALLUK,
 COIMBATORE DISTRICT-641 401.

LOCATION OF Q.L.APPLIED AREA:
 S.F.No : 282/1A,282/1B(P)
 EXTENT : 1.730 Ha
 VILLAGE : PACHAPALAYAM,
 TALLUK : SULLUR,
 DISTRICT : COIMBATORE,
 STATE : TAMIL NADU.

INDEX

Q.L.APPLIED AREA BOUNDARY

7.5M SAFETY DISTANCE

BENCH MARK

APPROACH ROAD

CONTOUR

ROUGH STONE

STRIKE & DIP

WEATHERED FORMATION

QUARRY ROAD

TOPOGRAPHY PLAN & GEOLOGICAL PLAN
SECTIONS SCALE: PLAN- 1 : 1000
 SECTION - HOR: 1 : 1000
 VER : 1:500

PREPARED BY:
 THE PLAN AND SECTIONS ARE PREPARED BASED ON LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

M.IFTHIKHAR AHMED,M.Sc,F.G.S,M.B.A.,M.M.E.A.,
 RECOGNIZED QUALIFIED PERSON
 RQP/MAS/183/2004/A

OCTOBER TO DECEMBER

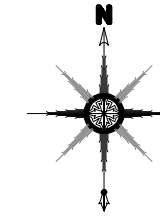


PLATE NO-VI

DATE OF SURVEY : 10.04.2013





APPLICANT:

THIRU.K.CHINNASAMY,
S/O.KALIYAPPA GOUNDER,
KORATHOTTAM,
KANGAYAMPALAYAM,
SULUR TALUK,COIMBATORE DISTRICT-641 401.

LOCATION OF Q.L.APPLIED AREA:

S.F.No : 282/1A,282/1B(P)
EXTENT : 1.73.0 Ha
VILLAGE : PACHAPALAYAM,
TALUK : SULUR,
DISTRICT : COIMBATORE,
STATE : TAMIL NADU.

INDEX

- Q.L.APPLIED AREA BOUNDARY 
- 7.5m SAFETY DISTANCE 
- CONTOUR 
- 500m RADIUS 
- 60m RADIUS 
- APPROACH ROAD 
- PANCHAYAT ROAD 
- WIND DIRECTION 
- TREES 
- SEASONAL AGRICULTURAL LAND 
- OLD PIT 

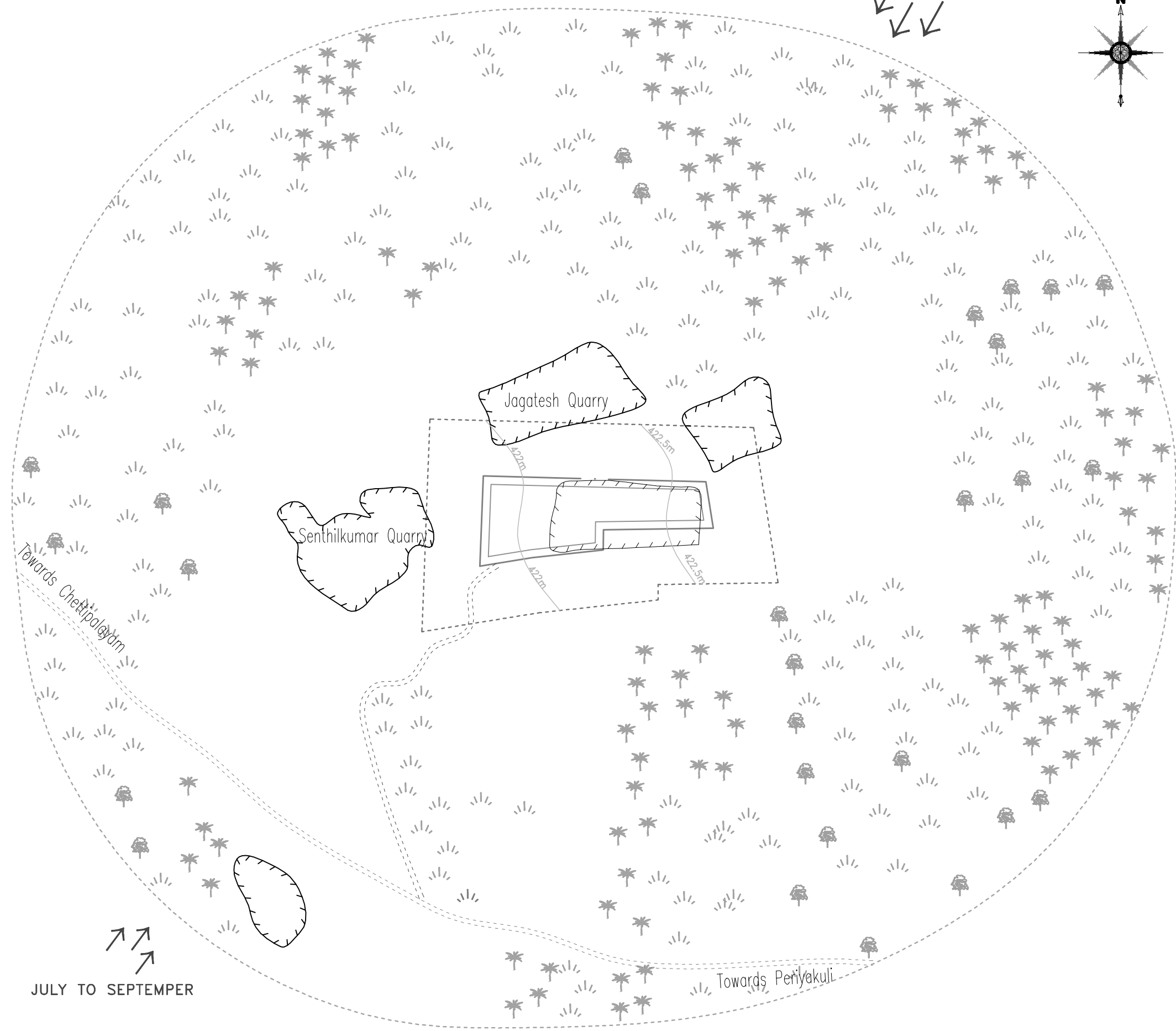
LOCATION OF PERMANENT STRUCTURES,AFFORESTATION, DUMP & DISPOSAL OF WASTE PLAN

SCALE 1:5000

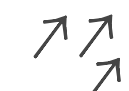
PREPARED BY :

THE PLAN AND SECTIONS ARE PREPARED BASED ON LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

M.IFTHIKHAR AHMED,M.Sc,F.G.S,M.B.A.,M.M.E.A,
RECOGNIZED QUALIFIED PERSON
RQP/MAS/183/2004/A

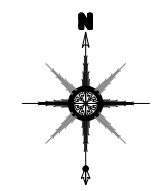
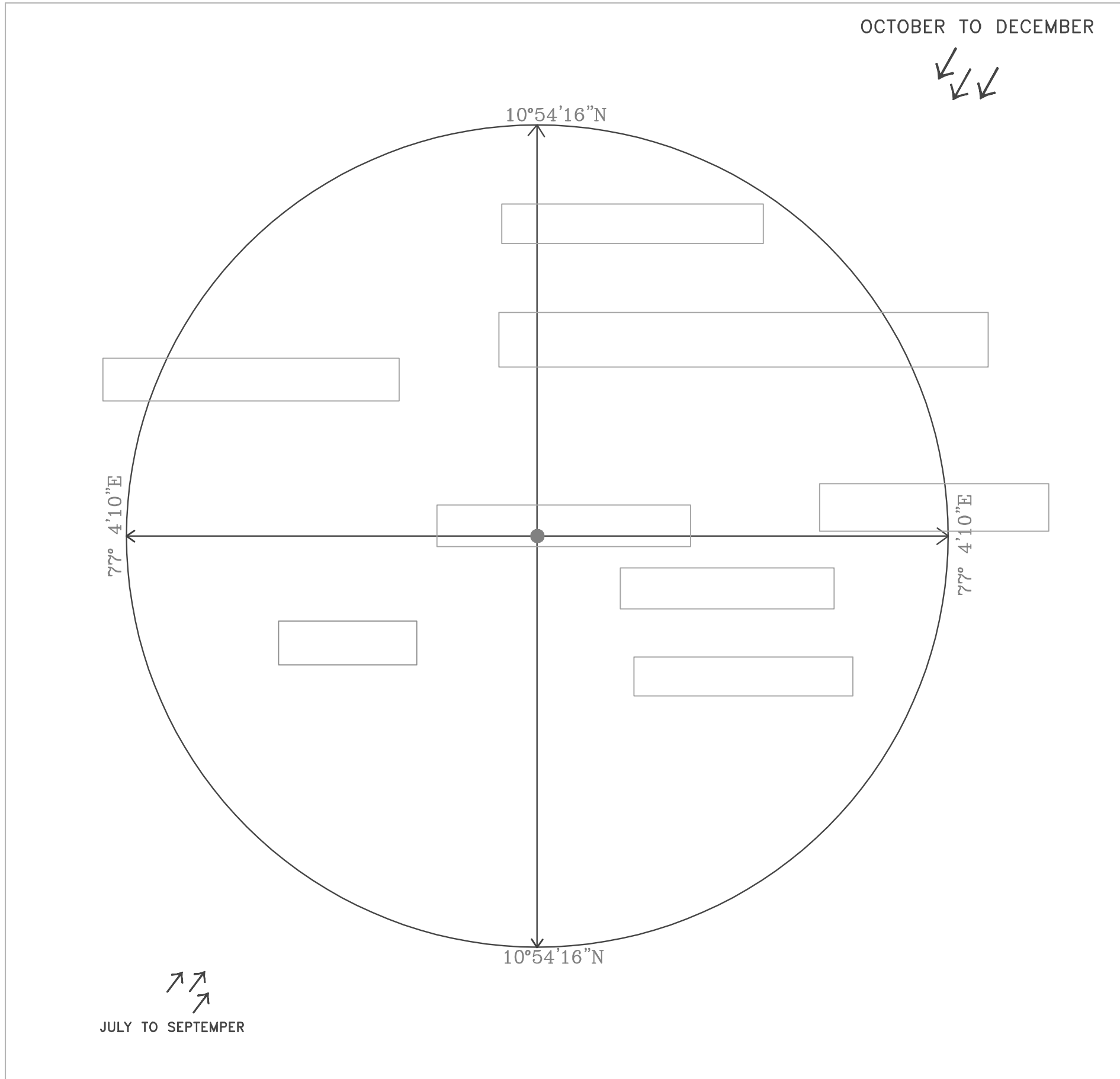





JULY TO SEPTEMBER



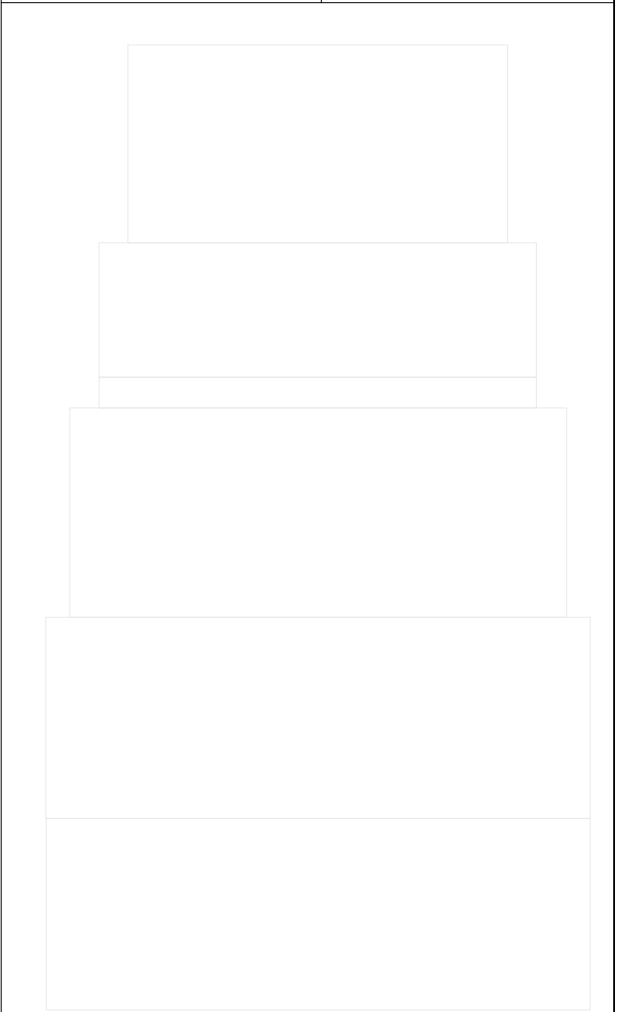
Towards Periyakuli

Towards Chetipalayam



15Km Radius : 
 Q.L.Applied Area : 
 TOPO SHEET No : 58/F 01
 Wind Direction : 
 LATITUDE : 10°54'16"N
 LONGITUDE : 77° 4'10"E

APPLICANT: THIRU.K.CHINNASAMY, S/O.KALIYAPPA GOUNDER, KORATHOTTAM, KANGAYAMPALAYAM, SULUR TALUK, COIMBATORE DISTRICT-641 401.	LOCATION OF Q.L.APPLIED AREA: S.F.No : 282/1A,282/1B(P) EXTENT : 1.73.0 Ha VILLAGE : PACHAPALAYAM, TALUK : SULUR, DISTRICT : COIMBATORE, STATE : TAMIL NADU.
--	---



TOPO SKETCH OF QUARRY LEASE
APPLIED AREA FOR
5Km RADIUS
 SCALE- 1:50000

PREPARED BY :
 THE PLAN AND SECTIONS ARE PREPARED BASED
 ON LEASEMAP AUTHENTICATED BY
 STATE GOVERNMENT

 M.IFTHIKHAR AHMED,M.Sc,F.G.S,M.B.A.,M.M.E.A,
 RECOGNIZED QUALIFIED PERSON
 RQP/MAS/183/2004/A

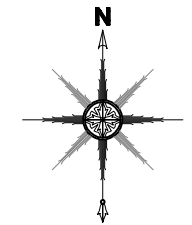
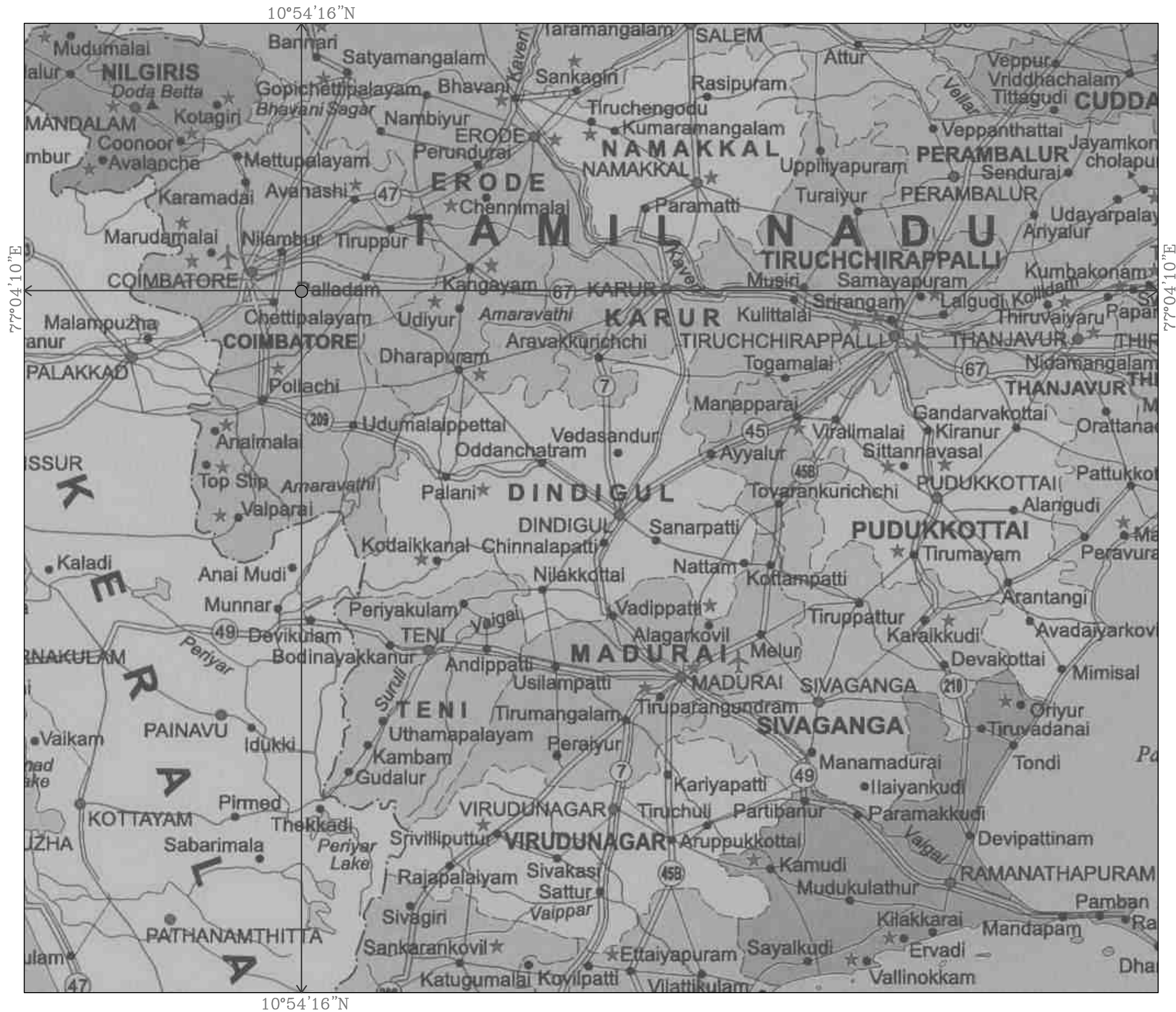


PLATE NO-II-B

DATE OF SURVEY : 10.04.2013

APPLICANT:

THIRU.K.CHINNASAMY,
S/O.KALIYAPPA GOUNDER,
KORAIHOTTAM,
KANGAYAMPALAYAM,
SULUR TALUK, COIMBATORE DISTRICT-641 401 .

LOCATION OF Q.L.APPLIED AREA:

S.F.No : 282/1A,282/1B(P)
EXTENT : 1.73.0 Ha
VILLAGE : PACHAPALAYAM,
TALUK : SULUR,
DISTRICT : COIMBATORE,
STATE : TAMIL NADU.

INDEX

Q.L.APPLIED AREA: ●
TOPO SHEET NO : 58/F 01
LATITUDE : 10°54'16"N
LONGITUDE : 77° 4'10"E

LOCATION PLAN

NOT TO SCALE

PREPARED BY :

THE PLAN AND SECTIONS ARE PREPARED BASED ON LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

M.IFTHIKHAR AHMED,M.Sc,F.G.S,M.B.A.,M.M.E.A,
RECOGNIZED QUALIFIED PERSON
RQP/MAS/183/2004/A

26 AUG 2016

MINING PLAN FOR PACHAPALAYAM ROUGH STONE AND GRAVEL QUARRY

(Prepared under rule 12 of Minor Mineral Conservation and Development Rules, 2010 & as per the amendments under TamilNadu Minor Mineral Concession Rules, 1959)

LOCATION OF THE QUARRY LEASE APPLIED AREA

STATE : TAMIL NADU
DISTRICT : COIMBATORE
TALUK : SULUR
VILLAGE : PACHAPALAYAM
S.F.NOS : 273/1B, 273/2B, 273/3E (PART),
274/1A AND 274/2A
EXTENT : 2.62.0Ha

For

APPLICANT

Thiru.T.Ragupathi,
S/o.N.Thangavelu,
No. 153A, Maraimalai Adigal Street,
Mangalam Road,
Palladam,
Tiruppur District.

PREPARED BY

C.Natarajan, M.Sc., M.Phil.,
RQP/MAS/004/87/A
Valid Upto-22.10.2021
93/36-E2, Subramaniyar Kovil Street,
Omalur Taluk, Salem District,
Tamil Nadu, PIN-636 455.
Mobile: 97502 23535-9444654520.
Email:geoprabu@gmail.com,
Infoglobmining@gmail.com.

T.Ragupathi,
S/o.N.Thangavelu,
No.153A, Maraimalai Adigal Street,
Mangalam Road,
Palladam,
Tiruppur District.



CONSENT LETTER FROM THE APPLICANT

The Mining Plan in respect of **Rough Stone and Gravel** quarry over an extent of 2.62.0Ha of (**Patta land**) in S.F.Nos. 273/1B, 273/2B, 273/3E (Part), 274/1A and 274/2A of Pachapalayam Village, Sulur Taluk, Coimbatore District, Tamil Nadu State has been prepared by

C.Natarajan, M.Sc.,M.Phil.,
RQP/MAS/004/87/A

I request the Assistant Director, Department of Geology and Mining, Coimbatore District to make further correspondence regarding modifications of the Mining Plan with the said Recognized Qualified Person on this following address.

C.Natarajan,M.Sc.,M.Phil.,
RQP/MAS/004/87/A

No.93/36E2, Subramaniam Kovil Street,
Omahur Taluk, Salem District,
Tamil Nadu, Pin-636 455.
Mobile: 97502 23535 & 94446 54520.

I hereby undertake that all modifications so 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 building on me in all respects.

Signature of the Applicant


T.Ragupathi

Place:Coimbatore
Date:18.08.2016

T.Ragupathi,
S/o.N.Thangavelu,
No.153A, Maraimalai Adigal Street,
Mangalam Road,
Palladam,
Tiruppur District.



DECLARATION

The Mining Plan in respect of **Rough Stone and Gravel** quarry over an extent of 2.62.0Ha of (Patta land) in S.F.Nos. 273/1B, 273/2B, 273/3E (Part), 274/1A and 274/2A of Pachapalayam Village, Sulur Taluk, Coimbatore District, Tamil Nadu State has been prepared with my consultation and I have understood the contents and agree to implement the same in accordance with the Mining Laws.

Signature of the Applicant

A handwritten signature in black ink, appearing to read "T. Ragupathi".

T.Ragupathi

Place:Coimbatore
Date:18.08.2016

C.Natarajan, M.Sc., M.Phil.,

RQP/MAS/004/87/A

No.93/36E2, Subramaniyar Kovil Street,

Omalur Taluk, Salem District,

Tamil Nadu, Pin-636 455.

Mobile:97502 23535 &94446 54520.



CERTIFICATE

This is to certify that, the provisions of Minor Minerals Conservation and Development Rules, 2010 (MMCDR) have been observed in the Mining Plan for the grant of **Rough Stone and Gravel** quarry over an extent of 2.62.0Ha of (Patta land) in S.F.Nos. 273/1B, 273/2B, 273/3E (Part), 274/1A and 274/2A of Pachapalayam Village, Sulur Taluk, Coimbatore District, Tamil Nadu State applied by Thiru.T.Ragupathi for fresh quarry lease.

Wherever specific permission / exemptions / relaxations or approvals are required, the applicant will approach the concerned authorities of State and Central Governments for granting such permissions etc.

Certified

Signature of Recognized Qualified Person.


C.Natarajan, M.Sc., M.Phil.,

RQP/MAS/004/87/A
C. NATARAJAN, M.Sc., M.Phil.,
RECOGNISED QUALIFIED PERSON,
RQP/MAS/004/87/A

Place: Salem

Date: 22.08.2016

C.Natarajan,M.Sc.,M.Phil.,

RQP/MAS/004/87/A

No.93/36E2, Subramaniyar Kovil Street,

Omalur Taluk, Salem District,

Tamil Nadu, Pin-636 455.

Mobile:97502 23535 &94446 54520.




CERTIFICATE

Certified that, in preparation of Mining Plan for **Rough Stone and Gravel** quarry over an extent of 2.62.0Ha of (Patta land) in S.F.Nos. 273/1B, 273/2B, 273/3E (Part), 274/1A and 274/2A of Pachapalayam Village, Sular Taluk, Coimbatore District, Tamil Nadu State for Thiru.T.Ragupathi, covers all the provisions of Mines Act, Rules, and Regulations etc made there under and whenever specific permission are required, the applicant will approach the Director General of Mines Safety, Chennai. The standards prescribed by DGMS in respect of Mines Health will be strictly implemented.

Certified

Signature of Recognized Qualified Person.


C.Natarajan, M.Sc.,M.Phil.,

RQP/MAS/004/87/A

C. NATARAJAN, M.Sc.,M.Phil.,
RECOGNISED QUALIFIED PERSON,

RQP/MAS/004/87/A

Place: Salem

Date: 22.08.2016

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Annexure



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MINING PLAN FOR MINOR MINERALS

ROUGH STONE AND GRAVEL

Over an extent of 2.62.0 Hectares of Patta land in S.F.Nos.273/1B, 273/2B, 273/3E (Part), 274/1A and 274/2A of Pachapalayam Village, Suler Taluk, Coimbatore District, Tamil Nadu State.

(PREPARED UNDER RULE 19 (1) OF TNMMCR 1959)

1.0 Introduction and Executive Summary:

1. The present mining plan is prepared for Thiru.T.Ragupathi, S/o.N.Thangavelu, Residing at No. 153A, Maraimalai Adigal Street, Mangalam Road, Palladam, Tiruppur District.
2. The application was processed by the District Collector, Coimbatore and passed an order vide Rc. No. 892/2015/Mines dated 17.08.2016 has directed 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 and Gravel** over an extent 2.62.0 hectares of patta lands in S.F.Nos.273/1B, 273/2B, 273/3E (Part), 274/1A and 274/2A of Pachapalaym Village, Suler Taluk, Coimbatore District of Tamil Nadu State for a period of **Five** years only.
3. Accordingly, Mining Plan is prepared under the provisions of rule 12 of Minor Mineral Conservation and Development Rules, 2010 & as per the amendments under Tamil Nadu Minor Mineral Concession Rules, 1959 by incorporating the conditions imposed in the precise area communication letter and by incorporating all the details proposed in the letter No. SEIAA-TN/Minor Minerals / 2012 dated 17.04.2013 of State Level Environmental Impact Assessment Authority.
4. Geological Resources is estimated at 2,57,590m³ of Rough stone and 51,518m³ of gravel formation. Mineable Reserves is estimated at 1,43,605m³ of Rough Stone and 34,222m³ of gravel formation after leaving necessary safety distance from the lease boundary as indicated in the precise area letter and relevant mining laws in force.
5. Production Schedule is proposed an average production of 65,435m³ of Rough Stone and 15,742m³ of gravel formation for the period of five years.



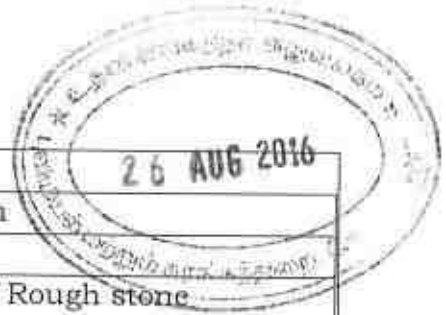
6. Environmental parameters,

- i) The area does not attract the Forest Conservation Act, 1980 as there is no forest around 10Kms radius.
- ii) There is no interstate boundary around 10Kms radius.
- iii) There is no wild life animal sanctuary within 10Kms radius form the project site area under the Wildlife (Protection) Act, 1972.

Therefore the project seeks clearance only from State Level Environmental Impact Assessment Authority (SEIAA), under B2 Category.

7. 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 tack 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	: Pachapalayam
b.	Name of the Panchayat Union	: Sulthanpettai
c.	The proposed total Movable Reserves	: 1,43,605m ³ of Rough stone 34,222m ³ of Gravel
d.	The proposed quantity of reserves (level of production) for five years to be mined	: 65,435m ³ of Rough stone 15,742m ³ of Gravel
e.	Total extent of the area	: 2.62.0Ha
f.	Proposed Period of mining	: Five Years
g.	Existing depth	: 12m below ground level
h.	Proposed Depth of mining	: 12m below ground level
i.	Method of mining / level of mechanization	: Opencast, Semi-mechanized Mining with a bench height of 5m and bench width of 5m 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 B. Operational Cost C. EMP Cost	Rs. 13,48,000/- Rs. 41,00,000/- Rs. 4,25,000/- Total Project cost(A+B+C)= 58,73,000/-

l. The area applied for lease is bounded by sixteen corners and the coordinates are clearly marked in plate no II

Corners	Co- ordinates		Distance between the corners
	Latitude	Longitude	
1	10° 54' 14"N	77° 04' 20"E	1-2 = 125.6m
2	10° 54' 18"N	77° 04' 19"E	2-3 = 35.0m
3	10° 54' 18"N	77° 04' 20"E	3-4 = 56.8m
4	10° 54' 20"N	77° 04' 20"E	4-5 = 79.6m
5	10° 54' 19"N	77° 04' 17"E	5-6 = 73.4m
6	10° 54' 21"N	77° 04' 16"E	6-7 = 90.4m
7	10° 54' 22"N	77° 04' 19"E	7-8 = 40.8m
8	10° 54' 23"N	77° 04' 20"E	8-9 = 30.0m
9	10° 54' 24"N	77° 04' 21"E	9-10 = 72.0m
10	10° 54' 22"N	77° 04' 21"E	10-11 = 67.8m
11	10° 54' 20"N	77° 04' 22"E	11-12 = 3.8m
12	10° 54' 20"N	77° 04' 22"E	12-13 = 78.2m
13	10° 54' 18"N	77° 04' 23"E	13-14 = 39.0m
14	10° 54' 17"N	77° 04' 23"E	14-15 = 73.6m
15	10° 54' 16"N	77° 04' 21"E	15-16 = 41.4m
16	10° 54' 15"N	77° 04' 22"E	16-1 = 53.6m



2.0 General Information:

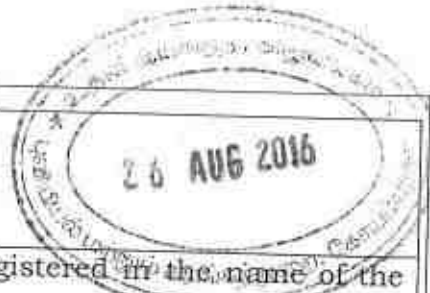
2.1	a.	Name of the Applicant	:	Thiru.T.Ragupathi,
	b.	Address of the Applicant with phone No and e-mail id if any	:	S/o.N.Thangavelu, No. 153A, Maraimalai Adigal Street, Mangalam Road, Palladam, Tiruppur District. Pincod-641664. Cell No: 9842262639
	c.	Status of the Applicant	:	Individual
2.2	a.	Mineral Which the applicant intends to mine	:	Rough Stone and Gravel.
	b.	Precise area communication letter No.	:	Precise area communication letter received from District Collector, Coimbatore letter vide Rc.No.892/2015/Minesdated17.08.2016.
	c.	Period of permission / lease granted	:	The applicant has applied permission for five years/ the district collector consider for grant of lease period of Five years only .
	d.	Name and Address of *the RQP preparing Mining Plan	:	C.Natarajan,M.Sc.,M.Phil., RQP/MAS/004/87/A No.93/36E2, Subramaniyar Kovil Street, Omalur Taluk, Salem District, Tamil Nadu, Pin-636 455. Mobile: 9750223535 & 94446 54520.
	e.	RQP Registration. No.	:	RQP/MAS/004/87/A Valid Til. 22.10.2021.

3.0 Location:

Details of the Area:

State	District	Taluk	Village	S.F.Nos	Extent in hectares
Tamil Nadu	Coimbatore	Sulur	Pachapalayam	273/1B, 273/2B, 273/3E (Part), 274/1A and 274/2A	2.43.5

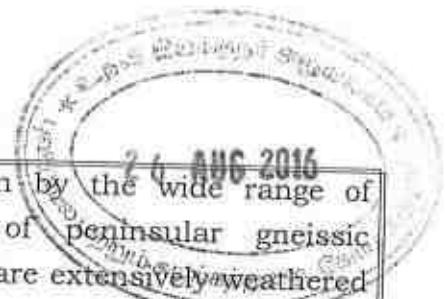
b.	Classification of the Area (Ryotwari / poramboke / others)	:	Patta land
c.	Ownership / Occupancy of the Applied area (Surface rights)	:	It is patta land registered in the name of the applicant vide patta no-1099; Please refer annexure no.IV.
d.	Toposheet No. with Latitude and Longitude	:	TopoSheet No: 58-F/01 Latitude : 10°54'14"N to 10°54'24"N Longitude : 77°04'16"E to 77°04'23"E
e.	Existence of Public Road / Railway line if any nearby the area and approximate distance	:	There is an existing road from the area leads to Chettipalayam on Western side of the area. The Nearest Railway line is Pollachi to Coimbatore line which is about 4.5Km on Western side of the area.



PART - A

4.0 Geology and Mineral Reserves:

4.1	a.	Topography	:	<ol style="list-style-type: none"> 1. The area applied for quarry lease is exhibits almost plain topography covered by Gravel formation. The massive Charnockite formation is clearly inferred followed by the 2m (Avg) Gravel and gentle sloping towards southeastern side of the area, the altitude of the area is above 412m (maximum) from MSL. 2. No major river is found nearby the applied area. 3. Water table is found at a depth of 40m in summer and 35m in rainy seasons. 4. Temperature of the area is reported to be 18°C to a maximum of 42°C during summer. 5. Rainfall of this area is about 800mm to 900 mm during the both NE& SW monsoons.
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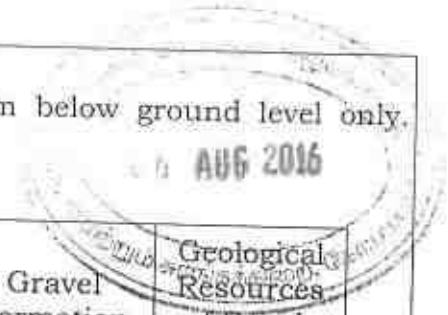


	<p>b. General Geology of the Area :</p>	<p>The area is underlain by the wide range of metamorphic rocks of peninsular gneissic complex. These rocks are extensively weathered and overlain by the recent valley fills and alluvium at places. The geological formations found in the district are Archaean rocks 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 N45°E-S45°W with dipping towards SE70°. The general geological succession of the area is given as under.</p> <table border="1" data-bbox="638 996 1157 1265"> <thead> <tr> <th></th> <th>Age</th> <th>Rock Formation</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Recent to Sub recent</td> <td>Gravel, Alluvium</td> </tr> <tr> <td>2.</td> <td>Archaean</td> <td>Charnockite</td> </tr> <tr> <td>3.</td> <td>Archaean</td> <td>Peninsular Gneiss, and Calc Gneiss</td> </tr> </tbody> </table>		Age	Rock Formation	1.	Recent to Sub recent	Gravel, Alluvium	2.	Archaean	Charnockite	3.	Archaean	Peninsular Gneiss, and Calc Gneiss
	Age	Rock Formation												
1.	Recent to Sub recent	Gravel, Alluvium												
2.	Archaean	Charnockite												
3.	Archaean	Peninsular Gneiss, and Calc Gneiss												
4.2	<p>Details of Exploration already carried out if any</p>	<p>No exploration was carried out, the rough stone formation are clearly visible from existing pit.</p>												
4.3	<p>a. Estimation of Reserves</p>	<p>The Geological and Recoverable reserves are estimated by cross sectional method. Totally five sections have been drawn, two section drawn length wise as (X-Y), (X1-Y1) and another three sections drawn width wise as (A-B), (C-D) and (E-F) to cover maximum area considered for lease. The Plans and Sections have been drawn with a scale of 1:1000 and 1:500 respectively. Please refer plate no.III</p>												

a. Geological Resources

The quarrying is restricted up to a depth of 12m below ground level only. Availability of Resources is given below.

Table No-1



Section	length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Gravel Formation in m ³	Geological Resources of Rough stone in m ³
XY-AB	123	32	2	7872	7872	
	123	32	10	39360		39360
Total					7872	39360
XIY1-AB	77	76	2	11704	11704	
	77	76	10	58520		58520
Total					11704	58520
X1Y1-CD	56	75	2	8400	8400	
	56	75	10	42000		42000
Total					8400	42000
X1Y1-EF	79	149	2	23542	23542	
	79	149	10	117710		117710
Total					23542	117710
Grand Total					51518	257590

Gravel Formation : 51,518m³

The Geological Resources of Rough stone : 2,57,590m³

b. Already excavated

The area has been quarried in earlier operation the existing pit dimension are given below

Table No-2

Pit No	length (Max) in(m)	Width (Avg) in (m)	Depth (Max) in (m)
I	108	24	12

C. Available Mineable Reserve

The available mineable reserve calculated by deducting 7.5m safety distance and bench loss.

Table No-3

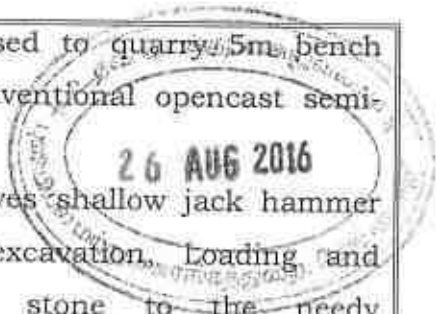
Section	Bench	length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Gravel Formation in m ³	Mineable Reserve of Rough stone in m ³
XIY1-AB	I	69	67	2	9246	9246	
	II	66	64	5	21120		21120
	III	61	59	5	17995		17995
Total						9246	39115
XIY1-CD	I	56	58	2	6496	6496	
	II	56	52	5	14560		14560
	III	56	42	5	11760		11760
Total						6496	26320
XIY1-EF	I	70	132	2	18480	18480	
	II	67	126	5	42210		42210
	III	62	116	5	35960		35960
Total						18480	78170
Grand Total						34222	143605

The available mineable reserve is computed as 1,43,605m³ of rough stone and 34,222m³ of Gravel formation at the rate of 100% recovery upto a depth of 12m below ground level.

5.0 Mining:

5.1	Method of Mining	:	<ol style="list-style-type: none"> 1. Opencast method of semi mechanized mining with 5.0m vertical bench width of the bench is not less than bench height. 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 petrogenetic 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.
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5.2	Mode of Working	<p>The rough stone is proposed to quarry 5m bench height and width with conventional opencast semi-Mechanized method.</p> <p>The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, Loading and transportation of Rough stone to the needy crusher/other buyers. The production of Rough stone in this quarry involves the following method which is typical for Rough Stone quarrying in contrast to other major mineral mining.</p> <p>Splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy crusher/other buyers.</p> <p>Occasionally hydraulic excavators are attached with rock breakers for fragmentation to avoid secondary blasting.</p> <p>The primary boulders thus splitted 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.</p>
5.3	Proposed bench height & Width	Quarrying of Rough Stone is proposed bench height of 5m and bench width of 5m.
5.4	Details of Overburden / Mineral Production proposed for the first 5 years.	The overburden in the form of gravel formation. The excavated rough stone and gravel will be directly loaded into tipper to the needy crushers/other buyers for road project and construction works for filling and leveling of low lying areas.



The Yearwise Production and Development Table

Table No -4



Year	section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Gravel Formation in m ³	Mineable Reserve of Rough stone in m ³
I	XIY1-AB	I	45	67	2	6030	6030	
		II	42	64	5	13440		13440
II	XIY1-AB	I	24	67	2	3216	3216	
		II	24	64	5	7680		7680
	XIY1-CD	I	22	58	2	2552	2552	
		II	22	52	5	5720		5720
III	XIY1-CD	I	34	58	2	3944	3944	
		II	34	52	5	8840		8840
		III	20	42	5	4200		4200
IV	XIY1-CD	III	36	42	5	7560		7560
	XIY1-AB	III	20	59	5	5900		5900
V	XIY1-AB	III	41	59	5	12095		12095
Total							15742	65435

The applicant has proposed to carry out 65,435m³ Rough Stone and 15,742m³ of Gravel formation at the rate of 100% recovery upto a depth of 12m below ground level for the period of five years only.

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 0.90m ³ bucket capacity (with Rock breaker attachment).
	b.	Loading	: Excavator of 0.90m ³ bucket capacity (with Rock breaker attachment).
	c.	Transportation	: Tipper 2Nos 5/10Ts capacity.
5.6		Disposal of Overburden	: The overburden in the form of gravel formation. The excavated rough stone and gravel will be directly loaded into tipper to the



needy crushers/other buyers for project and construction works for filling and leveling of low lying areas.

5.7 Brief Note on Conceptual Mining Plan for the entire lease period

Conceptual Mining Plan is prepared with an object of five 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,

Ultimate Pit dimension (M)			
Pit No	Length (max) in m	Width (Avg) in m	Depth(max) in(m)
I	200	70	12

Afforestation has been proposed on all along the boundary barrier by planting trees.

All the baseline information studies like Air Quality monitoring, Noise and Vibration monitoring, Water Analysis studies will be carried out every year as per the MOEF norms.

26 AUG 2016

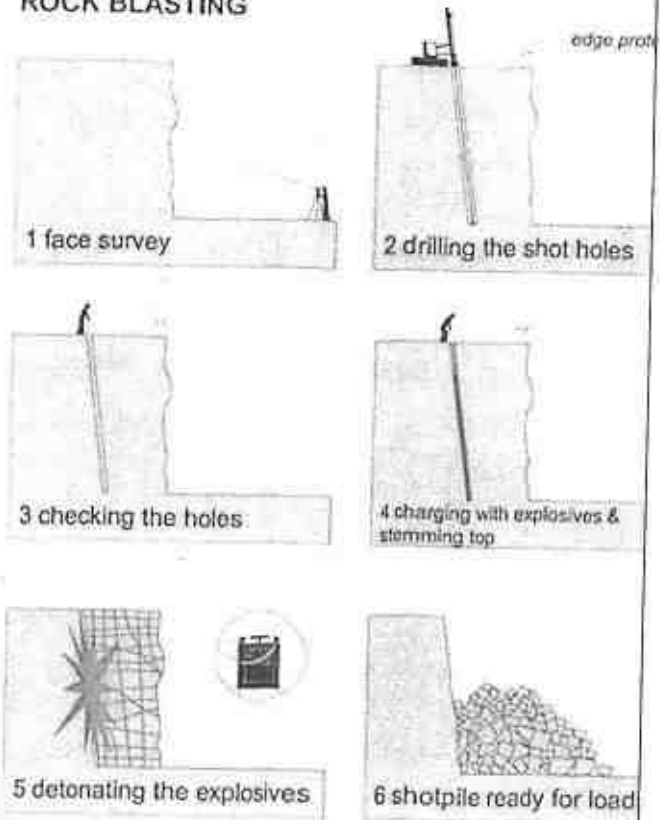
6.0 Blasting:

6.1 Blasting Pattern

: The massive formation shall be broken into pieces of portable size by drilling and blasting using jack hammers and shot hole blasting. Powder factor of explosives for breaking such hard rock shall be in the order of 6 to 7 Tonnes per K.g of explosives. Blasting parameters are as follows.

Diameter of the hole	:	32-36 mm
Spacing	:	60 Cms
Depth	:	1 to 1.5m
Burden for hole	:	0.6m
Pattern of hole	:	ZigZag
Inclination of hole	:	70° from the horizontal.

ROCK BLASTING



6.2 Types of Explosives

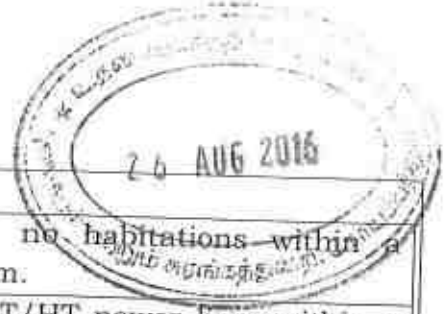
: Small dia, 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Roughstone. No deep hole drilling or primary blasting is proposed.



6.3	Measures proposed to minimize ground vibration due to blasting	<p>: 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.</p> <table border="1" data-bbox="774 526 1380 817"> <tr> <td>Number of holes</td> <td>: 40</td> </tr> <tr> <td>Powder factor</td> <td>: 6Ts/Kg of explosives</td> </tr> <tr> <td>Total explosive required</td> <td>: 20Kg slurry explosives</td> </tr> <tr> <td>Charge / hole</td> <td>: 0.5Kg</td> </tr> <tr> <td>Blasting time</td> <td>: 12-2 Pm</td> </tr> </table>	Number of holes	: 40	Powder factor	: 6Ts/Kg of explosives	Total explosive required	: 20Kg slurry explosives	Charge / hole	: 0.5Kg	Blasting time	: 12-2 Pm
Number of holes	: 40											
Powder factor	: 6Ts/Kg of explosives											
Total explosive required	: 20Kg slurry explosives											
Charge / hole	: 0.5Kg											
Blasting time	: 12-2 Pm											
6.4	Storage of Explosives and safety measures to be taken while blasting.	<p>: 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.</p>										

7.0 Mine Drainage:

7.1	Depth of Water table	<p>: The ground water table is reported as 40m below ground level in nearby wells of this area. The quarry operation proposed upto a depth of 12m below ground level only. Hence the quarrying operation may not affect the ground water.</p>
7.2	Arrangement and Places where the mine water is finally proposed to be discharged	<p>: The ground water may not rise immediately in this type of mining. However, the rain water percolation and collection of water from the seepage shall be less than 300lpm and it shall be pumped about periodically by a stand by diesel powered Centrifugal pump motivated with 7.5 H.P. Motor.</p> <p>The quality of water is potable and it is not contaminated with any hazardous things. Hence, water stored in the quarry pit will be pumped into the adjacent agricultural fields. Further the water stored in the old pit will also be used for plantation purposes</p>



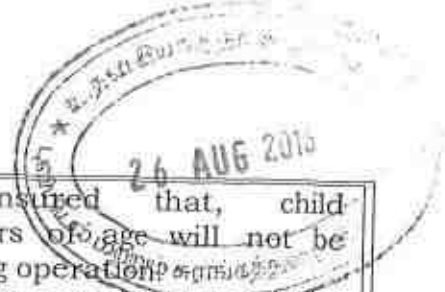
8.0 Other Permanent Structures:

8.1	Habitations / Village	:	There are no habitations within a radius of 500m.
8.2	Power lines (HT/LT)	:	There is no LT/HT power lines within a radius of 500m.
8.3	Water bodies (River, Pond, Lake, Odai, Channel etc)	:	There is rivers, odai, pond, etc located within a radius of 500m.
8.4	Archeological / Historical Monuments	:	There are no Archeological / Historical Monuments within a radius of 500m.
8.5	Road (NH, SH, Village Road etc)	:	The National Highway (NH-209) Coimbatore - Bangalore about 8.5km on Western side of the area. The State Highway (SH-163) Chettipalayam - Palladam is about 3Km on Northwestern side of the area.
8.6	Places of Worship	:	There are no Places of Worship within a radius of 500m.
8.7	Reserved Forest / Forest / Social Forest / Wild Life Sanctuary etc.,	:	There are no Reserved Forest / Forest / Social Forest / Wild Life Sanctuary etc within a radius of 500m.
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

9.0 Employment Potential & Welfare Measures:

9.1	Employment Potential (Management & Supervisory personal)	:	1. Skilled	Operator	4 No.
				Mechanic	1 No.
			Mines manager / Mat	1 No.	
			2. Semi - skilled	Driver	2 No
			3. Unskilled	Musdoor / Labours	6Nos
				Total =	14Nos
<p>Allowing 10% absenteeism, the no. of men of roll will be around 11.</p> <p>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.</p>					

(Signature)
ASSISTANT DIRECTOR
 DEPARTMENT OF GEOLOGY & MINING
 COIMBATORE DISTRICT



			<p>It is been ensured that, child labours under 18 years of age will not be engaged for quarrying operation.</p> <p>Necessary life insurance policies will be taken by the applicant to all the employees up to the end of the lease period.</p>	
9.2		Welfare Measures		
	a.	Drinking Water	: Packaged drinking water is available from the nearby approved water vendors in Chettipalayam which is about 3.5Km on Western side of the area.	
	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, 1960 separately for males and females. Washing facilities shall also be arranged as per rule (36) of the Mines Rules, 1960.	
	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 at distance of 3.5Km (W) in Chettipalayam 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 have to be provided as per the circulars and amendments made for Mine labours under the guidance of DGMS being a mechanized operation.	<p>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 and systematic quarrying operation.</p>

PART - B

10.0 Environmental Management Plan:



10.1 Existing Land Use Pattern

1. The area exhibits almost plain topography covered by Gravel formation.
2. Quarrying is proposed up to a depth of 12m below ground level.
3. Rough stone (Charnockite) is noticed below the gravel formation.
4. Fluctuation of Water table in this area is in between 35m and 40m during a year.
5. This region receives the average annual rainfall of 800mm to 900mm. The surrounding area is practiced by the seasonal cultivation.

The existing land use pattern is given as under.

Table No-5

Sl. No.	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)
1.	Quarrying Pit	0.26.0	1.40.0
2.	Infrastructure	Nil	0.01.0
3.	Roads	0.01.0	0.01.0
4.	Green Belt	Nil	0.10.0
5.	Unutilized	2.35.0	1.10.0
	Total =	2.62.0	2.62.0

10.2 Water Regime

Water table in this area is noticed at a depth of 40m and presently, the quarrying of Rough Stone quarry is proposed up to a depth of 12m below ground level and hence, it will not affect the ground water depletion of this area.

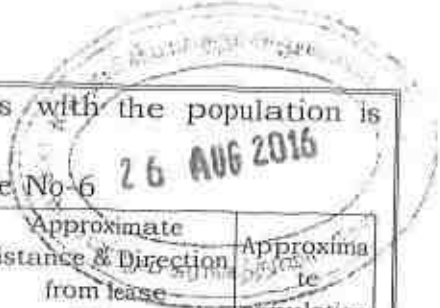
10.3 Flora and Fauna

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.

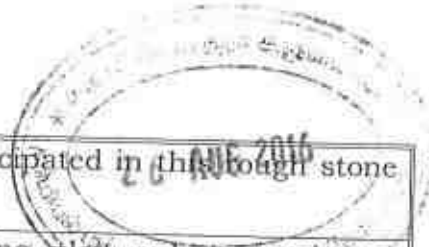
10.4 Climatic conditions

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 800mm to 900mm and the temperature ranges from 18°C during winter and to a maximum of 42°C during the summer.



10.5	Human Settlement	<p>: The nearest habitations with the population is given as under</p> <p style="text-align: center;">Table No-6</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>S.No</th> <th>Name of the Village</th> <th>Approximate distance & Direction from lease applied area</th> <th>Approximate population</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Chinnakuyili</td> <td>2.5Km - NE</td> <td>600</td> </tr> <tr> <td>2.</td> <td>Kallamadai Thottam</td> <td>4.0Km - NW</td> <td>400</td> </tr> <tr> <td>3.</td> <td>Ponnakkani</td> <td>3.0Km - SE</td> <td>700</td> </tr> <tr> <td>4.</td> <td>Anna Nagar</td> <td>2.5Km-SW</td> <td>400</td> </tr> </tbody> </table>	S.No	Name of the Village	Approximate distance & Direction from lease applied area	Approximate population	1.	Chinnakuyili	2.5Km - NE	600	2.	Kallamadai Thottam	4.0Km - NW	400	3.	Ponnakkani	3.0Km - SE	700	4.	Anna Nagar	2.5Km-SW	400
S.No	Name of the Village	Approximate distance & Direction from lease applied area	Approximate population																			
1.	Chinnakuyili	2.5Km - NE	600																			
2.	Kallamadai Thottam	4.0Km - NW	400																			
3.	Ponnakkani	3.0Km - SE	700																			
4.	Anna Nagar	2.5Km-SW	400																			
10.6	Plan for Air, Dust Suppression	<p>: 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.</p> <p>Wet drilling and dust extractor arrangements will be provided to drilling units so as to control raise of dust from the site of drilling.</p> <p>Operators, those exposed directly to such conditions will be provide such protective equipments like mask, ear plug, helmet, gloze etc as per the Mines Act.</p>																				
10.7	Plan for Noise Control	<p>: 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.</p>																				
10.8	Environmental Impact Assessment Statement Describing Impact on mining on the next five years	<p>: 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. It is B2 Category mine.</p>																				



10.9	Proposal for Waste Management	:	There is no waste anticipated in this tough 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 12m below ground level has been envisaged as workable depth for safe & economic mining during the lease period. Hence, after quarry reaches ultimate pit limit (for this lease period) of 12m 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.

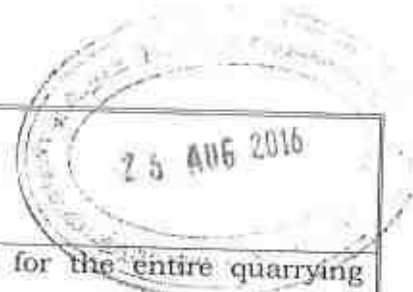
Table - 7

Year	No. of trees proposed to be planted	Survival %	Area to be covered Sq.m	Name of the species	No. of trees expected to be grown
I	20	80%	200	Neem	16
II	20	80%	200	Neem	16
III	20	80%	200	Neem	16
IV	20	80%	200	Neem	16
V	20	80%	200	Neem	16

Nearly 1000Sq.m area is proposed to use under afforestation by planting 20nos. of neem trees during every year with an anticipated survival rate of 80%. The Quarry land use, layout and afforestation plan is shown in Plate No.III.

10.12 Proposed Financial Estimate / Budget for (EMP) Environment Management

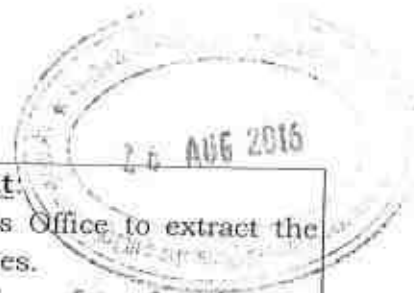
A.Fixed Asset Cost:	
1. Land Cost (400000/1Ha)=	: Rs.10,48,000
2. First aid room and accessories	: Rs.1,00,000
3. Labour Shed	Rs.1,00,000
4. Sanitary Facility	Rs.1,00,000
Total=	Rs.13,48,000/-



B.Operational Cost:		
1. Machineries	:	Rs.40,00,000/-
2. Fencing cost	:	Rs.1,00,000
Total	:	Rs.41,00,000
C.EMP Cost:		
Expenditure		
1. Drinking water facility	:	Rs. 1,00,000/-
2. Sanitary Arrangments	:	Rs. 25,000/-
3. Safety kids	:	Rs. 50,000/-
4. Water sprinkling	:	Rs. 1,00,000/-
5. Afforestation	:	Rs. 5,000/-
6. Cost towards charity	:	Rs. 25,000/-
Total=		Rs. 4,25,000/-
Total Project Cost (A+B+C)		Rs. 58,73,000 /-

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 cattles.
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.



12.0 Any Other Details Intend to Furnish by the Applicant

- (i) Permission will be obtained from the District Mines Office to extract the Rough Stone from the Boundary barriers and for slopes.
- (ii) Care and precautionary measures will be taken for the safety of workers as per Rules and Acts.
- (iii) The applicant will endeavor every attempt to quarry the Rough Stone economically without any wastage and to improve the environment and ecology.
- (iv) The Mining Plan is prepared by incorporating the conditions stipulated in the precise area communication issued and also prepared by incorporating the details mentioned in the letter SEIAA/TN/Minor and Minerals/2012 dated 17.04.2013.
- (v) Any violation pointed out by the inspecting authorities shall be rectified as per the guidelines of the Department.

Prepared by

C. Natarajan
 C.Natarajan, M.Sc.,M.Phil.,
 RQP/MAS/004/87/A
C. NATARAJAN, M.Sc.,M.Phil.,
 RECOGNISED QUALIFIED PERSON,
 RQP/MAS/004/87/A

Place : Salem
 Date : 22.08.2016

(Approved)
In. 22/08/2016
ASSISTANT DIRECTOR
 DEPARTMENT OF GEOLOGY & MINING
 COIMBATORE DISTRICT

From

Thiru. T.N. Hariharan, I.A.S.,
District Collector,
Coimbatore District,
Coimbatore - 18.

To

Thiru. T. Ragupathi,
S/o. N. Thangavelu,
153A, Maraimalai adigal street,
Mangalam road,
Palladam.

ANNEXURE

1

26 AUG 2016

R.C. 892/ 2015/ Mines Dated 17.08.2016

Sir,

Sub Mines & Minerals - Minor Mineral - Roughstone and Gravel - Application preferred by Thiru. T. Ragupathi for quarrying Roughstone and Gravel - Survey Nos. 273/1B over an extent of 0.65.5 hectares, 273/2B over an extent of 0.01.0 hectares, 273/3E (part) over an extent of 0.43.0 hectares out of 0.52.0 hectares, 274/1A over an extent of 0.73.5 hectares and 274/2A over an extent of 0.79.0 hectares totally over an extent of 2.62.0 hectares - patta land - in Pachapalayam Village - Sulur taluk - application processed - precise area communicated - for preparing Mining Plan - Reg.

- Ref
1. Application dated 28.09.2015 received from Thiru. T. Ragupathi, S/o. N. Thangavelu, 153A, Maraimalai adigal street, Mangalam road, Palladam.
 2. This office letter even number dated 30.09.2016 (addressed to the Revenue Divisional Officer, Coimbatore).
 3. The Revenue Divisional Officer, Coimbatore letter Ref.No.2024/ 2016 / A2 dated 29.07.2016.
 4. Inspection report of the Assistant Director, Geology and Mining, Coimbatore dated 03.08.2016.
 5. G.O.Ms.No.79, Industries (MMC-1) Department dated 06.04.2015.

In the reference 1st cited above, Thiru. T. Ragupathi, S/o. N. Thangavelu, 153A, Maraimalai adigal street, Mangalam road, Palladam. has applied for Roughstone and Gravel quarry lease in Survey Nos. 273/1B over an extent of 0.65.5 hectares, 273/2B over an extent of 0.01.0 hectares, 273/3E (part) over an extent of 0.43.0 hectares out of 0.52.0 hectares, 274/1A over an extent of 0.73.5 hectares and 274/2A over an extent of 0.79.0 hectares totally over an extent

Scanned by CamScanner



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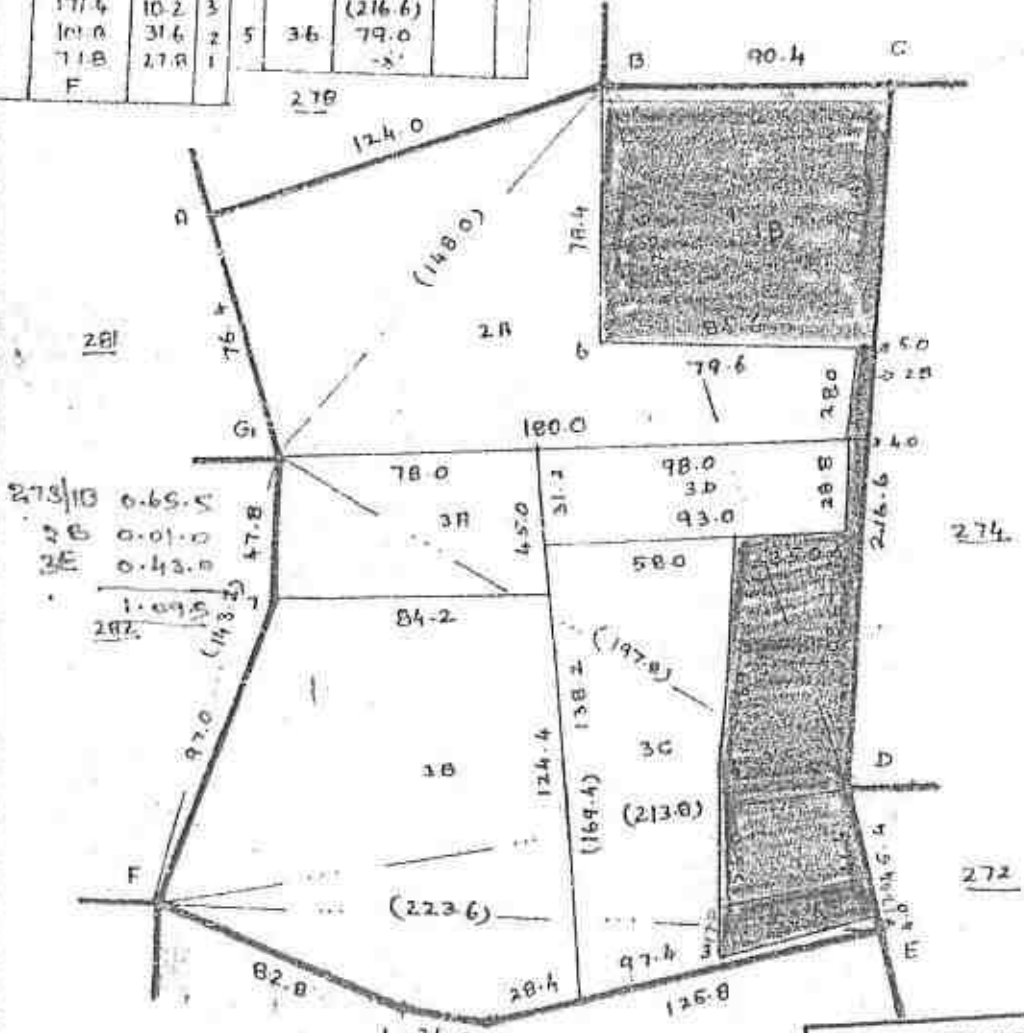
புள்ளி

பகுதி 7/13

சுட்டி 10

பகுதி 7/13

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(213.8)	41.6	B	71.4
36.0	110.4	B	100.0
D	(226.6)	D	79.0
E	258	C	79.0
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71.8	27.8		
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LEASE APPLIED AREA

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பகுதி 7/13

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வட்டம், பல்லா

புது கடை, 274



கிராமம்

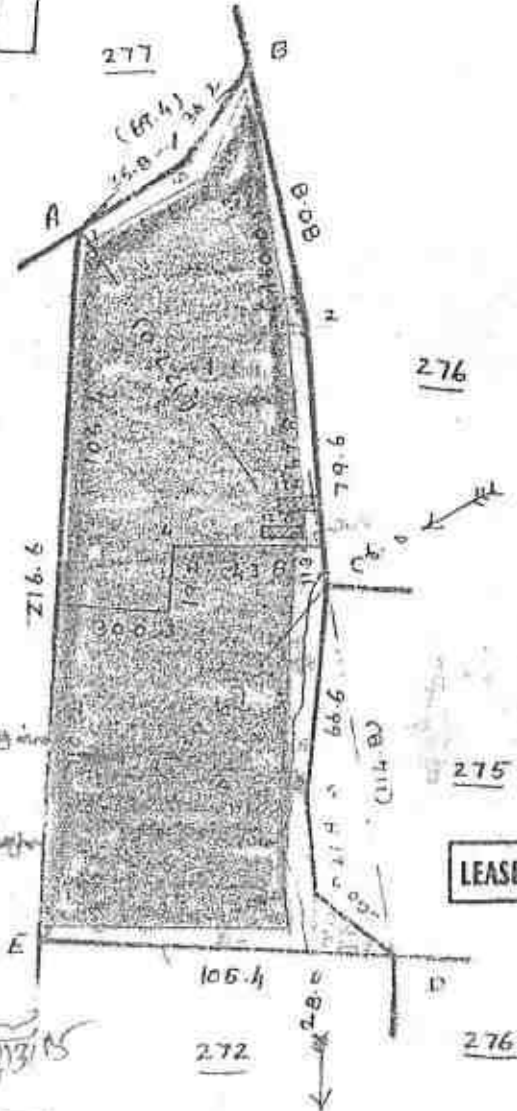
எண், 98

பெயர், பி. சி. சாமைய்யா

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கிராம நிர்வாக அலுவலர்
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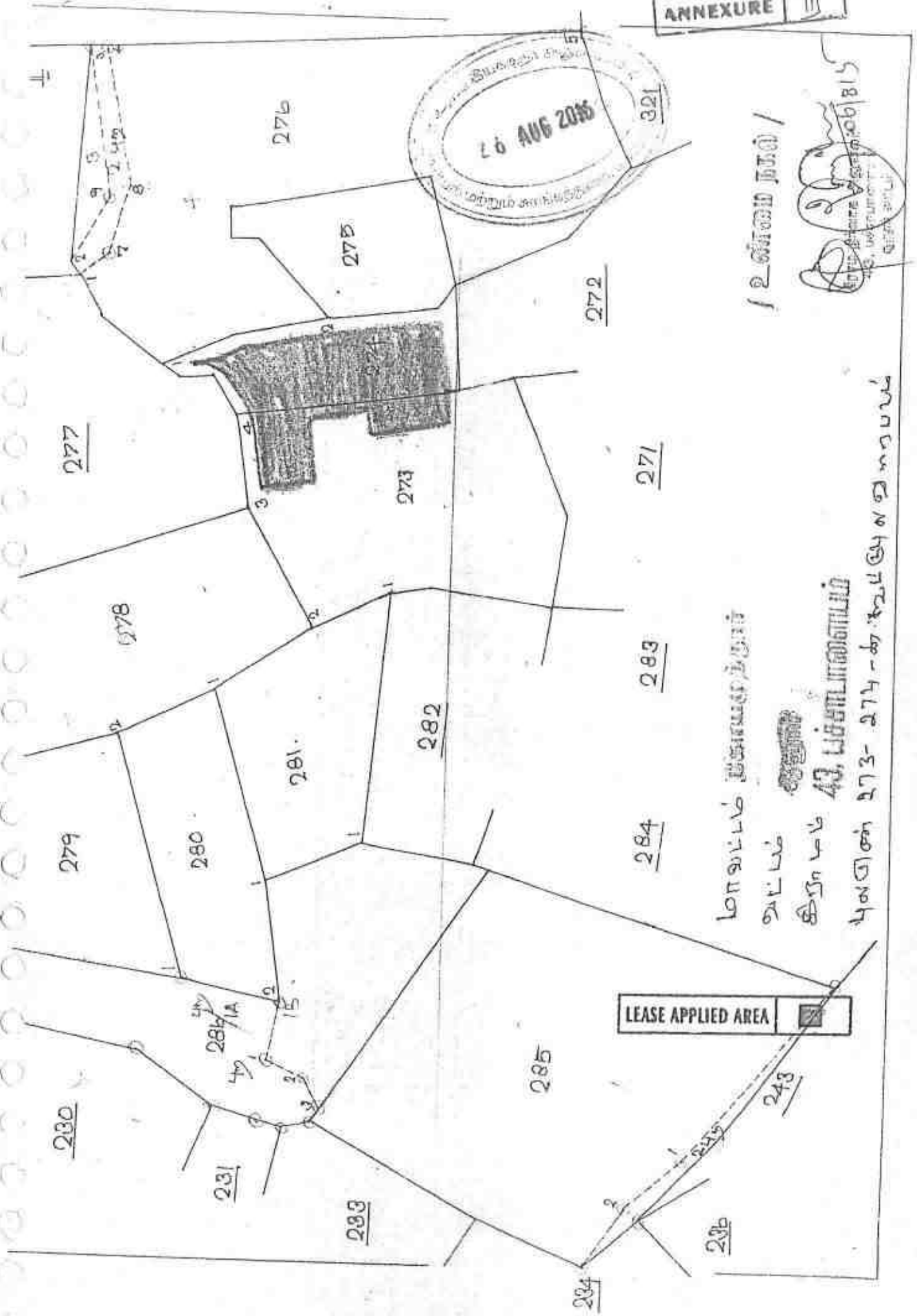
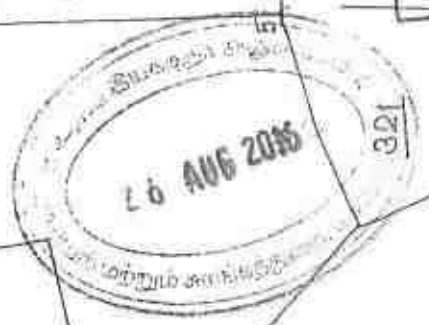
LEASE APPLIED AREA

சிறப்பு அதிகாரி
 43, மாவட்ட அலுவலகம்,
 சேலம்.

2000

ச. சி. சாமைய்யா

ANNEXURE



12-08-2016

Handwritten signature and stamp.

பொருள் பின்புலம்
 வட்டம்
 கிராமம் 43, பிள்ளையார்
 மருத்துவமனை

மேல்க்கண்ட 273-274-ஆக குறிப்பிடப்பட்ட பகுதிகள்

LEASE APPLIED AREA



செய்தாண்டு: 2014-15
 ம.வ.ப.ப. அட்டை

தலைவர் அலுவலகம்
 மதுரை (கி.மீ. 1009), திருவள்ளூர் மாவட்டம்
 திருவள்ளூர் மாவட்டம்

ம.வ.ப. அட்டை 1099

1. தலைவரவர்கள்

உ.பெருமாள்சாமி செட்டி
 உறுப்பினர்

ம.வ.ப. அட்டை ம.வ.ப.ப. அட்டை	தரவரிசை		புள்ளி		மற்றவை	
	பட்டியல்	தரவரிசை	பட்டியல்	தரவரிசை	பட்டியல்	தரவரிசை
	மெட்ரிக் - ஓர்	உ - ஸ்ப	மெட்ரிக் - ஓர்	உ - ஸ்ப	மெட்ரிக் - ஓர்	உ - ஸ்ப
273 IB	-	-	-	-	-	-
273 2B	-	-	- 65.50	1.84	-	-
273 3E	-	-	- 1.00	0.06	-	-
274 1A	-	-	- 52.00	1.44	-	-
274 2A	-	-	- 73.50	2.05	-	-
274 2C	-	-	- 79.00	2.18	-	-
	-	-	- 2.00	0.06	-	-
	-	-	2 - 73.00	7.63	-	-

025/1,099.00/1.1 08/12/2014 740059



உறுப்பினர்
 உறுப்பினர் அலுவலகம் - கருணா
 கருணா வட்டாட்சியர் அலுவலகம் - கருணா
 கோயம்புத்தூர் மாவட்டம்


423- ஆம் பக்கத்தில் கோயமுத்தூர்

மாண்புமிகு கலூர்

43, பச்சாபாளையம்

கிராம நிர்வாக அலுவலர் பதவிகளின் விவரம்.					கிராம நிர்வாக அலுவலர் பதவிகளின் விவரம்.	கிராம நிர்வாக அலுவலர் பதவிகளின் விவரம்.	கிராம நிர்வாக அலுவலர் பதவிகளின் விவரம்.	கிராம நிர்வாக அலுவலர் பதவிகளின் விவரம்.	கிராம நிர்வாக அலுவலர் பதவிகளின் விவரம்.	கிராம நிர்வாக அலுவலர் பதவிகளின் விவரம்.
(1)	(2)	(3)	(4)	(5)						
273	1B	0.655	1.84	1099	7 2014					
273	2B	1.00	0.00	1099	do					
273	3E	0.520	1.44	1099	do					
274	1A	0.735	2.05	1099	do					
274	2A	0.795	2.18	1099	do					
274	2C	0.00	0.00	1099	do					

உண்மை நகல் /


 கிராம நிர்வாக அலுவலர்
 43, பச்சாபாளையம் கிராமம்
 கலூர் வட்டம்



அச்சடித்த நாள் 05/03/2015

வட்டிக்கு அளவு



1 of 1

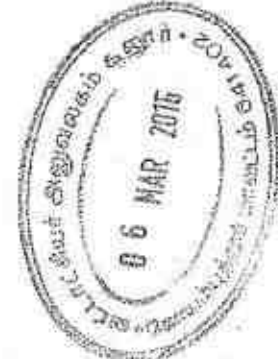
அ - பதிவேடு

வட்டி	குறள்	கிராமம் 025		பச்சாபாணையம்		மண் தரம்	திணை - ஹைக்	பரப்பு	கொத்த திணை	மட்ட எண்	குறள்
		பாசன இடு ஆதாரம்	பாசன இடு ஆதாரம்	மண் தரம்	திணை - ஹைக்						
273	IB	273-P	ரயத்தலாசி புள்கொய்	8-2	4	2.77	0 - 65.5	1.84	1099		
<p>பரப்பு 10 குறள்</p> <p>பாசன இடு ஆதாரம்</p> <p>பாசன இடு ஆதாரம்</p> <p>மண் தரம்</p> <p>திணை - ஹைக்</p> <p>பரப்பு</p> <p>கொத்த திணை</p> <p>மட்ட எண்</p> <p>குறள்</p>											
<p>273 IB 273-P ரயத்தலாசி புள்கொய் 8-2 4 2.77 0 - 65.5 1.84 1099</p>											

1.1.19.19.19.19

கொத்தம் 0 - 65.5 1.84
 கிராம கொத்தம் 0 - 65.5 1.84
 நாறுகா கொத்தம் 0 - 65.5 1.84

05/03/2015 6:38:27PM



சிலுவைக்கம் கோட்டையார்
 சிலுவைக்கம் கோட்டையார்
 சிலுவைக்கம் கோட்டையார்





அ - பதிவேடு

வட்டம்	10	சூலூர்	கிராமம்	025	பச்சையாவையம்
புல எண்	உட்பிரிவு எண்	பழைய புல உட்பிரிவு எண்	பகுதி அரசு- ரயத்துவாரி வகை	பகுதி அரசு- ரயத்துவாரி வகை	பாசன இந் ஆதாரம் போசன மண் தரம்
273	2B	-2P	ரயத்துவாரி புளசெய்	1	8-2
				4	2.77
			மு - ஸை	வேலக - ரர்	மு - ஸை
				0 - 1.0	0.06
					1099

பட்டிமறப்பு

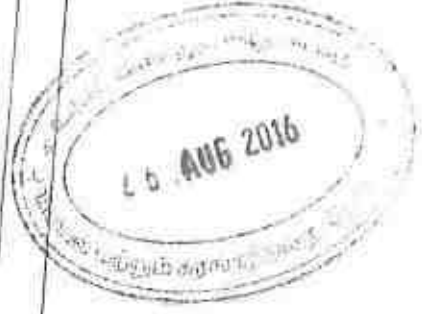
025/273/15.00

05/03/2015 6:38:34PM

வெள்தரம்	0 - 1.0	0.06
கிராம வெள்தரம்	0 - 1.0	0.06
தாலுகா வெள்தரம்	0 - 1.0	0.06



செயலாட்சித் துறைமன்றம்
சூலூர் வட்டாட்சியர் அலுவலகம் - சூலூர்
செயல்புத்தரம் மாண்புமிகு





அ - பதிவேடு

வட்டம்	10	சூலார்	கிராமம்	025	பச்சையலையம்	மண் தளம்	தாவை - குழை	பரப்பு	குளிப்பு தாவை	M.L.A. எண்	சூலார்
பூ எண்	கட்டிடம்	பழைய புல பகுதி அரசு-கட்டிடம்	பாசன இடு	மண்வயனமும் மகமூம்	மண் தளம்	தாவை - குழை	பரப்பு <td>குளிப்பு தாவை</td> <td>M.L.A. எண்</td> <td>சூலார்</td>	குளிப்பு தாவை	M.L.A. எண்	சூலார்	
273	3E	-3P	1	8-2	4	2.77	0 - 52.0	1.44		1099	

மொத்தம்	0 - 52.0	1.44
மொத்தம்	0 - 52.0	1.44
மொத்தம்	0 - 52.0	1.44
மொத்தம்	0 - 52.0	1.44

05/03/2015 6:38:40PM



வட்டம்: பச்சையலையம்
 தலைவர்: திரு. குழை
 இலாகா: வட்டம்
 தலைவர்: திரு. குழை

தமிழ்நாடு அரசு



1 of 1

அ - பதிவேடு

வட்டம் 10 சூலா

புற-எண் உட்பிரிவு புவியியல் புற-பகுதி அரசு-உட்பிரிவு எண் கிராமம் 025 பச்சாபாளையம்

பாசன இறு நிலத்தின் ரயத்துவாரி வகை தலைவரின் வகை மகாவுணமும் மனை தரம் தலைவரின் மரபு

ஆதிரம் பொகள புன்செய் 1 8-2 4 2.71 0 - 73.5 2.05

274 1A 274-1 ரயத்துவாரி புன்செய் 1 8-2 4 2.71 0 - 73.5 2.05

மேரத்த தலைவரின் மரபு 1099

1025/274/15.00 05/03/2015 6:38:50PM

மேரத்தம் 0 - 73.5 2.05

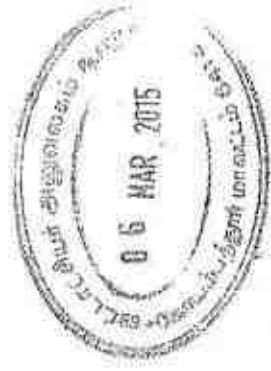
மீளம் மேரத்தம் 0 - 73.5 2.05

நல்லகர் மேரத்தம் 0 - 73.5 2.05

பிழார்ப்படி



வட்டாட்சியர்
கீழா வட்டாட்சியர் அலுவலகம் - சூலா
சேயம்புத்தூர் மாளிகம்



அச்சடித்த நாள்: 05/03/2015

தமிழ்நாடு அரசு



1 of 1

அ - பதிவேடு

வட்டம்: 10 சூலூர்

புல எண்: உட்டபீரில்
எண்: உட்டபீரில்
எண்:

பாசன இடு
ஆதாரம் போசன

நிலத்தின்
வகை:

மாசன இடு
ஆதாரம் போசன

மண்
நாள்

மண்
நாள்

மண்
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மண்
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மண்
நாள்

274 2A -2

ரயத்தலாசி புள்ளேய

1

8-2

4

ரூ - ரூ

ரூ - ரூ

ரூ - ரூ

2.77

0 - 79.0

2.18

1099

I. சூலூர்

மொத்தம்

0 - 79.0

2.18

வீரம மொத்தம்

0 - 79.0

2.18

தாமரை மொத்தம்

0 - 79.0

2.18

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சூலூர் வட்டம்
கீழர் வட்டம்
கீழர் வட்டம்
கீழர் வட்டம்





WARRIOR

STATE OF TEXAS
COMMISSION OF EXCELLENCE IN EDUCATION
OFFICE OF THE COMMISSIONER



COMMISSIONER
Name: [Name]
Address: [Address]
City: [City]
State: [State]
Zip: [Zip]

Phone: [Phone]
Fax: [Fax]
Email: [Email]

Signature of [Name]
Principal Registration Officer
115 - Pehaden
Assistant Commissioner
[Address]
[City, State, Zip]

Vertical text on the left margin, possibly a list or index of items.



GOVERNMENT OF INDIA
MINISTRY OF MINES AND MINEALS
INDIAN BUREAU OF MINES
OFFICE OF THE REGIONAL CONTROLLER OF MINES

No. : 656(48)/2010-Mds

C 4 A Rajaji Bhavan
Besant Nagar
Chennai 600 090.

Dated : 21 / 9 / 2011

To :
Sri C. Natarajan
S/o K. Chinna Gounder
No. 5/85 Muthugapatti - Post
Namakkal Taluk & District
Pincode - 637405

Sub. : Renewal of recognition as recognized qualified person under Rule 22C of MCR, 1960 reg.

Ref. : a) Your letter dated 5.08.2011.
b) Reg. No. RQP/MAS/004/87/A dated 26.10.87.

Sir,

With reference to your request for renewal of recognition under Rule 22C of MCR, 1960, please find enclosed herewith the original certificate of recognition duly renewed for a further period of ten years.

02. You are advised to prepare standard mining plans/scheme of mining/Progressive Mine Closure Plan/Final Mine Closure Plan complete in all respects as per the outline/guidelines and taking into account all requirements as per CCOM's Circular to RQPs and instructions issued from time to time. Further, you are advised not to furnish any deliberate false information in the mining plan/scheme of mining/Progressive Mine Closure Plan/Final Mine Closure Plan, so as to mislead the authorities. It may please be noted that any such incidence on your part may lead to withdrawal of the recognition granted to you.

03. The recognition is valid up to 22.10.2021.

Yours faithfully,

Encl. as above.


(Ivan Khess)
Regional Controller of Mines

Copy for kind information to :
The Controller of Mines (S), Indian Bureau of Mines, Bangalore without any enclosure.


(Ivan Khess)
Regional Controller of Mines

கோயம்புத்தூர் மாவட்ட ஆட்சியர் அவர்களின் செயல்முறை நடவடிக்கைகள்
முன்னிலை: திரு. த.ந.ஹரிஹரன், இ.ஆ.ப.,

ந.க.892/கனிமம்/2015

நாள்: 03.01.2019.

பொருள்: கனிமங்களும் குவாரிகளும் - கோயம்புத்தூர் மாவட்டம் -
சூலூர் வட்டம் - பச்சாபாளையம் கிராமம் - புல எண்கள்.
273/1B-ல் 0.65.5 ஹெக்டேர், 273/2B-ல் 0.01.0 ஹெக்டேர்,
273/3E(பகுதி)-ல் 0.43.0 ஹெக்டேர், 274/1A-ல் 0.73.5
ஹெக்டேர் மற்றும் 274/2A-ல் 0.79.0 ஹெக்டேர் ஆக
மொத்தம் 2.62.0 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில்
சாதாரணகற்கள் மற்றும் கிராவல் குவாரி செய்ய உரிமம்
கோரி திரு. T.ரகுபதி, த/பெ. N. தங்கவேலு என்பவர்
விண்ணப்பம் செய்தது - குவாரி குத்தகை அனுமதி வழங்கி
உத்திரவிடப்படுகிறது.

- பார்வை:
1. திரு. T.ரகுபதி, த/பெ. N. தங்கவேலு, 153 A, மறைமலை
அடிகள் வீதி, மங்கலம் ரோடு, பல்லடம், திருப்பூர்
மாவட்டம் என்பவரது விண்ணப்பம் நாள் 28.09.2015.
 2. இவ்வலுவலக கடிதம் இதே எண். நாள் 30.09.2015.
(கோயம்புத்தூர் வருவாய் கோட்டாட்சியருக்கு
முகவரியிடப்பட்டது)
 3. வருவாய் கோட்டாட்சியர், கோயம்புத்தூர் கடிதம்
ந.க.எண். 2024/2016/அ2 நாள் 29.07.2016.
 4. உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை,
கோயம்புத்தூர் அறிக்கை நாள் 03.08.2016.
 5. கோயம்புத்தூர் மாவட்ட ஆட்சியர் அவர்களின் கடித
ந.க.எண். 892/கனிமம்/2015 நாள்: 17.08.2016.
 6. திரு. T.ரகுபதி, த/பெ. N. தங்கவேலு கடித நாள்
26.08.2016.
 7. இவ்வலுவலக கடிதம் இதே எண் நாள் 27.08.2016.
 8. தலைவர் / மாவட்ட ஆட்சியர், மாவட்ட சுற்றுச்சூழல்
தாக்க மதிப்பீட்டு அமைப்பு, கோயம்புத்தூர் கடித
எண். DEIAA-CBE-IV/F.No.892/1(a&b)/EC.No.16/
2018 நாள்: 04.10.2018.
 9. இவ்வலுவலக கடிதம் இதே எண் நாள் 28.11.2018.
 10. திரு. T.ரகுபதி, த/பெ. N. தங்கவேலு கடிதம் நாள்
30.11.2018 (இவ்வலுவலகத்தில் பெறப்பட்ட நாள்.
03.12.2018.)

உத்திரவு:-

திருப்பூர் மாவட்டம், பல்லடம், மங்கலம் ரோடு, 153 A, மறைமலை அடிகள் வீதி
என்ற முகவரியை சேர்ந்த திரு. N. தங்கவேல் என்பவரின் மகன் திரு. T. ரகுபதி
என்பவர் சூலூர் வட்டம், பச்சாபாளையம் கிராமம், புல எண்கள். 273/1B-ல் 0.65.5
ஹெக்டேர், 273/2B-ல் 0.01.0 ஹெக்டேர், 273/3E(பகுதி)-ல் 0.43.0 ஹெக்டேர்,
274/1A-ல் 0.73.5 ஹெக்டேர் மற்றும் 274/2A-ல் 0.79.0 ஹெக்டேர் ஆக மொத்தம்

2.62.0 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் சாதாரணகற்கள் மற்றும் கிராவல் குத்தகை உரிமம் கோரி பார்வை 1-ல் உரிய ஆவணங்களுடன் விண்ணப்பித்துள்ளார்.

மேற்படி, மனு தொடர்பாக பார்வை 2-ல் காணும் இவ்வலுவலக கடிதத்தின்படி தணிக்கை மற்றும் விசாரணை செய்து அறிக்கை அனுப்பி வைக்கும்படி கோயம்புத்தூர் வருவாய் கோட்டாட்சியரிடம் கோரப்பட்டது.

பார்வை 3-ல் கோயம்புத்தூர் வருவாய் கோட்டாட்சியர் தணிக்கை செய்து பின்வருமாறு அறிக்கை சமர்ப்பித்துள்ளார்.

மேற்படி க.ச.எண். 273/1B-ல் 0.65.0 ஹெக்டேர், 273/2B-ல் 0.01.0 ஹெக்டேர், 273/3E-ல் 0.43.0 ஹெக்டேர், 274/1A-ல் 0.73.5 ஹெக்டேர், 274/2A-ல் 0.79.0 ஹெக்டேர் ஆக மொத்தம் 2.62.0 ஹெக்டேர் பூமியானது மேற்படி கிராம பட்டா எண். 1099-ன் படி தனியாக பாத்தியப்பட்டது எனவும், இதில் மொத்தம் 2.62.0 ஹெக்டேர் பரப்பில் கல்குவாரி அமைத்து சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க குத்தகை உரிமம் கடந்த 10.01.2011 முதல் 09.01.2016 வரை ஐந்து ஆண்டுகளுக்கு ஏற்கனவே பெற்றுள்ளார் எனவும்,

மேற்படி, கல்குவாரிக்கு அருகில் 300மீ சுற்றளவில் புராதனச் சின்னங்களோ, உயர்மின்னழுத்த கம்பிகளோ, சூடியிருப்புகளோ இல்லை எனவும்,

எனவே, கோயம்புத்தூர் மாவட்டம், துலூர் வட்டம், பச்சாபாளையம் கிராமம், க.ச.எண். 273/1B-ல் 0.65.0 ஹெக்டேர், க.ச.எண் 273/2B-ல் 0.01.0 ஹெக்டேர், 273/3E-ல் 0.43.0 ஹெக்டேர், 274/1A-ல் 0.73.5 ஹெக்டேர், 274/2A-ல் 0.79.0 ஹெக்டேர் ஆக மொத்தம் 2.62.0 ஹெக்டேர் பரப்பில் கல்குவாரி அமைத்து சாதாரணகற்கள் மற்றும் கிராவல் வெட்டி எடுக்க குத்தகை உரிமம் வழங்கலாம் என கோயம்புத்தூர் வருவாய் கோட்டாட்சியர் பரிந்துரை செய்துள்ளார்.

பார்வை 4-ல் காணும் உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கோயம்புத்தூர் தணிக்கை செய்து பின்வருமாறு அறிக்கை சமர்ப்பித்துள்ளார்.

குவாரி குத்தகை அனுமதி கோரும் புல எண்கள். 273/1B, 273/2B, 273/3E, 274/1A, மற்றும் 274/2A ஆனது பட்டா எண். 1099-ன் படி திரு.T.ரகுபதி, த/பெ.N.தங்கவேலு என்பவர் பெயரில் தனிப்பட்டவாக கிராம கணக்கில் தாக்கலாகியுள்ளது எனவும், அனுமதி கோரும் புலத்தில் ஏற்கனவே மாவட்ட ஆட்சியரின் செயல்முறைகள் ந.க.எண்.1056/2005/எம்எம்-2 நாள்:27.05.2005-ன் படி மனுதாரர் திரு.T.ரகுபதி, த/பெ.N.தங்கவேலு என்பவருக்கு 14.06.2005 முதல் 13.06.2010 வரை ஐந்து ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்கப்பட்டுள்ளது எனவும், அதை தொடர்ந்து மீண்டும் மாவட்ட ஆட்சியரின் செயல்முறைகள் ந.க.எண்.518/2010/எம்எம்-2 நாள்: 10.01.2011-ன் படி மனுதாரர் திரு.T.ரகுபதி, த/பெ.N.தங்கவேலு என்பவருக்கு 10.01.2011 முதல் 10.01.2016 வரை ஐந்து ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்கப்பட்டுள்ளது எனவும், மேற்கண்ட குத்தகை காலத்தில் 120 X 40 X 18 மீட்டர் என்ற அளவில் கற்குழி ஒன்று

அமைந்துள்ளதாகவும், மேற்படி புலத்தில் சார்னகைட் வகையை சார்ந்த சாதாரண வகை பாறைகள் தென்படுகிறது என தெரிவித்து,

கோயம்புத்தூர் மாவட்டம், சூலூர் வட்டம், பச்சாபாளையம் கிராமம், புல எண். 273/1B-ல் 0.65.0 ஹெக்டேர், 273/2B-ல் 0.01.0 ஹெக்டேர், 273/3E (பகுதி)-ல் 0.43.0 ஹெக்டேர், 274/1A-ல் 0.73.5 ஹெக்டேர் மற்றும் 274/2A-ல் 0.79.0 ஹெக்டேர் ஆக மொத்தம் 2.62.0 ஹெக்டேர் பரப்பில் மனுதாரர் திரு. T. ரகுபதி என்பவருக்கு கல் குவாரி குத்தகை ஒப்பந்தம் நிறைவேற்றிய நாளிலிருந்து 5 ஆண்டுகளுக்கு சாதாரண கல் மற்றும் கிராவல் வெட்டியெடுக்க அனுமதி வழங்கலாம் என பரிந்துரை செய்து அறிக்கை சமர்ப்பித்துள்ளார்.

மேற்படி கோயம்புத்தூர் தெற்கு வருவாய் கோட்டாட்சியர் மற்றும் உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கோயம்புத்தூர் ஆகியோரின் பரிந்துரைகளின்படி பார்வை 5-ல் காணும் கோயம்புத்தூர் மாவட்ட ஆட்சியர் அவர்களின் கடிதத்தில் திருப்பூர் மாவட்டம், பல்லடம், மங்கலம் ரோடு, 153 A, மறைமலை அடிகள் வீதி என்ற முகவரியை சேர்ந்த திரு. N. தங்கவேல் என்பவரின் மகன் திரு. T. ரகுபதி என்பவர் சூலூர் வட்டம், பச்சாபாளையம் கிராமம், புல எண்கள். 273/1B-ல் 0.65.5 ஹெக்டேர், 273/2B-ல் 0.01.0 ஹெக்டேர், 273/3E(பகுதி)-ல் 0.43.0 ஹெக்டேர், 274/1A-ல் 0.73.5 ஹெக்டேர் மற்றும் 274/2A-ல் 0.79.0 ஹெக்டேர் ஆக மொத்தம் 2.62.0 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் சாதாரணகல் மற்றும் கிராவல் மண் வெட்டியெடுக்க 1959-ஆம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகளில் விதி 19 (1) -ன்படி கீழ்க்கண்ட நிபந்தனைகளுடன் சுரங்கத் திட்டம் மற்றும் சுற்றுப்புற சூழல் தடையின்மை சான்று சமர்ப்பிக்க அறிவுறுத்தப்பட்டது.

பார்வை 6-ல் மனுதாரரால் சுரங்க திட்டம் சமர்ப்பிக்கப்பட்டதின் பேரில் பார்வை 7-ல் காணும் இவ்வலுவலக கடிதத்தின்படி சுரங்க திட்டம் ஒப்புதல் செய்து வழங்கப்பட்டுள்ளது.

பார்வை 8-ல் தலைவர்/ மாவட்ட ஆட்சியர், மாவட்ட சுற்றுப்புறச்சூழல் தாக்க மதிப்பீட்டு அமைப்பு அவர்களால் மேற்படி புலத்தில் சாதாரணகல் குவாரி செய்ய தடையின்மை சான்று பெற்றதற்கான செய்தியை உள்ளூர் தினசரி பத்திரிக்கையில் வெளியிடப்படவேண்டும் என்றும் மற்றும் இதர நிபந்தனைகளின் அடிப்படையில் சான்று வழங்கப்பட்டுள்ளது.

பார்வை 9-ல் கண்ட இவ்வலுவலக கடிதத்தில் ரூ.10000/-க்கு காப்புத்தொகை, பரப்பு வரி ரூ.1965/-, முத்திரைத்தாள் ரூ. 44,000/- மற்றும் வரைவு குத்தகை ஒப்பந்த பத்திரம் தயார் செய்து சமர்ப்பிக்குமாறு அறிவுறுத்தப்பட்டது.

பார்வை 10-ல் மனுதாரர் மாவட்ட சுற்றுப்புறச்சூழல் தாக்க மதிப்பீட்டு அமைப்பின் நிபந்தனைகளின்படி, 2 உள்ளூர் தினசரி பத்திரிக்கையில் தடையின்மை சான்று பெற்றதற்கான செய்தி வெளியிடப்பட்ட அறிவிப்பு, உள்ளூர் பஞ்சாயத்திலிருந்து பெறப்பட்ட ஒப்புதல் கடிதம், மாசு கட்டுப்பாட்டு வாரிய

செயல்முறை ஆணை, குத்தகை உரிம காப்புத் தொகை ரூ.10,000/- செலுத்தியதற்கான அசல் சலான் எண். 298 நாள் 28.11.2018, ஐந்து வருடங்களுக்கான பரப்பு வரி ரூ.1970/- செலுத்தியதற்கான அசல் சலான் எண்.295 நாள். 28.11.2018 ஆகியவைகளை இணைத்தும், ரூ.44,000/-மதிப்பிலான முத்திரைத்தாள் மற்றும் வரைவு குத்தகை ஒப்பந்த பத்திரம் (Appendix-IV) தயார் செய்தும் சமர்ப்பித்துள்ளார்.

எனவே, கோயம்புத்தூர் வருவாய் கோட்டாட்சியர் மற்றும் உதவி இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, கோயம்புத்தூர் ஆகியோரது பரிந்துரையின் பேரிலும், மாவட்ட சுற்றுப்புறச்சூழல் தாக்க மதிப்பீட்டு அமைப்பு சான்று வழங்கப்பட்டதின் பேரிலும், திருப்பூர் மாவட்டம், பல்லடம், மங்கலம் ரோடு, மறைமலை 153A அடிகள் வீதி என்ற முகவரியை சேர்ந்த திரு.N.தங்கவேல் என்பவரின் மகன் திரு.T.ரகுபதி என்பவருக்கு துலூர் வட்டம், பச்சாபாளையம் கிராமம், புல எண்கள். 273/1B-ல் 0.65.5 ஹெக்டேர், 273/2B-ல் 0.01.0 ஹெக்டேர், 273/3E(பகுதி)-ல் 0.43.0 ஹெக்டேர், 274/1A-ல் 0.73.5 ஹெக்டேர் மற்றும் 274/2A-ல் 0.79.0 ஹெக்டேர் ஆக மொத்தம் 2.62.0 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் 1959-ஆம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகளில் விதி 19(1) மற்றும் 22-ன்படி குத்தகை ஒப்பந்தப் பத்திரம் நிறைவேற்றிய நாளான 03.01.2019 முதல் 02.01.2024 வரை ஐந்து (5) ஆண்டுகளுக்கு சாதாரண கல் மற்றும் கிராவல் வெட்டியெடுக்க மாவட்ட சுற்றுச்சூழல் தாக்க மதிப்பீட்டு அமைப்பு விதித்துள்ள நிபந்தனைகள், கீழ்க்கண்ட நிபந்தனைகள் மற்றும் இணைப்பில் கண்ட நிபந்தனைகளுக்குப்பட்டு குவாரி குத்தகை உரிமம் வழங்கி உத்திரவிடப்படுகிறது.

1. அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரிப்பணி செய்ய வேண்டும்
2. குத்தகை உரிமம் றாரும் பகுதிக்கு அருகிலுள்ள ஓடைக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரிப்பணி செய்ய வேண்டும்.
3. அருகிலுள்ள பட்டா நிலங்கள் மற்றும் ஓடைக்கும் இடையே முள்வேலி அமைக்கப்பட வேண்டும்.
4. மேற்கண்ட அமைப்புகள் மற்றும் அருகிலுள்ள பட்டா நிலங்கள் மற்றும் குவாரிகளுக்கும் எவ்வித இடையூறும் ஏற்படுத்தாமல் குவாரிப்பணி மேற்கொள்ள வேண்டும்.

5. மெருகூட்ட தகுதிவாய்ந்த பெரிய கற்களை வெட்டி எடுக்க கூடாது.

இணைப்பு : நிபந்தனைகள்

ஓம்.xxx
மாவட்ட ஆட்சியர்,
கோயம்புத்தூர்.

1. குத்தகைதாரர் குவாரியில் உற்பத்தி செய்யப்படும் உடைகல், ஐஸ்லி, மற்றும் கிராவல் ஆகியவற்றிற்கான சீனியரேஜ் கட்டணம் ஆகியவற்றை, கனிமங்களை வெளியேற்றும் புளூ, உதவி இயக்குநர் அலுவலகம், புனியியல் மற்றும் கரங்கத்துறை, கோயம்புத்தூரில் செலுத்தி நடைச்சீட்டு மற்றும் இசைவாணைச்சீட்டு பெற்று கனிமங்கள் எடுத்து செல்ல வேண்டும். குவாரியிலிருந்து எடுத்துச் செல்லும் ஒவ்வொரு வோடு கிராவல், உடைகல் மற்றும் ஐஸ்லிக்கும் உரிய சீனியரேஜ் கட்டணம் தமிழ்நாடு சிறுவகை கனிம சலுகை விதிகள் எண் அட்டவணை II ன்படி தவறாது செலுத்த வேண்டும்.
2. குத்தகை பத்திரம் குறிப்பிட்டுள்ள காலக்கெடுவிற்குள் பதிவு செய்து தரப்பட வேண்டும்.
3. குத்தகை ஒப்புநடத்திரம் நிறைவேற்றப்படாமல் கல் / கிராவல் குவாரி செய்தால் அது சட்ட விரோதமான குவாரிப்பணி என்று கருதப்படும்.
4. குத்தகைதாரர் தன் சொந்த செலவில் குவாரியின் எல்லைகளைத் தெளிவாக தெரியப்படியாக கல் ஊன்றி அடையாளமிட்டு வைத்தபின் குவாரி செய்ய வேண்டும். எல்லைக் கற்களை குத்தகை காலம் முழுமைக்கும் நன்கு பராமரிக்க வேண்டும்.
5. வண்டிப்பாதை மற்றும் தடைபாதைகளில் இருந்து 10 மீட்டர் தூரம் தள்ளி குவாரி செய்ய வேண்டும். ரோடுகள், புதைவண்டிப்பாதை, பொதுப்பணித்துறை, வாய்க்கால், பொது மக்கள் உபயோகத்திற்கான பகுதிகள், மின்சாரம் மற்றும் தொலைபேசி கம்பி செல்லும் பகுதிகள், வழிபாட்டு இடங்கள் மற்றும் பழங்கால சின்னங்கள் உள்ள பகுதிகள் ஆகியவற்றில் இருந்து 50 மீட்டர் பாதுகாப்பு தூரம் விட்டு குவாரி செய்ய வேண்டும்.
6. குத்தகைக்கு விடப்பட்டுள்ள விஸ்தீரணத்தில் மட்டுமே குத்தகைதாரர் குவாரி செய்ய வேண்டும். அதற்கான சுடுதலான விஸ்தீரணத்தில் குவாரி செய்வது தெரியவந்தால் அபராத நடவடிக்கை மேற்கொள்வதுடன் குத்தகை இரத்து செய்ய நடவடிக்கை எடுக்கப்படும்.
7. குத்தகைதாரர் குவாரியில் இருந்து எடுத்துச் செல்லும் கனிமத்திற்கான உரிமக் கட்டணம் செலுத்தி தமிழ்நாடு சிறுவகைக் கனிம சலுகை விதிகள் 1959ல் உள்ள அட்டவணை XII ல் கண்ட படிவத்தில் இசைவாணைச் சீட்டையும் அட்டவணை XIIIல் கண்ட படிவத்தில் நடைச்சீட்டையும், கோயம்புத்தூர் புனியியல் மற்றும் கரங்கத்துறை உதவி இயக்குநர் அலுவலகத்தில் பெற்று சிறுவகைக் கனிமம் அனுப்பும் வாகனத்துடன் அனுப்புகைச் சீட்டை அனுப்ப வேண்டும். இவ்வனுப்புகைச் சீட்டை இரு பிரதிகளில் அச்சிட்டு வரிசையாக எண்ணிக்கையிட்டு குத்தகைதாரர் உத்தேசமாக எடுக்க இருக்கும் வோடுகளுக்கு 1 வோடு ஒன்றுக்கு ஒரு சீட்டு வீதம் கணக்கிட்டு பிரதி மாதமும் உதவி இயக்குநர், புனியியல் மற்றும் கரங்கத்துறை, கோயம்புத்தூர் அல்லது அரசு நிர்ணயிக்கும் அலுவலர் அவர்களிடமிருந்து முத்திரையும் கையொப்பமும் பெற்ற பின் பயன்படுத்த வேண்டும்.
8. குத்தகைதாரர் அனுப்புகைச் சீட்டை குத்தகைக்கு வழங்கப்பட்ட குவாரியில் இருந்து தான் வாகனங்களுக்கு கொடுத்து அனுப்ப வேண்டும். அனுப்புகைச் சீட்டை வேறு இடங்களில் இருந்தோ அல்லது வேறு குவாரியில் இருந்தோ கொடுத்து அனுப்பினால் குத்தகை ரத்து செய்யப்பட்டு அனைத்து தொகைகளும் அரசுக்கு ஆதாயமாக்கப்படும்.
9. குத்தகைதாரர் ஒவ்வொரு நாளும் குவாரியில் இருந்து எவ்வளவு சிறுகனிமங்கள் எடுக்கப்பட்டது என்பதையும் எந்த அளவு கனிமங்கள் ஊரி/வண்டி மூலம் வெளியே அனுப்பப்பட்டது என்ற விபரத்தையும் காட்டும் பதிவேட்டினைப் பராமரித்து வரவேண்டும்.

திரு. T. ரகுபதி,
த/பெ. N. தங்கவேலு,
153 A, மறைமலை அடிகள் வீதி,
மங்கலம் ரோடு,
பல்லடம், திருப்பூர் மாவட்டம்

- நகல் : 1. வருவாய் கோட்டாட்சியர், கோயம்புத்தூர் தெற்கு.
2. வட்டாட்சியர், தூலூர்.
3. கிராம நிர்வாக அலுவலர், பச்சாபாளையம் கிராமம்.

உண்மை நகல்//உத்திரவுப்படி/

சு. சோழசுந்தரி
31/1/19
மாவட்ட ஆட்சியருக்காக
கோயம்புத்தூர்.

10. புவியியல் மற்றும் கரங்கத்துறை அலுவலர்கள் அல்லது வருவாய்த் துறை அலுவலர்கள் முதலானோர் தணிக்கை செய்யும் போது உரிய கணக்குகள் மற்றும் அனுப்புகைச் சீட்டு முதலானவைகளைக் குத்தகைதாரர் அவர்களுக்கு காண்பிக்க வேண்டும்.
11. குத்தகை வழங்கப்பட்ட பகுதியில் பாறையில் குண்டுக்கல், கல், வேலிக்கற்கள் மற்றும் கிராவல் போன்ற சிறுகளிமங்கள் உடைத்தெடுக்க மட்டுமே அனுமதியுண்டு. வெளிநாடுகளுக்கு ஏற்றுமதியாகும் மெருகட்டும் கனவடிவ கற்கள் வெட்டி எடுக்கக் கூடாது.
12. ஒவ்வொரு முறை நடைச்சீட்டுக்கள் வாங்க வரும்போது குவாரியில் உற்பத்தி மற்றும் வெளிவீற்றப்பட்ட கற்கள் / கிராவல் குறித்து பதிவேடு மற்றும் உபயோகப்படுத்தப்பட்ட நடைச்சீட்டு அடிக்கட்டைகளை அலுவலத்தில் தணிக்கைக்கு ஆணர் செய்ய வேண்டும்.
13. இந்திய வெடிமருந்து சட்ட விதிகளுக்கு கட்டுப்பாட்டே குவாரியில் வெடி மருந்துகள் உபயோகப்படுத்த வேண்டும்.
14. குத்தகைதாரர் குவாரியின் அருகே குத்தகைதாரர் பெயர், கிராமத்தில் பெயர், வட்டத்தின் பெயர், புல எண், பாப்பு குத்தகை ஆணை எண். குத்தகை காலம், கனம்மத்தின் பெயர், போன்ற விபரங்கள் குறிக்கப்பட்ட தகவல் பலகையை தமது சொந்த செலவில் வைத்து நன்கு பராமரிக்க வேண்டும்.
15. குத்தகை நிபந்தனை மீறப்பட்டால் குத்தகை இரத்து செய்யவோ, செய்யப்பட்ட தவறுதலுக்கு அபராத நடவடிக்கை எடுத்து தண்டம் விதிக்கவோ அல்லது கிரியமின்ல் வழக்குத் தொடுக்க மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு. குத்தகை ரத்து செய்யப்பட்டால் குத்தகை தொகை காப்புத் தொகை உட்பட அனைத்து தொகைகளும் அரசுக்கு ஆதாயமாக்கப்படும்.
16. குத்தகைதாரர் தமிழ்நாடு சிறுவகைக்களிம சலுகை விதிகள் 1959ல் கண்டுள்ள விதிகளுக்கும் மற்றும் அரசு அவ்வப்போது அறிவிக்கும் சட்டதிட்டங்களுக்கும் உட்பட்டு குவாரிப்பணிகள் செய்ய வேண்டும்.
17. குவாரி குத்தகை எக்காரணத்தை முன்னிட்டும் மீண்டும் புதுப்பிக்கவோ அல்லது கால நீட்டிப்போ செய்து தரப்பட மாட்டாது.
18. அனுமதி அளிக்கப்பட்டுள்ள பட்டா நிலங்களுக்கு அருகில் உள்ள அரசு புறம்போக்கு நிலங்களில் கல் உடைக்கவோ, ஆக்கிரமிப்போ செய்பகூடாது.
19. குழந்தை தொழிலாளர்கள் எவரையும் வேலைக்கு அமர்த்துதல் கூடாது.

ஒம்.XXX
மாவட்ட ஆட்சியர்,
கோயம்புத்தூர்.

//உண்மை நகல்/ உத்திரவுப்படி//

M. S. Srinivasan
21/11/19
மாவட்ட ஆட்சியருக்காக
கோயம்புத்தூர்.

21/11/19

தணிக்கைக்குறிப்பு

கிராமம்: பச்சாபாளையம்

தணிக்கை நாள்:15.12.15

கோயம்புத்தூர் மாவட்டம், சூலூர் வட்டம், செலக்கரிச்சல் உள்வட்டம், பச்சாபாளையம் கிராமம் க.ச.273/1B-ல் 0.65.0 ஹெக், 273/2B-ல், 0.01.0 ஹெக், 273/3E-ல், 0.43.0 ஹெக், 274/1A-ல், 0.73.5 ஹெக், 274/2A-ல், 0.79.0 ஹெக், மொத்தம் 2.62.0 ஹெக் பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க கல்குவாரி அமைப்பது குறித்து குத்தகை உரிமம் கோரியது தொடர்பாக 15.12.2015-ம் தேதியன்று தணிக்கை செய்யப்பட்டது. தணிக்கையின்போது பச்சாபாளையம் கிராம நிர்வாக அலுவலர் மற்றும் சுரங்க உரிமையாளர் உடன் இருந்தனர். மனுதாரரின் வருமானவரி நிலுவை இல்லை மற்றும் கனிமவரி நிலுவை இல்லை என்பதற்கான உறுதிமொழி பத்திரம் மற்றும் சிட்டா, கிராம ஆவணங்கள் சரிபார்க்கப்பட்டது மேற்படி கல்குவாரிக்கு அருகில் 300 மீட்டர் சுற்றளவில் புராதன சின்னங்களோ, உயர் மின்னழுத்த கம்பிகளோ, குடியிருப்பு பகுதிகளோ மற்றும் பள்ளி, கல்லூரிகளோ, கோவில்களோ ஏதும் இல்லை. எனவே, திருரகுபதி, த.பெ.திரு.தங்கவேல் என்பவருக்கு கோயம்புத்தூர் மாவட்டம், சூலூர் வட்டம், பச்சாபாளையம் கிராமம் க.ச.273/1B-ல் 0.65.0 ஹெக், 273/2B-ல், 0.01.0 ஹெக், 273/3E-ல், 0.43.0 ஹெக், 274/1A-ல், 0.73.5 ஹெக், 274/2A-ல், 0.79.0 ஹெக், மொத்தம் 2.62.0 ஹெக் பரப்பில் கல்குவாரி அமைத்து சாதாரணக்கற்கள், மண் மற்றும் கிரேவல் மண் வெட்டியெடுக்க தமிழ்நாடு சிறுகனிம விதிகள் 19(1)-ன்படி குத்தகை உரிமம் வழங்கலாம் என்பதை தெரிவித்துக் கொள்கிறேன்.


வட்டாட்சியர்
சூலூர்

22/16

அனுப்புநர்
திரு.மு.சேகர்
வட்டாட்சியர்
குலூர்

பெறுநர்
வருவாய் கோட்டாட்சியர்
கோயம்புத்தூர்

ந.க.17608/2015/ஆ4, நாள்: 05.02.16

அம்மையர்,

பொருள்: கலிமங்கலும் சுரங்கங்களும் - கோயம்புத்தூர் மாவட்டம் - குலூர் வட்டம் பச்சாபாளையம் கிராமம் - க.ச.273/1B-ல் 0.65.0 ஹெக், 273/2B-ல், 0.01.0 ஹெக், 273/3E-ல், 0.43.0 ஹெக், 274/1A-ல், 0.73.5 ஹெக், 274/2A-ல், 0.79.0 ஹெக், ஆகிய காலைகளில் திரு.தரகுபதி என்பவர் குத்தகை உரிமம் கோரியது - அறிக்கை அனுப்புவது - தொடர்பாக.

பார்வை: கோயம்புத்தூர் வருவாய் கோட்டாட்சியரின் கடிதம்
ந.க.9369/2015/அ2, நாள்:19.11.2015

கோயம்புத்தூர் மாவட்டம், குலூர் வட்டம், செலக்கரிச்சல் உள்வட்டம், பச்சாபாளையம் கிராமம் க.ச.273/1B-ல் 0.65.0 ஹெக், 273/2B-ல், 0.01.0 ஹெக், 273/3E-ல், 0.43.0 ஹெக், 274/1A-ல், 0.73.5 ஹெக், 274/2A-ல், 0.79.0 ஹெக், ஆகிய காலைகளில் கல்குவாரி அமைத்து சாதாரணக்கற்கள் மண் மற்றும் கிரேவல் வெட்டியெடுக்க குத்தகை உரிமம் கோரி மறைமலைஅடிகள் வீதி, மங்கலம் ரோடு, பல்லடம் என்ற முகவரியில் வசிக்கும் திரு.தங்கவேல், மகன் திரு.தரகுபதி என்பவர் விண்ணப்பம் அளித்ததின் பேரில் புலத்தணிக்கை மேற்கொண்டு கீழ்க்கண்டவாறு எனது அறிக்கையினை சமர்ப்பிக்கிறேன்.

மனுதாரருக்கு பச்சாபாளையம் கிராமத்தில் க.ச.273/1B-ல் 0.65.0 ஹெக், 273/2B-ல், 0.01.0 ஹெக், 273/3E-ல், 0.43.0 ஹெக், 274/1A-ல், 0.73.5 ஹெக், 274/2A-ல், 0.79.0 ஹெக், மொத்தம் 2.62.0 ஹெக் பரப்புள்ள பூமி பட்டா எண்.1099-ன்படி தனியாக பாத்தியப்பட்டது. இதில் மொத்தம் 2.62.0 ஹெக் பரப்பில் கல்குவாரி அமைத்து சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க குத்தகை உரிமம் கடந்த 10.01.11 முதல் 09.01.2016 வரை ஐந்து ஆண்டுகளுக்கு ஏற்கனவே பெற்றுள்ளார். மேற்படி உரிமம் காலாவதி ஆகிவிட்டதால் மீண்டும் உரிமம் வழங்க கோரி வழங்க கோரி இதற்கான அரசுக்கு செலுத்த வேண்டிய காப்புத்தொகையாக ரூ.1500/-ஐ மைசூர் மாநில வங்கி கோயம்புத்தூர் சலான் எண்:141 நாள்:23.09.15-ன்படி செலுத்தியுள்ளார்.

மேலும், மனுதாரர் வருமானவரி நிலுவை இல்லை என்பதற்கான உறுதிமாழி பத்திரம், கனிமவரி நிலுவை இல்லை என்பதற்கான உறுதிமாழி பத்திரம் ஆகியவை இணைத்துள்ளார். மேலும், சிட்டா நகல், வரைபடங்கள் இணைத்துள்ளார். மேற்படி கல்குவாரிக்கு அருகில் 300மீ சுற்றளவில் புராதன சின்னங்களோ, உயர்மின்னழுத்த கம்பிகளோ, குடியிருப்புகளோ இல்லை.

எனவே, திரு.ரகுபதி, த.பெ.திரு.தங்கவேல் என்பவருக்கு கோவை மாவட்டம், குலூர் வட்டம், பச்சாபாளையம் கிராமம் புலனண்கள் க.ச.273/1B-ல் 0.65.0 ஹெக்டர், 273/2B-ல், 0.01.0 ஹெக்டர், 273/3E-ல், 0.43.0 ஹெக்டர், 274/1A-ல், 0.73.5 ஹெக்டர், 274/2A-ல், 0.79.0 ஹெக்டர், மொத்தம் 2.62.0 ஹெக்டர் பரப்பில் கல்குவாரி அமைத்து சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க குத்தகை உரிமம் 09.01.2016 உடன் முடிவடைந்ததாலும் தமிழ்நாடு சிறுகனிம சலுகைவிதிகள் 19(1)-ன்படி குத்தகை ஒப்பந்த விதிகளின்படி குவாரி குத்தகை உரிமம் வழங்கலாம் என்பதை பணிவுடன் தெரிவித்துக் கொள்கிறேன்.

இணைப்பு: உரிய ஆவணங்கள்

தங்கள் உண்மையுள்ள

வட்டாட்சியர்
குலூர்

09/01/2016

பணித்தொடர்புகள்

கோவை மாவட்டம், தஞ்சார் வட்டம்
43 பச்சாபாளையம் கிராமத்தில்
திருப்பூர் மாவட்டம், பல்லடம் வட்டம்
153/A மறைமண அழகன்ஜீதி, மங்கலம்
கிராமம், வீட்டின் வடிக் கும் திரு ரகுபதி குடிப
நாங்கலையன் என்பவருக்குக் கொடுத்தமான
பட்டா எண் 1099 சீர்தேவ எண் 273/18-ன்
0.65.0 ஏக்கர் ஏர்ஸ் பூமியும் 273/2B ஒரு
கொண்டயன் 0.1.00 ஏக்கர் ஏர்ஸ் பூமியும்
273/3E ஒரு கொண்டயன் 0.52.0 ஏக்கர்
ஏர்ஸ் பூமியும், 274/1A ஒரு கொண்டயன் 0.73-0
ஏக்கர் ஏர்ஸ் பூமியும் 274/2A ஒரு கொண்டயன்
0.79.0 ஏக்கர் ஏர்ஸ் பூமியும் மாத்திரம். இதன்
கூடுதலாகக் கட்டும் திரைக் கணம் அடையுமாக்க
மாவட்ட ஆட்சித் தலைவரின் ந. க. எண் 519/2010
ளம் எம் 2 -ன் படி உரிமை உபத்தேசம். உரிமை
10. 11. 2011 முதல் 09. 01. 2016 வரை உள்ளது.
இந்த உரிமை 09. 01. 2016 உடன் தொடர் தொடர்
கிந்த உரிமைக் கரு மீண்டும் மீட்டும் பங்கு களம்.
இந்த இடங்களை அருகில் கிணையுபந்ந்த மரங்கள்
மரத்தைக் கிணையுபந்ந்த மரங்கள், நத்தும் வீட்டு மரங்கள்
உயர் அருந்த மிகும் பங்கு வரும் கிணையு
பெரியதை பணி உடன் சீர்தேவக் கருடன்

கிணையு
தொடர்பு கள்


சிரம சீர்தேவ அலுவலர்
43, பச்சாபாளையம்,
தஞ்சார் வட்டம்.

- 16) The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
- 17) This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance.
- 18) The DEIAA, Salem District may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.
- 19) The DEIAA, Salem District may cancel the environmental clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this environmental clearance, if it is found or if it comes to the knowledge of this DEIAA Salem District that the project proponent has deliberately concealed and/or submitted false or misleading information or inadequate data for obtaining the environmental clearance.
- 20) Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.
- 21) The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, draft Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957, National Commission for protection of Child Right Rules, 2006 and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.
- 22) Any other conditions stipulated by other Statutory/ Government authorities shall be complied.
- 23) Any appeal against this environmental clearance shall lie with the Hon'ble National Green Tribunal, if preferred, within a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.
- 24) The proponent has to provide / maintain proper bench formation during mining operation.


 CHAIRMAN, DEIAA - CBE/
 DISTRICT COLLECTOR,
 COIMBATORE.

Copy to:-

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi
2. The Principal Secretary, Environment and Forest Department, Government of Tamil Nadu, Tamil Nadu.
3. The Principal Secretary to Government, Industries Department, Government of Tamil Nadu, Tamil Nadu.

4. The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 34, HEPC Building 1st & 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai-34.
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex East Arjun Nagar, New Delhi 110 032.
6. The Chairman, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai-600 032.
7. The Member Secretary, State Level Environmental Impact Assessment Authority, Tamil Nadu, 3rd Floor, Panagal maalgai, No. 1 Jeenis Road, Saidapet, Chennai-15.
8. The Director of Geology and Mining, Guindy, Chennai-32.
9. E1 Division, Ministry of Environment and Forests Paryavaran Bhawan, New Delhi.
10. Spare.

**பதிவுத்துறை
இரசீது - ஆவணப்பதிவு**

இரசீது எண்: 353/2019
ஆவண எண்: PV துலார்/ புத்தகம்-1/ 189 / 2019

கிரு ரகுபதி அவர்களிடமிருந்து 1,21,167 ரூபாய் இருபத்தொன்றாயிரத்து நூற்று அறுபத்திரண்டு மட்டும், மொக்கம் 187 இணையப் புத்தி 44 2019010 / 469992 / 20210 கீழ்க்கண்ட விவரப்படி பெற்றுக் கொள்ளப்பட்டது:

வ.எண்	விவரம்	தொகை (₹)
1	முத்திரைத்தீர்வை (முத்திரைச் சட்டம், 1916) உடன் மடி	100
2	பதிவுக் கட்டணம்	10000
3	கணினிக் கட்டணம்	100
4	குறுந்தகடுக் கட்டணம்	100
	செலுத்தப்பட்ட மொத்த தொகை	21,167

குறிப்பு: இந்த அசல் ஆவணம் உடனடியாக பக்க சான்று இடப்பட்டு ஒளி வருடல் செய்யப்பட்டு திரும்ப வழங்கப்படும். ஆகவே அசல் ஆவணத்தைத் திரும்பப் பெற தகுதி பெற்ற திரு / திருமதி/ செல்வி திரு ரகுபதி இது தொடர்பாக குறுஞ்செய்தி பெற்றவுடன் அசல் ரசீதை அளித்து அசல் ஆவணத்தை திரும்பப் பெற்றுக்கொள்ளலாம். இதில் ஏதேனும் இடர்பாடுகள் இருப்பின் கட்டணமில்லா நொலைபேசி எண் 1800-102-5174 - ஐ தொடர்பு கொள்ளவும்.

துலார் அலுவலகம்

நாள் 27/01/2019

பதிவு அலுவலர் கையொப்பம்

அசல் ஆவணத்தைத் திரும்பப் பெறும்போது உரிய நபரின் விரல் ரேகை பெறப்படுகிறது என உறுதிசெய்து கொள்ளவும்.

ஆவணதாரர்கள் தங்களில் சரியான கையேசி எண்ணைப் பதிவுக்கு தாக்கவாரும் ஆவணத்தில் தொழில்துறை ஆய்வணம்கொத்தின் நிலை சரிந்த குறுஞ்செய்தியை பெறலாம்.

ஆவணத்தை குறித்த காலத்தில் திரும்பப் பெற்றுக்கொள்ள தவறும் பட்சத்தில் பாதுகாப்பு கட்டணம் வசூலிக்கப்பட்டு திரும்பவும் சொத்துக்களைப் பெறுத்து மட்டும் மாற்றும் தேவையுடும் ஆவணங்களுக்கு மட்டும் மாற்றும் செயல்களையும் மட்டும் இவ்வலுவலகத்தில் இருந்து இணையதளம் வழியாகவ வசூலாபத்துறைக்கு அனுப்பப்பட்டுள்ளது. அதன் மூலமாக சீபிடை தங்குபின் அசல் ஆவணத்தைத் திரும்பப் பெறுய்ப்பாது கேட்டுப் பெற்றுக்கொள்ளவும்.

இணையதளம் என்று இணைய தளம் மூலம் பெறப்படும் சேவைகள்

- உயர் சாமினரி வில்லங்க வரலம் ஒரவிற்க்கம் செய்யும் வசதி
- சாமினரி அலுவலகம் நூல் வரலம் இணையதளம் மூலம் சான்றிட்ட நகல்கள் வில்லங்க சான்று வரல்கள் இணையதளம் இணையதள மூலம் சான்று பெரும் வசதி
- இணையதளம் மூலம் பொது பக்களை ஆவணம் உருவாக்கும் வசதி
- இணையதளம் மூலம் வழிமுறை பதிவு அறிமுகம் வசதி கட்டிட மதிப்பை கணக்கிடும் வசதி
- இணையதளம் மூலம் முத்திரைத் தீர்வை பதிவுக் கட்டணம் உள்ளிட்ட கட்டணங்கள் செலுத்தும் வசதி
- பொதுமக்கள் தங்கள் சார்ந்த பெற்றிருக்கக்கொள்ளக்கூடிய பதிவுத்துறையின் இணையதளத்தில் பார்வையிடும் வசதி

P. R. S.



கமலிபுத்தாடு தமிழ்நாடு TAMILNADU

D 407995

29.11.2018.

T. J. J. J.
சுயன்

S. MURUGANANTHAM
STAMP VENDOR,
R.O. PARTY SHED,
CBE-18, TAMIL NADU,
REF. NO: 4914/B1/84

APPENDIX IV
(See Rules 19. (1) and 22)

- I. Coimbatore District Collector's Ref. No. 892 / Mines / 2015
 - II. The Chairman, DEIAA, Coimbatore Letter No. DEIAA - CBE IV/F.No.892/ 11a&b/ EC.No.16/2018 Dated 04.10.2018.
 - III. District Environmental Engineer, Tamil Nadu Pollution Control Board, Coimbatore (South) Proceedings No.F.1997 CBS/RS/DEE/TNPCB/CBS/W&A/2018 Dated 31.10.2018.
 - IV. Stamp Duty Calculation: -
 - 1. Anticipated S. Fee for Rough stone 55,435 cbm x 59/- : Rs. 38,60,665/-
 - 2. Anticipated S. Fee for Gravel 15742 cbm x 33/- : Rs. 5,19,486/-
 - 3. Security Deposit : Rs. 10,000/-
 - 4. Area Assessment for 5 years : Rs. 1,965/-
- Total : Rs. 43,92,116/-

T. J. J. J.
REGISTERED HOLDER / LESSEE



District Collector
COIMBATORE
(LESSOR)



காபிட்டுநாடு தமில்நாடு TAMILNADU

27.11.2018. T. ரகுபதி
சுத்யா

S. MURUGANATHAN
STAMP VENDOR,
B.O. PAIDY SODA
CBE. OF TAMILNADU
REF. NO: 491373178



-2-

FORM OF AGREEMENT FOR QUARRYING AND CARRYING AWAY MINOR MINERALS (ROUGHSTONE AND GRAVEL) FROM RYOTWARI LANDS IN WHICH THE MINERALS BELONG TO GOVERNMENT

This AGREEMENT made this 3rd day of January 2019 between **Thiru.T.Ragupathy, S/o. N.Thangavelu** residing at 153A, Maraimalai adigal street, Mangalam Road, Palladam, Tiruppur District (hereinafter referred to as "the registered holder / lessee" which term shall include in these presents where the context so admits include also his heirs, executors, administrators, legal representatives and assigns) of the one part and the **Governor of Tamil Nadu** (hereinafter called "the Government" which term shall where the context so admits, include also his successors in office and assigns) of the other part.

T. R. S.
REGISTERED HOLDER / LESSEE

[Signature]
DISTRICT COLLECTOR
COIMBATORE
(LESSOR)





தமிழ்நாடு தமில்நாடு TAMILNADU

AS 127335

27/11/2018

T. ஜெயசீமா
ஜெயசீமா

S. MURUGANANTHAM
STAMP VENDOR,
R.O. PARTY SHED,
CBE-18, TAMIL NADU,
REF. NO: 4914/B1/8^A

-3-

WHEREAS the registered holder holds (amongst others) the lands described in the schedule hereunder written (hereinafter referred to as the said lands)

AND WHEREAS, the registered holder has made application to the Collector of the District of **Coimbatore** (hereinafter referred to as "the Collector") seeking grant of quarrying lease for quarrying **Roughstone & Gravel** in the said lands and to deposit mining waste in the said lands and has lodged with the Collector an accurate map or sketch of the said lands.

AND WHEREAS, the Collector, acting for and on behalf of the Government, has granted a quarrying lease to the registered holder and allowed him to commence quarrying operations for **Roughstone & Gravel** in the said lands and to deposit mining waste thereon by the registered holders for a period of 5 (Five) years from 03.01.2019 to 03.01.2024.

REGISTERED HOLDER / LESSEE



DISTRICT COLLECTOR
COIMBATORE
(LESSOR)



தமிழ்நாடு தமிழ்நாடு TAMILNADU

AS 129879

28.11.2018

T. ஜெயசூரியன்
செய்தார்

S. MURUGANANTHAM
STAMP VENDOR,
R.O. PARTY SHED,
CBE-18. TAMIL NADU.
REF. NO: 4914/B1/8

-4-

AND WHEREAS, the registered holders has deposited with the Collector, the sum of Rs.10,000/- (Rupees Ten Thousand only) vide Challan No.298, dated 28.11.2018 at State Bank of India, Treasury Branch, Coimbatore as security against any loss or damage which may be incurred by the Government by reason of any of the said lands being rendered unfit for cultivation by any mining operations therein of the registered holder or by the deposit of mining waste thereon by the registered holder.

NOW THESE PRESENTS WITNESS and the registered holder doth hereby agree with the Government in the manner following, that is to say:

- 1. The registered holder shall be at liberty at all times during the period of the lease to carry on mining operations for **Roughstone & Gravel** in the said lands in a proper and workman like manner and to deposit mining waste on the said lands and shall at all

T. ஜெயசூரியன்

REGISTERED HOLDER / LESSEE

செ. சிவசுப்பிரமணியன்

DISTRICT COLLECTOR
COIMBATORE
(LESSOR)





தமிழ்நாடு தமிழ்நாடு TAMILNADU

AS 129861

29-11-2018.

T. [Signature]
[Signature]

S. MURUGANANTHAM
STAMP VENDOR,
R.O. PARTY SHED,
CBE-18, TAMIL NADU,
REF. NO: 4914/B1/87

-5-

times be answerable and accountable to the Government for all acts and defaults by any of his nominees, servants or agents in carrying on such operations or in making such deposit.

2. The registered holder cum lessee has paid a sum of Rs.1970/- (Rupees One Thousand Nine Hundred and Seventy only) towards land assessment / Area assessment @ Rs.150/- per hectare per annum in lump sum for a whole period of lease (5 years) vide challan No.295 dated 28.11.2018 at State Bank of India, Treasury Branch, Coimbatore lease shall pay to the collector for and on behalf of the Government in addition to the land assessment for the time being payable in respect of the said lands, seigniorage on the minor minerals at the rate specified in Appendix II to the Tamil Nadu Minor Minerals Concession Rules 1959.

T. [Signature]
REGISTERED HOLDER / LESSEE



[Signature]
DISTRICT COLLECTOR
COIMBATORE
(LESSOR)



தமிழ்நாடு தமில்நாடு TAMILNADU

AS 129881

29.11.2018

T. ரகுமணி
சுயம்

S. MURUGANANTHAM
STAMP VENDOR,
R.O. PARTY SHED,
CBE-18, TAMIL NADU,
REF. NO: 4914/51/5

-6-

3. The registered holder shall and will keep correct accounts in such form as the Collector shall from time to time require and direct showing the quantities and other particulars of all minerals obtained by the registered holder from the said lands and also the number of persons employed in carrying on the said mining operations therein and shall from time to time when so directed by the Collector prepare and maintain complete and correct plans of all mines and working in the said lands and shall allow any officer hereunto authorized by the Director of Geology and Mining, Tamilnadu from time to time and at any time to examine such accounts and any such plans and shall when so required supply and furnish all such informations and returns regarding all or any of the matter aforesaid as the Government shall, from time to time, require and direct.

4. The registered holder shall and will at all times allow any officer authorized by the Director of Geology and Mining, Tamil Nadu in that behalf to enter upon any part of the said lands where any mining operations may be carried on for the purpose of inspecting the same.

T. R. [Signature]

REGISTERED HOLDER / LESSEE



[Signature]

DISTRICT COLLECTOR
COIMBATORE
(LESSOR)

5. The registered holder shall forthwith send to the District Collector a report of any accident which may occur at or in the said lands and also of the discovery of any mineral other than **Roughstone & Gravel**.
6. It shall be lawful for the registered holder at any time to cease mining operations under these presents provided he shall pay to Collector for and on behalf of the Government land assessment, cess and seigniorage due to the Government and shall restore the said lands or fence or fill in abandoned pits and excavations therein if required by the Collector and upon his so doing these presents shall cease and determine.
7. In case the registered holder shall relinquish the whole or any part of the said lands or in case of the expiry or sooner determination of this agreement then and in any such case, he shall restore the lands so relinquished or so much thereon as the Collector shall require to be restored to a state fit for cultivation or shall securely and permanently fence or fill in all such abandoned pits and excavations therein as the Collector shall require to be so fenced or filled in, and in case the registered holder shall fail or neglect to restore any such land which he shall be required to restore to a state fit for cultivation or to so fence, or fill in any such abandoned pit or excavation which he shall be required to so fence or fill in them and in any such case, it shall be lawful for the Collector to so restore any such lands, or as the case may be, to so fence or fill any such pits of excavation at the expense of the registered holder and to apply the said sum of **Rs.10,000/-** so deposited in or towards the cost of so doing and to deduct from the amount of the said deposit and retain on behalf of the Government a sum equal to thirty times the assessment of the said lands which shall have been rendered unfit for cultivation. If however, the amount of deposit is not sufficient to cover the cost of such restoration of fencing or filling in or to meet thirty times the assessment on the area rendered uncultivable, it shall be lawful for the Government to recover balance by resort to civil Court.
8. The registered holder shall not be entitled to any remission of assessment in respect of any of the said lands which shall be rendered unfit for surface cultivation by the carrying on of any mining operations or by the deposit of mining waste, unless thirty times the assessment thereon has already been deducted under the preceding clause.
9. The registered holder shall not assign, lease or part with the possession of the said lands or any part thereof for the whole or any part of the said term without previous intimation in writing to the Collector
10. If the registered holder does not intend to carry on mining operations himself, but intends to lease out the right to do so to another person, the registered holder and his lessee shall enter into an agreement with Government binding themselves jointly and severally to accept the conditions and stipulations herein contained which agreement shall be in the Form set out in Appendix V to the Tamil Nadu Minor Mineral Concession Rules, 1959.
11. All land assessment, cess and seigniorage payable under these presents shall be recoverable under the provisions of the Tamil Nadu Revenue Recovery Act, 1864, as if they were arrears of land revenue.
12. In the event of any breach by the registered holder by any of the conditions of this agreement, it shall be lawful for the Government to levy enhanced seigniorage or for the Collector to give notice in writing to the registered holder of his intention to cancel those presents whereupon the same shall stand cancelled but without prejudice to any rights which the Government may have against the pattadar in respect of any antecedent claim or breach of covenant or condition.
13. Any notice to be given to the registered holder may be addressed to his last known place of abode and where a notice has been so addressed, it shall be deemed to have been duly served for the purpose of these presents.

T. P. S. S.
 REGISTERED HOLDER / LESSEE



[Signature]
 DISTRICT COLLECTOR
 COIMBATORE
 (LESSOR)

14. Should any question or dispute arise regarding the agreement executed in pursuance of these rules or any matter or thing connected therewith or the powers of the registered holder there under, the amount or payment of the seigniorage fee or area assessment made payable thereby, the matter in issue shall be decided by the Director of Geology and Mining. In case the registered holder / registered holders, lessee / lessees is / are not satisfied with the decision of the Director of Geology and mining, the matter shall be referred to the State Government for decision.

15. The registered holder shall abide by the conditions laid down in the Payment of Wages Act, 1936 (Central Act IV of 1936), the Mines Act, 1952 (Central Act XXXV of 1952) and the Indian Explosives Act 1884 (Central Act IV of 1884).

16. (1) The lease period shall expire on the afternoon of ^{2nd} day of January 2024 for quarrying of Rough Stone and Gravel. Extension of lease shall not be granted under any circumstances.

(2) The lessee shall keep accounts showing the quantities and other particulars of all minerals obtained from the lease hold area and maintain register at the quarry site.

(3) The lessee shall send monthly report to the Deputy Director / Assistant Director of Geology and Mining, Coimbatore furnishing the particulars of the quantities of minerals quarried, transported etc.,

(4) The lessee shall not disturb nearby habitations, buildings, water courses, banks of water tanks, rivers, trees, roads, cart tracks, foot path and other public properties while quarrying in the lease hold area.

(5) The lessee shall not cause hindrance to the adjoining pattadars or public while quarrying in the leasehold area.

(6) The lessee should allow the District Collector or any officer authorized by the District Collector in this behalf or any other officer authorized by the State Government in this behalf to inspect the area and verify records and accounts and furnish such information under the terms as may be required by them.

(7) The lessee shall carry out the quarrying operations in skilful, scientific systematic manner keeping in view of the proper safety of the labour conservation of minerals and preservation of environmental ecology.

(8) The lessee should restrict his mining operations strictly within the permitted area as defined in the sketch.

(9) The lessee should maintain at his cost proper sign boards indicating the Survey Number, years of the lease, name of the registered holder and the lease period to the satisfaction of the District Collector/Commissioner/Director of Geology and Mining and maintain it at all time at the quarry site.

(10) The lessee should make his own arrangements to form the approach road from the public road to the place of the quarry.

(11) The lessee shall, at his own expense, erect boundary marks around the area shown in the plan annexed to the lease deed and in which he works minerals and at all times maintain and keep such boundary marks in good repair.

(12) The lessee is not entitled to remove the Rough Stone and Gravel from the said land after expiry of the period of the quarrying lease granted.

(13) The lease shall not be sublet to anybody.

F. R. 88
REGISTERED HOLDER / LESSEE




DISTRICT COLLECTOR
COIMBATORE
(18880)

(14) The lessee shall not claim compensation from the Government for the losses, if any incurred by him in quarrying.

(15) The lessee shall be held responsible for accidents if any happened to the labourers and other while quarrying and Government shall not be held responsible for this.

(16) The lessee shall be held responsible for all losses due to improper working of the quarry during and after the period of lease and he should pay the penalty to be levied for this.

(17) Simple interest at the rate of 24% per annum shall be levied, if the amount due to Government is not paid within the due date.

(18) The arrears of any amount payable shall be recovered under the provisions of the Tamil Nadu Revenue Recovery Act, 1864.

(19) In case of breach by the lessee or his transferee or assignee of any of Tamil Nadu Minor Mineral Concession Rules, 1959 or of the conditions of the lease, the Government/the Commissioner/Director of Geology and Mining/the District Collector without prejudice to any other penalty which may be imposed in respect of such breach, may cancel the lease after granting an opportunity of hearing to the said person.

(20) The terms and conditions are also subject to such further modifications, deletion and additions alteration as may be ordered by the Government from time to time.

(21) Blasting of rock should be done by the shot fire method with less explosives in between 12.00 Noon to 12.30 P.M. after giving proper signal by siren as per the provisions of Indian Explosive Act 1884.

(22) The lessee shall quarry rough stones, jelly, size stones and pillar stones and shall not produce rough blocks or slabs or any other form of stone, either for export purpose in the form of raw blocks, slab etc., or for using them in cutting and polishing industry,

(23) The lessee shall pay the seigniorage fee prescribed in Appendix II of Tamilnadu Minor Mineral Concession Rule, 1959, for the rough stone transported from the quarry and shall not raise any objection for the revision of seigniorage fee as and when announced by the Government

(24) The lessee shall remove, or allow and transportation of rough stone from the area, where quarrying is permitted only after obtaining transport permits in the form prescribed. The lessee shall issue the transport permit to the vehicle used for transportation for the rough stone, furnishing the particulars in the transport permits, specifically indicating the vehicle number, the quantity of the rough stone allowed to be transported by the vehicle mentioning the date and time of issue of transport permit, to the vehicle owner / driver. If any violation is noticed, the vehicle along with the mineral will be seized and the lessee is punishable for the illicit transportation of the mineral, under the provisions of the TNMMCR 1959.

(25) In addition to the above conditions, the lessee shall abide by the conditions specified in TNMMC Rules 1959, and also the conditions stipulated in the lease deed. Any violation of the above conditions will lead to penal action and also for cancellation of lease.

(26) Besides, the above said conditions, the lessee shall abide by the conditions laid down in District Collector's Coimbatore Proceedings Roc.892/Mines/2015 dated 03.01.2019 in Tamil Nadu Minor Mineral Concession Rules, 1959, Mines and Minerals (Development and Regulation) Act, 1957 and the orders of the Government, Commissioner/Director of Geology and Mining and District Collector to be issued from time to time.

(27) The lessee shall strictly follow all the conditions imposed by Coimbatore District Environment Impact Assessment Authority in their letter No. DEIAA-CBE - IV/F.No.892 / 1 (a&b) / EC.No.16 / 2018 dated 04.10.2018.

T.D. 88

REGISTERED HOLDER / LESSEE

189/2019



DISTRICT COLLECTOR

(28) The lessee should not employ Child labours in stone quarry work.

(29) A safety distance of 7.5 meters should be provided for all along the boundary of the lease granted area.

(30) If lease granted, the transport permit obtained for this area should not be used in other areas

(31) In order to avoid splinters of stone pieces into the air less affective explosives only to be used for breaking the stone by the well experienced certified blaster (or) short firer

(32) While carrying out blasting, usage of Ammonium Nitrate mixed with soil and diesel and dried in the air (an explosive substance) should be avoided to curtail the stone pieces flown into the air and create trouble to the nearby villagers (or) habitants

(33) Mild explosives, with less blasting sound only to be used for breaking the stones

(34) The lessee shall comply with provisions of labour laws applicable to quarries/mines. Any contravention of this provision shall attract legal proceedings of appropriate authority

(35) The lessee shall strictly comply with the provisions of labour legislations such as:-

1. Minimum Wages Act, 1948 and Central Rules, 1950
2. Payment of Wages Act, 1936 and Mines Rules, 1955
3. Equal Remuneration Act and Central Rules, 1976
4. The Indian Explosives Act, 1884 (Central Act IV of 1884)

(36) With regard to the safety of the public property the lessee is also hereby expressly bound by the relevant regulations of "the Metalliferous Mines Regulations, 1961" and the lessee shall be responsible for non-compliance and consequential eventuality.

(37) The condition imposed by the District Environmental Engineer, Tamil Nadu Pollution Control Board, Coimbatore (South) in his consent order No. 1805118218350 and 1805218218350 dated 31.10.2018 and consent Proceedings No.F.1997 CBS/ RS / DEE / TNPCB / CBS / W & A / 2018 dated 31.10.2018 should strictly be followed without any deviation. Further the lessee has to renew the consent order from time to time whenever the consent is expired/necessary.

For the purpose of calculating stamp duty the anticipated seigniorage fee for Roughstone and Gravel for Five years is estimated as Rs. 43,92,116/- (Rupees Forty Three Lakhs Ninety Two Thousand One Hundred and Sixteen Only)

Special Conditions.

1. No hindrance should be caused to the adjacent pattadars and public.
2. A safety distance of 7.5 meter to be maintained to the adjacent patta land
3. A safety distance of 10 meter should be provided for odal
4. Barbed wire line fencing should be maintained to the adjacent patta and poramboke lands.
5. The lessee should not quarry stone blocks for using polishing purpose.
6. The applicant should used only low explosives for the blasting
7. Child labourer should not be engaged.

T. R. 88
REGISTERED HOLDER / LESSEE




DISTRICT COLLECTOR
COIMBATORE
(LESSOR)

THE SCHEDULE

- | | | |
|-------------------------------------|---|----------------|
| 1) Name of the District | : | Coimbatore |
| 2) Name of the Taluk | : | Sulur |
| 3) Name of the Village | : | Pachapalayam |
| 4) Name of the Sub Registrar Office | : | Sulur |
| 5) Lease Period | : | 5 (Five) Years |

From 03 .01.2019 to 02 .01.2024

Survey Number	Area Assessment per hectares per year Rs.	Total Extent Hects.	BOUNDARIES			
			NORTH BY S.F.No.	SOUTH BY SF No.	EAST BY SF No.	WEST BY SF No.
273/1B	Rs.1970/- for 5 years (Rs. 150 / hectare / year)	0.65.5 hectares	273/1A	273/2A, 273/2B	274/1A, 274/1B	273/2A
273/2B		0.01.0 hectares	273/1B	273/3E	274/1A	273/2A
273/3E(P)		0.43.0 hectares out of 0.52.0 hectares	273/2B, 273/3D	Remaining part of 273/3E	272, 274/1A, 274/2A	273/3C, 273/3D
274/1A		0.73.5 hectares	274/1B	274/2A, 274/2B	274/1B	273/1B, 273/2B
274/2A		0.79.0 hectares	274/1A	274/2B	274/2B	273/3E
Total		2.62.0				

IN WITNESS whereof **Thiru.T.Ragupathy, S/o. N.Thangavelu** residing at 153A, Maraimalai adigal street, Mangalam Road, Palladam, Tiruppur District the Registered holder/ lessee and **Thiru.T.N.Hariharan, I.A.S, District Collector, Coimbatore** acting for and on behalf of and by the order and direction of the Governor of Tamil Nadu have hereunto set their hands.

T. Ragupathy

REGISTERED HOLDER / LESSEE

T. N. Hariharan

DISTRICT COLLECTOR
COIMBATORE
(LESSOR)

Signed by the above named
in the presence of:

1. *P. Shalini P. Subramanian*
S/o. K. C. Subramanian
Kanya D - 173 TNHB
Phase 2 SIDCO, Coim-21

2.

Paradeep P. Perumalachi
Shippu Pillai Manpara

Signed by the above named
in the presence of:

S. Sankaranarayanan
(A. Water 2014/2015)

JOINT DIRECTOR AND
ASSISTANT DIRECTOR (IIC)
DEPARTMENT OF GEOLOGY & MINING
COIMBATORE

189/2019

20

DEPUTY

COMMISSIONER

MINERS

சுல்லியம், சேரமல நகர்

சுல்லியம், சிவமலை

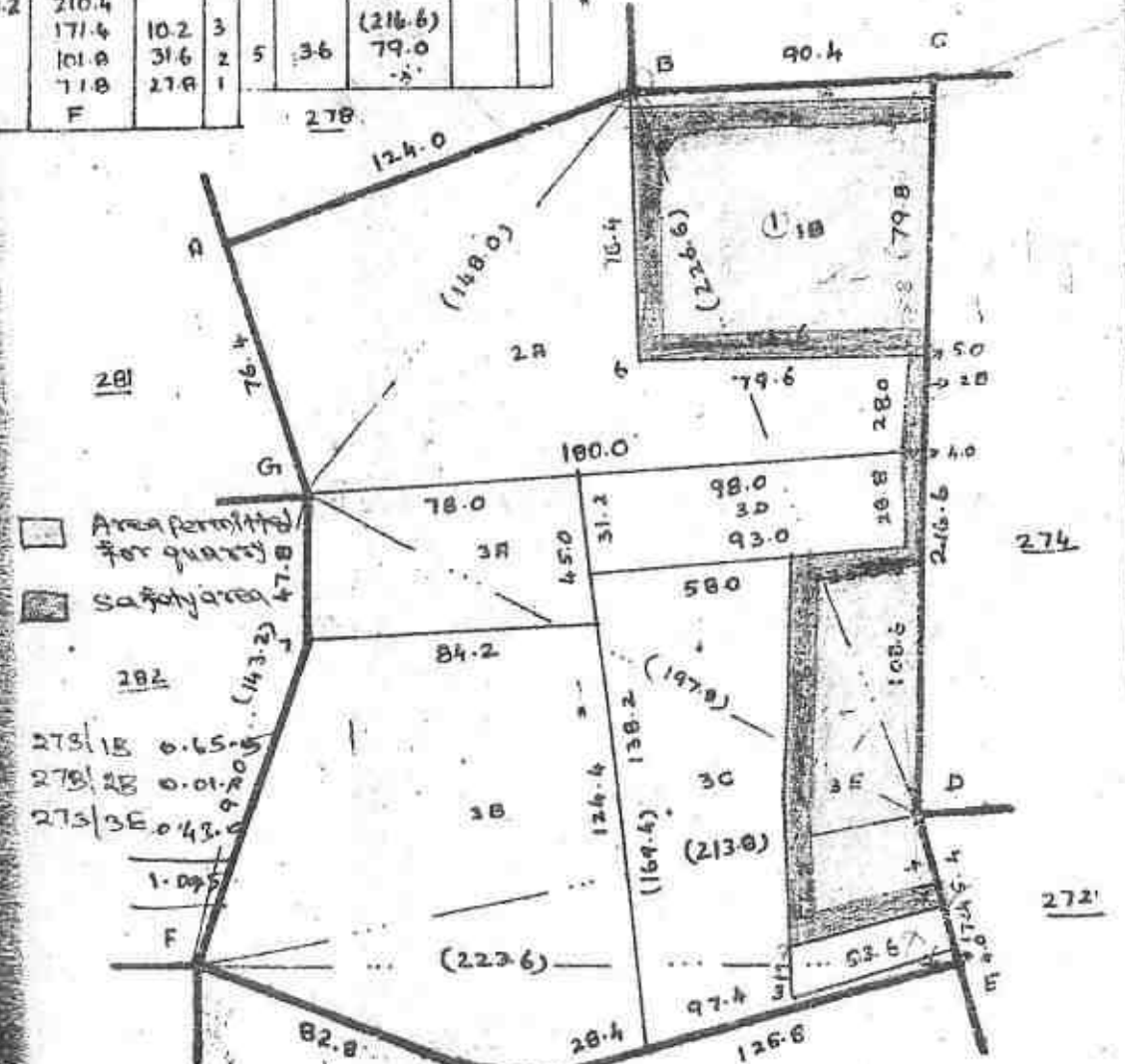
கிராமம் 273

கிராமம் 5 ஏர் 655

எண். 7E
பெயர். பச்சாபாளையம், 6

F	(2130)	36.0	11.0	4	64.4	41.6	7	100	F	(143.2)	44.8	
D	(2236)	210.4	171.4	101.8	71.8	F						
E	(2264)	10.2	31.6	27.8	6	268	154.6	D	(216.6)	79.0		
C	(148.0)				5	36						
					3							
					2							
					1							

DISTRICT COLLECTOR
277 COIMBATORE



சென்னை சட்டசபை
சென்னை சட்டசபை

(Signature)
பொதுகல்

REGISTERED HOLDER LESSEE
REGISTRAR OFFICE
Document No. 29/201
Page 10 Total

அளவு. சிறமுதுவிலக்கு அலுவலர்
43, பச்சாபாளையம்

வகைப்பாடு:

அனுப்புநர்
திரு. த. ந. ஹரிஹரன் இ. ஆ. ப.,
மாவட்ட ஆட்சியர்,
கோயம்புத்தூர் -18.

பெறுநர்
சார்பதிவாளர்,
கூலார்.

ந.க. 892/கனிமம்/2015 நாள் 3.01.2019.

அய்யா,

பொருள்: கனிமங்களும் - சுரங்கங்களும் - சிறுகனிமங்கள்
கோயம்புத்தூர் மாவட்டம் - கூலார் வட்டம் -
பச்சாபாளையம் கிராமம் - புல எண்கள்: 273/1B-ல் 0.65.5
ஹெக்டேர், 273/2B-ல் 0.01.0 ஹெக்டேர், 273/3E
(பகுதி)-ல் 0.43.0 ஹெக்டேர், 274/1A-ல் 0.73.5 ஹெக்டேர்
மற்றும் 274/2A-ல் 0.79.0 ஹெக்டேர் ஆக மொத்தம் 2.62.0
ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமிபில் சாதாரணகற்கள்
மற்றும் கிராவல் குவாரி செய்ய உரிமம் கோரி
திரு. T. ரகுபதி, த/பெ. N. தங்கவேலு என்பவருக்கு ஐந்து
ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்கப்பட்டது -
குத்தகை ஒப்பந்த பத்திரத்தை சம்மந்தப்பட்ட
சார்பதிவாளர் அலுவலகத்தில் பதிவு செய்து வழங்க
கோருதல் தொடர்பாக.

பார்வை: கோயம்புத்தூர் மாவட்ட ஆட்சியர் அவர்களின்
செயல்முறை ஆணை ந.க. 892/கனிமம்/2015 நாள்
03.01.2019.

கோயம்புத்தூர் மாவட்டம், கூலார் வட்டம், பச்சாபாளையம் கிராமம், புல எண்கள்.
273/1B-ல் 0.65.5 ஹெக்டேர், 273/2B-ல் 0.01.0 ஹெக்டேர், 273/3E(பகுதி)-ல் 0.43.0 ஹெக்டேர்,
274/1A-ல் 0.73.5 ஹெக்டேர் மற்றும் 274/2A-ல் 0.79.0 ஹெக்டேர் ஆக மொத்தம் 2.62.0 ஹெக்டேர்
பரப்பளவுள்ள பட்டா பூமிபில் சாதாரணகற்கள் மற்றும் கிராவல் குவாரி செய்ய உரிமம் கோரி
திரு. T. ரகுபதி, த/பெ. N. தங்கவேலு என்பவருக்கு ஐந்து ஆண்டுகளுக்கு குத்தகை உரிமம்
வழங்கப்பட்டு அதற்கான குத்தகை ஒப்பந்தப்பத்திரம் 03.01.2019 அன்று நிறைவேற்றப்பட்டு
குத்தகை காலம் 03.01.2019 முதல் 02.01.2024 வரை ஐந்து ஆண்டுகளுக்கு வழங்கப்பட்டுள்ளது.
இந்த ஒப்பந்தப் பத்திரத்தை சம்மந்தப்பட்ட சார்பதிவாளர் அலுவலகத்தில் குத்தகைதாரர் தமது
சொந்த செலவில் பதிவு செய்து திரும்ப இவ்வலுவலகத்தில் ஒப்படைக்க வேண்டும்.
முத்திரைத்தாள் மதிப்பு கீழ்க்கண்டவாறு நிர்ணயம் செய்யப்பட்டுள்ளது.

1. ஐந்து ஆண்டுகளுக்கு செலுத்தப்படும் உத்தேச சீனியரேஜ் தொகை : ரூ. 43,80,151/-
2. காப்புறுதி தொகை : ரூ. 10,000/-
3. பரப்பு வரி : ரூ. 1,965/-

மொத்தம் : ரூ. 43,92,116/-

குத்தகைதாரர் ரூ.44,000/- மதிப்பில் முத்திரைத்தாள் பெற்று சமர்பித்து
குத்தகை ஒப்பந்தப்பத்திரம் நிறைவேற்றப்பட்டது.



இந்திய பதிவுச்சட்டம் (விதி) பிரிவு 88 (1) - ன் படி குத்தகை ஒப்பந்தபதிவின் பொழுது மாவட்ட ஆட்சியர் ஆலோசனை விதிவிலக்கு அளிக்கப்பட்டுள்ளது.

எனவே மேற்படி குத்தகை ஒப்பந்தப்பத்திரத்தை குத்தகைதாரர் பதிவு செய்ய சமர்ப்பிக்கும் பட்சத்தில் அதனை பதிவு செய்து இவ்வலுவலகத்திற்கு திருப்பி அனுப்பிவைக்குமாறு கேட்டுக்கொள்கிறேன்.

ஜி. சீதாராணி
3.1.2019
மாவட்ட ஆட்சியருக்காக,
கோயம்புத்தூர்.

நகல் :

திரு. T. ரகுபதி,
த/பெ. N. தங்கவேலு,
153 A, மறைமலை அடிகள் வீதி,
மங்கலம் ரோடு,
பல்லடம், திருப்பூர் மாவட்டம்

3/1/19

மேற்படி குத்தகை ஒப்பந்தப்பத்திரத்தை சம்பந்தப்பட்ட சார்பதிவாளர் அலுவலகத்தில் உடனடியாக பதிவு செய்து மீள சமர்ப்பிக்கவேண்டியது.



आयकर विभाग
INCOME TAX DEPARTMENT
T BAGUPATHY
THANGAVELU
27/02/1983
 Permanent Account Number
AKKPR045M

 Signature

भारत सरकार
GOVT OF INDIA



इस कार्ड को खोने/पाने पर कृपया सूचित करें/सौदागः
 आयकर विंग सेवा इकाई, एन एस डी एल
 'फ्लोरी मंजिल, टाईम्स टॉवर, कलमा मिलस कंपाउंड, एन. बी. मार्ग,
 सोबर परेल, मुंबई - 400 013.

*If this card is lost / someone's lost card is found,
 please inform / return to*
Income Tax PAN Services Unit, NSDL
1st Floor, Times Tower,
Kamala Mills Compound,
S.B. Marg, Lower Parel, Mumbai - 400 013.
Tel: 91-22-2499 4630, Fax: 91-22-2495 0664
email: eminf@nsdl.co.in

T. R. S.





இந்திய அரசாங்கம்
Government of India
 கருப்புசாமி நாச்சிமுத்து
 Karuppusamy Nachimuthu
 பிறந்த நாள் / DOB - 11/09/1989
 ஆண்பால் / Male



2880 0470 8659

சாதாரண மனிதனின் அதிகாரம்



Unique Identification Authority of India

மகலாபி
 111 நாச்சிமுத்து பி.சி. என். வீ.
 சூர் என். துள். கலங்கல் ரிஜட்.
 சூர் நகர், தஞ்சை.
 கேரளப்படுத்தலி தலைநகர்
 611027

Address:
 S/O Nachimuthu B.S. SVR N
 NAGAR KALANGAL RIJAD,
 Sutor (TP), Sutor, Chinnabore
 Tamil Nadu, 611027

2880 0470 8659

W. Karuppusamy





இந்திய அரசாங்கம்

Government of India

வேலுசாமி ரா

Velusamy R

பிறந்த நாள் DOB: 04/05/1948

ஆண்பால் / Male



7260 7183 2725

சாதாரண மனிதனின் அதிகாரம்



இந்திய அரசாங்கம்
Government of India

முகவரி:

தந்தை / தாய் பெயர் ராமசாமி

கவுண்டர் 2/ 20, கோங்கு

இல்லம், பழைய தபால்

நிலையம் வீதி,

கங்கையம்பாளையம்,

கங்கையம்பாளையம்,

கோயம்புத்தூர்

கங்கையம்பாளையம், தமிழ் நாடு

641401

Address:

S/O: Ramasamy Gounder, 2/ 20,

KONGU ILLAM, OLD POST

OFFICE STREET,

KANGAYAMPALAYAM,

Kangayampalayam, Coimbatore,

Kangayampalayam, Tamil Nadu,

641401

7260 7183 2725

1547
1800 300 1547

help@uidai.gov.in

www.uidai.gov.in

(Handwritten signature)



R/தலூர்/புத்தகம்-1/189/2019

189ம் ஆண்டு இந்திய முத்திரைச் சட்டம் 12வது பிரிவின் கீழான சான்று

2019ம் ஆண்டு வரிசை எண் 88

மக்கலம் வழி திருப்பூர் தமிழ்நாடு இந்தியா 641663ல் வசிக்கும் திரு ரகுபதி என்பவரிடமிருந்து ர 827 ரூபாய் தொள்ளாயிரத்து இருபத்திரண்டு மட்டும் இந்த ஆவணத்திற்காக இந்திய முத்திரைச் சட்டம் 12வது பிரிவின் 144 குறைவாயிருந்த முத்திரைக் கட்டணம் வசூலிக்கப்பட்டது என நான் இதன் மூலம் சான்றளிக்கிறேன்.

சார்பதிவாளர் தலூர்
நாள் 07/01/2019

சார்பதிவாளர் மற்றும் இந்திய முத்திரைச் சட்டம் பிரிவு
144 ஆட்சியர்

2019 ஆம் ஆண்டு ஜனவரி மாதம் 8ம் தேதி ரிப. 0472 மணியளவில் தலூர் சார்பதிவாளர் அலுவலகத்தில் நூக்கல் செய்து கட்டணம் ர 20,240 செலுத்தியவர்.

இ. த. பெருவிரல்



T. R. 88

கூடுதல் விவரங்கள் ஆவண வாசகத்தில் உள்ளன

பதிவுச் சட்டம் பிரிவு 881ன் கீழ் நேரில் வருவதளிலிருந்து விலக்களிக்கப்பட்ட திரு. ரகுபதி கோவை கோயம்புத்தூர் தமிழ்நாடு இந்தியா 64101 மாவட்ட ஆட்சியர் கோவை கோயம்புத்தூர் அவர்களால் இந்த ஆவணம் எழுதிக் கொடுக்கமை குறித்து நான் மனநிறைவுடைந்துள்ளேன்

சார்பதிவாளர் தலூர்

எழுதி வாங்கியதாக ஒப்புக் கொண்டவர்
இ. த. பெருவிரல்



T. R. 88

கூடுதல் விவரங்கள் ஆவண வாசகத்தில் உள்ளன

189/19 9

R/தலூர்/புத்தகம்-1/189/2019

இணைப்பென்று நிரூபித்தவர்கள்

N. S. S. S. S. S.
A. S. S. S. S. S.

திரு கருப்பசாமி தம்பை நாச்சிமுத்து 4/11சி, எஸ்விஆர்என் நகர், கலங்கல் ரோடு,
தலூர், தலூர், கோயம்புத்தூர், தமிழ்நாடு இந்தியா, 641407

திரு வேலுச்சாமி தம்பை ராமசாமி 270, கொக்கு இல்லம் பழைய தபால் நிலையம்
வழி, கலங்கல்பாளையம் தலூர், கோயம்புத்தூர், தமிழ்நாடு இந்தியா, 641407

2019 ஆம் ஆண்டு ஜனவரி மாதம் 1ம் நாள்

இளங்கோ என்
சார்பதிவாளர்
தலூர்

R/தலூர்/புத்தகம்-1/189/2019 எண்ணகல் பதிவு செய்யப்பட்டது

நாள் 20/01/2019
தலூர்

இளங்கோ என்
சார்பதிவாளர்



R.C.No.892/Mines/2015

Dated. 11.08.2016.

Memo.

Sub : Mines and Minerals – Rough Stone and Gravel – Coimbatore District – Sulur Taluk – Pachapalayam Village – S.F.No.273/1B over an extent of 0.65.50 hectares, 273/2B over an extent of 0.01.0 hectares, 273/3E(Part) over an extent of 0.43.0 hectares out of 0.52.0 hectares, 274/1A over an extent of 0.73.5 hectares and 274/2A over an extent of 0.79.0 hectares totally over an extent of 2.62.0 hectares - Mining Plan submitted for obtaining Environmental Clearance for grant of Rough Stone and Gravel quarry lease – Approval – Accorded.

- Ref : 1) Commissioner, Geology and Mining Letter No.3868/LC/2012 dated 19-11-2012 and with Guidelines / Instructions to be followed for the approval of Mining Plan and obtaining Environmental Clearance for grant of quarry leases in respect of Minor Minerals other than Granite.
- 2) District Collector, Coimbatore letter Ref.No.892/ Mines /2015 dated 17.08.2016.
- 3) G.O.Ms.No.79, Industries (MMC-1) Department dated 06.04.2015.
- 4) Thiru. T.Ragupathi, S/o.Thangavelu, 153A, Maraimalai adigal street, Mangalam Road, Palladam, letter dated 26.08.2016 along with three Copies of Mining Plan prepared by Thiru.C.Natarajan, RQP/MAS/004/87/A.

In pursuance of the letter 1st cited, the Mining Plan submitted by Thiru.T.Ragupathi in respect of S.F.No.273/1B over an extent of 0.65.50 hectares, 273/2B over an extent of 0.01.0 hectares, 273/3E(Part) over an extent of 0.43.0 hectares out of 0.52.0 hectares, 274/1A over an extent of 0.73.5 hectares and 274/2A over an extent of 0.79.0 hectares totally over an extent of 2.62.0 hectares in Pachapalayam Village, Sulur Taluk, Coimbatore District for obtaining Environmental

Clearance for grant of Rough Stone and Gravel quarry lease is approved subject to the following conditions.

(ii) That the mining plan is approved without prejudice to any other laws applicable to the quarry area from time to time whether made by the Central Government or State Government or any other authority.

(vi) That 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 (Regulation and Development) Act, 1957, or Mineral Concession Rules 1960, or Tamil Nadu Minor Mineral Concession Rule 1959 or any other laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980 and the Rules made there under.

(vii) That the mining plan is approved without prejudice to any other direction from any court of competent jurisdiction.

(viii) That the approval of mining plan does not confer any rights for the renewal of quarry lease.

(ix) The approval is valid upto the subsistence of the lease period only.

Encl: Two Copies of approved
Mining Plan

Assistant Director,
Dept of Geology and Mining,
Coimbatore.

To

Thiru. T.Ragupathi,
S/o.Thangavelu, 153A,
Maraimalai adigal street,
Mangalam Road,
Palladam

Copy submitted to the Commissioner, Geology and Mining, Guindy, Chennai - 32.

Thiru.T.N. Hariharan I.A.S.,
CHAIRMAN/
DISTRICT COLLECTOR.

District Level Environment Impact
Assessment Authority - Coimbatore,
Second Floor,
Collectorate New Building,
Coimbatore - 641018.

ENVIRONMENTAL CLEARANCE

Lr.No.DEIAA - CBE - IV/F.No. 892/1(a&b)/EC.No.16/2018 dated 04.10.2018

To

Thiru. T.Ragupathi,
S/o. N.Thangavelu,
153A, Maraimalai Adigal street,
Mangalam road, Palladam,
Tirupur District

Sir,

Sub: DEIAA - CBE - Proposed **Roughstone & Gravel** quarry
located at S.F.Nos. 273/1B,273/2B,273/3E (Part), 274/1A &
274/2A of Pachapalayam Village, Sulur Taluk Coimbatore District
- **Thiru.T.Ragupathi** - Issue of Environmental Clearance -
Reg.

- Ref: 1. Your application for Environmental Clearance dated
19.06.2017.
2. Minutes of the 4th DEAC meeting held on 08.09.2018.
3. Minutes of the 4th DEIAA meeting held on 04.10.2018.

-000-

Details of Minor mineral Activity:-

This has reference to your application first cited. The proposal is for obtaining Environmental Clearance for mining / quarrying of category 'B2' minor mineral based on the particulars furnished in your application as shown below:

1.	Name of Project Proponent and address	:	Thiru. T.Ragupathi, S/o. N.Thangavelu, 153A, Maraimalai Adigal street, Mangalam road, Palladam, Tirupur District
2.	Location of the Proposed Activity		
	Survey Number	:	S.F.Nos.273/1B,273/2B,273/3E (Part), 274/1A and 274/2A


CHAIRMAN
DEIAA - CBE

Latitude and Longitude		: 10°54'14"N to 10°54'24"N 77°04'16"E to 77°04'23"E
Village		: Pachapalayam
Taluk		: Sulur
District		: Coimbatore
3. Proposed Activity		
i.	Minor Mineral	: Roughstone & Gravel
ii.	Quarrying Lease Area	: 2.62.0 Ha.
iii.	Approved quantity	: Roughstone = 65,435 cu.mt Gravel = 15,742 cu.mt
iv.	Depth of quarrying	: 12m
v.	Type of quarrying	: Open cast, Semi-mechanised
vi.	Category (B1/ B2)	: "B2" category.
vii.	Precise Area Communication	: District Collector, Coimbatore Letter No. 892/Mines/2015 Dated 17.08.2016.
viii.	Mining Plan approval	: Assistant Director of Geology and Mining, Coimbatore letter Rc.No. 892/Mines/2015 Dated 27.08.2016
ix.	Quarrying lease period	: 5 Years.
4.	Whether Project area attracts any general conditions specified in the EIA notification, 2006 as amended:-	: Not attracted. Affidavit furnished.
5.	Man power requirement per day:	: 14 Nos.
6. Utilities		
i.	Source of Water	: Water vendors
ii.	Water requirement"	:
	1. Drinking & domestic purposes (in KLD)	0.3KLD
	2. Dust suppression (in KLD)	0.3 KLD
	3. Green Belt (in KLD)	0.4KLD


 CHAIRMAN
 DEIAA - CBE

	iii.	Power requirement: a. Domestic purposes b. Industrial Purpose	:	Fuel is used for operating machineries and vehicles during quarrying process and electricity will be used only for mine office.
7.	Cost			
	i.	Project cost	:	Rs.58,73,000/-
	ii.	EMP cost	:	Rs.4,25,000/-
8.	Public Consultation		:	Not required as per O.M. dated 24.12.2013 of MoEF, GOI
9.	Date of Appraisal by DEAC: Agenda No.			08.09.2018 IV-2
10.	Date of review / discussion by DEIAA and the Remarks:- The proposal was placed before the DEIAA in its 4 th DEIAA meeting held on 04.10.2018 and the Authority after careful consideration, decided to grant Environmental Clearance to the said project Mining of "Roughstone & Gravel" subject to terms and conditions stipulated under the provisions of Environment Impact Assessment Notification, 2006 as amended.			
11.	Validity: This Environmental Clearance is granted to quarrying of "Roughstone & Gravel" for the production quantity of 65,435 cu.mt of Rough Stone and 15,742 cu.mt of Gravel for the period of "five years" from the date of execution of the quarry lease deed.			

Conditions to be Complied before / during commencing quarrying operations:-

1. The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing the public that
 - i) The project has been accorded Environmental Clearance.
 - ii) Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.
 - iii) Environmental Clearance may also be seen on the website of the District Level Environment Impact Assessment Authority.
 - iv) The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the DEIAA.
2. The applicant has to obtain land use classification as industrial use before issue/renewal of mining lease.


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 DEIAA - CBE

3. NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.
4. The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Mineral Concession Rules, 1959.
5. A copy of the Environment Clearance letter shall be sent by the proponent to the concerned Panchayat, Town Panchayat / Panchayat union/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the proponent and also kept at the site, for the general public to see.
6. Quarry lease area should be demarcated on the ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar shall be erected before commencement of quarrying.
7. The proponent shall ensure that First Aid Box is available at site.
8. The excavation activity shall not alter the natural drainage pattern of the area.
9. The excavated pit shall be restored by the project proponent for useful purposes.
10. The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.
11. The quarrying operation shall be restricted between 7 AM and 5 PM.
12. The proponent shall take necessary measures to ensure that there shall not be any adverse impacts due to quarrying operation on the nearby human habitations, by way of pollution to the environment.
13. A minimum distance of 15 mts. from any civil structure shall be kept from the periphery of any excavation area.
14. Depth of quarrying shall be 2m above the ground water table /approved depth of mining whichever is lesser to be considered as a safe guard against Environmental Contamination and over exploitation of resources.
15. The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.
16. Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.
17. Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
18. The explosives shall be stored at site as per the conditions stipulated in the permits issued by the licensing Authority.
19. Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.
20. A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.
21. The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF, GoI on 16.11.2009.


 CHAIRMAN
 DEIAA - CBE

22. The following measures are to be implemented to reduce Air Pollution during transportation of mineral
 - (i) Roads shall be graded to mitigate the dust emission.
 - (ii) Water shall be sprinkled at regular interval on the main road and other service roads to suppress dust.
23. The following measures are to be implemented to reduce Noise Pollution
 - (i) Proper and regular maintenance of vehicles and other equipment.
 - (ii) Limiting time exposure of workers to excessive noise.
 - (iii) The workers employed shall be provided with protection equipment and earmuffs etc.
 - (iv) Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.
24. Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoE&F, Govt to control noise to the prescribed levels.
25. Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with the Regional Director, CGWP suitable measures should be taken for rainwater harvesting.
26. Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.
27. Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.
28. The following measures are to be adopted to control erosion of dumps:-
 - (i) Retention/ toe walls shall be provided at the foot of the dumps.
 - (ii) Worked out slopes are to be stabilized by planting appropriate shrub/ grass species on the slopes.
29. Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous Wastes (Management, Handling, and trans boundary movement) Rules, 2008 and its amendments thereof to the recyclers authorized by TNPCB.
30. Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
31. Rain water harvesting to collect and utilize the entire water falling in land area should be provided.
32. Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the (lease area and only the overflow after allowing setting of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season.


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 DEIAA - CBE

33. The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, if it is observed that the ground water table is getting depleted due to the quarrying activity; necessary corrective measures shall be carried out. The Assistant Director Ground water Division, PWD Salem shall monitor, the ground water related issues.
34. No tree-felling shall be done in the leased area, except only with the permission from competent Authority.
35. To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic Institution.
36. Ground water quality monitoring should be conducted once in 3 Months.
37. Transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village road.
38. Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI
39. Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI.
40. Bunds to be provided at the boundary of the project site.
41. The project proponent shall undertake plantation/ afforestation work by planting the native species on all side of the lease area at the rate of 400/Ha. Suitable tall tree saplings should be planted on the bunds and other suitable areas in and around the work place and progress report shall be submitted once in 3 months.
42. At least 10 Neem trees should be planted around the boundary of the quarry site.
43. Floor of excavated pit to be leveled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.
44. The Project Proponent shall ensure a minimum of 2.5 of the annual turnover will be utilized for the CSR Activity
45. The CSR funds should be channelized for planning programme, nature conservation support, tribal development and activities that support forest and environment.
46. The Project Proponent shall provide solar lighting system to the nearby villages
47. The Project Proponent shall comply with the mining and other relevant rules and regulations where ever applicable.
48. Rainwater shall be pumped out Via Settling Tank only.
49. Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.
50. As per MoEF & CC, GoI, Office Memorandum dated 30.03.2015, prior clearance from Forestry & Wild Life angle including clearance from standing committee of the National Board for Wild life as applicable shall be obtained before starting the quarrying operation, if the project site is located within 10KM from National Park and Sanctuaries.


CHAIRMAN
DEIAA - CBE

B. General Conditions:

- 1) EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.
- 2) The Proponent shall obtain the Consent for Establishment from the TNPC Board before commencing the activity.
- 3) No change in mining technology and scope of working should be made without prior approval of the DEIAA, Salem District, Tamil Nadu.
- 4) No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.
- 5) Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- 6) Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.
- 7) A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.
- 8) Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
- 9) Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying them mineral shall not be overloaded.
- 10) Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
- 11) All Personnel shall be provided with protective respiratory devices including safety shoes, Masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
- 12) Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.
- 13) Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.
- 14) The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.
- 15) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its Regional Office located at Chennai.


 CHAIRMAN
 DEIAA - CBE

51. The quarrying activity shall be stopped if the entire quantity indicated in the Mining plan is quarried even before the expiry of the quarry lease period and the same shall be monitored by the District Authorities.
52. Safety equipments to be provided to all the employees.
53. Safety distance of 50 m has to be provided in case of railway, reservoir, canal/odai
54. The Assistant / Deputy Director, Department of Geology and Mining shall ensure that the proponent has engaged the blaster with valid Blasting license / certificate obtained from the competent authority before execution of mining lease.
55. The proponent shall furnish the Baseline data covering the Air, Water, Noise and land environment quality for the proposed quarry site before execution of mining lease.
56. The proponent shall erect the pillars in accordance with the Rules for depicting GPS details in the earmarked boundary of the quarry site to monitor electronically before execution of quarrying lease.
57. The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh case before commencing quarrying operation.
58. The proponent has to display the name board at the quarry site showing the details of proponent, leased period, extent etc., with respect to the existing activity before execution of mining.
59. Heavy earth machinery equipments if utilized, after getting approval from the competent authority.
60. The proponent shall ensure that project activity including blasting, mining transportation etc., should in no way in adverse impact to the forests, such as reserve forest and social forests, tree plantation and bio diversity, surrounding water bodies etc.,
61. The environmental norms shall be adhered by the Project Proponent and shall furnish a report periodically to the authority concerned.
62. Ground Water Level and quality shall be monitored by the Assistant Director, Public Works Department (WRO), Salem.
63. NOC for sanitary certificate obtained from the Deputy Director of Health Services, Salem should be submitted by the proponent.
64. Periodical medical examination of the quarry workers should be carried out by a registered medical practitioner and the report should be filed in the quarry office in a separate file and copy should be sent to the Health Department.
65. Machinery equipments friction / wear and cost of things have to be monitored then and there alongwith maintenance.
66. Staff secure will be maintained by the proponent as per labour act and rules in force.
67. Proper bench should be maintained by the proponent as per norms, proper safety measures should be provided by the proponent while quarrying.


 CHAIRMAN
 DEIAA - CBE



TAMIL NADU POLLUTION CONTROL BOARD

CONSENT ORDER NO. 1805118218350

DATED: 31/10/2018.

PROCEEDINGS NO.F.1997CBS/RS/DEE/TNPCB/CBS/W/2018

DATED: 31/10/2018

SUB: Tamil Nadu Pollution Control Board -CONSENT TO OPERATE - DIRECT -M/s. T.RAGUPATHY QUARRY , S.F.No. 273/1B,273/2B, 273/3E(Part), 274/1A & 274/2A, PACHAPALAYAM villageSulur Taluk and Coimbatore District - Consent for the operation of the plant and discharge of sewage and/or trade effluent under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act 6 of 1974) - Issued- Reg.

- Ref: 1. Unit's CTO-direct application No. 18218350 dated:25/10/2018.
- 2. IR No. F.1997CBS/RS/AEE/CBS/2018 dated 30/10/2018.
- 3. Minutes of the 172th DLCCC meeting held on 30.10.2018.

CONSENT TO OPERATE is hereby granted under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act, 6 of 1974) (hereinafter referred to as "The Act") and the rules and orders made there under to

The Proprietor,
 M/s. T.RAGUPATHY QUARRY
 S.F No.273/1B,273/2B, 273/3E(Part), 274/1A & 274/2A,
 PACHAPALAYAM Village,
 Sulur Taluk,
 Coimbatore District.

authorising the occupier to make discharge of sewage and /or trade effluent.

This is subject to the provisions of the Act, the rules and the orders made there under and the terms and conditions incorporated under the Special and General conditions stipulated in the Consent Order issued earlier and subject to the special conditions annexed.

This CONSENT is valid for the period ending March 31, 2023

P. MANIMARAN

District Environmental Engineer,
Tamil Nadu Pollution Control Board,
COIMBATORE SOUTH

Digitally signed by P. MANIMARAN
 DN: c=IN, o=TAMIL NADU POLLUTION CONTROL BOARD,
 ou=ENGINEERING DEPARTMENT, postalCode=638001, st=Tamil
 Nadu,
 3.3.4.3B+40+0234c37F950064b7ae5e87cd8e94476e879e62u
 8549a0c3742115e5990.ccm/P. MANIMARAN
 Date: 2018.11.07 12:27:31 +05'30'

To ✓

The Proprietor,
 M/s.T.RAGUPATHY QUARRY,
 SF No.273/1B,273/2B, 273/3E(Part), 274/1A & 274/2A Pachapalayam Village, Sulur Taluk, Coimbatore District,
 Pin: 641402

Copy to:

- 1. The Commissioner, SULTHANPITTAI-Panchayat Union, Sulur Taluk, Coimbatore District.
- 2. Copy submitted to the Member Secretary, Tamil Nadu Pollution Control Board, Chennai for favour of kind information.
- 3. Copy submitted to the JCEE-Monitoring, Tamil Nadu Pollution Control Board, Coimbatore for favour of kind information.
- 4. File



TAMILNADU POLLUTION CONTROL BOARD

SPECIAL CONDITIONS

1. This consent to operate is valid for operating the facility for the manufacture of products (Col. 2) at the rate (Col. 3) mentioned below. Any change in the products and its quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Sl. No.	Description	Quantity	Unit
Product Details			
1.	Rough Stone (Quarrying Area 2.62.0 Hectares)	65435	Cu.m/Five Years
2.	Gravel (Quarrying Area 2.62.0 Hectares)	15742	Cu.m/Five Years

2. This consent to operate is valid for operating the facility with the below mentioned permitted outlets for the discharge of sewage/trade effluent. Any change in the outlets and the quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Outlet No.	Description of Outlet	Maximum daily discharge in KLD	Point of disposal
Effluent Type : Sewage			
1.	Sewage	0.24	On Industrys own land
Effluent Type : Trade Effluent			

3. The effluent discharge shall not contain constituents in excess of the tolerance Limits as laid down hereunder.



TAMILNADU POLLUTION CONTROL BOARD

Sl. No.	Parameters	Unit	TOLERANCE LIMITS - OUTLETS -Nos			
			Sewage		Trade Effluent	
			01			
1.	pH		5.5 to 9			
2.	Temperature	oC	-			
3.	Particle size of Suspended solids	-	-			
4.	Total Suspended Solids	mg/l	30			
5.	Total Dissolved solids (inorganic)	mg/l	-			
6.	Oil & Grease	mg/l	-			
7.	Biochemical Oxygen Demand (3-days at 27oC)	mg/l	20			
8.	Chemical Oxygen Demand	mg/l	-			
9.	Chloride (as Cl)	mg/l	-			
10.	Sulphates (as SO4)	mg/l	-			
11.	Total Residual Chlorine	mg/l	-			
12.	Ammonical Nitrogen (as N)	mg/l	-			
13.	Total Kjeldahl Nitrogen (as N)	mg/l	-			
14.	Free Ammonia (as NH3)	mg/l	-			
15.	Arsenic (as As)	mg/l	-			
16.	Mercury (as Hg)	mg/l	-			
17.	Lead (as Pb)	mg/l	-			
18.	Cadmium(as Cd)	mg/l	-			
19.	Hexavalent Chromium (as Cr+6)	mg/l	-			
20.	Total Chromium (as Cr)	mg/l	-			
21.	Copper (as Cu)	mg/l	-			
22.	Zinc (as Zn)	mg/l	-			
23.	Selenium (as Se)	mg/l	-			
24.	Nickel (as Ni)	mg/l	-			
25.	Boron (as B)	mg/l	-			
26.	Percent Sodium	%	-			
27.	Residual Sodium Carbonate	mg/l	-			
28.	Cyanide (as CN)	mg/l	-			
29.	Fluoride (as F)	mg/l	-			
30.	Dissolved Phosphates(as P)	mg/l	-			
31.	Sulphide (as S)	mg/l	-			
32.	Pesticides	mg/l	-			
33.	Phenolic Compounds (as C6H5OH)	mg/l	-			
34.	Radioactive materials a) Alpha emitters	micro curie/ml	-			
35.	Radioactive materials b). Beta emitters	micro curie/ml	-			
36.	Fecal Coliform	MPN/100ml	-			

4. All units of the sewage and Trade effluent treatment plants shall be operated efficiently and continuously so as to achieve the standards prescribed in Sl No.3 above or to achieve the zero liquid discharge of effluent as applicable.



TAMILNADU POLLUTION CONTROL BOARD

5. The occupier shall maintain the Electro Magnetic Flow Meters/water Meters installed at the inlet of the water supply connection for each of the purposes mentioned below for assessing the quantity of water used and ensuring that such meters are easily accessible for inspection and maintenance and for other purposes of the Act.
 - a. Industrial Cooling, Spraying in mine pits or boiler feed.
 - b. Domestic purpose.
 - c. Process.
6. The occupier shall maintain the Electro Magnetic Flow Meters with computer recording arrangement for measuring the quantity of effluent generated and treated for the monitoring purposes of the Act.
7. Log book for each of the unit operations of ETP have to be maintained to reflect the working condition of ETP along with the readings of the Electro Magnetic Flow Meters installed to assess effluent quantity and the same shall be furnished for verification of the Board officials during inspection.
8. The occupier shall at his own cost get the samples of effluent/surface water/ground water collected in and around the unit by Board officials and analyzed by the TNPC Board Laboratory periodically.
9. Any upset condition in any of the plants of the factory which is, likely to result in increased effluent discharge and result in violation of the standards mentioned in Sl. No.3 above shall be reported to the Member Secretary / Joint Chief Environmental Engineer-Monitoring and the concerned District/Assistant Environmental Engineer of the Board by e-mail immediately and subsequently by Post with full details of such upset condition.
10. The occupier shall always comply and carryout the order/directions issued by the Board in this Consent Order and from time to time without any negligence. The occupier shall be liable for action as per provisions of the Act in case of non compliance of any order/directions issued.
11. The occupier shall develop adequate width of green belt at the rate of 400 numbers of trees per Hectare.
12. The occupier shall provide and maintain rain water harvesting facilities.
13. The occupier shall ensure that there shall not be any discharge of effluent either treated or untreated into storm water drain at any point of time.
14. In the case of zero liquid discharge of effluent units, the occupier shall adhere the following conditions as laid under.
 - i). The occupier shall ensure zero liquid discharge of effluent, thereby no discharge of untreated / treated effluent on land or into any water bodies either inside or outside the premises at any point of time.
 - ii) The occupier shall operate and maintain the Zero liquid discharge treatment components comprising of Primary, Secondary and tertiary treatment systems at all times and ensure that the RO permeate/Evaporator condensate shall be recycled in the process and the final RO reject shall be disposed off with the reject management system ensuring zero liquid discharge of effluents in the premises.
 - iii) The occupier shall operate and maintain the reject management system effectively and recover the salt from the system which shall be reused in the process if reusable or shall be disposed off as ETP sludge.
 - iv) In case of failure to achieve zero discharge of effluents for any reason, the occupier shall stop its production and operations forthwith and shall be reported to the Member Secretary/Joint Chief Environmental Engineer-Monitoring and the concerned District/Assistant Environmental Engineer of the Board by e-mail immediately and subsequently by Post with full details of such upset condition.
 - v) The occupier shall restart the production only after ascertaining that the Zero discharge treatment system can perform effectively for achieving zero discharge of effluents.

Additional Conditions:



TAMILNADU POLLUTION CONTROL BOARD

1. The unit shall ensure that the Rough stone and gravel mining activity is in accordance with the consented quantity of 65435 Cu.m of Rough Stone Mining and 15742 Cu.m of Gravel Mining over a period of 5 years in the mining lease area of about 2.62.0 Hectares from 04.10.2018 to 03.10.2023 in the (Latitude 10o54' 14" N to 10o54' 24" N and Longitude 77o04' 16" E to 77o04' 04.23" E).
2. Mine working shall be open cast semi-mechanised mining and is proposed up to a depth of 12 metres from ground level.
3. The unit shall comply with all the conditions stipulated in the environmental clearance issued to the unit vide Lr. No. DEIAA-CBE-IV/F.No.892/1(a&b)/E.C.No.16/2018 dated 04.10.2018.
4. The unit shall provide adequate sanitary facilities within the quarry area as reported.
5. The unit shall dispose the solid waste then and there without accumulation within the premises.
6. The proponent shall do the Rough stone quarrying in strict accordance with the orders of the Government of Tamil Nadu, as upheld by the Hon'ble High Court of Madras.
7. The unit shall ensure that there shall not be any adverse impacts due to quarrying operation on the nearby human habitations, by way of pollution to the environment.
8. The unit shall be ensured that the mining operation shall be carried out only between 7 AM and 5 PM. The loading shall not be done during night hours.
9. The unit shall ensure that drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
10. The unit shall ensure that the blasting shall be carried out after announcing to the public through adequate public address system to avoid any accident.
11. The unit shall ensure that the mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation.
12. The unit shall ensure that no change in mining technology and scope of working should be made without prior approval of the Ministry of Environment and Forests.
13. The unit shall carry out Wet drilling and Water Sprinkling as Air Pollution Control Measures to control the high levels of Particulate Matter such as drilling, blasting, loading and unloading and all transfer points so as to achieve the AAQ/ Emission Standards prescribed by the Board.
14. The unit shall ensure that the transportation of materials shall be done by covering the trucks/tractors with tarpaulin or other suitable mechanism so that no spillage of mineral /dust takes place.
15. The unit shall ensure that the topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.
16. The unit shall undertake plantation/afforestation work by planting the native species on all side of the quarry lease area and the approach road.
17. The unit shall comply with the conditions stipulated in the Environmental Clearance issued to the unit.
18. The unit shall carry out the rough stone mining operation as per the conditions stipulated in the approved mining plan.
19. The unit shall comply with the conditions stipulated in the mining lease issued to the unit by the District Collector, Coimbatore.
20. The unit shall not use "use and throwaway plastics" such as plastic sheets used for food wrapping, spreading on dining table etc., plastic plates, plastic coated tea cups, plastic tumbler, water pouches and packets, plastic straw, plastic carry bags and plastic flags irrespective of thickness, within the industry premises. Instead unit shall encourage use of eco friendly alternative such as banana leaf, arecanut palm plate, stainless steel, glass, porcelain plates/cups, cloth bag, jute bag etc.,

P. MANIMARAN

District Environmental Engineer,
Tamil Nadu Pollution Control Board,
COIMBATORE SOUTH

Digitally signed by P. MANIMARAN
DN: c=IN, o=TAMILNADU POLLUTION CONTROL BOARD,
ou=ENGINEERING DEPARTMENT, postalCode=639001, st=TN,
Nadu,
2.5.4.30=40e0234c3791c0b67e9e07c0c0f09676c0730c2e0543
e0fd7421c5e0a90, cn=P. MANIMARAN
Date: 2018.11.07 12:29:38 +05'30'



TAMILNADU POLLUTION CONTROL BOARD

GENERAL CONDITIONS

1. The occupier shall make an application along with the prescribed consent fee for grant of renewal of consent at least 60 days before the date of expiry of this Consent Order along with all the required particulars ensuring that there is no change in Production quantity and change in sewage/Trade effluent.
2. This Consent is issued by the Board in consideration of the particulars given in the application. Any change or alteration or deviation made in actual practice from the particulars furnished in the application will also be ground for review/variation/revocation of the Consent Order under Section 27 of the Act and to make such variation as deemed fit for the purpose of the Act.
3. The consent conditions imposed in this order shall continue in force until revoked under Section 27(2) of the Act.
4. After the issue of this order, all the 'Consent to Operate' orders issued previously under Water (Prevention and Control of Pollution) Act, 1974 as amended stands defunct.
5. The occupier shall maintain an Inspection Register in the factory so that the inspecting officer shall record the details of the observations and instructions issued to the unit at the time of inspection for adherence.
6. The occupier shall provide and maintain an alternate power supply along with separate energy meter for the Effluent Treatment Plant sufficient to ensure continuous operation of all pollution control equipments to maintain compliance.
7. The occupier shall provide all facilities to the Board officials for inspection and collection of samples in and around the factory at any time.
8. The occupier shall display the flow diagram of the sources of effluent generation and pollution control systems provided at the ETP site.
9. The solid waste such as sweepings, wastage, package, empty containers, residues, sludge including that from air pollution control equipments collected within the premises of the industrial plant shall be collected in an earmarked area and shall be disposed off properly.
10. The occupier shall collect, treat the solid wastes like food waste, green waste generated from the canteen and convert into organic compost.
11. The occupier shall segregate the Hazardous waste from other solid wastes and comply in accordance with Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008.
12. The occupier shall maintain good house-keeping within the factory premises.
13. All pipes, valves, sewers and drains shall be leak proof. Floor washings shall be admitted into the trade effluent collection system only and shall not be allowed to find their way in storm drains or open areas.
14. The occupier shall ensure that there shall not be any diversion or by-pass of trade effluent on land or into any water sources.
15. The occupier shall ensure that solar Evaporation pans shall be constructed in such a way that the bottom of the solar pan is at least 1 m above the Ground level (if applicable).
16. The occupier shall furnish the following returns in the prescribed formats to the concerned District office regularly.
 - a) Monthly water consumption returns of each of the purposes with water meter readings in Form-I on or before 5th of every month.
 - b) Yearly return on Hazardous wastes generated and accumulated for the period from 1st April to 31st March in Form-4 before the end of the subsequent 30th June of every year (if applicable).
 - c) Yearly Environmental Statement for the period from 1st April to 31st March in Form -V before the end of the subsequent 30th September of every year(if applicable).
17. If applicable, the occupier has to comply with the provisions of Public Liability Insurance Act, 1991 to provide immediate relief in the event of any hazard to human beings, other living creatures/plants and properties while handling and storage of hazardous substances.
18. The issuance of this consent does not authorize or approve the construction of any physical structures or facilities or the undertaking of any work in any natural watercourse or in Government Poromboke lands.
19. The issuance of this Consent does not convey any property right in either real personal property or any exclusive privileges, nor does it authorize any injury to private property or Government property or any invasion of personal rights nor any infringement of Central, State laws or regulation.



TAMILNADU POLLUTION CONTROL BOARD

20. The occupier shall forth with keep the Board informed of any accident of unforeseen act or event of any poisonous, noxious or polluting matter or emissions are being discharged into stream or well or air as a result of such discharge, water or air is being polluted.
21. If due to any technological improvements or otherwise the Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any treatment system, either in whole or in part) the Board shall, after giving the applicant an opportunity of being heard, vary all or any of such conditions and thereupon the applicant shall be bound to comply with the conditions as so varied.
22. In case there is any change in the constitution of the management, the occupier of the new management shall file fresh application under Water (Prevention and Control of Pollution) Act, 1974, as amended in Form-II alongwith relevant documents of change of management immediately and get the necessary amendment with renewal of consent order.
23. In case there is any change in the name of the company alone, the occupier shall inform the same with relevant documents immediately and get the necessary amendments for the change of name from the Board.
24. The occupier shall display this consent order granted to him in a prominent place for perusal of the inspecting Officers of this Board.

P. MANIMARAN

**District Environmental Engineer,
Tamil Nadu Pollution Control Board,
COIMBATORE SOUTH**

Digitally signed by P. MANIMARAN
DN: cn=IN, o=TAMILNADU POLLUTION CONTROL BOARD,
ou=ENGINEERING DEPARTMENT, postalCode=618001,
st=Tamil Nadu,
2.5.4.20=4805234637991d06eb7ae5b97c7e0a0a76a734107b
2543aaf027421c5e5490, cn=P. MANIMARAN
Date: 2018.11.07 13:30:26 +05'30'

Renewed up to 24 OCT 1989



P. Hanumanthly 14/5/82
 Regional Controller of Mines
 INDIAN BUREAU OF MINES
 Ministry of Steel, Mines & Coal
 MADRAS

**CERTIFICATE OF RECOGNITION AS
 QUALIFIED PERSON TO PREPARE MINING PLANS**
 (Under Rule 22 (c) of Mineral Concession Rules 1960)

Shri C. NATARAJAN resident
 of ALAMBADI (VILL), VEDASENDUR (TU), ANNA (DISTT), TAMILNADU, son
 of SHRI K. CHINNA GOUNDER , having given satisfactory
 evidence of his qualifications and experience is hereby granted recognition
 under Rule 22 (c) of the Mineral Concession Rules, 1960 as a Qualified
 Person to prepare Mining Plans.

His registration number is RQP / MAS / 004 / 87 / A

This recognition is valid for a period of two years
 ending 25.10.1989

Place: MADRAS
 Date: 26.10.1987

P. Hanumanthly 26/10/82
 Regional Controller of Mines
 Indian Bureau of Mines
 MADRAS

ENVIRONMENTAL BASELINE MONITORING REPORT

From March 2023 to May 2023

For

M/s. Pachapalayam Rough Stone and Gravel Quarry

S.F.Nos.279/2C1B, 212/1A(P), 212/1B, 212/2A, 212/2B(P),
212/3A, 212/3B(P), 238/2 (P), 239/1B, 239/2B, 240/2B(P), 241/1(P),
241/2 (P), 241/3 (P) & 241/4 (P) Pachapalayam Village, Suler
Taluk, Coimbatore District

By



No. 8, 50th Street, 7th Avenue,

Ashok Nagar, Chennai - 600 083.

TEST REPORT

Report No	EHS360/TR/2022-23/001	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sular Taluk, Coimbatore District		
Sampling Method	IS 5182	Sample Drawn by	Laboratory
Sample Name	Air	Sample Code	EHS360/001
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sampling Location	AAQ 1 – CORE ZONE - Project Area - 10°54'25.78"N 77°04'08.34"E		

Date	Period. hrs	PM10(µg/m3)	PM2.5(µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.03.2023	7:00-7:00	23.3	46.4	8.3	27.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.03.2023	7:15-7:15	22.2	46.8	7.5	24.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
08.03.2023	7:00-7:00	23.8	44.7	7.8	25.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
09.03.2023	7:15-7:15	22.5	45.8	8.0	24.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
15.03.2023	7:00-7:00	23.8	45.5	8.4	24.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
16.03.2023	7:15-7:15	23.1	45.8	7.6	22.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
22.03.2023	7:00-7:00	24.8	45.3	9.0	23.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
23.03.2023	7:15-7:15	23.1	46.2	9.8	24.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
29.03.2023	7:00-7:00	23.9	44.8	9.5	23.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
30.03.2023	7:15-7:15	23.6	45.2	8.6	24.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
05.04.2023	7:00-7:00	24.0	46.2	9.3	26.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
06.04.2023	7:15-7:15	23.9	46.5	8.5	25.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
12.04.2023	7:00-7:00	22.9	46.2	8.1	24.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
13.04.2023	7:15-7:15	22.1	45.2	7.4	23.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
19.04.2023	7:00-7:00	23.8	45.1	7.7	22.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
20.04.2023	7:15-7:15	23.9	46.4	6.1	21.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
26.04.2023	7:00-7:00	24.5	45.0	6.9	23.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
27.04.2023	7:15-7:15	24.3	46.9	6.4	22.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
03.05.2023	7:00-7:00	23.4	45.8	7.7	21.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
04.05.2023	7:15-7:15	23.7	45.4	8.6	23.0	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
10.05.2023	7:00-7:00	23.8	46.2	9.1	24.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
11.05.2023	7:15-7:15	24.2	45.0	8.5	22.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
17.05.2023	7:00-7:00	23.4	46.0	7.7	23.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
18.05.2023	7:15-7:15	24.1	45.3	7.5	22.0	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
24.05.2023	7:00-7:00	24.5	45.8	8.6	23.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25.05.2023	7:15-7:15	24.8	46.2	8.4	21.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

Note: BDL: Below Detection Limit ;DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.

*****End of Report*****

Page 1 of 1

Verified by



Authorised Signatory

Name: Santhosh Kumar A
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/001	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Suler Taluk, Coimbatore District		
Sampling Method	IS 5182	Sample Drawn by	Laboratory
Sample Name	Air	Sample Code	EHS360/001
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sampling Location	AAQ 1 – CORE ZONE - Project Area - 10°54'25.78"N 77°04'08.34"E		

Date	Period. hrs	SPM ($\mu\text{g}/\text{m}^3$)	As (ng/m^3)	C6H6 ($\mu\text{g}/\text{m}^3$)	BaP (ng/m^3)	Pb ($\mu\text{g}/\text{m}^3$)	Ni (ng/m^3)
01.03.2023	7:00-7:00	62.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.03.2023	7:15-7:15	64.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
08.03.2023	7:00-7:00	65.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
09.03.2023	7:15-7:15	61.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
15.03.2023	7:00-7:00	63.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
16.03.2023	7:15-7:15	63.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
22.03.2023	7:00-7:00	64.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
23.03.2023	7:15-7:15	64.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
29.03.2023	7:00-7:00	63.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
30.03.2023	7:15-7:15	63.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
05.04.2023	7:00-7:00	63.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
06.04.2023	7:15-7:15	64.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
12.04.2023	7:00-7:00	65.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
13.04.2023	7:15-7:15	65.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
19.04.2023	7:00-7:00	66.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
20.04.2023	7:15-7:15	66.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
26.04.2023	7:00-7:00	66.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
27.04.2023	7:15-7:15	67.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
03.05.2023	7:00-7:00	60.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
04.05.2023	7:15-7:15	62.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
10.05.2023	7:00-7:00	61.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
11.05.2023	7:15-7:15	63.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
17.05.2023	7:00-7:00	63.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
18.05.2023	7:15-7:15	62.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
24.05.2023	7:00-7:00	64.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25.05.2023	7:15-7:15	64.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
NAAQ* Standard		<200	6	5	1	1	20

Note: BDL: Below Detection Limit ;DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.

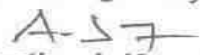
*****End of Report*****

Page 1 of 1

Verified by




Authorised Signatory



Name: Santhosh Kumar A
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/002	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sulur Taluk, Coimbatore District		
Sampling Method	IS 5182	Sample Drawn by	Laboratory
Sample Name	Air	Sample Code	EHS360/002
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sampling Location	AAQ 2 – Core zone – Near Project Area - 10°54'6.80"N 77° 3'58.64"E		

Date	Period. hrs	PM10(µg/m3)	PM2.5(µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.03.2023	7:00-7:00	45.1	21.9	8.7	20.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.03.2023	7:15-7:15	42.9	21.5	8.5	19.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
08.03.2023	7:00-7:00	42.5	22.2	8.0	20.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
09.03.2023	7:15-7:15	41.8	20.4	8.6	21.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
15.03.2023	7:00-7:00	43.0	21.1	8.4	21.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
16.03.2023	7:15-7:15	43.0	22.1	8.4	20.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
22.03.2023	7:00-7:00	42.5	21.4	8.5	21.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
23.03.2023	7:15-7:15	41.5	21.6	8.4	19.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
29.03.2023	7:00-7:00	42.0	20.5	8.1	18.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
30.03.2023	7:15-7:15	43.6	22.3	8.3	19.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
05.04.2023	7:00-7:00	45.4	21.5	9.2	18.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
06.04.2023	7:15-7:15	44.2	21.4	8.6	19.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
12.04.2023	7:00-7:00	45.1	22.7	8.9	22.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
13.04.2023	7:15-7:15	43.7	22.8	8.8	20.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
19.04.2023	7:00-7:00	41.9	21.3	8.6	21.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
20.04.2023	7:15-7:15	42.8	20.4	8.5	22.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
26.04.2023	7:00-7:00	42.9	21.4	8.9	23.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
27.04.2023	7:15-7:15	44.1	22.1	9.0	19.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
03.05.2023	7:00-7:00	45.2	22.4	8.6	18.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
04.05.2023	7:15-7:15	44.6	22.5	8.4	18.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
10.05.2023	7:00-7:00	42.0	21.3	9.4	19.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
11.05.2023	7:15-7:15	45.3	20.5	8.7	20.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
17.05.2023	7:00-7:00	44.7	20.3	8.6	21.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
18.05.2023	7:15-7:15	42.2	21.1	8.7	22.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
24.05.2023	7:00-7:00	43.3	22.5	8.2	20.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25.05.2023	7:15-7:15	41.0	21.2	8.0	21.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

Note: BDL: Below Detection Limit ;DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.

*****End of Report*****

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Authorised Signatory

A-57

Name: Santhosh Kumar A
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/002	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sulur Taluk, Coimbatore District		
Sampling Method	IS 5182	Sample Drawn by	Laboratory
Sample Name	Air	Sample Code	EHS360/002
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sampling Location	AAQ 2 – Core zone – Near Project Area - 10°54'6.80"N 77° 3'58.64"E		

Date	Period. hrs	SPM ($\mu\text{g}/\text{m}^3$)	As (ng/m^3)	C6H6 ($\mu\text{g}/\text{m}^3$)	BaP (ng/m^3)	Pb ($\mu\text{g}/\text{m}^3$)	Ni (ng/m^3)
01.03.2023	7:00-7:00	65.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.03.2023	7:15-7:15	64.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
08.03.2023	7:00-7:00	63.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
09.03.2023	7:15-7:15	61.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
15.03.2023	7:00-7:00	60.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
16.03.2023	7:15-7:15	62.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
22.03.2023	7:00-7:00	63.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
23.03.2023	7:15-7:15	64.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
29.03.2023	7:00-7:00	60.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
30.03.2023	7:15-7:15	62.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
05.04.2023	7:00-7:00	68.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
06.04.2023	7:15-7:15	66.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
12.04.2023	7:00-7:00	66.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
13.04.2023	7:15-7:15	65.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
19.04.2023	7:00-7:00	66.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
20.04.2023	7:15-7:15	69.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
26.04.2023	7:00-7:00	66.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
27.04.2023	7:15-7:15	64.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
03.05.2023	7:00-7:00	68.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
04.05.2023	7:15-7:15	60.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
10.05.2023	7:00-7:00	62.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
11.05.2023	7:15-7:15	64.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
17.05.2023	7:00-7:00	65.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
18.05.2023	7:15-7:15	64.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
24.05.2023	7:00-7:00	63.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25.05.2023	7:15-7:15	62.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
NAAQ* Standard		<200	6	5	1	1	20

Note: BDL: Below Detection Limit ; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.

*****End of Report*****

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[Signature]



Authorised Signatory

Name: Santhosh Kumar A
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/003	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Suler Taluk, Coimbatore District		
Sampling Method	IS 5182	Sample Drawn by	Laboratory
Sample Name	Air	Sample Code	EHS360/003
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sampling Location	AAQ3 – Chettipalayam - 10°54'37.41"N 77° 2'20.12"E		

Date	Period. hrs	PM10(µg/m3)	PM2.5(µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.03.2023	7:00-7:00	42.9	22.3	6.7	21.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.03.2023	7:15-7:15	44.3	22.2	6.5	22.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
08.03.2023	7:00-7:00	43.2	21.2	6.7	23.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
09.03.2023	7:15-7:15	42.5	21.2	6.4	19.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
15.03.2023	7:00-7:00	40.6	21.1	6.3	18.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
16.03.2023	7:15-7:15	41.2	20.4	5.3	18.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
22.03.2023	7:00-7:00	44.5	21.3	5.2	20.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
23.03.2023	7:15-7:15	45.1	22.4	6.9	21.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
29.03.2023	7:00-7:00	44.1	22.0	5.2	21.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
30.03.2023	7:15-7:15	43.1	22.0	6.5	23.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
05.04.2023	7:00-7:00	40.4	22.5	5.8	22.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
06.04.2023	7:15-7:15	42.5	22.5	6.7	21.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
12.04.2023	7:00-7:00	44.1	23.8	6.5	24.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
13.04.2023	7:15-7:15	43.0	24.3	6.2	24.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
19.04.2023	7:00-7:00	45.1	25.4	6.5	23.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
20.04.2023	7:15-7:15	44.4	26.3	7.2	22.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
26.04.2023	7:00-7:00	43.5	22.4	7.5	24.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
27.04.2023	7:15-7:15	41.3	21.4	7.7	23.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
03.05.2023	7:00-7:00	40.5	22.4	6.4	22.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
04.05.2023	7:15-7:15	42.6	20.2	6.6	22.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
10.05.2023	7:00-7:00	43.6	21.5	6.7	22.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
11.05.2023	7:15-7:15	44.2	22.5	6.8	23.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
17.05.2023	7:00-7:00	45.2	22.4	5.4	22.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
18.05.2023	7:15-7:15	44.1	22.7	5.4	22.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
24.05.2023	7:00-7:00	43.1	20.1	6.6	22.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25.05.2023	7:15-7:15	42.1	21.1	6.8	23.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

Note: BDL: Below Detection Limit ;DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.

*****End of Report*****

Page 1 of 1

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Authorised Signatory

Name: Santhosh Kumar A
Designation: Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/003	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sulur Taluk, Coimbatore District		
Sampling Method	IS 5182	Sample Drawn by	Laboratory
Sample Name	Air	Sample Code	EHS360/003
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sampling Location	AAQ3 – Chettipalayam - 10°54'37.41"N 77° 2'20.12"E		

Date	Period. hrs	SPM (µg/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)	Ni (ng/m ³)
01.03.2023	7:00-7:00	63.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.03.2023	7:15-7:15	62.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
08.03.2023	7:00-7:00	60.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
09.03.2023	7:15-7:15	68.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
15.03.2023	7:00-7:00	65.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
16.03.2023	7:15-7:15	64.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
22.03.2023	7:00-7:00	62.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
23.03.2023	7:15-7:15	60.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
29.03.2023	7:00-7:00	63.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
30.03.2023	7:15-7:15	66.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
05.04.2023	7:00-7:00	64.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
06.04.2023	7:15-7:15	68.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
12.04.2023	7:00-7:00	60.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
13.04.2023	7:15-7:15	62.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
19.04.2023	7:00-7:00	61.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
20.04.2023	7:15-7:15	60.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
26.04.2023	7:00-7:00	62.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
27.04.2023	7:15-7:15	61.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
03.05.2023	7:00-7:00	62.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
04.05.2023	7:15-7:15	67.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
10.05.2023	7:00-7:00	68.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
11.05.2023	7:15-7:15	66.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
17.05.2023	7:00-7:00	65.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
18.05.2023	7:15-7:15	68.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
24.05.2023	7:00-7:00	60.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25.05.2023	7:15-7:15	62.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
NAAQ* Standard		<200	6	5	1	1	20

Note: BDL: Below Detection Limit ;DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.

*****End of Report*****



Verified by

Authorised Signatory

Name: Santhosh Kumar A
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/004	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sulur Taluk, Coimbatore District		
Sampling Method	IS 5182	Sample Drawn by	Laboratory
Sample Name	Air	Sample Code	EHS360/004
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sampling Location	AAQ4 – Edayapalayam - 10°55'16.54"N 77° 6'30.52"E		

Date	Period. hrs	PM10(µg/m3)	PM2.5(µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.03.2023	7:00-7:00	48.0	22.3	7.4	19.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.03.2023	7:15-7:15	47.0	22.5	7.3	21.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
08.03.2023	7:00-7:00	42.4	21.6	7.9	22.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
09.03.2023	7:15-7:15	45.9	20.2	7.3	22.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
15.03.2023	7:00-7:00	45.4	21.9	8.6	23.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
16.03.2023	7:15-7:15	44.0	22.7	8.5	21.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
22.03.2023	7:00-7:00	47.1	21.5	7.6	20.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
23.03.2023	7:15-7:15	47.2	22.1	7.5	18.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
29.03.2023	7:00-7:00	44.5	22.1	7.6	19.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
30.03.2023	7:15-7:15	44.9	22.6	7.3	21.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
05.04.2023	7:00-7:00	49.2	22.1	8.1	20.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
06.04.2023	7:15-7:15	49.0	21.5	8.8	22.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
12.04.2023	7:00-7:00	48.4	22.2	7.7	21.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
13.04.2023	7:15-7:15	47.8	23.3	6.5	19.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
19.04.2023	7:00-7:00	48.2	22.1	9.1	20.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
20.04.2023	7:15-7:15	44.9	22.2	8.6	19.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
26.04.2023	7:00-7:00	45.5	20.8	8.6	22.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
27.04.2023	7:15-7:15	46.2	20.4	7.5	22.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
03.05.2023	7:00-7:00	45.4	22.3	8.9	23.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
04.05.2023	7:15-7:15	44.2	21.5	8.3	20.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
10.05.2023	7:00-7:00	45.0	22.2	8.4	20.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
11.05.2023	7:15-7:15	46.0	21.0	8.6	22.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
17.05.2023	7:00-7:00	46.5	21.7	8.2	22.0	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
18.05.2023	7:15-7:15	46.9	21.1	7.8	20.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
24.05.2023	7:00-7:00	45.2	22.1	8.8	21.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25.05.2023	7:15-7:15	44.1	21.5	8.2	22.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

Note: BDL: Below Detection Limit ;DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.

*****End of Report*****

Page 1 of 1

Verified by



Authorised Signatory

Name: Santhosh Kumar A
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/004	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sulur Taluk, Coimbatore District		
Sampling Method	IS 5182	Sample Drawn by	Laboratory
Sample Name	Air	Sample Code	EHS360/004
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sampling Location	AAQ4 – Edayapalayam - 10°55'16.54"N 77° 6'30.52"E		

Date	Period. hrs	SPM (µg/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)	Ni (ng/m ³)
01.03.2023	7:00-7:00	63.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.03.2023	7:15-7:15	62.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
08.03.2023	7:00-7:00	62.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
09.03.2023	7:15-7:15	61.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
15.03.2023	7:00-7:00	60.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
16.03.2023	7:15-7:15	68.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
22.03.2023	7:00-7:00	67.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
23.03.2023	7:15-7:15	65.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
29.03.2023	7:00-7:00	64.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
30.03.2023	7:15-7:15	63.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
05.04.2023	7:00-7:00	61.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
06.04.2023	7:15-7:15	60.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
12.04.2023	7:00-7:00	62.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
13.04.2023	7:15-7:15	64.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
19.04.2023	7:00-7:00	68.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
20.04.2023	7:15-7:15	60.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
26.04.2023	7:00-7:00	62.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
27.04.2023	7:15-7:15	63.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
03.05.2023	7:00-7:00	60.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
04.05.2023	7:15-7:15	63.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
10.05.2023	7:00-7:00	62.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
11.05.2023	7:15-7:15	60.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
17.05.2023	7:00-7:00	62.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
18.05.2023	7:15-7:15	61.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
24.05.2023	7:00-7:00	68.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25.05.2023	7:15-7:15	68.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
NAAQ* Standard		<200	6	5	1	1	20

Note: BDL: Below Detection Limit ;DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.

*****End of Report*****



Verified by

[Signature]

Authorised Signatory

[Signature]

Name: Santhosh Kumar A
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/005	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Suler Taluk, Coimbatore District		
Sampling Method	IS 5182	Sample Drawn by	Laboratory
Sample Name	Air	Sample Code	EHS360/005
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sampling Location	AAQ5 – Karacherry - 10°52'18.87"N 77° 3'39.99"E		

Date	Period. hrs	PM10(µg/m3)	PM2.5(µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.03.2023	7:00-7:00	44.2	20.5	8.6	20.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.03.2023	7:15-7:15	41.6	22.8	8.5	22.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
08.03.2023	7:00-7:00	42.6	20.2	7.9	22.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
09.03.2023	7:15-7:15	43.3	21.4	8.5	24.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
15.03.2023	7:00-7:00	42.5	22.6	8.4	25.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
16.03.2023	7:15-7:15	41.0	21.3	8.5	24.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
22.03.2023	7:00-7:00	41.5	21.1	7.6	22.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
23.03.2023	7:15-7:15	42.5	21.7	7.8	20.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
29.03.2023	7:00-7:00	45.3	23.2	8.4	21.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
30.03.2023	7:15-7:15	44.3	22.7	8.5	22.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
05.04.2023	7:00-7:00	43.6	22.8	7.8	20.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
06.04.2023	7:15-7:15	42.9	21.8	7.7	22.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
12.04.2023	7:00-7:00	42.1	22.2	7.9	21.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
13.04.2023	7:15-7:15	41.9	22.5	8.1	20.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
19.04.2023	7:00-7:00	41.3	21.2	7.7	21.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
20.04.2023	7:15-7:15	42.1	22.2	8.0	22.0	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
26.04.2023	7:00-7:00	39.9	21.9	8.2	22.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
27.04.2023	7:15-7:15	40.6	21.8	8.5	19.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
03.05.2023	7:00-7:00	40.4	20.3	7.6	18.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
04.05.2023	7:15-7:15	42.4	21.9	7.8	21.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
10.05.2023	7:00-7:00	40.1	21.6	7.7	21.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
11.05.2023	7:15-7:15	40.9	20.7	9.2	20.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
17.05.2023	7:00-7:00	41.8	21.6	7.8	19.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
18.05.2023	7:15-7:15	40.1	21.7	7.9	21.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
24.05.2023	7:00-7:00	41.5	21.4	7.6	21.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25.05.2023	7:15-7:15	41.6	20.6	8.9	19.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

Note: BDL: Below Detection Limit ;DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.

*****End of Report*****

Page 1 of 1

Verified by



Authorised Signatory

Name: Santhosh Kumar A
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/005	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Suler Taluk, Coimbatore District		
Sampling Method	IS 5182	Sample Drawn by	Laboratory
Sample Name	Air	Sample Code	EHS360/005
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sampling Location	AAQ5 – Karacherry - 10°52'18.87"N 77° 3'39.99"E		

Date	Period. hrs	SPM ($\mu\text{g}/\text{m}^3$)	As (ng/m^3)	C6H6 ($\mu\text{g}/\text{m}^3$)	BaP (ng/m^3)	Pb ($\mu\text{g}/\text{m}^3$)	Ni (ng/m^3)
01.03.2023	7:00-7:00	68.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.03.2023	7:15-7:15	69.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
08.03.2023	7:00-7:00	67.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
09.03.2023	7:15-7:15	68.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
15.03.2023	7:00-7:00	68.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
16.03.2023	7:15-7:15	66.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
22.03.2023	7:00-7:00	63.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
23.03.2023	7:15-7:15	62.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
29.03.2023	7:00-7:00	62.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
30.03.2023	7:15-7:15	64.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
05.04.2023	7:00-7:00	62.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
06.04.2023	7:15-7:15	63.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
12.04.2023	7:00-7:00	68.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
13.04.2023	7:15-7:15	69.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
19.04.2023	7:00-7:00	68.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
20.04.2023	7:15-7:15	68.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
26.04.2023	7:00-7:00	68.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
27.04.2023	7:15-7:15	69.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
03.05.2023	7:00-7:00	69.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
04.05.2023	7:15-7:15	69.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
10.05.2023	7:00-7:00	68.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
11.05.2023	7:15-7:15	68.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
17.05.2023	7:00-7:00	69.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
18.05.2023	7:15-7:15	69.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
24.05.2023	7:00-7:00	68.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25.05.2023	7:15-7:15	67.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
NAAQ* Standard		<200	6	5	1	1	20

Note: BDL: Below Detection Limit ;DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.

*****End of Report*****

Page 1 of 1

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[Signature]



Authorised Signatory

Name: Santhosh Kumar A
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/006	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sulur Taluk, Coimbatore District		
Sampling Method	IS 5182	Sample Drawn by	Laboratory
Sample Name	Air	Sample Code	EHS360/006
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sampling Location	AAQ 6 – Panapatti- 10°52'35.83"N 77° 5'56.31"E		

Date	Period. hrs	PM10(µg/m3)	PM2.5(µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.03.2023	7:00-7:00	45.2	22.1	6.7	21.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.03.2023	7:15-7:15	43.9	22.0	6.5	20.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
08.03.2023	7:00-7:00	44.9	22.8	6.1	21.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
09.03.2023	7:15-7:15	43.8	22.0	6.6	22.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
15.03.2023	7:00-7:00	43.5	22.3	6.3	19.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
16.03.2023	7:15-7:15	43.8	22.7	5.4	19.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
22.03.2023	7:00-7:00	43.1	21.6	6.5	21.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
23.03.2023	7:15-7:15	43.0	22.1	6.7	20.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
29.03.2023	7:00-7:00	44.7	22.6	7.5	20.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
30.03.2023	7:15-7:15	42.6	21.5	6.8	21.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
05.04.2023	7:00-7:00	42.0	22.0	5.6	20.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
06.04.2023	7:15-7:15	43.6	22.4	7.4	22.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
12.04.2023	7:00-7:00	43.0	22.2	6.9	22.0	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
13.04.2023	7:15-7:15	44.6	21.7	6.8	21.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
19.04.2023	7:00-7:00	42.4	21.8	7.3	20.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
20.04.2023	7:15-7:15	42.7	21.9	7.6	22.0	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
26.04.2023	7:00-7:00	43.5	22.4	7.1	21.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
27.04.2023	7:15-7:15	44.3	22.7	7.5	21.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
03.05.2023	7:00-7:00	42.6	21.2	8.2	23.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
04.05.2023	7:15-7:15	42.9	21.9	7.3	22.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
10.05.2023	7:00-7:00	43.0	22.8	6.9	21.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
11.05.2023	7:15-7:15	44.6	21.8	6.2	22.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
17.05.2023	7:00-7:00	43.1	22.2	7.4	21.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
18.05.2023	7:15-7:15	42.1	20.7	7.0	21.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
24.05.2023	7:00-7:00	42.2	21.5	7.3	21.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25.05.2023	7:15-7:15	43.5	22.4	7.4	22.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

Note: BDL: Below Detection Limit ;DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.

*****End of Report*****

Page 1 of 1

Verified by



Authorised Signatory

Name: Santhosh Kumar A
Designation : Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/006	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sulur Taluk, Coimbatore District		
Sampling Method	IS 5182	Sample Drawn by	Laboratory
Sample Name	Air	Sample Code	EHS360/006
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sampling Location	AAQ 6 – Panapatti- 10°52'35.83"N 77° 5'56.31"E		

Date	Period. hrs	SPM ($\mu\text{g}/\text{m}^3$)	As (ng/m^3)	C6H6 ($\mu\text{g}/\text{m}^3$)	BaP (ng/m^3)	Pb ($\mu\text{g}/\text{m}^3$)	Ni (ng/m^3)
01.03.2023	7:00-7:00	65.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.03.2023	7:15-7:15	62.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
08.03.2023	7:00-7:00	63.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
09.03.2023	7:15-7:15	62.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
15.03.2023	7:00-7:00	68.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
16.03.2023	7:15-7:15	68.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
22.03.2023	7:00-7:00	63.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
23.03.2023	7:15-7:15	62.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
29.03.2023	7:00-7:00	61.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
30.03.2023	7:15-7:15	67.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
05.04.2023	7:00-7:00	63.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
06.04.2023	7:15-7:15	62.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
12.04.2023	7:00-7:00	61.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
13.04.2023	7:15-7:15	68.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
19.04.2023	7:00-7:00	66.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
20.04.2023	7:15-7:15	65.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
26.04.2023	7:00-7:00	64.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
27.04.2023	7:15-7:15	64.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
03.05.2023	7:00-7:00	65.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
04.05.2023	7:15-7:15	63.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
10.05.2023	7:00-7:00	64.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
11.05.2023	7:15-7:15	67.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
17.05.2023	7:00-7:00	70.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
18.05.2023	7:15-7:15	72.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
24.05.2023	7:00-7:00	73.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25.05.2023	7:15-7:15	75.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
NAAQ* Standard		<200	6	5	1	1	20

Note: BDL: Below Detection Limit ;DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.

*****End of Report*****



Verified by

[Signature]

Authorised Signatory

[Signature]
Name: Santhosh Kumar A
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/007	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sulur Taluk, Coimbatore District		
Sampling Method	IS 5182	Sample Drawn by	Laboratory
Sample Name	Air	Sample Code	EHS360/007
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sampling Location	AAQ7 – Kallapalayam -10°57'3.71"N 77° 4'38.09"E		

Date	Period. hrs	PM10(µg/m3)	PM2.5(µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.03.2023	7:00-7:00	44.8	22.6	7.3	19.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.03.2023	7:15-7:15	45.2	24.1	7.7	20.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
08.03.2023	7:00-7:00	43.1	24.2	7.5	18.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
09.03.2023	7:15-7:15	44.8	24.7	8.5	20.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
15.03.2023	7:00-7:00	47.3	23.1	9.5	21.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
16.03.2023	7:15-7:15	48.1	23.5	9.3	22.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
22.03.2023	7:00-7:00	43.1	22.7	8.5	19.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
23.03.2023	7:15-7:15	43.9	24.1	6.6	18.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
29.03.2023	7:00-7:00	43.2	23.6	7.8	17.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
30.03.2023	7:15-7:15	44.4	23.5	8.6	20.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
05.04.2023	7:00-7:00	45.1	23.5	7.3	21.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
06.04.2023	7:15-7:15	46.1	24.5	7.1	18.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
12.04.2023	7:00-7:00	42.5	24.2	7.3	22.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
13.04.2023	7:15-7:15	45.2	24.4	6.8	22.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
19.04.2023	7:00-7:00	43.8	23.1	6.6	20.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
20.04.2023	7:15-7:15	45.6	24.0	8.1	21.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
26.04.2023	7:00-7:00	46.1	24.2	7.4	22.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
27.04.2023	7:15-7:15	46.3	24.8	6.2	21.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
03.05.2023	7:00-7:00	43.2	23.5	7.3	20.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
04.05.2023	7:15-7:15	42.9	24.3	7.9	19.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
10.05.2023	7:00-7:00	43.2	24.5	8.4	22.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
11.05.2023	7:15-7:15	44.2	23.4	7.6	19.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
17.05.2023	7:00-7:00	45.8	24.5	7.4	19.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
18.05.2023	7:15-7:15	46.6	25.3	8.1	20.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
24.05.2023	7:00-7:00	48.6	24.0	6.5	21.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25.05.2023	7:15-7:15	45.1	23.4	6.4	22.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

Note: BDL: Below Detection Limit ;DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.

*****End of Report*****

Page 1 of 1

Verified by



Authorised Signatory

Name: Santhosh Kumar A
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/007	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Suler Taluk, Coimbatore District		
Sampling Method	IS 5182	Sample Drawn by	Laboratory
Sample Name	Air	Sample Code	EHS360/007
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sampling Location	AAQ7 – Kallapalayam -10°57'3.71"N 77° 4'38.09"E		

Date	Period. hrs	SPM ($\mu\text{g}/\text{m}^3$)	As (ng/m^3)	C6H6 ($\mu\text{g}/\text{m}^3$)	BaP (ng/m^3)	Pb ($\mu\text{g}/\text{m}^3$)	Ni (ng/m^3)
01.03.2023	7:00-7:00	66.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.03.2023	7:15-7:15	68.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
08.03.2023	7:00-7:00	69.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
09.03.2023	7:15-7:15	68.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
15.03.2023	7:00-7:00	67.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
16.03.2023	7:15-7:15	68.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
22.03.2023	7:00-7:00	66.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
23.03.2023	7:15-7:15	67.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
29.03.2023	7:00-7:00	68.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
30.03.2023	7:15-7:15	68.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
05.04.2023	7:00-7:00	69.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
06.04.2023	7:15-7:15	68.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
12.04.2023	7:00-7:00	68.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
13.04.2023	7:15-7:15	65.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
19.04.2023	7:00-7:00	69.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
20.04.2023	7:15-7:15	69.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
26.04.2023	7:00-7:00	67.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
27.04.2023	7:15-7:15	65.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
03.05.2023	7:00-7:00	64.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
04.05.2023	7:15-7:15	67.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
10.05.2023	7:00-7:00	65.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
11.05.2023	7:15-7:15	68.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
17.05.2023	7:00-7:00	72.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
18.05.2023	7:15-7:15	70.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
24.05.2023	7:00-7:00	72.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25.05.2023	7:15-7:15	70.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
NAAQ* Standard		<200	6	5	1	1	20

Note: BDL: Below Detection Limit ;DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.

*****End of Report*****

Page 1 of 1

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[Signature]



Authorised Signatory

[Signature]
Name: Santhosh Kumar A
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/008	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Suler Taluk, Coimbatore District		
Sampling Method	IS 5182	Sample Drawn by	Laboratory
Sample Name	Air	Sample Code	EHS360/008
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sampling Location	AAQ8 –Okkilipalayam - 10°53'37.21"N 77° 1'10.69"E		

Date	Period. hrs	PM10(µg/m3)	PM2.5(µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.03.2023	7:00-7:00	22.1	45.2	6.3	22.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.03.2023	7:15-7:15	23.5	41.7	7.8	23.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
08.03.2023	7:00-7:00	21.4	45.2	6.6	22.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
09.03.2023	7:15-7:15	22.1	43.2	5.4	22.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
15.03.2023	7:00-7:00	22.5	43.6	5.9	24.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
16.03.2023	7:15-7:15	21.9	42.3	6.4	23.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
22.03.2023	7:00-7:00	23.7	41.6	6.8	21.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
23.03.2023	7:15-7:15	21.3	42.0	5.3	23.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
29.03.2023	7:00-7:00	22.5	42.9	5.4	21.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
30.03.2023	7:15-7:15	23.0	43.6	5.8	21.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
05.04.2023	7:00-7:00	21.8	42.1	5.4	23.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
06.04.2023	7:15-7:15	24.2	43.6	6.9	24.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
12.04.2023	7:00-7:00	22.5	41.5	5.2	22.0	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
13.04.2023	7:15-7:15	21.6	41.5	5.7	21.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
19.04.2023	7:00-7:00	22.4	42.4	5.3	23.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
20.04.2023	7:15-7:15	23.9	43.9	7.6	23.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
26.04.2023	7:00-7:00	21.4	41.4	8.5	22.0	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
27.04.2023	7:15-7:15	21.7	42.5	8.8	21.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
03.05.2023	7:00-7:00	22.1	43.5	7.2	22.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
04.05.2023	7:15-7:15	24.1	42.8	7.6	23.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
10.05.2023	7:00-7:00	21.4	41.6	8.6	20.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
11.05.2023	7:15-7:15	23.9	44.5	8.7	24.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
17.05.2023	7:00-7:00	21.4	43.8	7.5	24.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
18.05.2023	7:15-7:15	22.1	42.8	7.2	23.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
24.05.2023	7:00-7:00	23.4	43.7	8.5	25.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25.05.2023	7:15-7:15	21.1	42.8	8.7	24.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

Note: BDL: Below Detection Limit ;DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.

*****End of Report*****

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Verified by



Authorised Signatory

Name: Santhosh Kumar A
Designation: Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/008	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sulur Taluk, Coimbatore District		
Sampling Method	IS 5182	Sample Drawn by	Laboratory
Sample Name	Air	Sample Code	EHS360/008
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sampling Location	AAQ8 –Okkilpalayam - 10°53'37.21"N 77° 1'10.69"E		

Date	Period. hrs	SPM (µg/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)	Ni (ng/m ³)
01.03.2023	7:00-7:00	65.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.03.2023	7:15-7:15	62.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
08.03.2023	7:00-7:00	68.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
09.03.2023	7:15-7:15	67.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
15.03.2023	7:00-7:00	67.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
16.03.2023	7:15-7:15	67.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
22.03.2023	7:00-7:00	68.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
23.03.2023	7:15-7:15	68.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
29.03.2023	7:00-7:00	67.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
30.03.2023	7:15-7:15	66.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
05.04.2023	7:00-7:00	68.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
06.04.2023	7:15-7:15	67.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
12.04.2023	7:00-7:00	66.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
13.04.2023	7:15-7:15	69.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
19.04.2023	7:00-7:00	65.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
20.04.2023	7:15-7:15	67.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
26.04.2023	7:00-7:00	68.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
27.04.2023	7:15-7:15	69.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
03.05.2023	7:00-7:00	67.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
04.05.2023	7:15-7:15	66.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
10.05.2023	7:00-7:00	69.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
11.05.2023	7:15-7:15	68.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
17.05.2023	7:00-7:00	67.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
18.05.2023	7:15-7:15	66.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
24.05.2023	7:00-7:00	69.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25.05.2023	7:15-7:15	67.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
NAAQ* Standard		<200	6	5	1	1	20

Note: BDL: Below Detection Limit ;DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.

*****End of Report*****



Verified by

[Signature]

Authorised Signatory

[Signature]

Name: Santhosh Kumar A
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/ 009	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sulur Taluk, Coimbatore District		
Sampling Method	IS 9989	Sample Drawn by	Laboratory
Sample Name	Noise Level Monitoring	Sample Code	EHS360/ 009
Sample Description	Ambient Noise	Sample Collected Date	25.05.2023

Location	N1 – Core Zone - 10°54'24.74"N 77° 4'5.33"E			N2 – Core Zone - 10°54'6.48"N 77° 3'58.02"E		
Parameter	Min	Max	Result	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
06:00-07:00	38.7	44.2	42.3	33.3	40.1	37.9
07:00-08:00	36.3	42.5	40.4	36.1	46.6	44.0
08:00-09:00	40.8	45.8	44.0	37.5	46.2	43.7
09:00-10:00	41.7	48.2	46.1	37.0	47.8	45.1
10:00-11:00	42.5	47.3	45.5	38.0	45.2	43.0
11:00-12:00	44.0	45.2	44.6	38.4	47.1	44.6
12:00-13:00	40.9	45.5	43.8	34.9	43.4	41.0
13:00-14:00	43.3	45.9	44.8	37.1	48.2	45.5
14:00-15:00	41.7	42.8	42.3	36.2	43.7	41.4
15:00-16:00	39.8	40.1	40.0	35.8	46.1	43.5
16:00-17:00	35.1	38.7	37.3	31.6	38.4	36.2
17:00-18:00	35.4	39.7	38.1	32.3	40.7	38.3
18:00-19:00	34.6	45.0	42.4	34.2	42.9	40.4
19:00-20:00	38.2	45.6	43.3	31.2	39.7	37.3
20:00-21:00	35.3	43.9	41.5	36.7	45.8	43.3
21:00-22:00	39.5	45.2	43.2	32.5	40.8	38.4
22:00-23:00	35.3	38.2	37.0	35.3	43.1	40.8
23:00-00:00	32.6	37.5	35.7	34.0	42.5	40.1
00:00-01:00	33.4	38.6	36.7	32.9	40.7	38.4
01:00-02:00	31.3	34.3	33.1	32.4	42.8	40.2
02:00-03:00	32.7	37.0	35.4	33.6	41.1	38.8
03:00-04:00	32.2	36.5	34.9	34.5	38.2	36.7
04:00-05:00	32.4	35.5	34.2	34.0	40.7	38.5
05:00-06:00	33.4	34.5	34.0	35.4	39.5	37.9
Result	Day Means		42.1	Day Means		41.4
	Night Means		35.1	Night Means		38.9

Note: CPCB Norms Industrial Area Day Time:75 dB(A); Night Time:70 dB(A)
The Noise level in the above location exists within the permissible limits of CPCB.

*****End of Report*****



Verified by



Authorised Signatory

Name: Santhosh Kumar A
Designation: Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/ 010	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Suler Taluk, Coimbatore District		
Sampling Method	IS 9989	Sample Drawn by	Laboratory
Sample Name	Noise Level Monitoring	Sample Code	EHS360/ 010
Sample Description	Ambient Noise	Sample Collected Date	25.05.2023

Location	N3 – Chettipalayam - 10°54'37.18"N 77°2'20.24"E			N4 – Edayapalayam - 10°55'16.54"N 77°6'30.33"E		
Parameter	Min	Max	Result	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
06:00-07:00	35.3	39.5	37.9	33.8	42.6	39.6
07:00-08:00	34.9	40.2	38.3	35.6	43.3	40.1
08:00-09:00	35.6	41.3	39.3	35.7	44.5	41.0
09:00-10:00	35.2	41.1	39.1	31.6	46.9	42.0
10:00-11:00	34.7	42.2	39.9	36.4	48.3	44.0
11:00-12:00	36.0	45.5	43.0	32.8	45.7	45.6
12:00-13:00	34.1	47.9	45.1	34.6	43.2	42.9
13:00-14:00	32.9	48.1	45.2	32.9	41.4	40.8
14:00-15:00	38.2	48.9	46.2	37.4	49.3	39.0
15:00-16:00	34.6	47.5	44.7	32.6	40.7	46.6
16:00-17:00	32.5	40.8	38.4	32.7	40.3	38.3
17:00-18:00	34.1	43.1	40.6	31.6	38.5	38.0
18:00-19:00	33.6	41.6	39.2	31.8	38.3	36.3
19:00-20:00	32.8	39.9	37.7	32.4	40.4	36.2
20:00-21:00	34.0	42.6	40.2	33.6	41.3	38.0
21:00-22:00	36.9	44.8	42.4	32.9	40.2	39.0
22:00-23:00	32.7	40.7	38.3	31.7	39.7	37.9
23:00-00:00	34.0	43.6	41.0	32.6	40.4	37.3
00:00-01:00	32.6	40.5	38.1	33.9	37.1	38.1
01:00-02:00	31.1	35.5	33.8	35.2	38.7	35.8
02:00-03:00	32.8	36.5	35.0	34.6	35.9	37.3
03:00-04:00	34.1	37.0	35.8	33.7	36.5	35.3
04:00-05:00	35.2	37.1	36.3	32.6	35.5	35.3
05:00-06:00	33.9	38.5	36.8	32.1	42.2	34.3
Result	Day Means		40.9	Day Means		40.3
	Night Means		36.9	Night Means		36.2

Note: CPCB Norms Industrial Area Day Time:75 dB(A); Night Time:70 dB(A)
The Noise level in the above location exists within the permissible limits of CPCB.

*****End of Report*****



Verified by



Authorised Signatory

Name: Santhosh Kumar A
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/ 011	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Suler Taluk, Coimbatore District		
Sampling Method	IS 9989	Sample Drawn by	Laboratory
Sample Name	Noise Level Monitoring	Sample Code	EHS360/ 011
Sample Description	Ambient Noise	Sample Collected Date	25.05.2023

Location	N5 – Karacherry - 10°52'18.61"N 77° 3'37.66"E			N6 – Panapatti - 10°52'36.01"N 77° 5'55.92"E		
Parameter	Min	Max	Result	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
06:00-07:00	31.3	38.8	36.5	34.5	43.2	40.7
07:00-08:00	33.7	41.5	39.2	33.7	40.4	38.2
08:00-09:00	34.4	42.8	40.4	32.8	41.8	39.3
09:00-10:00	35.5	44.4	41.9	33.9	38.1	36.5
10:00-11:00	36.1	45	42.5	34.7	40.6	38.6
11:00-12:00	38.2	43.5	41.6	34.1	40.2	38.1
12:00-13:00	38.2	41.6	40.2	32.8	38.5	36.5
13:00-14:00	36.6	42.5	40.5	34.7	43.2	40.8
14:00-15:00	32.6	45.4	42.6	32.6	40.6	38.2
15:00-16:00	31.3	40.4	37.9	31.3	38.9	36.6
16:00-17:00	32.5	41.6	39.1	32.6	41.2	38.8
17:00-18:00	36.5	43.9	41.6	33.5	42.7	40.2
18:00-19:00	34.5	42.9	40.5	34.4	43.2	40.7
19:00-20:00	33.8	41.6	39.3	32.9	40.6	38.3
20:00-21:00	31.2	39.4	37.0	33.6	41.4	39.1
21:00-22:00	32.8	40.7	38.3	31.5	38.6	36.4
22:00-23:00	33.7	41.4	39.1	32.5	40.1	37.8
23:00-00:00	31.6	38.2	36.1	31.7	38.2	36.1
00:00-01:00	33.4	40.1	37.9	32.3	39.3	37.1
01:00-02:00	33.5	36.5	35.3	33.9	38.4	36.7
02:00-03:00	35.7	39.3	37.9	31.5	35.5	33.9
03:00-04:00	36.1	39	37.8	32.4	36.3	34.8
04:00-05:00	35.2	38.2	37.0	34.1	35.8	35.0
05:00-06:00	34.6	36.8	35.8	32.6	33.6	33.1
Result	Day Means		39.9	Day Means		38.5
	Night Means		37.1	Night Means		35.2

Note: CPCB Norms Industrial Area Day Time:75 dB(A); Night Time:70 dB(A)
The Noise level in the above location exists within the permissible limits of CPCB.

*****End of Report*****

Page 1 of 1

Verified by



Authorised Signatory

Name: Santhosh Kumar A
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/ 012	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sullur Taluk, Coimbatore District		
Sampling Method	IS 9989	Sample Drawn by	Laboratory
Sample Name	Noise Level Monitoring	Sample Code	EHS360/ 012
Sample Description	Ambient Noise	Sample Collected Date	25.05.2023

Location	N7 - Kallapalayam - 10°57'3.85"N 77° 4'37.89"E			N8 - Okkilpalayam - 10°53'36.71"N 77° 1'10.94"E		
Parameter	Min	Max	Result	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
06:00-07:00	36.5	38.6	37.7	37.7	39.8	38.9
07:00-08:00	37.2	39.2	38.3	36.2	38.6	37.6
08:00-09:00	35.2	37.2	36.3	35.5	37.2	36.4
09:00-10:00	36.6	38.8	37.8	36.6	38.6	37.7
10:00-11:00	33.2	35.6	34.6	37.1	39.2	38.3
11:00-12:00	37.3	39.1	38.3	36.2	38.4	37.4
12:00-13:00	30.2	35.5	33.6	34.5	36.1	35.4
13:00-14:00	32.6	35.6	34.4	35.2	37.6	36.6
14:00-15:00	33.5	36.2	35.1	36.2	39.2	38.0
15:00-16:00	34.2	38.2	36.6	33.2	36.5	35.2
16:00-17:00	33.1	36.2	34.9	35.1	39.8	38.1
17:00-18:00	33.5	38.2	36.5	36.2	38.2	37.3
18:00-19:00	34.5	37.7	36.4	34.5	37.1	36.0
19:00-20:00	34.2	38.6	36.9	32.6	38.6	36.6
20:00-21:00	35.6	38.4	37.2	35.6	37.4	36.6
21:00-22:00	33.6	34.2	33.9	36.6	39.5	38.3
22:00-23:00	31.2	36.2	34.4	35.1	38.2	36.9
23:00-00:00	30.2	35.6	33.7	35.6	38.9	37.6
00:00-01:00	32.1	35.2	33.9	34.2	37.6	36.2
01:00-02:00	31.2	33.6	32.6	33.8	35.6	34.8
02:00-03:00	33.2	37.3	35.7	32.1	38.6	36.5
03:00-04:00	30.6	38.9	36.5	33.2	36.5	35.2
04:00-05:00	30.4	39.8	37.3	31.2	35.5	33.9
05:00-06:00	31.2	36.6	34.7	34.2	38.6	36.9
Result	Day Means		36.1	Day Means		37.1
	Night Means		34.9	Night Means		35.9

Note: CPCB Norms Industrial Area Day Time:75 dB(A); Night Time:70 dB(A)
The Noise level in the above location exists within the permissible limits of CPCB.

*****End of Report*****



Verified by

Authorised Signatory

Name: Santhosh Kumar A
Designation: Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/ 013	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Suler Taluk, Coimbatore District		
Sampling Method	SOP Method	Sample Drawn by	Laboratory
Sample Name	Soil	Sample Code	EHS360/ 013
Sample Description	Soil 1	Sample Collected Date	25.05.2023
Qty. of Sample Received	2 KG	Sample Received On	26.05.2023
Sample Condition	Good	Test Commenced On	26.05.2023
Sampling Location	Soil – 1 – Core Zone - 10°54'24.94"N 77° 4'6.74"E		

S.No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987	8.25
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	730 µmhos/cm
03	Texture:		
	Clay	Gravimetric Method	31.3 %
	Sand		34.6 %
	Silt		34.1 %
04	Water Holding Capacity	By Gravimetric Method	44.8 %
05	Bulk Density	By Cylindrical Method	1.22 g/cm3
06	Porosity	By Gravimetric Method	40.3 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	136 mg/kg
08	Magnesium as Mg		70.2 mg/kg
09	Manganese as Mn		14.7mg/kg
10	Zinc as Zn		1.0 mg/kg
11	Boron as B		0.85 mg/kg
12	Chloride as Cl	APHA 23rd Edn 2019 4500 Cl B	41.7 mg/kg
13	Total Soluble Sulphate as SO4	IS 2720 Part 27 : 1977	0.020 %
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	18.5 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Reaff: 2019)	2.1 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999 (Reaff:2019)	256 mg/kg
17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		0.39 mg/kg
21	Iron as Fe		1.10 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972	1.95 %
23	Organic Carbon	IS : 2720 Part 22: 1972	1.13 %
24	Cation Exchange Capacity	USEPA 9080 – 1986	34.5 meq/100g of soil

*****End of Report*****



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Authorised Signatory

[Signature]
Name: Santhosh Kumar A
Designation : Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/ 014	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Suler Taluk, Coimbatore District		
Sampling Method	SOP Method	Sample Drawn by	Laboratory
Sample Name	Soil	Sample Code	EHS360/ 014
Sample Description	Soil 2	Sample Collected Date	25.05.2023
Qty. of Sample Received	2 KG	Sample Received On	26.05.2023
Sample Condition	Good	Test Commenced On	26.05.2023
Sampling Location	Soil – 2 – Pachapalayam- 10°54'5.74"N 77° 3'53.48"E		

S.No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987	7.85
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	578 µmhos/cm
03	Texture :		
	Clay	Gravimetric Method	29.5 %
	Sand		32.5 %
	Silt		38.0%
04	Water Holding Capacity	By Gravimetric Method	43.0 %
05	Bulk Density	By Cylindrical Method	1.14 g/cm3
06	Porosity	By Gravimetric Method	42.5 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	126 mg/kg
08	Magnesium as Mg		53.5 mg/kg
09	Manganese as Mn		13.0 mg/kg
10	Zinc as Zn		0.7 mg/kg
11	Boron as B		0.95 mg/kg
12	Chloride as Cl	APHA 23rd Edn 2019 4500 Cl B	129 mg/kg
13	Total Soluble Sulphate as SO4	IS 2720 Part 27 : 1977	0.004 %
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	33.8 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Reaff: 2019)	3.0 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999 (Reaff:2019)	510 mg/kg
17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		0.21 mg/kg
21	Iron as Fe		1.09 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972	2.89 %
23	Organic Carbon	IS : 2720 Part 22: 1972	1.67 %
24	Cation Exchange Capacity	USEPA 9080 – 1986	29.6 meq/100g of soil

*****End of Report*****

Page 1 of 1

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Authorised Signatory

[Signature]

Name: Santhosh Kumar A
Designation : Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/ 015	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Suler Taluk, Coimbatore District		
Sampling Method	SOP Method	Sample Drawn by	Laboratory
Sample Name	Soil	Sample Code	EHS360/ 015
Sample Description	Soil 3	Sample Collected Date	25.05.2023
Qty. of Sample Received	2 KG	Sample Received On	26.05.2023
Sample Condition	Good	Test Commenced On	26.05.2023
Sampling Location	Soil – 3 – Chettipalayam- 10°54'33.13"N 77° 2'26.60"E		

S.No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987	8.19
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	695 µmhos/cm
03	Texture :		
	Clay	Gravimetric Method	31.5 %
	Sand		34.6 %
	Silt		33.9 %
04	Water Holding Capacity	By Gravimetric Method	40.8 %
05	Bulk Density	By Cylindrical Method	0.99 g/cm ³
06	Porosity	By Gravimetric Method	43.5 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	116 mg/kg
08	Magnesium as Mg		59 mg/kg
09	Manganese as Mn		16.8 mg/kg
10	Zinc as Zn		3.9 mg/kg
11	Boron as B		1.1 mg/kg
12	Chloride as Cl	APHA 23rd Edn 2019 4500 Cl B	96.4 mg/kg
13	Total Soluble Sulphate as SO ₄	IS 2720 Part 27 : 1977	0.0015 %
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	49 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Reaff: 2019)	1.65 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999 (Reaff:2019)	638 mg/kg
17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		0.62 mg/kg
21	Iron as Fe		1.13 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972	1.87 %
23	Organic Carbon	IS : 2720 Part 22: 1972	1.08 %
24	Cation Exchange Capacity	USEPA 9080 – 1986	40.6 meq/100g of soil

*****End of Report*****



Verified by

Authorised Signatory

Name: Santhosh Kumar A
Designation : Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/ 016	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sullur Taluk, Coimbatore District		
Sampling Method	SOP Method	Sample Drawn by	Laboratory
Sample Name	Soil	Sample Code	EHS360/ 016
Sample Description	Soil 4	Sample Collected Date	25.05.2023
Qty. of Sample Received	2 KG	Sample Received On	26.05.2023
Sample Condition	Good	Test Commenced On	26.05.2023
Sampling Location	Soil – 4 – Panapatti- 10°52'41.74"N 77° 5'58.95"E		

S.No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987	8.19
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	629 µmhos/cm
03	Texture :		
	Clay	Gravimetric Method	27.5 %
	Sand		29.6 %
	Silt		42.9 %
04	Water Holding Capacity	By Gravimetric Method	40.0 %
05	Bulk Density	By Cylindrical Method	1.13 g/cm ³
06	Porosity	By Gravimetric Method	39.8 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	108.2 mg/kg
08	Magnesium as Mg		33.5 mg/kg
09	Manganese as Mn		18.6 mg/kg
10	Zinc as Zn		1.44 mg/kg
11	Boron as B		1.12 mg/kg
12	Chloride as Cl	APHA 23rd Edn 2019 4500 Cl B	30.5 mg/kg
13	Total Soluble Sulphate as SO ₄	IS 2720 Part 27 : 1977	0.063 %
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	16.5 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Reaff: 2019)	3.2 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999 (Reaff:2019)	374 mg/kg
17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		0.35 mg/kg
21	Iron as Fe		0.92 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972	1.62 %
23	Organic Carbon	IS : 2720 Part 22: 1972	0.93%
24	Cation Exchange Capacity	USEPA 9080 – 1986	29.8 meq/100g of soil

*****End of Report*****



Verified by

Authorised Signatory

Name: Santhosh Kumar A
Designation : Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/ 017	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sullur Taluk, Coimbatore District		
Sampling Method	SOP Method	Sample Drawn by	Laboratory
Sample Name	Soil	Sample Code	EHS360/ 017
Sample Description	Soil 5	Sample Collected Date	25.05.2023
Qty. of Sample Received	2 KG	Sample Received On	26.05.2023
Sample Condition	Good	Test Commenced On	26.05.2023
Sampling Location	Soil – 5 – Kallapalayam - 10°57'3.30"N 77° 4'38.23"E		

S.No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987	7.91
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	552 µmhos/cm
03	Texture :		
	Clay	Gravimetric Method	28.1 %
	Sand		31.8 %
	Silt		40.1 %
04	Water Holding Capacity	By Gravimetric Method	40.6 %
05	Bulk Density	By Cylindrical Method	1.13 g/cm ³
06	Porosity	By Gravimetric Method	40.2 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	112 mg/kg
08	Magnesium as Mg		26.7 mg/kg
09	Manganese as Mn		19.3 mg/kg
10	Zinc as Zn		3.8 mg/kg
11	Boron as B		1.1 mg/kg
12	Chloride as Cl	APHA 23rd Edn 2019 4500 Cl B	63.5 mg/kg
13	Total Soluble Sulphate as SO ₄	IS 2720 Part 27 : 1977	0.006 %
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	105 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Reaff: 2019)	3.2 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999 (Reaff:2019)	568 mg/kg
17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		0.49 mg/kg
21	Iron as Fe		1.38 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972	2.01 %
23	Organic Carbon	IS : 2720 Part 22: 1972	1.17 %
24	Cation Exchange Capacity	USEPA 9080 – 1986	42.4 meq/100g of soil

*****End of Report*****

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[Signature]
Name: Santhosh Kumar A
Designation : Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

TEST REPORT

Report No	EHS360/TR/2022-23/ 018	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sullur Taluk, Coimbatore District		
Sampling Method	SOP Method	Sample Drawn by	Laboratory
Sample Name	Soil	Sample Code	EHS360/ 018
Sample Description	Soil 6	Sample Collected Date	25.05.2023
Qty. of Sample Received	2 KG	Sample Received On	26.05.2023
Sample Condition	Good	Test Commenced On	26.05.2023
Sampling Location	Soil – 6 – Okkilipalayam - 10°53'36.89"N 77° 1'11.02"E		

S.No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987	8.21
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	515 µmhos/cm
03	Texture :		
	Clay	Gravimetric Method	30.5 %
	Sand		35.0 %
	Silt		34.5 %
04	Water Holding Capacity	By Gravimetric Method	40.5 %
05	Bulk Density	By Cylindrical Method	1.10 g/cm ³
06	Porosity	By Gravimetric Method	41.8 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	152.3 mg/kg
08	Magnesium as Mg		59.5 mg/kg
09	Manganese as Mn		26.5 mg/kg
10	Zinc as Zn		0.95 mg/kg
11	Boron as B		1.02 mg/kg
12	Chloride as Cl	APHA 23rd Edn 2019 4500 Cl B	135 mg/kg
13	Total Soluble Sulphate as SO ₄	IS 2720 Part 27 : 1977	0.004 %
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	23.4 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Reaff: 2019)	3.0 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999 (Reaff:2019)	498 mg/kg
17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		0.75 mg/kg
21	Iron as Fe		1.18 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972	2.21 %
23	Organic Carbon	IS : 2720 Part 22: 1972	1.28 %
24	Cation Exchange Capacity	USEPA 9080 – 1986	40.3 meq/100g of soil

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[Signature]
Name: Santhosh Kumar A
Designation : Quality Manager

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TEST REPORT

Report No	EHS360/TR/2022-23/ 019	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sulur Taluk, Coimbatore District		
Sampling Method	SOP Method	Sample Drawn by	Laboratory
Sample Name	Water	Sample Code	EHS360/019
Sample Description	Surface Water (SW-1)	Sample Collected Date	25.05.2023
Qty. of Sample Received	2 Litres	Sample Received On	26.05.2023
Sample Condition	Fit for Analysis	Test Commenced On	26.05.2023
Sampling Location	Existing Quarry Pit Water - 10°54'15.74"N 77° 4'0.67"E		

S.No.	Parameters	Test Method	RESULTS
	Discipline: Chemical		
1	Colour	IS 3025 Part 4:1983	5 Hazen
2	Odour	IS 3025 Part 5:2018	Agreeable
3	pH at 25°C	IS 3025 Part 11:1983	7.31
4	Conductivity @ 25°C	IS 3025 Part 14:2013	895 µmhos/cm
5	Turbidity	IS 3025 Part 10:1984	6.0 NTU
6	Total Dissolved Solids	IS 3025 Part 16:1984	571 mg/l
7	Total Hardness as CaCO ₃	IS 3025 Part 21:2009	129 mg/l
8	Calcium as Ca	IS 3025 Part 40:1991	25.9 mg/l
9	Magnesium as Mg	IS 3025 Part 46:1994	15.6 mg/l
10	Total Alkalinity as CaCO ₃	IS 3025 Part 23:1986	146 mg/l
11	Chloride as Cl	IS 3025 Part 32:1988	88.0 mg/l
12	Sulphate as SO ₄	IS 3025 Part 24:1986	29.6 mg/l
13	Iron as Fe	IS 3025 Part 53:2003	0.21 mg/l
14	Residual Free Chlorine	IS 3025 Part 26:1986	BDL (DL:0.1 mg/l)
15	Fluoride as F	APHA 23 rd Edn. 2017:4500 F,D	0.18 mg/l
16	Nitrate as NO ₃	IS 3025 Part 34:1988	8.4 mg/l

*****End of Report*****

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Name: Santhosh Kumar A
Designation: Quality Manager

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TEST REPORT

Report No	EHS360/TR/2022-23/019	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Suler Taluk, Coimbatore District		
Sampling Method	SOP Method	Sample Drawn by	Laboratory
Sample Name	Water	Sample Code	EHS360/019
Sample Description	Surface Water (SW-1)	Sample Collected Date	25.05.2023
Qty. of Sample Received	2 Litres	Sample Received On	26.05.2023
Sample Condition	Fit for Analysis	Test Commenced On	26.05.2023
Sampling Location	Existing Quarry Pit Water - 10°54'15.74"N 77° 4'0.67"E		

S.No.	Parameters	Test Method	RESULTS
17	Copper as Cu	IS 3025 Part 65:2014	BDL (DL:0.01 mg/l)
18	Manganese as Mn	IS 3025 Part 65:2014	BDL (DL:0.02 mg/l)
19	Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
20	Cadmium as Cd	IS 3025 Part 65:2014	BDL (DL:0.001 mg/l)
21	Selenium as Se	IS 3025 Part 65:2014	BDL (DL:0.005 mg/l)
22	Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
23	Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
24	Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
25	Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.02 mg/l)
26	Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
27	Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	BDL(DL : 0.01 mg/l)
28	Phenolic compounds as C ₆ H ₅ OH	IS 3025 Part 43-1992(Reaff: 2019)	BDL (DL:0.0005 mg/l)
29	Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	BDL (DL:0.01 mg/l)
30	Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)
31	BOD @ 27°C for 3 days	IS 3025 Part 44:1993 (Reaff:2019)	11.6 mg/l
32	Chemical Oxygen Demand	IS 3025 Part 58:2006 (Reaff:2017)	38 mg/l
33	Dissolved Oxygen	IS 3025 Part 38:1989 (Reaff:2019)	5.0 mg/l
34	Barium as Ba	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL:0.05 mg/l)
35	Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Reaff. 2019)	BDL (DL:0.01 mg/l)
36	Sulphide as H ₂ S	IS 3025 Part 29-1986 (Reaff: 2019)	BDL (DL:0.01 mg/l)
37	Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
38	Total Arsenic as As	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
39	Total Suspended Solids	IS 3025 Part 17 -1984 (Reaff:2017)	11.2 mg/l
	Discipline: Biological	Group: Water	
40	Total Coliform	APHA 23 rd Edn. 2017:9221B	590 MPN/100ml
41	<i>Escherichia coli</i>	APHA 23 rd Edn. 2017:9221F	70 MPN/100ml

*****End of Report*****

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 Name: Santhosh Kumar A
 Designation : Quality Manager

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TEST REPORT

Report No	EHS360/TR/2022-23/020	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sulur Taluk, Coimbatore District		
Sampling Method	SOP Method	Sample Drawn by	Laboratory
Sample Name	Water	Sample Code	EHS360/020
Sample Description	Surface Water (SW-2)	Sample Collected Date	25.05.2023
Qty. of Sample Received	2 Litres	Sample Received On	26.05.2023
Sample Condition	Fit for Analysis	Test Commenced On	26.05.2023
Sampling Location	Pallapalayam Lake- 10°59'18.68"N 77° 4'25.61"E		

S.No.	Parameters	Test Method	RESULTS
Discipline: Chemical			
1	Colour	IS 3025 Part 4:1983	10 Hazen
2	Odour	IS 3025 Part 5:2018	Agreeable
3	pH at 25°C	IS 3025 Part 11:1983	7.58
4	Conductivity @ 25°C	IS 3025 Part 14:2013	885 µmhos/cm
5	Turbidity	IS 3025 Part 10:1984	7.5 NTU
6	Total Dissolved Solids	IS 3025 Part 16:1984	570 mg/l
7	Total Hardness as CaCO ₃	IS 3025 Part 21:2009	154 mg/l
8	Calcium as Ca	IS 3025 Part 40:1991	29.6 mg/l
9	Magnesium as Mg	IS 3025 Part 46:1994	18.4 mg/l
10	Total Alkalinity as CaCO ₃	IS 3025 Part 23:1986	170 mg/l
11	Chloride as Cl	IS 3025 Part 32:1988	108 mg/l
12	Sulphate as SO ₄	IS 3025 Part 24:1986	39.6 mg/l
13	Iron as Fe	IS 3025 Part 53:2003	0.21 mg/l
14	Residual Free Chlorine	IS 3025 Part 26:1986	BDL (DL:0.1 mg/l)
15	Fluoride as F	APHA 23 rd Edn. 2017:4500 F,D	0.30 mg/l
16	Nitrate as NO ₃	IS 3025 Part 34:1988	6.8 mg/l

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Name: Santhosh Kumar A
Designation: Quality Manager

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TEST REPORT

Report No	EHS360/TR/2022-23/020	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Suler Taluk, Coimbatore District		
Sampling Method	SOP Method	Sample Drawn by	Laboratory
Sample Name	Water	Sample Code	EHS360/020
Sample Description	Surface Water (SW-2)	Sample Collected Date	25.05.2023
Qty. of Sample Received	2 Litres	Sample Received On	26.05.2023
Sample Condition	Fit for Analysis	Test Commenced On	26.05.2023
Sampling Location	Kothavadi Lake - 10°48'40.88"N 77° 4'1.08"E		
S.No.	Parameters	Test Method	RESULTS
17	Copper as Cu	IS 3025 Part 65:2014	BDL (DL:0.01 mg/l)
18	Manganese as Mn	IS 3025 Part 65:2014	BDL (DL:0.02 mg/l)
19	Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
20	Cadmium as Cd	IS 3025 Part 65:2014	BDL (DL:0.001 mg/l)
21	Selenium as Se	IS 3025 Part 65:2014	BDL (DL:0.005 mg/l)
22	Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
23	Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
24	Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
25	Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.02 mg/l)
26	Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
27	Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	BDL(DL : 0.01 mg/l)
28	Phenolic compounds as C ₆ H ₅ OH	IS 3025 Part 43-1992(Reaff: 2019)	BDL (DL:0.0005 mg/l)
29	Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	BDL (DL:0.01 mg/l)
30	Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)
31	BOD @ 27°C for 3 days	IS 3025 Part 44:1993 (Reaff:2019)	10.5 mg/l
32	Chemical Oxygen Demand	IS 3025 Part 58:2006 (Reaff:2017)	32 mg/l
33	Dissolved Oxygen	IS 3025 Part 38:1989 (Reaff:2019)	5.4 mg/l
34	Barium as Ba	IS 3025 Part 65:2014 (Reaff:2019)	3.0 mg/l
35	Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Reaff. 2019)	BDL (DL:0.01 mg/l)
36	Sulphide as H ₂ S	IS 3025 Part 29-1986 (Reaff: 2019)	BDL (DL:0.01 mg/l)
37	Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
38	Total Arsenic as As	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
39	Total Suspended Solids	IS 3025 Part 17 -1984 (Reaff:2017)	7.4 mg/l
	Discipline: Biological	Group: Water	
40	Total Coliform	APHA 23 rd Edn. 2017:9221B	845 MPN/100ml
41	<i>Escherichia coli</i>	APHA 23 rd Edn. 2017:9221F	98 MPN/100ml

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 Name: Santhosh Kumar A
 Designation: Quality Manager

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TEST REPORT

Report No	EHS360/TR/2022-23/ 021	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Suler Taluk, Coimbatore District		
Sampling Method	SOP Method	Sample Drawn by	Laboratory
Sample Name	Water	Sample Code	EHS360/021
Sample Description	Ground Water (WW-1)	Sample Collected Date	25.05.2023
Qty. of Sample Received	2 Litres	Sample Received On	26.05.2023
Sample Condition	Fit for Analysis	Test Commenced On	26.05.2023
Sampling Location	Near Project Area - 10°54'33.65"N 77° 3'53.87"E		

S.No.	Parameters	Test Method	RESULTS
Discipline: Chemical			
1	Colour	IS 3025 Part 4:1983	5
2	Odour	IS 3025 Part 5:2018	Agreeable
3	pH at 25°C	IS 3025 Part 11:1983	7.49
4	Conductivity @ 25°C	IS 3025 Part 14:2013	1214 µmhos/cm
5	Turbidity	IS 3025 Part 10:1984	< 1 NTU
6	Total Dissolved Solids	IS 3025 Part 16:1984	789 mg/l
7	Total Hardness as CaCO ₃	IS 3025 Part 21:2009	127.0mg/l
8	Calcium as Ca	IS 3025 Part 40:1991	26.2 mg/l
9	Magnesium as Mg	IS 3025 Part 46:1994	14.8 mg/l
10	Total Alkalinity as CaCO ₃	IS 3025 Part 23:1986	137 mg/l
11	Chloride as Cl	IS 3025 Part 32:1988	114 mg/l
12	Sulphate as SO ₄	IS 3025 Part 24:1986	32.8 mg/l
13	Iron as Fe	IS 3025 Part 53:2003	0.20 mg/l
14	Residual Free Chlorine	IS 3025 Part 26:1986	BDL (DL:0.1 mg/l)
15	Fluoride as F	APHA 23 rd Edn. 2017:4500 F,D	0.25 mg/l
16	Nitrate as NO ₃	IS 3025 Part 34:1988	5.4 mg/l

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Name: Santhosh Kumar A
Designation: Quality Manager

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TEST REPORT

Report No	EHS360/TR/2022-23/ 021	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sulur Taluk, Coimbatore District		
Sampling Method	SOP Method	Sample Drawn by	Laboratory
Sample Name	Water	Sample Code	EHS360/021
Sample Description	Ground Water (WW-1)	Sample Collected Date	25.05.2023
Qty. of Sample Received	2 Litres	Sample Received On	26.05.2023
Sample Condition	Fit for Analysis	Test Commenced On	26.05.2023
Sampling Location	Near Project Area - 10°48'34.91"N 77° 0'7.95"E		

S.No.	Parameters	Test Method	RESULTS
17	Copper as Cu	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.01 mg/l)
18	Manganese as Mn	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
19	Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
20	Cadmium as Cd	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.001 mg/l)
21	Selenium as Se	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
22	Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
23	Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
24	Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
25	Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.02 mg/l)
26	Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
27	Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	BDL(DL : 0.01 mg/l)
28	Phenolic compounds as C ₆ H ₅ OH	IS 3025 Part 43-1992(Reaff: 2019)	BDL (DL:0.0005 mg/l)
29	Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	BDL (DL:0.01 mg/l)
30	Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)
31	Barium as Ba	IS 3025 Part 44:1993 (Reaff:2019)	BDL(DL:0.05 mg/l)
32	Ammonia (as total ammonia-N)	IS 3025 Part 58:2006 (Reaff:2017)	BDL (DL:0.01 mg/l)
33	Sulphide as H ₂ S	IS 3025 Part 38:1989 (Reaff:2019)	BDL (DL:0.01 mg/l)
34	Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
35	Total Arsenic as As	IS 3025 Part 34-1988 (Reaff. 2019)	BDL (DL:0.005 mg/l)
36	Total Suspended Solids	IS 3025 Part 29-1986 (Reaff: 2019)	BDL (DL:1.0 mg/l)
	Discipline: Biological	Group: Water	
37	Total Coliform	APHA 23 rd Edn. 2017:9221B	70 MPN/100ml
38	<i>Escherichia coli</i>	APHA 23 rd Edn. 2017:9221F	< 1.8 MPN/100ml

*****End of Report*****

Page 1 of 1

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 Name: Santhosh Kumar A
 Designation: Quality Manager

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TEST REPORT

Report No	EHS360/TR/2022-23/ 023	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Suler Taluk, Coimbatore District		
Sampling Method	SOP Method	Sample Drawn by	Laboratory
Sample Name	Water	Sample Code	EHS360/023
Sample Description	Ground Water (WW-2)	Sample Collected Date	25.05.2023
Qty. of Sample Received	2 Litres	Sample Received On	26.05.2023
Sample Condition	Fit for Analysis	Test Commenced On	26.05.2023
Sampling Location	Panapatti - 10°52'41.07"N 77° 5'51.48"E		

S.No.	Parameters	Test Method	RESULTS
Discipline: Chemical			
1	Colour	IS 3025 Part 4:1983	5 Hazen
2	Odour	IS 3025 Part 5:2018	Agreeable
3	pH at 25°C	IS 3025 Part 11:1983	7.58
4	Conductivity @ 25°C	IS 3025 Part 14:2013	1018 µmhos/cm
5	Turbidity	IS 3025 Part 10:1984	2.0 NTU
6	Total Dissolved Solids	IS 3025 Part 16:1984	658 mg/l
7	Total Hardness as CaCO ₃	IS 3025 Part 21:2009	159 mg/l
8	Calcium as Ca	IS 3025 Part 40:1991	32.6 mg/l
9	Magnesium as Mg	IS 3025 Part 46:1994	19.0 mg/l
10	Total Alkalinity as CaCO ₃	IS 3025 Part 23:1986	196 mg/l
11	Chloride as Cl	IS 3025 Part 32:1988	126 mg/l
12	Sulphate as SO ₄	IS 3025 Part 24:1986	29.4 mg/l
13	Iron as Fe	IS 3025 Part 53:2003	0.20 mg/l
14	Residual Free Chlorine	IS 3025 Part 26:1986	BDL (DL:0.1 mg/l)
15	Fluoride as F	APHA 23 rd Edn. 2017:4500 F,D	0.4 mg/l
16	Nitrate as NO ₃	IS 3025 Part 34:1988	4.8 mg/l

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Designation: Quality Manager

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TEST REPORT

Report No	EHS360/TR/2022-23/ 023	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sulur Taluk, Coimbatore District		
Sampling Method	SOP Method	Sample Drawn by	Laboratory
Sample Name	Water	Sample Code	EHS360/023
Sample Description	Ground Water (WW-2)	Sample Collected Date	25.05.2023
Qty. of Sample Received	2 Litres	Sample Received On	26.05.2023
Sample Condition	Fit for Analysis	Test Commenced On	26.05.2023
Sampling Location	Kallapuram - 10°50'1.49"N 76°59'8.86"E		

S.No.	Parameters	Test Method	RESULTS
17	Copper as Cu	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.01 mg/l)
18	Manganese as Mn	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
19	Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
20	Cadmium as Cd	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.001 mg/l)
21	Selenium as Se	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
22	Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
23	Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
24	Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
25	Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.02 mg/l)
26	Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
27	Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	BDL(DL : 0.01 mg/l)
28	Phenolic compounds as C ₆ H ₅ OH	IS 3025 Part 43-1992(Reaff: 2019)	BDL (DL:0.0005 mg/l)
29	Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	BDL (DL:0.01 mg/l)
30	Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)
31	Barium as Ba	IS 3025 Part 44:1993 (Reaff:2019)	BDL(DL:0.05 mg/l)
32	Ammonia (as total ammonia-N)	IS 3025 Part 58:2006 (Reaff:2017)	BDL (DL:0.01 mg/l)
33	Sulphide as H ₂ S	IS 3025 Part 38:1989 (Reaff:2019)	BDL (DL:0.01 mg/l)
34	Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
35	Total Arsenic as As	IS 3025 Part 34-1988 (Reaff. 2019)	BDL (DL:0.005 mg/l)
36	Total Suspended Solids	IS 3025 Part 29-1986 (Reaff: 2019)	BDL (DL:1.0 mg/l)
	Discipline: Biological	Group: Water	
37	Total Coliform	APHA 23 rd Edn. 2017:9221B	68 MPN/100ml
38	<i>Escherichia coli</i>	APHA 23 rd Edn. 2017:9221F	< 1.8 MPN/100ml

*****End of Report*****

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Verified by



Authorised Signatory

 Name: Santhosh Kumar A
 Designation: Quality Manager

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TEST REPORT

Report No	EHS360/TR/2022-23/ 024	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Suler Taluk, Coimbatore District		
Sampling Method	SOP Method	Sample Drawn by	Laboratory
Sample Name	Water	Sample Code	EHS360/024
Sample Description	Ground Water (BW-1)	Sample Collected Date	25.05.2023
Qty. of Sample Received	2 Litres	Sample Received On	26.05.2023
Sample Condition	Fit for Analysis	Test Commenced On	26.05.2023
Sampling Location	Near Project Area - 10°54'7.44"N 77° 4'8.81"E		

S.No.	Parameters	Test Method	RESULTS
Discipline: Chemical			
1	Colour	IS 3025 Part 4:1983	5 Hazen
2	Odour	IS 3025 Part 5:2018	Agreeable
3	pH at 25°C	IS 3025 Part 11:1983	7.36
4	Conductivity @ 25°C	IS 3025 Part 14:2013	1128 µmhos/cm
5	Turbidity	IS 3025 Part 10:1984	2.5 NTU
6	Total Dissolved Solids	IS 3025 Part 16:1984	728 mg/l
7	Total Hardness as CaCO ₃	IS 3025 Part 21:2009	166 mg/l
8	Calcium as Ca	IS 3025 Part 40:1991	33.8 mg/l
9	Magnesium as Mg	IS 3025 Part 46:1994	19.6 mg/l
10	Total Alkalinity as CaCO ₃	IS 3025 Part 23:1986	142 mg/l
11	Chloride as Cl	IS 3025 Part 32:1988	88 mg/l
12	Sulphate as SO ₄	IS 3025 Part 24:1986	39.4 mg/l
13	Iron as Fe	IS 3025 Part 53:2003	0.35 mg/l
14	Residual Free Chlorine	IS 3025 Part 26:1986	BDL (DL:0.1 mg/l)
15	Fluoride as F	APHA 23 rd Edn. 2017:4500 F,D	0.40 mg/l
16	Nitrate as NO ₃	IS 3025 Part 34:1988	7.8 mg/l

*****End of Report*****

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Authorised Signatory

Name: Santhosh Kumar A
Designation: Quality Manager

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TEST REPORT

Report No	EHS360/TR/2022-23/ 024	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sulur Taluk, Coimbatore District		
Sampling Method	SOP Method	Sample Drawn by	Laboratory
Sample Name	Water	Sample Code	EHS360/024
Sample Description	Ground Water (BW-1)	Sample Collected Date	25.05.2023
Qty. of Sample Received	2 Litres	Sample Received On	26.05.2023
Sample Condition	Fit for Analysis	Test Commenced On	26.05.2023
Sampling Location	Near Project Area - 10°54'7.44"N 77° 4'8.81"E		

S.No.	Parameters	Test Method	RESULTS
17	Copper as Cu	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.01 mg/l)
18	Manganese as Mn	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
19	Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
20	Cadmium as Cd	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.001 mg/l)
21	Selenium as Se	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
22	Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
23	Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
24	Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
25	Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.02 mg/l)
26	Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
27	Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	BDL(DL : 0.01 mg/l)
28	Phenolic compounds as C ₆ H ₅ OH	IS 3025 Part 43-1992(Reaff: 2019)	BDL (DL:0.0005 mg/l)
29	Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	BDL (DL:0.01 mg/l)
30	Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)
31	Barium as Ba	IS 3025 Part 44:1993 (Reaff:2019)	BDL(DL:0.05 mg/l)
32	Ammonia (as total ammonia-N)	IS 3025 Part 58:2006 (Reaff:2017)	BDL (DL:0.01 mg/l)
33	Sulphide as H ₂ S	IS 3025 Part 38:1989 (Reaff:2019)	BDL (DL:0.01 mg/l)
34	Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
35	Total Arsenic as As	IS 3025 Part 34-1988 (Reaff. 2019)	BDL (DL:0.005 mg/l)
36	Total Suspended Solids	IS 3025 Part 29-1986 (Reaff: 2019)	BDL (DL:1.0 mg/l)
	Discipline: Biological	Group: Water	
37	Total Coliform	APHA 23 rd Edn. 2017:9221B	95 MPN/100ml
38	<i>Escherichia coli</i>	APHA 23 rd Edn. 2017:9221F	< 1.8 MPN/100ml

*****End of Report*****

Page 1 of 1

Verified by




Authorised Signatory

 Name: Santhosh Kumar A
 Designation : Quality Manager

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TEST REPORT

Report No	EHS360/TR/2022-23/ 025	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sulur Taluk, Coimbatore District		
Sampling Method	SOP Method	Sample Drawn by	Laboratory
Sample Name	Water	Sample Code	EHS360/025
Sample Description	Ground Water (BW-2)	Sample Collected Date	25.05.2023
Qty. of Sample Received	2 Litres	Sample Received On	26.05.2023
Sample Condition	Fit for Analysis	Test Commenced On	26.05.2023
Sampling Location	Okkilipalayam - 10°53'41.76"N 77° 1'4.78"E		

S.No.	Parameters	Test Method	RESULTS
Discipline: Chemical			
1	Colour	IS 3025 Part 4:1983	5 Hazen
2	Odour	IS 3025 Part 5:2018	Agreeable
3	pH at 25°C	IS 3025 Part 11:1983	7.68
4	Conductivity @ 25°C	IS 3025 Part 14:2013	1085 µmhos/cm
5	Turbidity	IS 3025 Part 10:1984	6 NTU
6	Total Dissolved Solids	IS 3025 Part 16:1984	699 mg/l
7	Total Hardness as CaCO ₃	IS 3025 Part 21:2009	148 mg/l
8	Calcium as Ca	IS 3025 Part 40:1991	28.2 mg/l
9	Magnesium as Mg	IS 3025 Part 46:1994	19.0 mg/l
10	Total Alkalinity as CaCO ₃	IS 3025 Part 23:1986	130 mg/l
11	Chloride as Cl	IS 3025 Part 32:1988	121 mg/l
12	Sulphate as SO ₄	IS 3025 Part 24:1986	40.6 mg/l
13	Iron as Fe	IS 3025 Part 53:2003	0.25 mg/l
14	Residual Free Chlorine	IS 3025 Part 26:1986	BDL (DL:0.1 mg/l)
15	Fluoride as F	APHA 23 rd Edn. 2017:4500 F,D	0.35 mg/l
16	Nitrate as NO ₃	IS 3025 Part 34:1988	8.0 mg/l

*****End of Report*****

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Name: Santhosh Kumar A
Designation: Quality Manager

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TEST REPORT

Report No	EHS360/TR/2022-23/ 025	Report Date	05.06.2023
Site Location	M/s. Pachapalayam Rough Stone and Gravel Quarry S.F.Nos. 279/2C1B, 212/1A(P), Pachapalayam Village, Sulur Taluk, Coimbatore District		
Sampling Method	SOP Method	Sample Drawn by	Laboratory
Sample Name	Water	Sample Code	EHS360/025
Sample Description	Ground Water (BW-2)	Sample Collected Date	25.05.2023
Qty. of Sample Received	2 Litres	Sample Received On	26.05.2023
Sample Condition	Fit for Analysis	Test Commenced On	26.05.2023
Sampling Location	Okkilpalayam - 10°53'41.76"N 77° 1'4.78"E		

S.No.	Parameters	Test Method	RESULTS
17	Copper as Cu	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.01 mg/l)
18	Manganese as Mn	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
19	Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
20	Cadmium as Cd	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.001 mg/l)
21	Selenium as Se	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
22	Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
23	Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
24	Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
25	Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.02 mg/l)
26	Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
27	Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	BDL(DL : 0.01 mg/l)
28	Phenolic compounds as C ₆ H ₅ OH	IS 3025 Part 43-1992(Reaff: 2019)	BDL (DL:0.0005 mg/l)
29	Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	BDL (DL:0.01 mg/l)
30	Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)
31	Barium as Ba	IS 3025 Part 44:1993 (Reaff:2019)	BDL(DL:0.05 mg/l)
32	Ammonia (as total ammonia-N)	IS 3025 Part 58:2006 (Reaff:2017)	BDL (DL:0.01 mg/l)
33	Sulphide as H ₂ S	IS 3025 Part 38:1989 (Reaff:2019)	BDL (DL:0.01 mg/l)
34	Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
35	Total Arsenic as As	IS 3025 Part 34-1988 (Reaff. 2019)	BDL (DL:0.005 mg/l)
36	Total Suspended Solids	IS 3025 Part 29-1986 (Reaff: 2019)	BDL (DL:1.0 mg/l)
	Discipline: Biological	Group: Water	
37	Total Coliform	APHA 23 rd Edn. 2017:9221B	95 MPN/100ml
38	<i>Escherichia coli</i>	APHA 23 rd Edn. 2017:9221F	< 1.8 MPN/100ml

*****End of Report*****

Page 1 of 1

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Authorised Signatory


 Name: Santhosh Kumar A
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National Accreditation Board for Education and Training



Certificate of Accreditation

Geo Exploration & Mining Solutions, Salem

No. 17, Advaita Ashram Road, Fairlands, Salem – 636 004, Tamilnadu, India.

The organization is accredited as **Category-A** under the QCI-NABET Scheme for Accreditation of EIA Consultant Organization, Version 3: for preparing EIA-EMP reports in the following Sectors –

S.No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals opencast only	1	1 (a) (i)	A
2	Industrial estates/ parks/ complexes/areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes	31	7 (c)	B
3	Building and construction projects	38	8(a)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RAAC minutes dated Jan 06, 2023 and posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no QCI/NABET/ENV/ACO/23/2684 dated Feb 20, 2023. The accreditation needs to be renewed before the expiry date by Geo Exploration & Mining Solutions, Salem following due process of assessment.

Sr. Director, NABET
Dated: Feb 20, 2023

Certificate No.
NABET/EIA/2225/RA 0276

Valid up to
August 06, 2025

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