

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT OF MULTICOLOUR GRANITE QUARRY

(As per EIA Notification, 2006 dated 14.09.2006 and amendments)

**CATEGORY - B1 - CLUSTER - MINOR MINERAL -
NON-FOREST LAND**

Project Proponent

M/s. M.P. GRANITE

No.131/29, RR Complex, Kollapatti, Animoor Post,
Trichengode Taluk, Namakkal- 637 211

<i>Proposed Production</i>	<i>Project Site Details</i>
Geological Reserves : 4,04,622 m ³	Extent Area : 4.01.5 Ha
Mineable Reserves : 2,73,726 m ³	S.F. No : 260/ A1, etc.,
Production : 59,400 m ³	K. Pitchampatti Village
Proposed depth : 45m bgl	Karur Taluk, Karur District

Laboratory

ABM Enviro Lab

NIPBASS PLAZA, 4/77-L, Narasothipatti, Salem-636004

NABL Certificate No: **TC-15822/** Valid up to: **01.04.2029**

Baseline Monitoring Period: December, 2025 to February, 2026

EIA Consultant

UIN: ABM/MIN/EIA/2026-27/001/R1/2026

AADHI BOOMI MINING & ENVIRO TECH (P) LTD

(NABET Accredited EIA Organization)

NABET Certificate No: NABET/EIA/24-27/RA 0365/Valid Up to: 23.10.2027
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M/s. M.P. GRANITE,
No.131/29, RR Complex,
Kollapatti, Animoor Post,
Trichengode Taluk,
Namakkal – 637 211
+91-9751520324

Date:

To

District Environmental Engineer

Tamil Nadu Pollution Control Board (TNPCB),
No 26, Ramakrishnapuram West,
Karur District- 639 001

Sub: Submission of **Draft Environmental Impact Assessment Report** as per EIA Notification, 2006 dated 14.09.2006 and amendments for the Multicolour Granite Quarry located within cluster area over an extent of 4.01.5 Ha of S.F. No's: 260/A1, 260/A2, 260/A3, 260/B1, 260/B2, 260/B3, 260/C, 262/A3 (P), 262/A4 (P), 262/A5 (P), 262/A6 (P), 262/A7, 262/A8 (P), 262/B1 & 262/B2 in K. Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu-reg.

Ref:

1. Precise area communication letter. No: 11030/MMB.2/2016-1, Dated: 17.10.2016
2. Approval of Scheme of Mining Vide Rc. No. 4342/MM2/2022 Dated. 29.09.2022
3. ToR Identification No: TO26B0108TN5488325N Dated: 13.04.2026

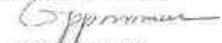
Dear Sir/Madam,

With reference to the above mentioned subject, we herewith submit the hard copy of **Draft Environmental Impact Assessment Report** as per the Terms of Reference vide ToR Identification No: TO26B0108TN5488325N Dated: 13.04.2026 with a Demand Draft of Rs. _____ in favour of DEE, TNPCB, Karur for your kind perusal. Hence, we kindly request you to process our application for Public Hearing as per EIA Notification, 2006 for obtaining Environment Clearance from SEIAA Tamil Nadu as early as possible.

Thanking You,

Yours faithfully,

For M/s. M.P. Granite


(G.P. Panneer)
Partner

M/s. M.P. Granite
(Project Proponent)

Encl:

Draft EIA Report along with the soft copy.

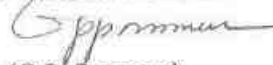
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M/s. M.P. GRANITE
No.131/29, RR Complex
Kollapatti, Animoor Post
Trichengode Taluk
Namakkal -637211
Tamil Nadu.
Contact Number- +91-9751520324

Undertaking by Project Proponent

I, **M/s. M.P. Granite** (G.P. Panneer, Managing Partner), as **Project Proponent**, hereby give this undertaking to the effect that the conditions laid down in Terms of Reference vide ToR Identification No. TO26B0108TN5488325N Dated: 13.04.2026 for our existing multicolour granite quarry, in S.F. No. 260/A1, 260/A2, 260/A3, 260/B1, 260/B2, 260/B3, 260/C, 262/A3 (P), 262/A4 (P), 262/A5 (P), 262/A6 (P), 262/A7, 262/A8 (P), 262/B1 & 262/B2, over an extent 4.01.5 Ha in K. Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu, Tamil Nadu have been compiled with the data submitted and the information presented in this report are true to the best of my knowledge.

For M/s. M.P. Granite

(G.P. Panneer)
Partner

Signature and seal of the Project Proponent

AADHI BOOMI MINING AND ENVIRO TECH (P) Ltd.

(NABET/QCI Accredited Organisation – 'A' Category)

ISO: 9001:2015 Certified Company

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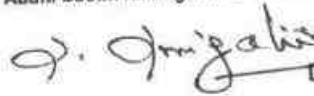
Email: suriyakumarsemban@gmail.com, admin@abmenvirotec.com,Website: www.abmenvirotec.com**Date:****Declaration by the Head of the accredited consultant organization/authorized person**

I, **S. Suriyakumar**, CEO of Aadhi Boomi Mining & Enviro Tech (P) Ltd, hereby confirm that the Draft Environmental Impact Assessment Report has been prepared as per the conditions laid down in Terms of Reference vide ToR Identification No. TO26B0108TN5488325N Dated: 13.04.2026 for conducting Public Hearing and obtaining Environment Clearance from SEIAA/SEAC, Tamil Nadu for existing multicolour granite quarry of M/s. M.P. Granite located in K. Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu.

I also confirm that I shall be fully accountable for any mis-leading information mentioned in this statement.

Name : **Dr.S.Suriyakumar**

Signature : For Aadhi Boomi Mining And Enviro Tech (P) Ltd.,



Director
Designation : **EIA Coordinator**Name of the EIA Consultant Organization: **Aadhi Boomi Mining & Enviro Tech Private Limited.**QCI/NABET Accredited Consultant, Certificate No: **NABET/EIA/24-27/RA 0365.**

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LIST OF ABBREVIATIONS AND ACRONYMS

AQI	-	Air Quality Index
AAQ	-	Ambient Air Quality
CPCB	-	Central Pollution Control Board
CAPEXIL	-	Chemical and Allied Export Promotion Council of India
CSR	-	Corporate Social Responsibility
DB	-	Decibel
DGM	-	Department of Geology and Mining
DGPS	-	Differential Global Positioning System
EC	-	Environment Clearance
EMP	-	Environment Management Plan
EIA	-	Environmental Impact Assessment
EMC	-	Environmental Management Cell
LEQ	-	Equivalent Noise Level
GOVT	-	Government of Tamil Nadu
GLC	-	Ground Level Concentration
HSE	-	Health, Safety and Environment
HA	-	Hectare
KLD	-	Kilo Liters Per -Day
KM	-	Kilo Meter
MOEF&CC	-	Ministry of Environment Forest and Climate Change
NH	-	National Highway
PH	-	Public Hearing
R&R	-	Rehabilitation & Resettlement
SEIS	-	Seismograph
SEIAA	-	State Environmental Impact Assessment Authority
SEAC	-	State Expert Appraisal Committee
SH	-	State Highway
SPM	-	Suspended Particulate Matter
TNPCB	-	Tamil Nadu Pollution Control Board
TOR	-	Terms of Reference
WQI	-	Water Quality Index

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S. No	TERMS OF REFERENCE		P. No	
1. SEIAA Specific Condition				
1.1	After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant Terms of Reference (ToR) along with Public Hearing for the quantity of 59,400m ³ (ROM) of Multicolour Granite which includes 35,640m ³ of Granite recovery @60% and 23,760m ³ of Granite reject @40% up to the depth of 40m BGL (including the existing depth of 13m BGL) and the annual peak production should not exceed 7,290 m ³ of Granite recovery @60% as per approved mining plan, under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal conditions & SEIAA Specific & Standard conditions.	Agreed.	-	
1. SEIAA Standard Conditions				
Cluster Management Committee				
2.1	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.	Agreed. The Cluster Management Committee will be formed as per SEAC guidance.	-
	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.,	Agreed. After forming CMC, the all the members will implement environment management plan effectively. Effective plan has been given in chapter – 4.	-
	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.	Agreed. The List of members of the committee formed will be submitted to AD/Mines before the commencing the quarry activity.	-
	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	Certified Blaster will be engaged for blasting having adequate knowledge in Environmental safety aspects. Plan will be included in the EIA report. The usage of haul roads by the	-

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		roads by the individual quarry in the form of route map and network.	individual quarry is attached in EIA report.	
5		The committee shall deliberate on risk & emergency management plan, fire safety & evacuation plan and sustainable development goals pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.	Risk Management is elaborated in chapter 7 of the EIA report.	-
6		The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail in the EIA Report.	Agreed. The CMC will form Environmental Policy to practice sustainable mining in a scientific and systematic manner. The same shall be displayed within the cluster area.	-
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.	The conceptual plan for the quarry area 4.01.5 Ha is attached in the EIA report. After forming CMC, the restoration strategy of individual quarry will be submitted to AD Mines, Karur.	-
8		The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity.	Occupational safety and Health care of the workers are included in Chapter 4 in the EIA report.	-
Agriculture & Agro-Biodiversity				
9		Impact on surrounding agricultural fields around the proposed mining Area.	The impact on surrounding agricultural fields is given in chapter 4.	-
10		Impact on soil flora & vegetation around the project site	The impact on ecology and biodiversity including soil flora and vegetation around the project site is mentioned in chapter 4.	151
11		Details of type of vegetation including no. of trees & shrubs within the proposed mining area and if so, transplantation of such vegetation all along the boundary of the proposed mining area shall committed mentioned in EMP.	As it is multicolour granite quarry there is no trees or plants in quarry area. However, PP planted Neem trees along the boundary of mining lease area. There are only few numbers of Neem trees, coconut trees, palm trees, <i>Prosopis juliflora</i> are found within 500m radius buffer zone. It will not be	-

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		disturbed during quarrying activity.	
12	The Environmental Impact Assessment should study the agro-biodiversity, agro-forestry, horti-cultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed bank sand suggest measures to maintain the natural Ecosystem.	The impact on ecology and biodiversity including the soil micro flora, fauna and soil seed banks around the project site is mentioned in chapter 4.	151
13	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	At the end of mining, the quarried-out pit will be used as water storage pond which improves the agricultural activity in the buffer zone. The afforestation plan for five years is given in chapter 4.	158
14	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.	Anticipated impact on Agriculture, Horticulture and livestock is given chapter 4. Refer clause 4.14.	162
Forests			
15	The project proponent shall detail study on impact of mining on Reserve forests and free ranging wildlife.	There is No reserve forests located within 10km radius of the project site. There are no wildlife sanctuaries within 10km radius. Refer table 2.2 in page 16 of chapter 2.	18 & 19
16	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	There is no endangered species found within 10km radius study area.	-
17	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	As it is newly proposed multicolour granite quarry, no trees and shrubs are present in the quarry area.	-
18	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	There are no protected areas, National Parks, Corridors and Wildlife pathways within 10km radius of the project site. There is no reserve forest located within 10km radius. The impact on reserve forest is given in Chapter 4.	-
Water Environment			
19	Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km	The hydro geology study has been conducted within the study area of project site in Chapter 3. The details of water bodies in the study area are given chapter 2.	18 & 19

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	(radius) so as to assess the impacts on the nearby water bodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.	The depth of water table identified by Geo resistivity survey is 60m bgl whereas the proposed depth of mining is 35m bgl. Therefore, the mining activity will not intersect ground water table.	
20	Erosion Control measures.	To control the erosion, the tree sapling will be planted along the mining lease boundary. Garland drainage will be developed around the dump to control the washout of dump due to hydrostatic pressure.	-
21	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas.	The impact of mining on the nearby villages and water bodies are given detail in chapter 4.	
22	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.	The detailed study of impact on fish habitation and food WEB/ food chain in the water body and reservoir is given in chapter 4. Refer table 4.28.	151
23	The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities.	The detailed impact studies are given in Chapter 4.	-
24	The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.	The study and the impact on aquatic plants and animals in water bodies are mentioned in Chapter 4. There are no caves, heritage site, and archaeological site found within 10km radius of project site.	-
25	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	The impact study on soil health and erosion is given in clause 4.7 in chapter 4. The soil physical, chemical components and microbial components are given in Chapter 3.	150
26	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	The impact study on surface water bodies and agricultural land is given in chapter 4.	146
27	The EIA shall include the impact of mining	Yes, we are including in this part in EIA	-

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	activity on the following: a) Hydrothermal/Geothermal effect due to destruction in the Environment. b) Bio-geochemical processes and its foot prints including environmental stress. c) Sediment geochemistry in the surface streams.	report.	
Energy			
28	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished	Agreed	-
Climate Change			
29	The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.	The carbon emission due to proposed mining activity and its mitigation measures are given in Chapter 4.	139
30	The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features.	The carbon emission due to proposed mining activity and its mitigation measures are given in Chapter 4.	139
31	Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood.	Impact on the mining pollution we have studied refer chapter 3, and mitigation measures we have included.	-
Mine Closure Plan			
32	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	Detailed mine closure plan incorporate in chapter 2 in the EIA report.	45
EMP			
33	Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs.	Detailed Environmental management plan is given in chapter 10.	181
34	The Environmental Impact Assessment	The Environmental management plan is given	181,

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	should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.	chapter 10. The cost for green belt development is mentioned in table 10.2 in chapter 10. Budget for mine closure plan is given in table 10.3 in chapter 10. The disaster management plan is given in chapter 7.	186 & 139
Risk Assessment			
35	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	Risk Assessment and management Plan has been prepared and included in the EIA report. Refer Chapter 7.	169
Disaster Management Plan			
36	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	The Disaster management Plan has been prepared and included in the EIA report of chapter 7.	169
Others			
37	The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.	The project proponent obtained from VAO certificate for 300m radius in the lease area	296
38	As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.	Agreed.	-
39	The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the Environment. The ecological risks and impacts of plastic &	The study on pollution due to plastic and micro plastic and its ecological risk is mentioned in chapter 7.	173

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	microplastics on aquatic Environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.		
SEAC conditions - Site specific (Major Condition)			
1	The Project Proponent shall furnish the Certified Compliance Report obtained from the competent authority for the EC previously issued during the EIA appraisal.	Under process	-
General Condition:			
1	A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal: i. Copy of the agreement forming CMC. ii. The Organization chart of the Committee with defining the role of the members iii. The 'Standard Operating Procedures' (SOP) executing the planned activities.	Under Process.	-
2	The Geo referenced Boundary pillars to be erected on the field as per the mine rules and the evidence should be submitted along with the EIA report.	Under Process.	-
3	The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report.	In this lease area there are no structures including school, college and primary health centre in and around 500m radius	-
4	The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300m & upto	The details of nearest habitation in the study area are given chapter 2. Refer table 2.2 in	18 & 19

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		1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations.	EIA report.	
	5	The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	Agreed.	-
	6	The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report.	The baseline study on Ecology and Biodiversity are given detail in chapter 3. The impact on Ecology and Biodiversity are given in chapter 4.	87 & 153
	7	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	The EMP for the proposed project is mentioned in Chapter 10 along with EMP cost. The affidavit stating to abide the EMP for the entire life of mine will be attached in the EIA report.	186
	8	The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures.	The anticipated cumulative impact on various environments such as air, water, soil and noise etc., due to proposed mining activity are given in chapter 4 with appropriate mitigation measures.	127
	9	The PP shall prepare a conceptual working plan accommodating the inclusion of haul road accessibility keeping the benches intact, by ensuring the slope stability of the working benches to be constructed and existing quarry wall.	As it is granite quarry, blasting will be carried out to remove blocks from the parent rock by forming crack. Adequate Blast shield or blast mats will be provided wherever necessary for fly rock protection during blasting, thus to prevent the accident on the nearest farms.	-
	10	The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along	Under Process	-

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		with the EIA report.		
2. SEAC Standard Conditions				
	1	In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following: (i) Original pit dimension (ii) Quantity achieved Vs EC Approved Quantity (iii) Balance Quantity as per Mineable Reserve calculated. (iv) Mined out Depth as on date Vs EC Permitted depth (v) Details of illegal/illicit mining (vi) Violation in the quarry during the past working. (vii) Quantity of material mined out outside the mine lease area (viii) Condition of Safety zone/benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.	Under Process.	-
	2	Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.	Yes, The Latest habitations detail VAO certificate enclose in annexures.	296
	3	The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc., with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.,	The details of nearest habitation in the study area are given table 2.2 in chapter 2.	18 & 19
	4	The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the water bodies	The hydro geology study has been conducted within the study area of project site. Refer chapter 3 in EIA report.	73, 18 & 19

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		like lake, water tanks, etc., are located within 1 km of the proposed quarry.	The details of water bodies in the study area are given table 2.2 in chapter 2.	
5		The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.	The baseline study on Ecology and Biodiversity are given detail in chapter 3. The impact on Ecology and Biodiversity are given in chapter 4.	87 & 153
6		The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.	Not applicable. The mining area does not involve any forest land. Refer table 2.2 in EIA report.	18 & 19
7		In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.	Slope stability study under preparation and incorporated in final EIA Report.	-
8		However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.	Slope stability study under preparation and incorporated in final EIA Report.	-
9		The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961	Agreed. The affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961.	-

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		such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.		
10		The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.	As it is granite quarry, blasting will be carried out to remove blocks from the parent rock by forming crack. Adequate Blast shield or blast mats will be provided wherever necessary for fly rock protection during blasting, thus to prevent the accident on the nearest farms.	-
11		The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.	The drone survey will be conducted for this project. The video and photographs included in final EIA report.	-
12		If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,	Under process	-
13		What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?	Under Process	-
14		Quantity of minerals mined out. ❖ Highest production achieved in any one year ❖ Detail of approved depth of mining. ❖ Actual depth of the mining achieved earlier. ❖ Name of the person already mined in that leases area. ❖ If EC and CTO already obtained, the copy of the same shall be submitted. ❖ Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.	Under Process	-
15		All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of	The Toposheet showing location of the lease area is attached in Chapter 1. The geology and geomorphology of the 10km	6

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	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).	radius of proposed area is given in chapter 2. The land use/land cover image is given chapter 3.	29 120
16	The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,	The drone video, fencing and green belt development along the periphery is under process. The photographs will be attached in final EIA Report.	-
17	The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	The fencing and green belt development along the periphery is under process. The photographs will be attached in final EIA Report.	-
18	The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.	The details of reserves, production capacity and methodology are given in chapter – 2. The impacts on surrounding environment due to mining activity are given in chapter 4.	41 154
19	The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.	The employment potential of proposed project is given in chapter 2.	47
20	The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to	The hydro geology study has been conducted within the study area of project site. Refer in Chapter 3. The details of water bodies in the study area are given chapter 2. The depth of water table identified by Geo resistivity survey is 60m bgl whereas the	73 18 & 19 73

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	assess their 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.	proposed depth of mining is 35m bgl. Therefore, the mining activity will not intersect ground water table.	
21	The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.	The baseline data for the environmental and ecological parameters were collected. Refer chapter 3.	50 to 115
22	The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.	The anticipated cumulative impact on various environments such as air, water, soil and noise etc., due to proposed mining activity are given in chapter 4 with appropriate mitigation measures. The environmental management plan is given in chapter- 10.	133 to 169 181
23	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	The studies on rain water harvesting is given in chapter 7.	172
24	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	The land use/land covers of 10km radius of proposed mining lease area are given in chapter 3.	120
25	Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land	Not applicable. All waste and rejects shall be dumped within the lease area of 4.01.5 Ha of M.P. Granite.	-

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	use, R&R issues, if any, should be provided.		
26	Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.	No. There is no boundary of critically polluted area found within 10km radius proposed mining lease area.	-
27	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	At the end of mining, the quarried-out pit will be used for storing rain water which will enhance agricultural activity around the lease area. The rain harvesting plan is given detail in chapter 7.	172
28	Impact on local transport infrastructure due to the Project should be indicated.	No. The existing roads are available to withstand the traffic generated due to proposed project. Refer fig 2.6 in chapter 2.	22
29	A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.	Only trees such as Neem trees, coconut trees, palm trees, Pungamin tree, Guava tree, Teak tree are found within 500m radius.	-
30	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 for the proposed project is included in the EIA report. Refer fig 2.18 in chapter 2.	45
31	As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.	Agreed. The EIA coordinator will educate the local students on the importance of preserving local flora and fauna.	-
32	The purpose of green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the	Agreed. In consultation with the DFO, State Agriculture University, the green belt will be made around the boundary of lease area to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated	-

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	appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.		
33	Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner	Agreed. Taller/one-year old Saplings will be planted as per the advice of local forest authorities/botanist/ Horticulturist with regard to site specific choices.	-
34	A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	The Disaster management Plan has been prepared and included in the EIA report of chapter 7.	169
35	A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	Risk Assessment and management Plan has been prepared and included in the EIA report. Refer clause 7.2 in Chapter 7.	168
36	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	An occupational Health impact of the Project has been anticipated and the appropriate mitigation measures are given in Chapter 4 of EIA report.	160
37	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with	Yes, it is given in EIA report in chapter -4.	160

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	budgetary allocations.		
38	The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	The study on Socio-economic for the proposed project is mentioned in clause 3.13 of chapter 3.	103 to 115
39	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.	Not applicable.	-
40	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	The benefits of the proposed project are given detail in chapter 8.	175 to 178
41	If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.	Under Process.	-
42	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	The EMP for the proposed project is mentioned in Chapter 10 along with EMP cost. The affidavit stating to abide the EMP for the entire life of mine will be attached in the EIA report.	186
43	Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.	Agreed.	-

Standard Terms of Reference

S. No	Conditions	Compliance	P. No
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.	NA	-
2.	A copy of the document in support of the fact that the Proponent is the right full lessee of the mine should be given.	The Director of Geology and Mining, Chennai grant of Granite quarry lease, G.O. No. (3D)-10 Industries (MMB-2) Department, Dated: 11.08.2017	234
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.	Contents in all documents are synchronizing with one another in terms of mine lease area, production levels, waste generation, its management and quarrying technology.	-
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).	The area is bounded by northern latitude of 11°21'44.7411" to 11°21'32.7629" N and eastern longitude of 77°12'20.8758" to 77°12'38.7912" E. Toposheet No. 58E/3. Details are given in Chapter 1. Geomorphology & Geology of the area is given in fig no 2.11 in Chapter 2. Land Use details given in Table 3.18 and also refer fig No.3.24. Land use within the lease area is mentioned in Table No 2.8 in Chapter 2.	6 29 120 & 121 34
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,	Survey of India Toposheet No. 58E/3 in 1:50,000 scale indicating physical features of geological map of the area, geomorphology of land forms of the area, existing minerals and	5 to 6, 29

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	existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.	quarrying history of the area, important water bodies, streams and rivers and soil characteristics is given in figs 1.1, 1.2, 3.26, and 3.27.	
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 details of land proposed for mining activities are given in Table No 2.8 of Chapter 2.	34
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 in to 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.	The proponent M/s. M.P. Granite is very much conscious of complying with the Environmental Regulations with systematic mining. The proponent will comply with the EC conditions and Consent to Operate issued by the TNPCB with stipulated time.	-
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.	Quarry Safety pertaining to the failure of pit slope in open cast quarrying is described in Table 7.1 in chapter 7. Safety for blasting is given under Table 10.1 in chapter 10.	169 181
9.	The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.	The Study area of the existing mining project comprises of 10km zone around the mining Lease boundary has been prepared. Data like reserves, waste generation up to life of mine have been incorporated in Chapter 2 of the EIA report.	42
10.	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife	Land use of the study area, parks, migratory routes of fauna, water bodies, human	117

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	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.	settlements, other existing mines/ industrial activity and other ecological features are shown in delineating forest area, agricultural land, grazing land, wildlife sanctuary and national parks. Refer Clause 3.11.6 in Chapter 3. Land use plan of the mine lease area is given in Table No.2.8.	34
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.	Details of the dump design area given in Chapter - 2. The mining operation will not disturb/relocate any villages and hence R & R plan not required. Refer Chapter 7.	47 171
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.	Not applicable. The mining area does not involve any forest land. Refer Table 2.2 in chapter-2.	18 & 19
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 mining area does not involve any forest land.	18 & 19
14.	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.	Not Applicable.	-
15.	The vegetation in the RF / PF areas in the	The details of reserve forest located within study	18 &

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	study area, with necessary details, should be given.	area of 10km radius are given in chapter 2. Refer Table No 2.2 in chapter-2. The details of flora within the study area are given detail Refer Clause 3.9 in Chapter 3.	19 87 to 103
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.	Eco biodiversity (EB) study has been done for the project which details the impact on surrounding wildlife and mitigation measures are discussed and given in Chapter-4.	151
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.	There is no National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors and Tiger/ Elephant Reserves within the 10 km radius of the mining lease area. Refer Page No. Refer Table 2.2 in chapter -2.	18 & 19
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	Details of Flora and Fauna found in the study area are given in Chapter 3 in the EIA Report. No scheduled list of fauna is found in this study area.	87 to 103

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	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.	The project site is neither falling under 'Aravalli range' not it is located in proximity to area declared as Critically Polluted Area.	-
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).	Not Applicable. Bay of Bengal is located 145 km away from the lease area towards the east side. Hence the project does not attract the C.R.Z. Notification.	18 & 19
21.	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need-based sample survey, family-wise, should be undertaken to assess their requirements, and action programmers prepared and submitted accordingly, integrating the sectoral programme 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.	The multicolour granite quarry project does not involve any kind of displacement of the population since the mining will be concentrated only in the quarry area. Hence, Rehabilitation of settlement is not anticipated under this project as it is not required. The Socio-Economic study detailed in included in Clause 3.10 of Chapter 3.	103 to 115
22.	One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post	Monitoring data for a period of three months (December 2025– February 2026) on Air quality,	50 to 115

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	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.	Water quality, Noise level, Soil, Flora and Fauna in the core and buffer zones is collected and complied data wise in the EIA report. Refer Chapter 3.	
23.	Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.	Air quality modeling carried out for prediction of impact of the project on the air quality of the area, which is included in Chapter 4, Refer Clause 4.1. Wind Rose Pattern is shown in fig. 3.1 in Chapter 3.	127 52
24.	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.	The water requirement for the Project is 7.0 KLD; the details are given in Chapter – 2. A detailed water balance is shown in fig 4.4 in Chapter 4.	47 146
25.	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	The granite quarry project requires water for drinking, dust suppression and plantation. Drinking water is obtained from Mineral water industries. For Dust suppression, green belt and	-

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		other uses water will be obtained from ordinary water vendors through water tank. There is no extraction of ground water within lease area for the quarry activity. So, no clearance from the Competent Authority is required.	
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.	At the end of the project the quarried-out pit will be used as Water storage pond. It will increase the agricultural activity in the surrounding villages. The rainwater harvesting and rate of evaporation is given in Chapter 7.	172
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.	The impacts of the project on the water quality are assessed and necessary safe guard measures will be provided. Refer Clause 4.6 in Chapter 4.	146
28.	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.	The mining operation will not intersect the ground water table. The depth of mining is 35m bgl whereas the depth of water table is 60m bgl. So, No NOC is required from CGWA for the proposed project. However detailed Hydro geological study has been carried out and incorporated in Chapter 3.	73
29.	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.	There is no stream crossing inside the mining lease area and hence there is no need of modification/diversion.	-
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.	Elevation of the quarry area is 316m above MSL. The mining operation will be at a maximum depth of 45m bgl. The ground water table is at 60m bgl from the surface in the adjacent tube well, and mine workings are above groundwater table.	-
31.	A time bound Progressive Greenbelt	Phase-wise plan of plantation and Compensatory	158

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	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.	Afforestation and the plant species selected for green belt. The proposed afforestation plan is given in Table 4.29 of Chapter 4.	
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.	The transportation of minerals will be carried out through the existing roadways during day work hours only with no increase in the existing traffic pattern. Refer Chapter 2 in fig no: 2.6.	22
33.	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	Details of the onsite shelter and facilities to be provided to the mine workers are discussed in chapter 2 of clause 2.13.	48
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.	Conceptual mining plan is given in Chapter 2. Refer Fig 2.19.	45
35.	Occupational Health impacts of the Project should be anticipated and the proposed	Occupational Health impacts of the Project are detailed in EIA report. Refer Clause 4.13 of	160

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	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.	Chapter 4.	
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.	All control measure for public health implications, air emission, noise control, and waste management will be duly considered as per norms and the remedial measures are detailed along with budgetary allocation in Chapter 10.	186
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.	Details of community welfare activities to be done for the local community along with proposed budget have been incorporated in EIA Report. Refer Chapter 8.	178
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.	Environmental Management Plan (EMP) for the proposed quarry project has been prepared and incorporated in Chapter 10.	181
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.	Public hearing yet to be conducted in 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.	No litigation pending against the project.	-
41.	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly	Project Cost – 31.92 L EMP cost- 0.78 L	48

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	spelt out.		
42.	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	A detailed Risk and Disaster Management Plan has been prepared and detailed in Chapter 7.	169
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.	Project Benefits have been detailed in Chapter 8.	175
44.	Besides the above, the below mentioned general points are also to be followed: - Executive Summary of the EIA/EMP Report. - All documents to be properly referenced with index and continuous page numbering. - Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated. - 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. - Where the documents provided are in a language other than English, an English translation should be provided. - The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted. - While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No.	Yes, Yes, all the document to be proper referenced with indexed and page no also. Yes, Yes, We are prepared in EIA draft English and Tamil No Yes,	-

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	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 maybe 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.	PH yet to be conducted after any change, we have submitted Form -I and PFR. Under Process. We have included in the surface plan of the area indicating contours of main topographic features, drainage and mining area, geological maps and sections and sections of the mine pit and external dumps.	

CHAPTER 1: INTRODUCTION

1.1. PURPOSE OF THE REPORT

The applicant, M/s. M.P.Granite having registered office at No.131/29, RR Complex, Kollapatti, Animoor Post, Trichengode Taluk, Namakkal District, Tamil Nadu-637211 has applied for grant of Granite quarry lease to the secretary to Government, Industries Dept, Fort St. George, Chennai-9 through District Collector, Karur District and Director of Geology and Mining, Chennai for quarrying Multicolour Granite from a patta land over an extent of 4.01.5 Hectares in S.F. Nos: 260/A1, 260/A2, 260/A3, 260/C, 262/A3, 262/A4, 262/A5, 262/A6, 262/A7, 262/A8, 262/B1 and 262/B2 in K.Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu.

M/s. M.P.Granite is a partnership firm. The Partnership deed executed on 09.07.2012 with two partners under Indian Partnership Act, 1932. The details of the partners are given below.

S. No	Name of the Partners	Designation
1	Tmt. N.Madhavi	Partner
2	Thiru. G.P. Panneer	Managing Partner

Thiru G.P.Panneer is the partner of the firm and he is an authorised person for signing all the documents on behalf of this company.

The principal secretary, Govt. of Tamil Nadu directed the applicant M/s. M.P.Granite, through his precise area communication letter No. 11030/MMB.2/2016-1, Dated: 17.10.2016 to get approved mining plan and obtain Environmental clearance from the Environment Impact Assessment Authority (SEIAA) as per the EIA Notification, 2006 and its amendments for grant of quarrying for Multicolour Granite over an extent of 4.01.5 hectares of patta land in S.F. No's: 260/A1, 260/A2, 260/A3, 260/C, 262/A3, 262/A4, 262/A5, 262/A6, 262/A7, 262/A8, 262/B1 and 262/B2, K.Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu for a period of 20 years.

Accordingly, Mining Plan is prepared under Rule 12 & 13 of Granite conservation and development Rules, 1999 for quarrying Multicolour Granite with due consideration of environmental parameters so as to obtain Environmental clearance (EC) from Environment Impact Assessment Authority (SEIAA) vide MoEF&CC Notification S.O 141(E) dated 15th January, 2016. The mining plan was approved by Department of Geology and Mining, Guindy, Chennai and the PP obtained EC from DEIAA. The Government has issued vide letter

G.O.(3D) No.10 Industries (MMB.2) Department dated: 11.08.2017. The lease was executed on 18.08.2017 and expired on 17.08.2037. The mining plan and EC was expired on 01.08.2022.

Now the PP obtained Scheme of Mining Plan approval from the Commissionerate of Geology and Mining, Chennai, vide his letter Roc No. 4342/MM2/2022 Dated. 29.09.2022 for the period of 2022-23 to 2026-27.

The cluster letter issued by Deputy Director, Department of Geology and Mining, Karur vide No.2374/MM2/2022 Dated 12.12.2025 for M/s. M.P.Granite, (4.01.5 Ha) the lease area of above said there is 3 existing quarries comes under the cluster of 500m radius. Namely M/s. M.P. Granite it's an extent of 4.01.50 Ha, 2.43.5 Ha and 4.45.0 Ha respectively the total area of cluster is 13.90.0 Ha. Which is above 5 hectares hence the proposed project comes under Category B1 as per EIA Notification 2006 and its amendments. Now the application has been made for Terms of Reference for carrying out EIA studies. The project cost is about Rs. 31.92 lakhs and EMP cost is Rs. 0.76 lakhs.

Proposed Quarries

1. M/s. G.P Exports – 3.00.0 Ha

Existing Quarries

1. M/s. M.P Granites - 2.43.50 Ha
2. M/s. M.P Granites - 4.01.50 Ha
3. M/s. M.P Granites - 4.45.50 Ha

Abandoned Quarries

Nil

As the projects comes under B1(cluster) category, the applicant made TOR application individually the PARIVESH website for carrying out EIA Studies for obtaining Environmental clearance. The details are given in below table 1.1.

Table 1.1 Details on Terms of Reference

S. No	Name of Applicant	ToR Application No	SEAC and SEIAA Meeting	TOR Identification No
1	M/s. M.P Granite	SIA/TN/MIN/570774/2026, Dated 11.03.2026	697 th SEAC Meeting dated 26.03.2026 & 990 th SEIAA Meeting dated 07.04.2026	TO26B0108TN5488 325N Dated: 13.04.2026

The draft EIA report has been prepared based on the Terms of Reference issued by SEIAA. The points raised in the public hearing and the commitments of the project proponent will be given detail in the final EIA Report which will be submitted to SEAC/SEIAA-TN for obtaining environmental clearance. The production achieved by the Lessee since inception of mining activity as against approved Mining plan/Scheme is given below.

1.2. IDENTIFICATION OF PROJECT AND PROJECT PROPONENT

1.2.1. IDENTIFICATION OF PROJECT

Table 1.3 Details on Project and Project Proponent

Particulars	Details
Address of the Project Proponent	M/s. M.P.Granite , No.131/29, RR Complex, Kollapatti, Animoor Post, Trichengode Taluk, Namakkal District, Tamil Nadu-637211
S. F. No	260/A1, 260/A2, 260/A3, 260/B1, 260/B2, 260/B3, 260/C, 262/A3 (P), 262/A4 (P), 262/A5 (P), 262/A6 (P), 262/A7, 262/A8 (P), 262/B1 & 262/B2
Lease Area	4.01.5 Hectares
Site Location	K. Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu
Geographical Co-ordinates	Latitude: 10°46' 47.1743"N to 10°46'54.9115"N Longitude: 78°05' 01.7543"E to 78°05'09.5432"E
Toposheet No.	58J/1
Precise Area Communication	Rc. No. 11030/MMB.2/2016-1, Dated: 17.10.2016
Mining Plan Approval	Rc. No. 4342/MM2/2022 Dated. 29.09.2022
Period of Lease	20 years
AD Cluster letter	Rc. No. 2374/MM2/2022 Dated 12.12.2025

Table 1.4 Land Particulars

State & District	Taluk	Village	S.F. No.	Total Extent of area (Ha)	Ownership Occupancy
Tamil Nadu & Karur	Karur	K.Pichampatti	260/A1, 260/A2, 260/A3, 260/B1, 260/B2, 260/B3, 260/C, 262/A3 (P), 262/A4 (P), 262/A5 (P), 262/A6 (P), 262/A7, 262/A8 (P), 262/B1 & 262/B2	4.01.5	Own patta land

1.3 BRIEF DESCRIPTION OF THE PROJECT

1.3.1. Nature and Size of the Project

Open cast, semi-mechanized mining will be adopted to extract granite of required size from the area for which lease applied for. Before opening a mine, several aspects should be considered like construction of semi-permanent structures, planning for the development / production works, formation of faces, lying of approach road to various benches for Movement of dumpers, recruitment of man power, deployment of machinery, selection of dump sites, stacking yards etc. Top soil/overburden materials shall be removed prior to development of working benches. The bench height should not exceed 5m and the bench width should not less than the bench height. The slope of the benches should not exceed 45° from horizontal.

Geological resources and Mineable reserves: Geological resource of total ROM is estimated to be 4,04,622m³ including the resources of safety zone of which, Multicolour granite is about 2,42,773m³ at the recovery of 60% and granite rejects is about 1,61,849m³. The mineable reserve of total ROM is estimated as 2,73,726m³ by deducting the reserve safety zone, block in benches from the total mineable resources of which, Multicolour granite is about 1,64,236m³ at the recovery of 60% and granite rejects are 1,09,490m³ of 40% up to a depth of 45m below the ground level (Refer Plate No's. VIII).

Proposed production schedule: Total proposed production of ROM is about 59,400m³ out of which, Multicolour granite is about 35,640m³ at the recovery of 60% and granite rejects are 23,760 @40%, up to a depth of 40m below the ground level for first five years scheme of mining plan period. Annual Peak production is RoM 12,150m³ of Multicolour granite (Refer Plate No. VIIIA).

1.3.2. Location of the Project

The area is accessible from Karur via Palayam to reach Gudalur further travel to 4.5km reach the site. The NH-44 road is situated about 13.7km on the North-western direction, connecting Dindigul- Salem. S.H.74 is situated at a distance of 4.6 km on Northeast direction connecting Dindigul- Karur. The village road is located on the western side.

The area is marked in the survey of India Toposheet No 58J/1. The area lies in the northern latitude of 10°46' 47.1743"N to 10°46'54.9115"N and eastern longitude of 78°05' 01.7543"E to 78°05'09.5432"E.

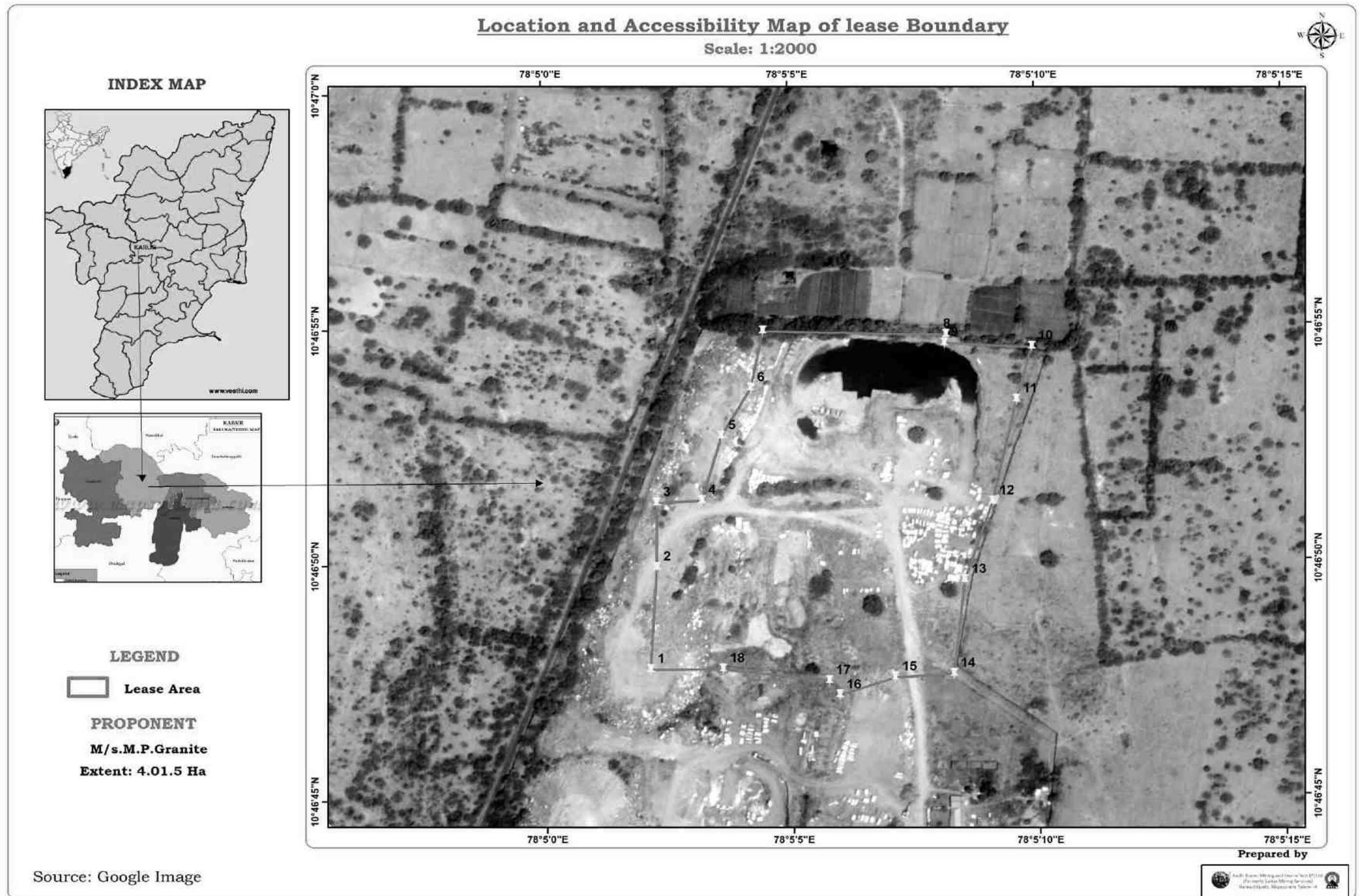


Fig No 1.1 Google earth image showing location and route for existing multi color granite quarry

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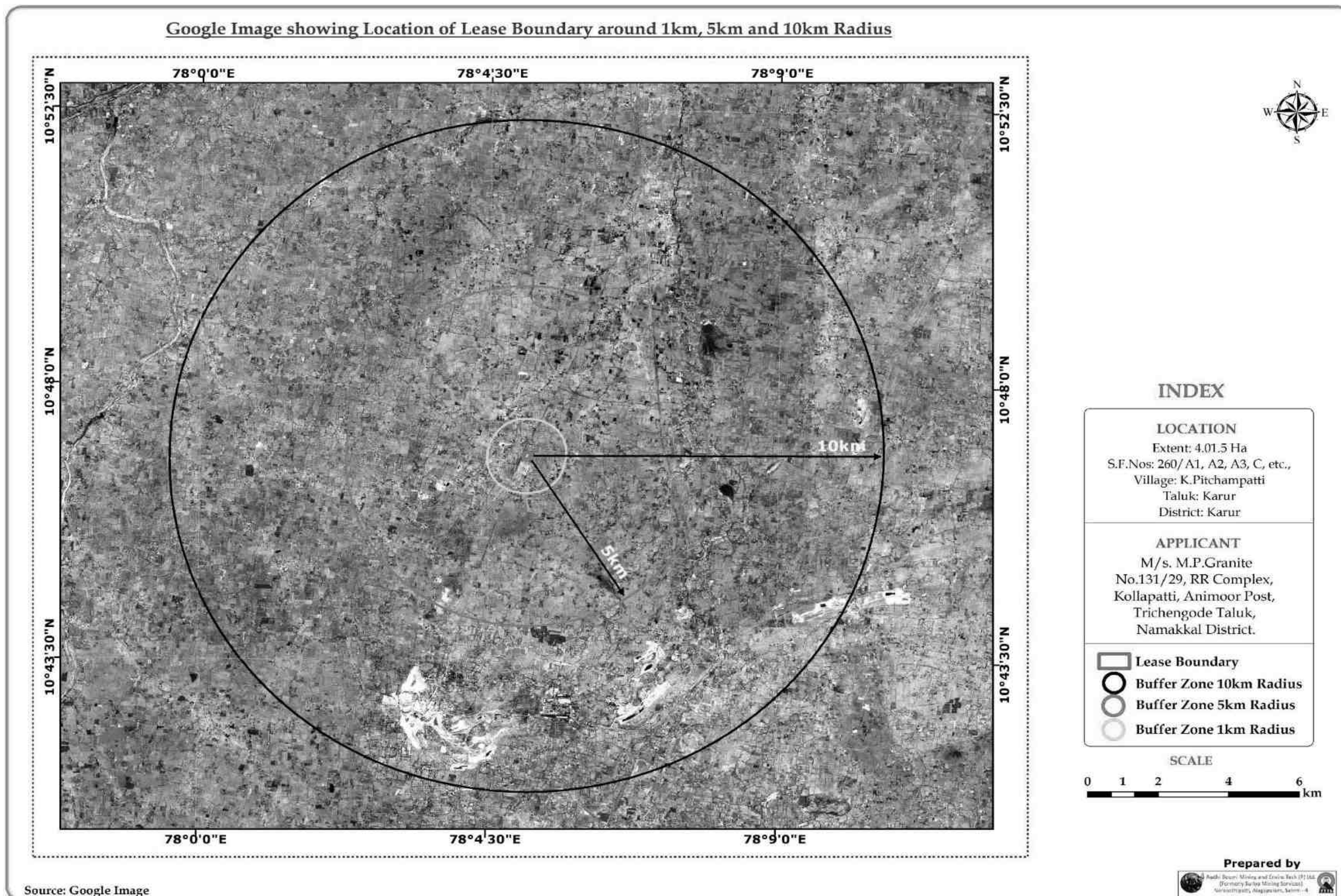


Fig No 1.3 Google earth image showing 300m and 500m radius around mining lease area

1.4. SCOPE OF THE PROJECT

The proposal for Environmental Clearance of existing Multi color Granite Quarry of **M.P. Granite** requires Environmental Impact Assessment (EIA) to be carried as per with Standard and additional TOR specified by the SEAC. Based on the documents furnished for TOR, the Committee observed that the project falls under the category B1 and schedule 1(a) of the EIA Notification, 2006. This is primarily to ascertain the potential impacts of the mining activity for environmental components, prediction and evaluation of environmental impacts to describe the Environmental Management Plan.

The EIA/EMP report also includes an independent chapter prepared by an Accredited Consultant. The collection and analysis of air, water and soil sample required for preparation of EIA report data will be done by an Environmental Laboratory duly notified under the Environment (Protection) Act, 1986, accredited by NABET/NABL.

The scope of the study includes a detailed characterization of the environment in an area of 10km radius of the mine lease area. The EIA will cover one season (Three months) baseline environmental data, as per the ToR and guidelines of SEIAA, Tamil Nadu.

In order to assess the likely impacts arising out of this project on the surrounding environment and evaluating the quantum of likely negative impacts, if any, from this mine, the proponent has selected Aadhi Boomi Mining and Enviro Tech Pvt. Ltd., Salem as their environmental EIA consultant for this project. ABM prepared an Environmental Impact Assessment (EIA) report and made an effective Environment management Plan (EMP) for various environmental components likely to be affected.

The scope covers all the conditions outlined in the TOR prescribed by SEIAA, Tamil Nadu for this mining project vide Letter No. TO26B0108TN5488325N Dated: 13.04.2026 and their compliance thereof is attached in EIA report.

1.5. METHODOLOGY OF EIA STUDY

The EIA study includes detailed baseline data generation and characterization of existing status of environment in an area of 10 km radius with the project as its center for various environmental components viz. Air, Noise, Water, Land, Biological and Socio-Economic components and other parameters of interest. The envisaged scope of EIA is as follows

- ❖ To assess the present status of air, noise, water, land, biological and socio-economic components of environment.

- ❖ To identify and quantify the significant positive and negative impacts due to various mining operation in various components of the environment through identification and prediction of impacts.
- ❖ To prepare a detailed Environment Management Plan (EMP) for implementation of mitigation measures.
- ❖ To suggest a monitoring program to evaluate the effectiveness of mitigation measures.
- ❖ Post-project environmental quality monitoring program to be followed.
- ❖ To prepare a capital and running cost estimates for Environmental Management Plan (EMP).

The baseline monitoring study has been carried out during the summer season (December 2025 to February 2026) for various environmental components to assess the anticipated impact on the environment and suggest suitable mitigation measures for likely adverse impacts due to the project. Environmental attributes, source and frequency of monitoring are outlined in Table No.1.5.

Table 1.5 Environment Attributes

Attributes	Parameters	Source and Frequency
Meteorology	Temperature, Wind Speed, Wind Direction, Rain fall, Relative Humidity.	Secondary sources of IMD station, Karur, Hourly recorded data for the period of 3 months.
Ambient Air Quality	PM ₁₀ , PM _{2.5} , SO _x , NO _x	24 hourly samples twice a week for three months at 5 locations.
Water Quality	Physical, Chemical and Biological parameters	Grab sampling at 5 locations once during study period.
Noise levels	Noise levels in dB(A)	At 5 locations data monitored once in a Month for three months for 24 hours during EIA study.
Soil Characteristics	Physical and Chemical parameters	Once at 5 locations during study period
Hydrogeology	Drainage area and pattern, nature of streams, aquifer characteristics, recharge and discharge areas	Based on data collected through field investigation devices once in a month.
Land use	Existing land use for different categories	Based on Survey of India Toposheet and Google Earth imagery
Ecology and Biodiversity	Existing terrestrial flora and fauna within 10 km radius circle	Field observation and utilization of Secondary data.
Socio-Economic aspects	Socio-economic and demographic characteristics, worker characteristics	Based on collection of primary data through questionnaire analyses and utilization of Secondary data from census records (2001 -2011), statistical hand books, Toposheets, health records and relevant official records.

Risk assessment and Disaster Management Plan	Identify areas where disaster can occur by fires and explosions and release of toxic substances if any	Based on the findings of Risk Modeling done for the risk associated with explosives, and land-slips.

The impacts of the project activities on environmental components can be quantified through EIA Studies within the impact zone of the project activities. The results of EIA Studies form the basis for the preparation of a viable EMP for mitigation of the adverse impacts.

CHAPTER – 2: PROJECT DESCRIPTION

2.1. NEED FOR THE PROJECT

The applicant, M/s. M.P.Granite having registered office at No.131/29, RR Complex, Kollapatti, Animoor Post, Trichengode Taluk, Namakkal District, Tamil Nadu-637211 has applied for grant of Granite quarry lease to the secretary to Government, Industries Dept, Fort St. George, Chennai-9 through District Collector, Karur District and Director of Geology and Mining, Chennai for quarrying Multicolour Granite from a patta land over an extent of 4.01.5 Hectares in S.F. Nos: 260/A1, 260/A2, 260/A3, 260/C, 262/A3, 262/A4, 262/A5, 262/A6, 262/A7, 262/A8, 262/B1 and 262/B2 in K.Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu.

The principal secretary, Govt. of Tamil Nadu directed the applicant M/s. M.P.Granite, through his precise area communication letter No. 11030/MMB.2/2016-1, Dated: 17.10.2016 to get approved mining plan and obtain Environmental clearance from the Environment Impact Assessment Authority (SEIAA) as per the EIA Notification, 2006 and its amendments for grant of quarrying for Multicolour Granite over an extent of 4.01.5 hectares of patta land in S.F. No's: 260/A1, 260/A2, 260/A3, 260/C, 262/A3, 262/A4, 262/A5, 262/A6, 262/A7, 262/A8, 262/B1 and 262/B2, K.Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu for a period of 20 years.

Accordingly, Mining Plan is prepared under Rule 12 & 13 of Granite conservation and development Rules, 1999 for quarrying Multicolour Granite with due consideration of environmental parameters so as to obtain Environmental clearance (EC) from Environment Impact Assessment Authority (SEIAA) vide MoEF&CC Notification S.O 141(E) dated 15th January, 2016. The mining plan was approved by Department of Geology and Mining, Guindy, Chennai and the PP obtained EC from DEIAA. The Government has issued vide letter G.O.(3D) No.10 Industries (MMB.2) Department dated: 11.08.2017. The lease was executed on 18.08.2017 and expired on 17.08.2037. The mining plan and EC was expired on 01.08.2022.

The cluster letter issued by Deputy Director, Department of Geology and Mining, Karur vide No.2374/MM2/2022 Dated 12.12.2025 for M/s. M.P.Granite, (4.01.5 Ha) the lease area of above said there is 3 existing quarries comes under the cluster of 500m radius. Namely M/s. M.P. Granite it's an extent of 4.01.50 Ha, 2.43.5 Ha and 4.45.0 Ha respectively the total area of cluster is 13.90.0 Ha. Which is above 5 hectares hence the proposed project comes under Category B1 as per EIA Notification 2006 and its amendments. Now the application has been

made for Terms of Reference for carrying out EIA studies. The project cost is about Rs. 31.92 lakhs and EMP cost is Rs. 0.76 lakhs.

Open cast, semi-mechanized mining will be adopted to extract granite of required size from the area for which lease applied for. Before opening a mine, several aspects should be considered like construction of semi-permanent structures, planning for the development / production works, formation of faces, lying of approach road to various benches for Movement of dumpers, recruitment of man power, deployment of machinery, selection of dump sites, stacking yards etc. Top soil/overburden materials shall be removed prior to development of working benches. The bench height should not exceed 5m and the bench width should not less than the bench height. The slope of the benches should not exceed 45° from horizontal.

Geological resources and Mineable reserves: Geological resource of total ROM is estimated to be 4,04,622m³ including the resources of safety zone of which, Multicolour granite is about 2,42,773m³ at the recovery of 60% and granite rejects is about 1,61,849m³. The mineable reserve of total ROM is estimated as 2,73,726m³ by deducting the reserve safety zone, block in benches from the total mineable resources of which, Multicolour granite is about 1,64,236m³ at the recovery of 60% and granite rejects are 1,09,490m³ of 40% up to a depth of 45m below the ground level (Refer Plate No's. VIII).

Proposed production schedule: Total proposed production of ROM is about 59,400m³ out of which, Multicolour granite is about 35,640m³ at the recovery of 60% and granite rejects are 23,760 @40%, up to a depth of 40m below the ground level for first five years scheme of mining plan period. Annual Peak production is RoM 12,150m³ of Multicolour granite (Refer Plate No. VIIIA).

Granite is one of the important materials for building construction. Granite is used in many outdoor and indoor projects. Outdoor projects like bridges, monuments, buildings, paving etc. Indoor projects like countertops, floor etc. Using granite for kitchen tops, shelves, tabletops etc makes it look elegant. Apart from elegance, it has great strength and is durable. It looks stylish and is easy to clean. Granite sinks like the under-mount sink, angular basin, modern or pedestals sink are some different granite basins available. These are water-resistant and maintenance is also easy. So, it is needy to excavate the granite for economic and infrastructure development of our Nation.

2.2 DEMAND – SUPPLY GAP

As granite rough blocks play a significant role as raw material in the construction sector, the demand exists in the market throughout the year. Thus, quarrying of the mineral finds consumer easily in the local market.

2.3 LOCATION

The area is marked in the survey of India Toposheet No 58J/1. The area lies in the northern latitude of 10°46' 47.1743"N to 10°46'54.9115"N and eastern longitude of 78°05' 01.7543"E to 78°05'09.5432"E Latitude and Longitude of all boundary Pillars of are given in below Table 2.1.

Table 2.1 Coordinates of Quarry lease Boundary Pillars as taken by DGPS for Geo Referencing of Lease Plan is given as under

ID	Latitude (Global)	Longitude (Global)
1	10°46'47.7412"N	78° 5'1.7543"E
2	10°46'49.9121"N	78° 5'1.8930"E
3	10°46'51.2841"N	78° 5'1.9035"E
4	10°46'51.3225"N	78° 5'2.8201"E
5	10°46'52.6933"N	78° 5'3.2321"E
6	10°46'53.7010"N	78° 5'3.8352"E
7	10°46'54.9115"N	78° 5'4.0920"E
8	10°46'54.8020"N	78° 5'7.8005"E
9	10°46'54.6224"N	78° 5'7.7734"E
10	10°46'54.5301"N	78° 5'9.5432"E
11	10°46'53.4131"N	78° 5'9.2224"E
12	10°46'51.2552"N	78° 5'8.7244"E
13	10°46'49.5934"N	78° 5'8.1405"E
14	10°46'47.6055"N	78° 5'7.9031"E
15	10°46'47.5342"N	78° 5'6.7110"E
16	10°46'47.1743"N	78° 5'5.5833"E
17	10°46'47.4724"N	78° 5'5.3734"E
18	10°46'47.7434"N	78° 5'3.2214"E



Fig No. 2.1 Google image showing lease boundary with its Coordinates

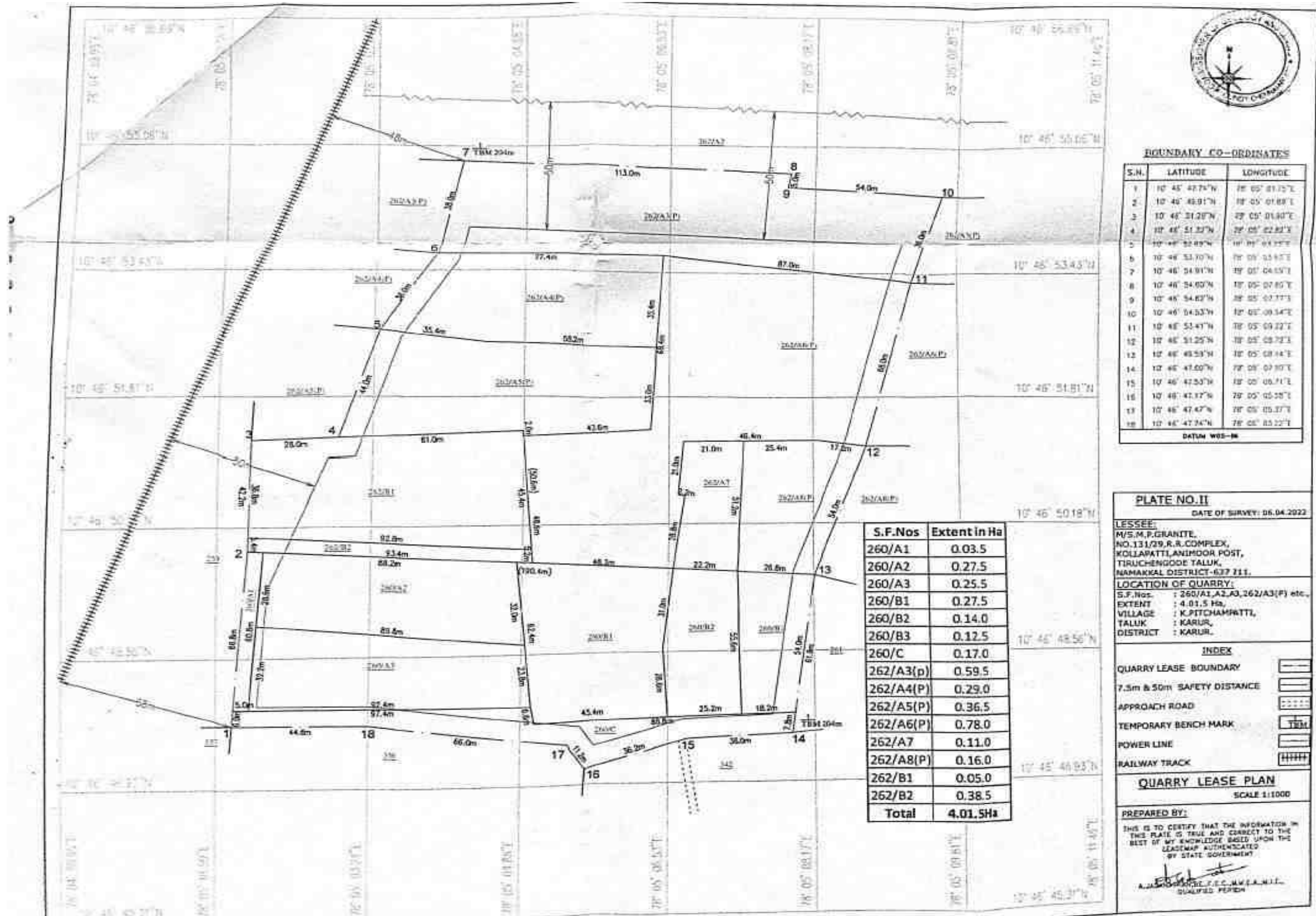


Fig No.2.2 Lease Plan

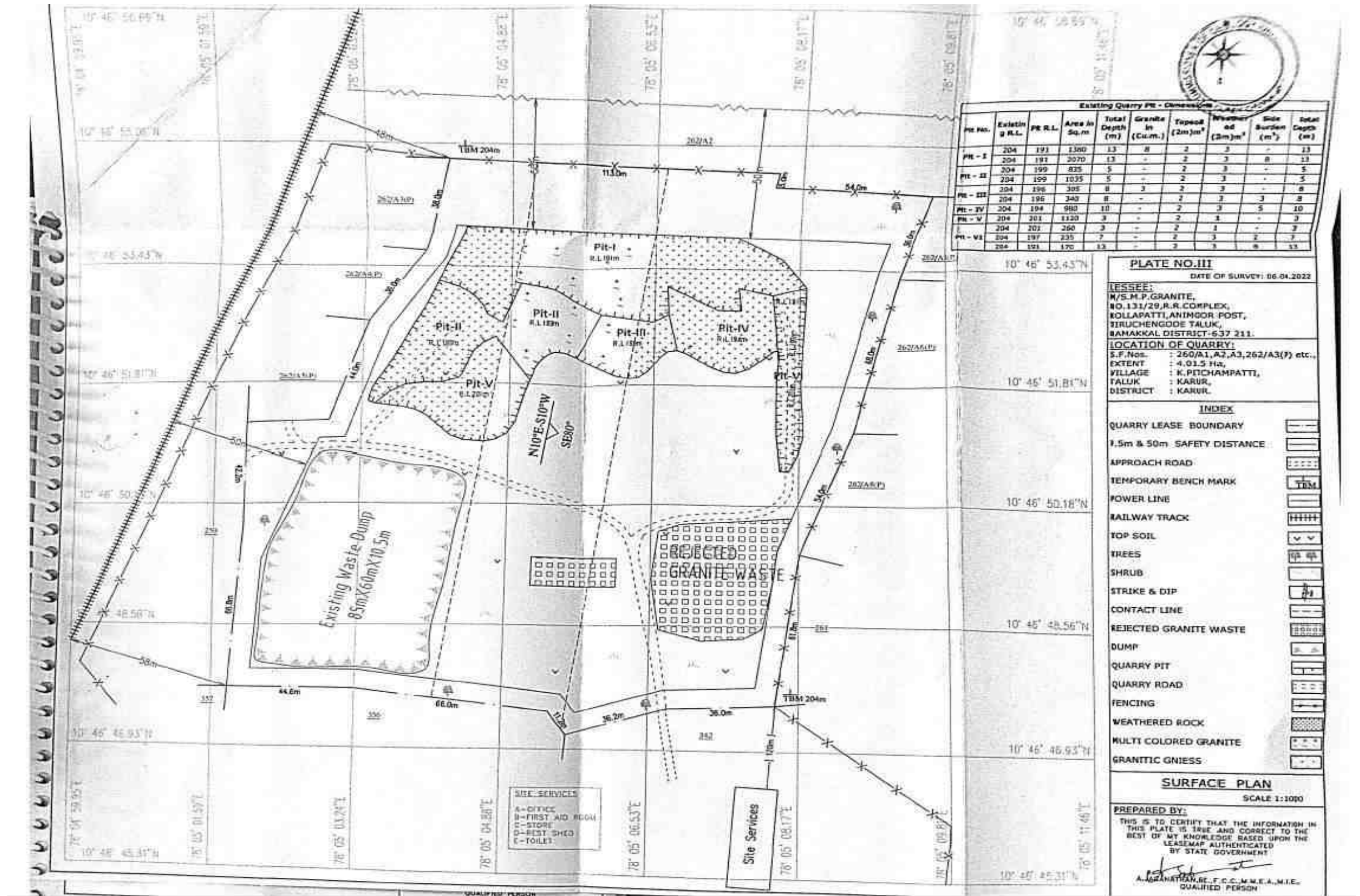


Fig No.2.3 Surface Plan



Fig No. 2.4 Photograph shows general view of the texture of the Multi colour granite.

Table 2.2 Environmental Settings

FEATURE	DETAILS
Name of the Proponent and address	M/s. M.P. Granite, No.131/29, RR Complex, Kollapatti, Animoor Post, Trichengode Taluk, Namakkal District, Tamil Nadu-637211.
Existing/New Quarry	Existing
Survey number	260/A1, 260/A2, 260/A3, 260/C, 262/A3, 262/A4, 262/A5, 262/A6, 262/A7, 262/A8, 262/B1 and 262/B2
Geographical features	Latitude: 10°46' 47.1743"N to 10°46'54.9115"N Longitude: 78°05' 01.7543"E to 78°05'09.5432"E Toposheet No: 58J/1
Site Location	K. Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu.
Type of Project	Multicolour Granite
Category	B1
Mining lease area	4.01.5 Hectares
Depth of Mining	45 m bgl
Water Table	60 m bgl
Method of Mining	Open cast semi mechanized mining
Blasting Pattern	Chemical rock blasting, also known as non-explosive rock blasting, uses a chemical agent that expands when mixed with water, creating pressure that fractures the rock.
Types of Explosives	Chemical explosive is not proposed chemical powder called as Rock breaking powder Ca (OH) ₂ are also used for granite splitting.
Measures proposed to minimize ground vibrations due to blasting	It is an Eco-friendly quarry operation; diamond wire saw cutting method shall be practiced to this quarrying operation. Chemical rock blasting, also known as non-explosive rock blasting No impact on surroundings due to blasting.
Storage of Explosive	Not Applicable
Category	B1
Mining plan approval	Director of Geology and Mining, Chennai vide Rc. No: 4342/MM2/2022 Dated. 29.09.2022.
Period of Lease	20 years.
Does it attract any general	Not applicable

conditions specified in the EIA notification, 2006?	
Man Power	40 persons
Water requirement	Total water requirement – 7.0 KLD Drinking water – 1.0 KLD Domestic purposes – 2.0 KLD Water sprinkling – 2.0 KLD, Wet drilling and Green Belt 2.0 KLD. Source: Mineral water supply and nearby bore wells
EMP Cost	Rs. 0.76 Lakhs
Project Cost	Rs. 31.92 Lakhs
Nearest habitation	630m -South
Nearest Village	K. Pitchampatti -0.630m -South
PMHC	P. Kullampatti –3.2km –North
Nearest Town	Velliyanai – 8.0km –NE
Nearest Road	SH 74- 4.3km- NE NH 44 –13.4 km- NW Approach road for the Transportation is located at the north-eastern side.
Nearest Railway station	Velliyanai – 7.5 km –NE
Nearest Airport	Tiruchirapalli –68.6km –East
Water bodies	Tank- 0.83km East Erattai kulam -1.3km NW Kodaganar River-10.43km -NW, Amaravathi River-15.8km- NW, Cauvery River -23.7km NE Mayanur check dam -26km NE
Interstate Boundary	Tamil Nadu -Kerala Interstate Boundary –104km (SW)
Coastal Zone	Bay of Bengal – 145km - East
Reserve Forest	No reserve forest around 10km radius from the periphery of the lease applied area.
Wildlife Sanctuary	There is no wild life sanctuary or National Park found within 10km radius Kadavur Slender Loris Sanctuary – 23.0km – SE Vellode Birds Sanctuary–70km- North-western Side

Land use pattern	S. No	Description	Present Area (Ha)	Proposed land use (Ha)
	1	Mine working area	0.88.2	1.05.0
	2	Road	0.01.0	0.01.0
	3	Safety and Area under plantation	---	0.16.0
	4	Labour shed and office	---	---
	5	Waste Dump	0.51.0	0.51.0
	6	Garland drainage& settling tank	---	---
	7	Stocking Blocks	2.61.3	2.28.5
	Total		4.01.5	4.01.5



Fig No. 2.5 Google Earth Image showing 300m and 500 m radius around multicolor granite quarry

Transport Network Map showing Lease Boundary around 10km Radius

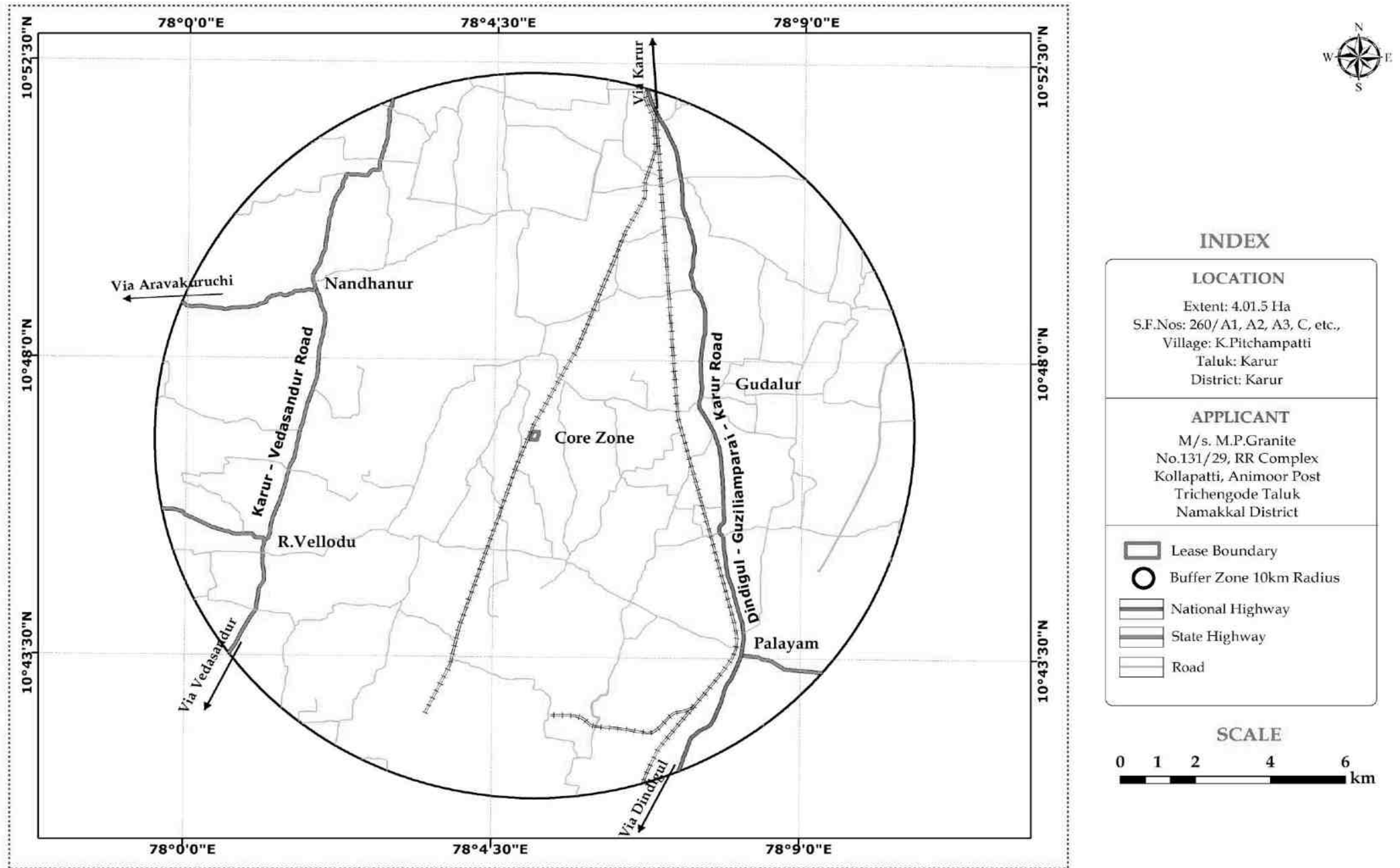


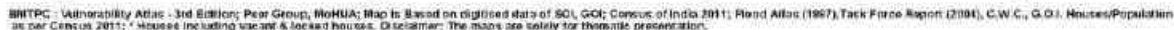
Fig No 2.6 Transport Network of 10 km radius around multicolor granite quarry

Proponent: M/s. M.P. Granite, Multicolour Granite Quarry, Karur District



The area falls under Zone-II, low damage risk zone as per BMTPC, Vulnerability atlas Seismic zone of India IS: 1893-2002.

Proponent: M/s. M.P. Granite, Multicolour Granite Quarry, Karur District



The area falls under Probable Maximum Surge Height of 5m.

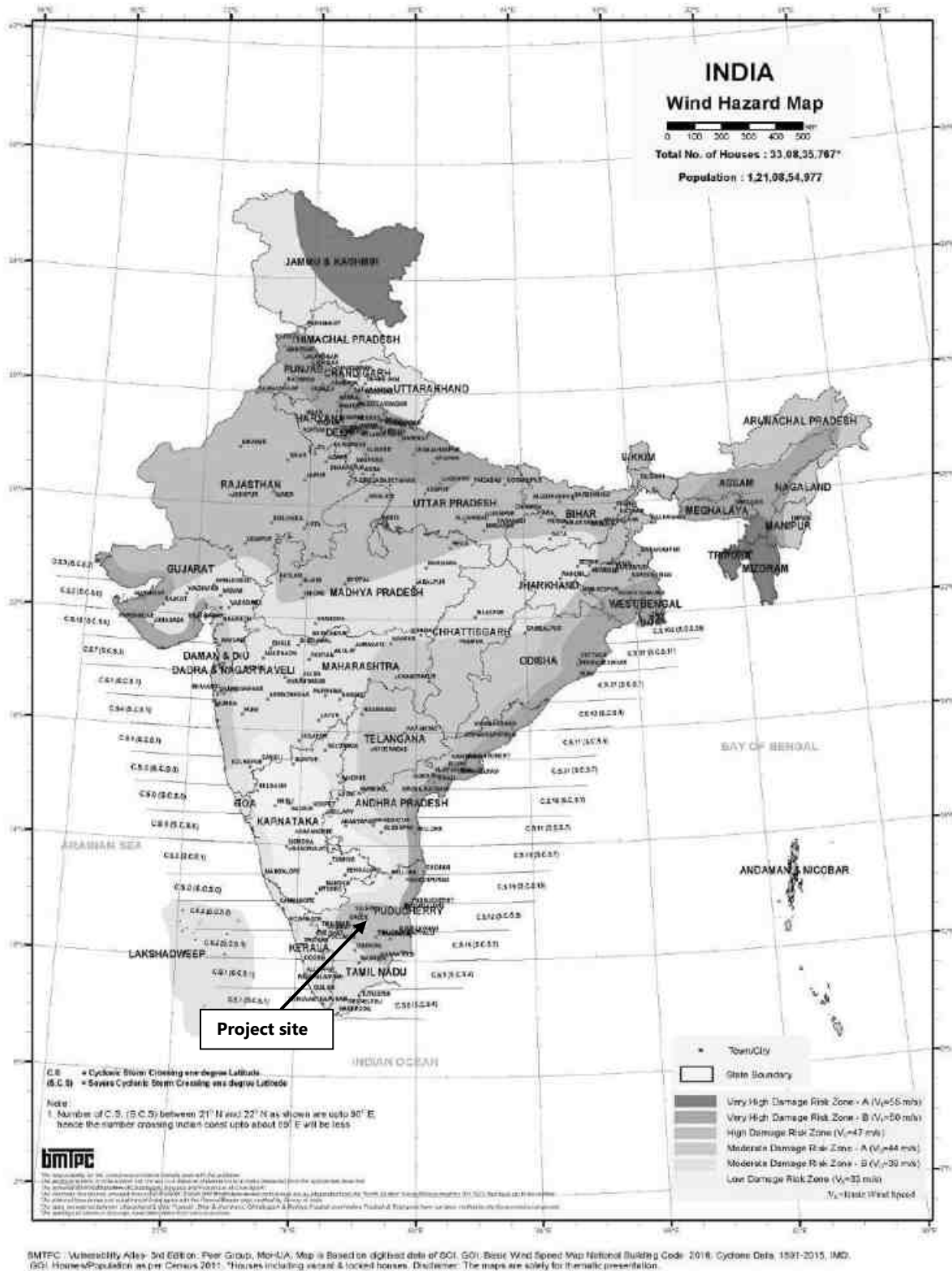


Fig No 2.9 Winds and Cyclone Hazard Map

The area falls Moderate Damage Risk Zone-B ($V_b = 44$ m/s).

2.4 Size or Magnitude of Operation

Table 2.3 Mining Details

Particulars	Details
Method of Mining	Open cast – mechanized mining
Geological resources	4,04,622m ³ (2,42,773m ³ at the recovery of 60% and granite rejects is about 1,61,849m ³ @ 40%)
Mineable reserves	2,73,726m ³ (1,64,236m ³ at the recovery of 60% and granite rejects are 1,09,490m ³ of 40%)
Production	59,400m ³ (35,640m ³ at the recovery of 60% and granite rejects are 23,760 @40%,) up to a depth of 40m during the first scheme of mining plan period.
Reject	23,760 m ³ (Rejects 40%)
Top soil	-
Side Burden	35,375 m ³
Weathered rock	5,592 m ³
Ore: Waste ratio	1: 5.4
Depth of Mining	45m bgl
Water Table	60mbgl
Road design	1: 10 inside the pit and ramp 1:16 for transport
Overall Pit Slope	45°
Period of Lease	20 years

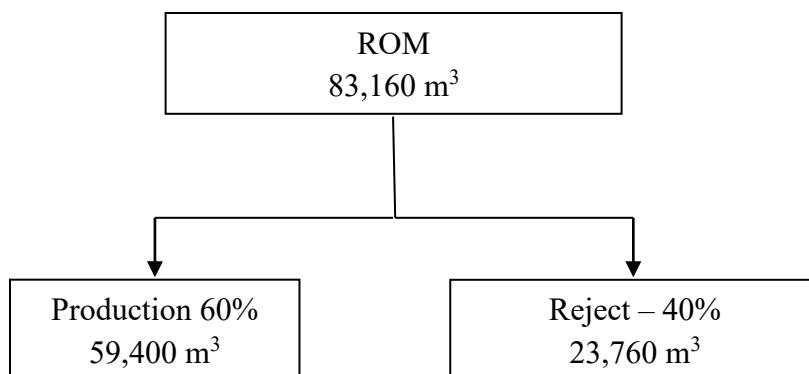


Fig No 2.10 Material Balance

2.5 Proposed schedule for approval and implementation

The proposed activity will be commenced only after obtaining Environment Clearance from SEAC/SEIAA, Tamil Nadu and CTE/CTO from TNPCB and other necessary clearance from concerned departments.

2.6 Technology and process description

2.6.1 Regional Geology

Karur District is comprised of Archaean peninsular gneisses such as Charnockites, Hornblende gneisses, Biotite gneisses, migmatites and limestones pinkish to yellow shades of granites and intruded by younger formations like pegmatite and quartz veins. The peninsular gneiss \ migmatite consists of biotite mica, plagioclase and orthoclase feldspars, Quartz, and accessories like magnetite and garnet are found as sheet rocks running to several km from west to east as a massive rock formation. The granite body found in the applicant's area is a narrow intrusive rock with yellow and brown shades upon polishing.

↑ The order of superposition of geological sequence are given as under,

<u>ERA</u>		<u>GROUP</u>		<u>LITHOLOGY</u>
Quaternary	-	Recent	-	Topsoil-Red soil (1-2m thick)
Proterozoic	-	Acid intrusive-		Pegmatite veins/quartz veins
		Migmatite	-	Granite
Archaean	-	Charnockites	-	Pyroxene Granulites, Charnockites
		Khondalite	-	Calc granulite/Crystalline limestone
				Peninsular gneisses and Schist

The regional rock is Charnockite and Biotite Gneisses. All are high grade metamorphic rocks, into which younger granites found intruded vertically.

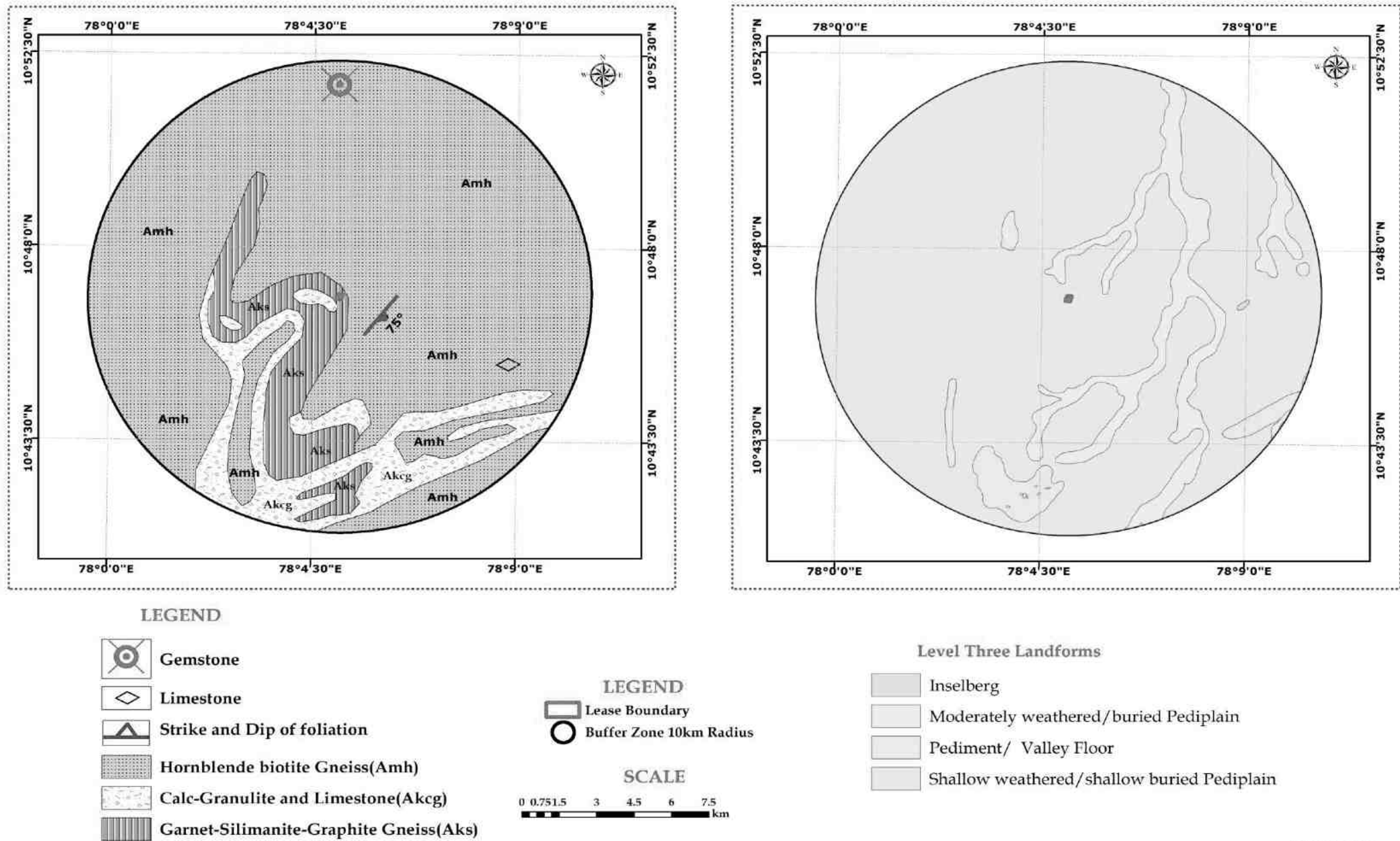
2.6.1.1 Exploration

The Systematic geological mapping and demarcation of the commercially viable granite deposit has been prepared with relevant structural features such as Contact of the country rock with commercial Multi colour granite deposit. Different joint pattern and their pattern of repetition etc. have been marked. Based on the features, estimation of geological and minable reserves has been arrived having considered the market potentiality. In the earlier approved mining plan, two core drilling proposal for exploration was given, no core drilling was done due to expected recovery has been achieved however, however the lessee has proposed to drill two

bore holes to ascertain the proved depth persistence of the deposit, colour and texture of formation and possibility of recovery of bigger size blocks in this Scheme period.

The mineralized zone of the deposit is well established but drilling was made randomly and therefore two more bore holes as per plate-III is proposed to be carried out during the next Scheme period.

Geology and Geomorphology Features map of Lease area around 10km radius



Source: Geological Survey of India, 1995

Prepared by
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(Formerly Sriya Mining Services)
Narasimharajpet, Alagapattinam, Tamil Nadu - 605 004

Fig No 2.11 Regional Geology & Geomorphology Map

2.6.2 Method of Mining

a) Open cast working:

The quarry operation will be carried out by open cast mechanized method of mining. Jack hammer drilling and blasting will be adopted to make perfect pre-determined crack to release the block from the parent rock. Hydraulic excavators will be engaged for loading the rejects, top soil and weathered rock and wire saw will be adopted for cutting the rocks. Wire saw cutting is adopted below second bench to recover more granite blocks to increase the rate of recovery. The top soil is found up to 2m depth from surface, below which found hard rock formation. The recovery factor is taken as 60% and it may increase further at deeper levels.

Manpower will be engaged for drilling shot-holes, line drilling, smooth blasting, Jet burner operation, dressing of granite blocks, cutting and removal of small amount waste or rejects and support service labours for operation of machineries. The materials required for manual workings are listed as under,

1. Drill rods - 0.3m, 0.4m, 0.5mm, 0.6m, 0.75m, 1.65m, 2.25m, 3m & 3.6m, Etc.,
2. Steel alloy chains of sufficient lengths with dia. of 12 - 18mm with 'D' shackles.
3. Rubber hose and clamps.
4. Feather and wedges of 6 and 12 utilize for splitting the block from the mother rock. This is an important tool in the operation of a Quarry.
5. Crow bars of 1500 - 1800mm lengths.
6. Spades, Sludge hammers, Iron Pans and chisels.
7. Consumables, such as diesel, Hydraulic oil, grease, abrasive wheels, welding Machines etc.,
8. Stock of essential spare parts of machinery

2.6.3 Extent of Mechanization

The following machinery is proposed to be exclusively for the development and production work at this quarry.

i) Drilling equipment:

Drilling of shot-holes will be carried out using compressor and Jack hammer combination. Depth of holes shall be 2.5m for 3m bench height. The spacing shall be 30 - 40cms and burden from the preface depends upon the size of block. However, it is preferred to have 1 - 2m burden from the preface for effective pulling of blocks.

In case of burden in excess of 1.5m the spacing should be adjusted smaller, less than 30cms. To achieve a correct blasting geometry certain amount of trial blast is pre-requisite to

affect a perfect pre-determined crack to release the block from the parent rock. Details of drilling equipment's are tabulated below,

Table 2.4: Details of drilling equipment

Type	Nos.	Dia. Of Hole	Size/Capacity Make	Motive Power	H.P.
Jack Hammer	7	32mm	Hand held Atlas Copco	Diesel	60 (100 cfm)
Compressor (ELGI)	2	--	ELGI 10.5 Kgs /cm2	"	450 cfm
Wagon drill or Crawler drill	1	110mm	Atlas copco		450 cfm

ii) Loading Equipment:

Loading of waste and granite rejects shall be done by hydraulic excavator into tippers for clearing of waste and rejects from the working place periodically. One hydraulic excavator with 1.7m³ bucket capacity are engaged for clearing of wastes in the lease area .

Table 2.5: Details of loading equipment

Type	Nos	Size/ Capacity	Make	Motive Power	H.P
Hydraulic Excavator	2	1.7 m ³	Tata Hitachi	Diesel	170

iii) Haulage and Transport Equipment:

Transport of Rejects and waste will be done by Tippers of 15 Tonnes capacity

Table No-2.6: Details of transportation vehicles

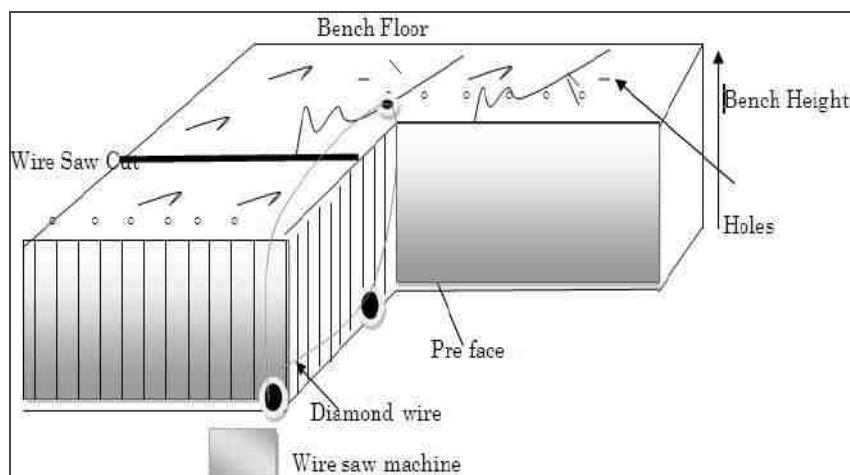
Type	Nos.	Capacity (m ³)	Make	Motive Power	H.P.
Tipper	2	20 MT	Stone Tech	Electric Power	60 Each



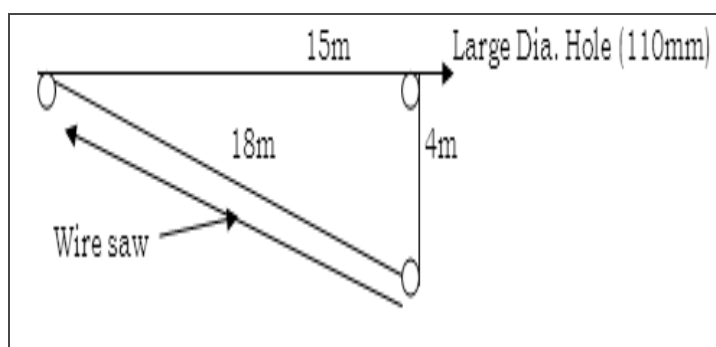
Tipping Truck

iv) Diamond wire saw cutting:

Diamond Wire saw cutting is an eco-friendly method of quarrying with high rate of recovery, thereby the conservation aspects of GCDR, 1999 is perfectly fulfilled.



PLAN VIEW FOR INITIAL WIRE –CUT:



Details of wire saw cutting machine is given as under

Table No 2.7 Details of wire saw cutting machine

Type	Nos.	Capacity (m ³)	Make	Motive Power	H.P.
Wire saw Machine	2	Port – Black Diamond impregnated wire rope	Stone Tech	Electric Power	60 Each

v) Blasting pattern

Blasting: A controlled blasting technique is adopted to open a pre-determined crack of the block from the parent body. Shot-hole with 32-40mm dia. which are drilled by line drilling and Jack hammers at a close spaced interval of 30cms will be initiated suitably with any one or more of the following methods

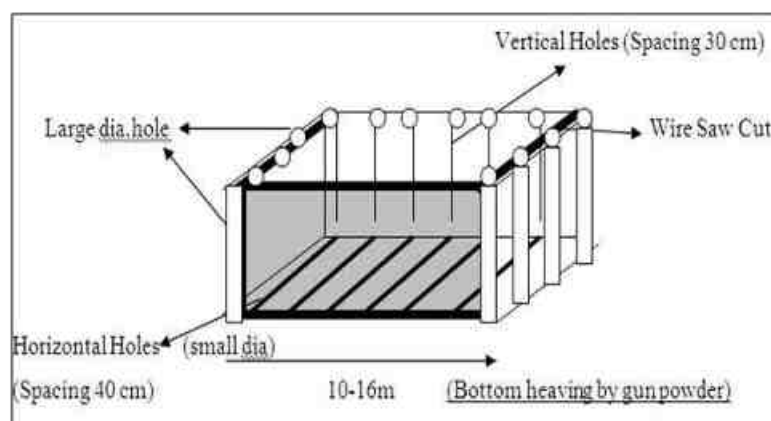
- a) Pre-splitting
- b) Cushing blasting with low strength and very low dia. Cartridges axial priming or standard dia. cartridge with intermittent stemming materials.

- c) Water impulsion with Detonating cords of sufficient power, preferably 10gms per meter to develop cracks along the line of drilling,

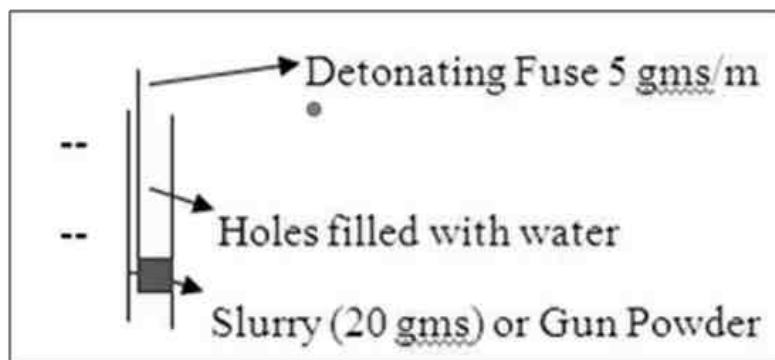
a) Broad Blasting Parameter:

Dia. of the hole	=	32 - 36 mm
Spacing	=	30cms
Charge per Hole	=	D.cord with water or 70gms of gun powder or slurry
Depth	=	2.5 m

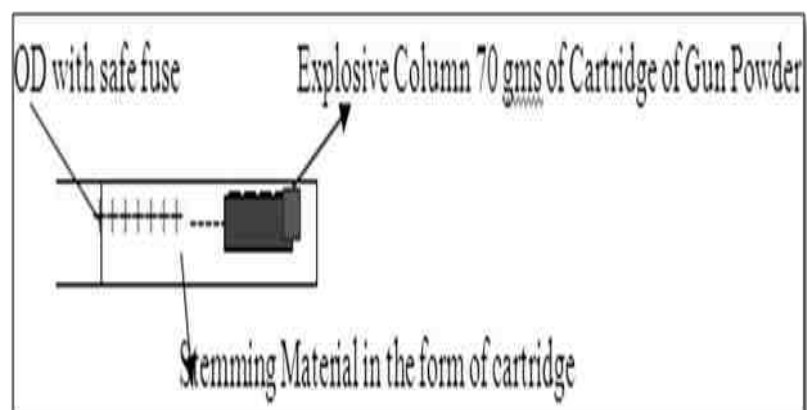
Wire Saw Cut and Drilling Pattern



Charging of Vertical Holes



Charging of Horizontal Holes



In watery holes, the detonating fuse is directly used and water 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 shear plane \tensional crack formed by a line of drilling. Sometimes wedges are used to cut the major blocks into smaller sizes after drilling of holes to a depth of 30-40cms. Then the blocks are dressed to desire sizes.

b) Type of Explosives:

Common explosives used to develop a line of crack along the line of drilling are,

- i) Detonating Fuse or Cord with 5-10gms of Expl. Permeter,
- ii) Low explosives like Gun powder or 70gms of slurry cartridges,
- iii) Ordinary Detonator, class- 6
- iv) Safety fuse, class -6.

c) Powder factor: The Powder factor for waste rock development shall be 2m³ or 7 tonnes per Kg. of explosives

d) Storage of explosives

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 5 Kgs at time or any other quantity permitted by the concerned authorities in a portable magazine of S & B types.

2.7 Land Use Pattern of the Core Zone

Depth of mining is estimated as 35m based on the working pits of the lease quarry. The Present and proposed land use pattern is given as under, at the time of closure of mine the pit will be backfilled.

Table 2.8 Computation of existing and proposed land use pattern

S. No	Description	Present area (Ha)	Proposed land use	% of Use
1	Mine working area	0.88.20	0.17.0	2.50.70
2	Waste Dump	0.51.0	-	Backfilled
3	Infrastructure	Nil	Nil	Nil
4	Road	0.01.0	0.01.0	0.03.0
5	Greenbelt	Nil	0.16.0	0.71.8
6	Stocking Blocks	2.16.3	2.27.3	0.76.0
Total		4.01.5	2.61.3	4.01.5

2.8 Mineral Reserves and Resources

2.8.1 Geological Resources and Reserves

Geological resources are estimated as ROM 4,04,622m³ out of which Multicolour granite is about 2,42,773m³ at the recovery of 60% and granite rejects is about 1,61,849m³ @ 40% and Mineable reserves are estimated as ROM is 2,73,726m³ out of which 1,64,236m³ of Multicolor Granite at the recovery of 60% and granite rejects are 1,09,490m³ @ 40% up to a depth of 45m below ground level.

Description	Geological Resources (m³)	Mineable Reserves (m³)	Production for the five years (m³)
ROM	4,04,622	2,73,726	59,400
Granite @60% Recovery	2,42,773	1,64,236	35,640
Granite @40% Reject	1,61,849	1,09,490	23,760
Depth (m)	45m	45m	40m

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Section	Bench	Length (m)	Width (m)	Depth (m)	ROM (m ³)	Recovery (m ³)	Granite Waste 40% (m ³)	Side Burden (m ³)	Weathered rock	topsoil
XY-AB	i	78	38	2	--	--	--	--	--	5928
	ii	78	38	3	--	--	--	--	8892	--
	iii	78	28	3	6552	3931	2621	--	--	--
	iii	78	45	2	7020	4212	2808	--	--	--
	iii	78	83	2	--	--	--	12948	--	--
	iii	78	78	3	--	--	--	18252	--	--
	iv	78	45	5	17550	10530	7020	--	--	--
	iv	78	126	5	--	--	--	49140	--	--
	v	78	45	5	17550	10530	7020	--	--	--
	v	78	126	5	--	--	--	49140	--	--
	vi	78	45	5	17550	10530	7020	--	--	--
	vi	78	126	5	--	--	--	49140	--	--
	vii	78	45	5	17550	10530	7020	--	--	--
	vii	78	126	5	--	--	--	49140	--	--
	viii	78	45	5	17550	10530	7020	--	--	--
	viii	78	126	5	--	--	--	49140	--	--
	ix	78	45	5	17550	10530	7020	--	--	--
	ix	78	126	5	--	--	--	49140	--	--
	x	78	45	5	17550	10530	7020	--	--	--
	x	78	126	5	--	--	--	49140	--	--
Total					136422	81853	54569	375180	8892	5928
	i	149	193	2	--	--	--	--	--	57514
	ii	149	193	3	--	--	--	--	86271	--
	iii	149	45	5	33525	20115	13410	--	--	--
	iii	149	148	5	--	--	--	110260	--	--
	iv	149	45	5	33525	20115	13410	--	--	--

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Proponent: M/s. M.P. Granite, Multicolour Granite Quarry, Karur District

XY-CD	iv	149	148	5	--	--	--	110260	--	--
	v	149	45	5	33525	20115	13410	--	--	--
	v	149	148	5	--	--	--	110260	--	--
	vi	149	45	5	33525	20115	13410	--	--	--
	vi	149	148	5	--	--	--	110260	--	--
	vii	149	45	5	33525	20115	13410	--	--	--
	vii	149	148	5	--	--	--	110260	--	--
	viii	149	45	5	33525	20115	13410	--	--	--
	viii	149	148	5	--	--	--	110260	--	--
	ix	149	45	5	33525	20115	13410	--	--	--
	ix	149	148	5	--	--	--	110260	--	--
	x	149	45	5	33525	20115	13410	--	--	--
	x	149	148	5	--	--	--	110260	--	--
Total					268200	160920	107280	882080	86271	57514
Grand Total					404622	242773	161849	1257260	95163	63442

Total Geological resources ROM	=	4,04,622m ³
Total Recoverable reserves @60%	=	2,42,773m ³
Total Waste @ @40%	=	1,61,849m ³
Weathered Rock	=	95,163 m ³
Side Burden	=	12,57,260 m ³
Top Soil	=	63,442 m ³
Total Waste (Granite Waste + Weathered+ SB)	=	15,14,272m ³
Granite Waste ratio:	=	1:6.2

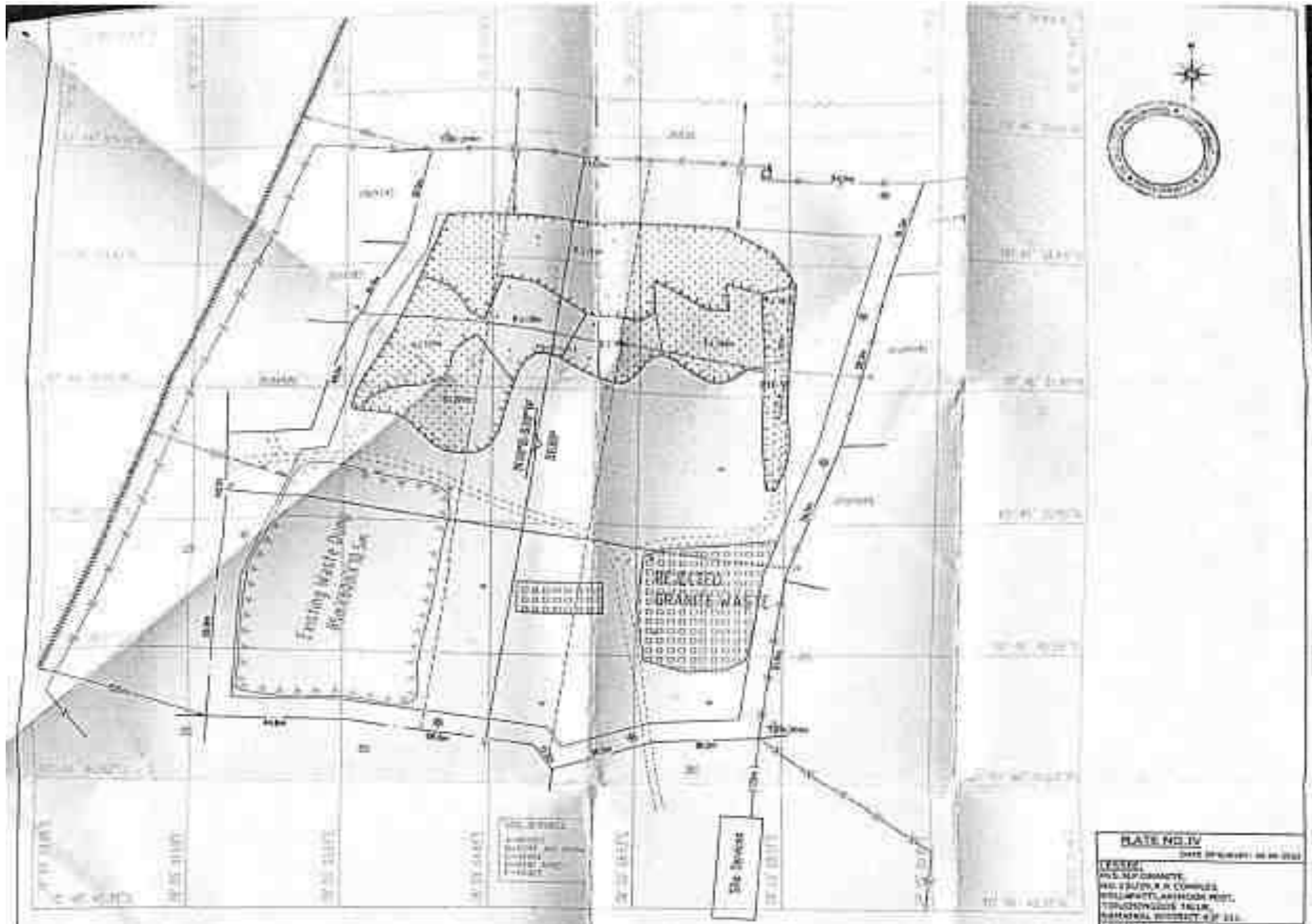


Fig No 2.12 Geological plan

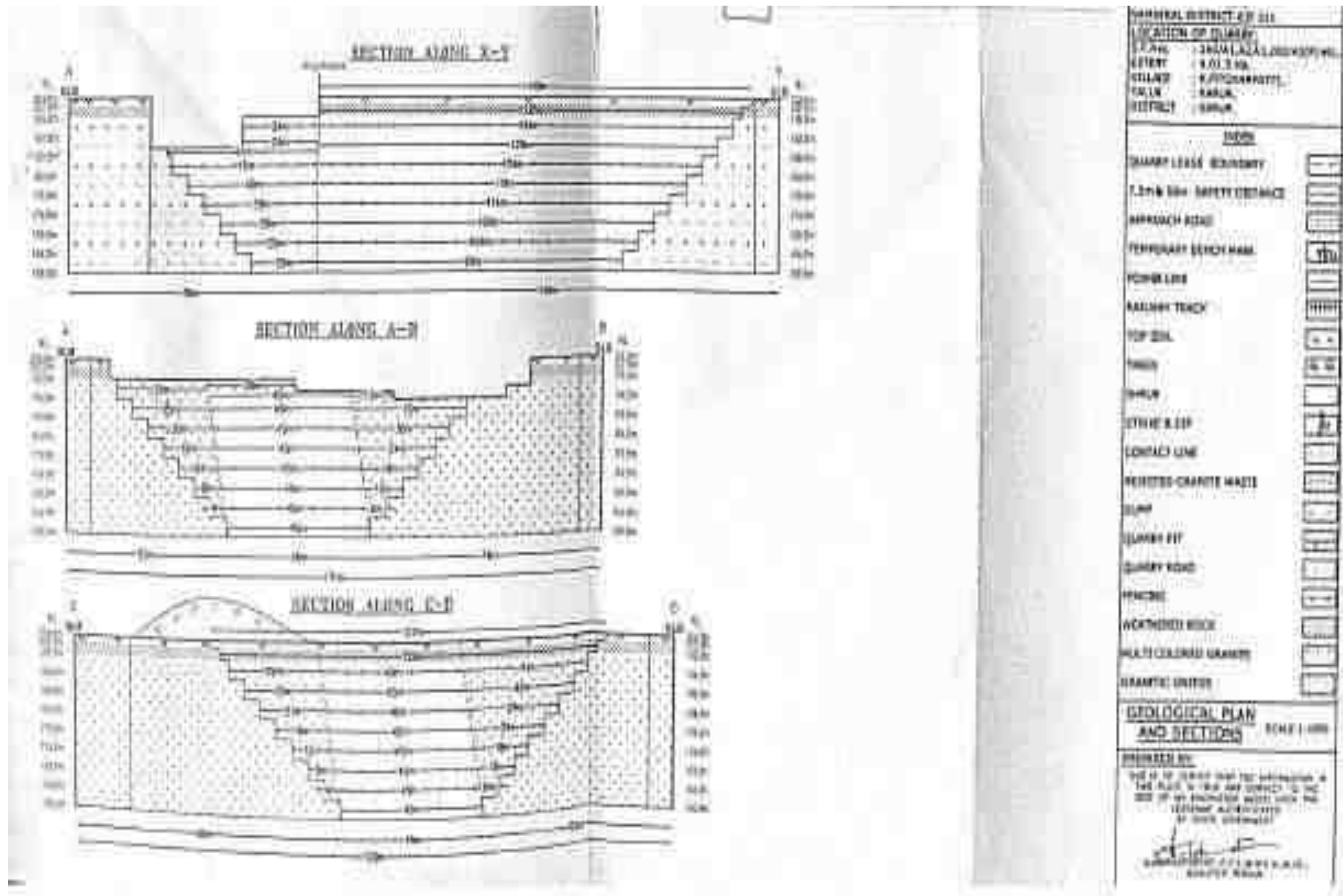


Fig No 2.13 Geological Sections

2.8.2 Mineable /Recoverable Reserves:

The mineable reserve is estimated by the cross-sectional method, considering the factors such as the recovery factor, depth of mining and safety barriers. The estimated mineable reserve is about 2,73,726m³ out which of 1,64,236m³ @ 60% recovery and rejects as 1,09,490m³ @ 40% to a depth of 45 meters. Further details about the estimation of the mineable reserves are given below.

Table 2.10 Computation of Mineable/Recoverable Reserves

Section	Bench	Length (m)	Width (m)	Depth (m)	ROM (m ³)	Recovery (m ³)	Granite Waste 40% (m ³)	Side Burden (m ³)	Weathered rock	Topsoil
XY-AB	iii	24	28	3	2016	1210	806	---	--	--
	iii	24	45	2	2160	1296	864	---	--	--
	iii	24	29	2	---	----	---	1392	--	--
	iii	24	42	3	---	---	---	3024	--	--
	iv	24	45	5	5400	3240	2160	---	--	--
	iv	47	45	5	10575	6345	4230	---	--	--
	iv	24	60	5	---	---	---	7200	--	--
	v	45	45	5	10125	6075	4050	----	--	--
	v	45	50	2	---	----	---	4500	---	--
	vi	40	45	5	9000	5400	3600	---	--	--
	vi	40	40	5	---	---	---	8000	--	--
	vii	35	45	5	7875	4725	3150	---	--	--
	vii	35	30	5	---	---	---	5250	--	--
	viii	30	45	5	6750	4050	2700	---	--	--
	viii	30	20	5	---	---	--	3000	--	--
	ix	25	45	5	5625	3375	2250	---	--	--

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	ix	25	10	5	---	---	---	1250	--	--
	x	20	45	5	4500	2700	1800	---	--	--
Total					64026	38416	25610	33616	--	--
XY-CD	i	140	127	2	--	--	--	--	--	35560
	ii	137	121	3	--	--	--	--	49731	--
	iii	134	45	5	30150	18090	12060	--	--	--
	iii	134	70	5	--	--	--	46900	--	--
	iv	129	45	5	29025	17415	11610	--	--	--
	iv	129	60	5	--	--	--	38700	--	--
	v	124	45	5	27900	16740	11160	--	--	--
	v	124	50	5	--	--	--	31000	--	---
	vi	119	45	5	26775	16065	10710	--	---	--
	vi	119	40	5	--	--	--	23800	--	--
	vii	114	45	5	25650	15390	10260	--	--	--
	vii	114	30	5	--	--	--	17100	--	--
	viii	109	45	5	24525	14715	9810	--	--	--
	viii	109	20	5	--	--	--	10900	--	--
	ix	104	45	5	23400	14040	9360	--	--	--
	ix	104	10	5	--	--	--	5200	--	--
	x	99	45	5	22275	13365	8910	--	--	--
Total					209700	125820	83880	173600	49731	35560
Grand Total					273726	164236	109490	207216	49731	35560

Total Mineable Reserves in ROM	=	2,73,726m ³
Total Recoverable Reserves @ 60%	=	1,64,236m ³
Granite Waste @ 40%	=	1,09,490m ³
Weathered Rock	=	49,731m ³
Side Burden (SB)	=	2,07,216m ³
Total Waste (Granite Waste + Weathered+ SB)	=	3,66,437m ³
Topsoil	=	35,560m ³
Granite Waste ratio:	=	1:2.2

2.9 Year Wise Production and Development

The five years period of production and the generation of waste are described in the year-wise development/production schedule as tabulated for Multi Colour Granite in Table-3.5. The five years production is designed up to a depth of 40m. The waste ratio with reference to the production of Multi Colour Granite would be 1:1.8. The year-wise development /production plan is shown in Plate No-V-A.

Table 2.11 Computation of Year wise development Plan

Year	Topsoil (m ³)	ROM (m ³)	Production @ 60% recovery (m ³)	Rejects @ 40% (m ³)	Weathered rock (m ³)	Side Burden (m ³)
I	3564	12150	7290	4860	5592	11595
II		12150	7290	4860	--	9420
III		12150	7290	4860	--	5860
IV		12150	7290	4860	--	6600
V		10800	6480	4320	--	1900
Total	3564	59400	35640	23760	5592	35375

Total proposed ROM	=	59,400m ³
Total Recoverable Reserves @60%	=	35,640m ³
Granite Reject @ 40%	=	23,760m ³
Side Burden (SB)	=	35,375m ³
Weathered Rock (WR)	=	5,592m ³
Total Waste (Granite Waste+ WR+SB)	=	64,727m ³
Granite Waste Ratio:	=	1:1.8
Topsoil	=	3564 m ³

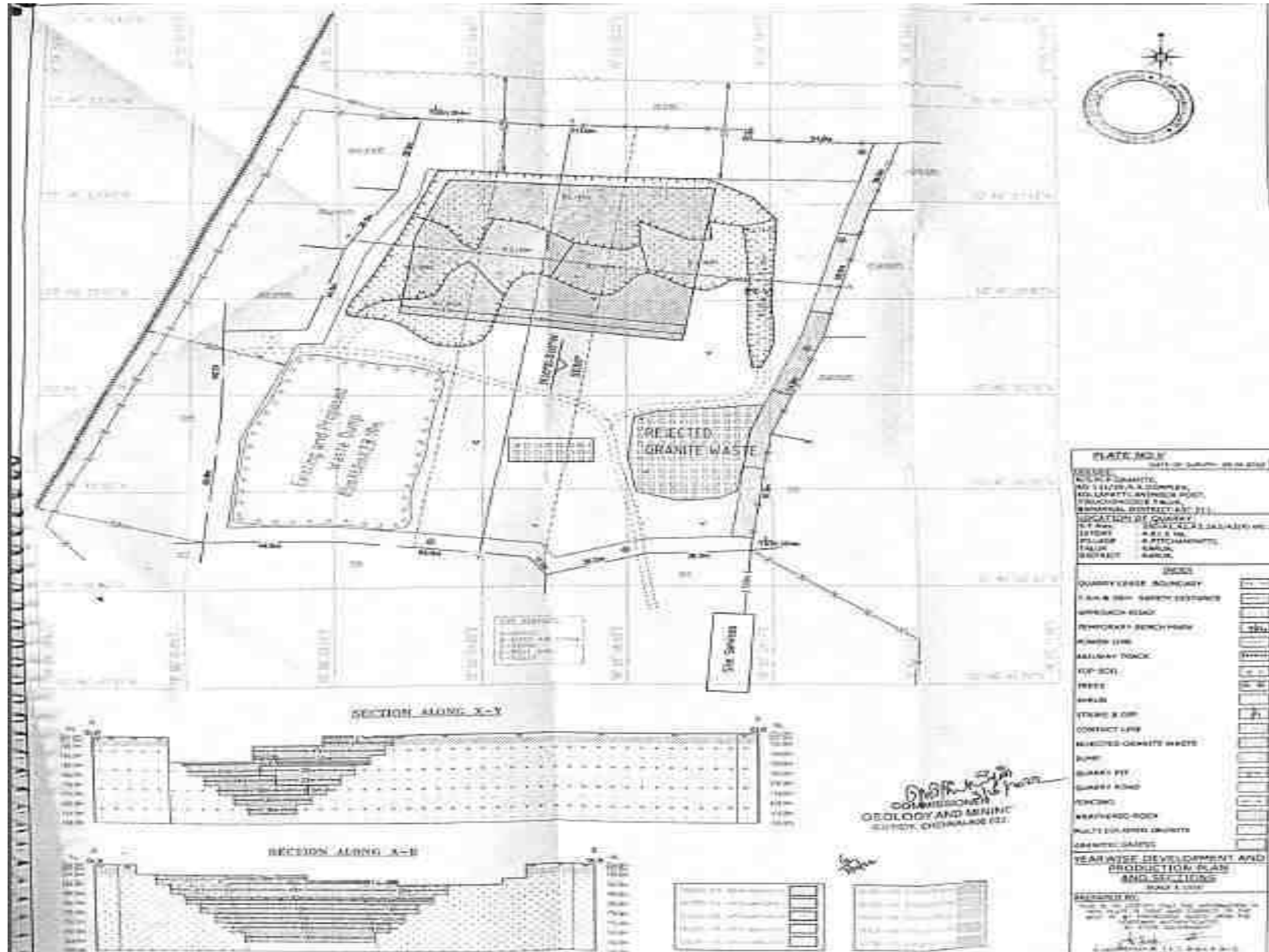


Fig No 2.14 Year Wise Development and Production Plan



Fig No 2.18 Quarry Layout and Afforestation Plan



Fig No 2.19 Quarry Closure Plan

2.10 Stacking of Mineral Rejects and Disposal of Waste for the plan period.

The present mining plan period, The proposed reject (40%) side burden and weathered rock are $64,727\text{m}^3$ $23,760\text{m}^3 + 35,375\text{m}^3 + 5,592\text{m}^3$) will be removed and proposed waste dump situated on the western side of the lease area with dimension of 85m (L) X 60m (W) X 23.19m Height and Top soil is about 3564m^3 will be removed and stacked separately along lease boundary as earth bund which will be used for afforestation purposes. All waste and rejects materials dumped western side of the lease boundary and back filled over the mined-out area in future. Total generation of Granite rejects and waste & topsoil for the next five years will be $68,291\text{m}^3$. It is revealed in the progressive mine closure plan showing the depth of mining and pit configuration. The total waste spread of dumps for the next five years are given as under.

Table 2.12 Computation of waste and rejects materials

Year	Topsoil (m³)	Rejects @ 40% (m³)	Weathered rock (m³)	Side Burden (m³)	Total
I	3564	4860	5592	11595	25611
II		4860	--	9420	14,280
III		4860	--	5860	10720
IV		4860	--	6600	11460
V		4320	--	1900	6220
Total	3564	23760	5592	35375	68291

For the next five years, all the rejects and weathered rock will be dumped in the northern side of mining lease area as per approved scheme of mining. Top soil will be used for afforestation purposes.

2.11 Conceptual Mining Plan

Conceptual Mining Plan is prepared with an object of long-term systematic development of bench lay - outs, selection of permanent dump so as to avoid re-handling, setting roads, to determine ultimate pit limit, depth of mining and ultimate pit slope, selection of sites for construction of infrastructures, lying of roads etc. Kindly refer Plate No-VIII-A.

The ultimate pit size is so designed based on certain practical factors such as the economical depth of mining, safety zones followed, available area for mining. The Ultimate pit size of the mine in bench-wise arrived and calculated as here under.

2.11.1 Ultimate Pit Dimensions

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

Table 2.14 Ultimate Pit Dimensions (m)

Ultimate Pit Dimension
192m X 133m X 45m

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.

2.11.2 Restoration, Reclamation of already mined out area

The quarried-out pit will be used as water storage pond which improves the agricultural activity in the buffer zone.

The quarried pit will be fenced by using Barbed wire fencing to prevent inherent entry of public and cattle.

2.12 Employment Potential (Management & Supervisory personal)

Table 2.16 Employment Potential

1	Highly Skilled	Quarry Manager	1No.
		Mines Forman	1No
		Geologist	1No
		Accountant cum & admin	1No
2	Skilled	Earth moving Operator	4Nos.
		Driver	2 Nos.
		Mechanic	1 Nos.
		Blaster/Mat	1 Nos.
3	Semi-skilled	Helpers Greaser's	20 No.
4	Unskilled	Musdoor/Labours	6 Nos
		Cleaners	1 No
		Attendant's	1No
		Total =	40 Nos

Table No 2.17 Water Requirements (7.0 KLD)

Drinking & Domestic purposes	2.0 KLD
Water sprinkling on haul roads	2.0 KLD
Green Belt	2.0 KLD
Wet drilling	1.0 KLD
Total	7.0 KLD
Source	Water Vendors

2.13 Amenities

This is an existing quarry project. Good approach road is already available. All site services such as first-aid room, office, rest room, canteen and toilets will be established outside the lease area. The workers are supplied with helmets, safety boots, ear plugs, masks, gloves, etc., as personal protective devices.

2.13.1 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 main rules, 1955 separately for males and females. Washing facilities shall also be arranged as per rule (36) of the mines Rules, 1955.

2.13.2 First Aid facility

10 Numbers First aid kit will be made available at site. Better higher facilities are available in and around Namakkal district.

2.13.3 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).

2.13.4 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.

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

2.13.5 The Child labour Employment

As per the Mines Act, 1952, no child labours below 18 years of old were engaged for any work in the quarry.

2.13.6 Power Requirement

Only diesel operated mining machinery will be used for quarrying. No power will be required for the proposed project.

2.13.7 Project Cost

A	Fixed Asset Cost	
	1. Land Cost (Consent land)	Rs. 21,02,000/-
	2. Labour Shed	Rs. 3,00,000/-
	3. Sanitary Facility	Rs. 1,00,000/-
	4. Fencing	Rs. 3,90,000/-

	5. Other expenses (Security guard bin etc)	Rs. 3,00,000/-
	Total	Rs. 31,92,000/-

2.15 End Use

The applicant does not have the facilities to cut and polish the rough blocks of granite. He proposes to sell the rough blocks directly to the potential buyers of the domestic and world market.

CHAPTER – 3: DESCRIPTION OF THE ENVIRONMENT

3.0 BASELINE ENVIRONMENTAL STATUS

3.1 INTRODUCTION

The chapter describes the existing environmental settings in the study area and is based upon the secondary information collected from the published sources, reconnaissance survey, primary socio-economic and environmental monitoring of air, noise, soil, ground and surface water in the study area.

For the purpose of EIA studies, mine lease area was considered as the core zone and area outside the mine lease boundary up to 10km radius from the lease boundary was considered as buffer zone. Collection of base line data is an integral part of the preparation of environmental impact assessment reports. The baseline monitoring study has been carried out during December 2025 – February 2026 to assess the existing environmental scenario in this area.

The Various environmental components studied as a part of the baseline study are discussed in the following project activities are:

- Air Environment
- Noise Environment
- Soil Environment
- Water Environment
- Flora and Fauna
- Socio-economic
- Land Environment

3.2 METHODOLOGY

The guiding factors of the present baseline study are the requirements laid down by the Central Pollution Control Board (CPCB) and guidelines as per the Environmental Impact Assessment Notification.

- In order to assess the Ambient Air Quality (AAQ), samples of ambient air were collected by installation of Respirable Dust Sampler and Fine Particulate Matter Sample at different locations within the study area and analyzed to find out the existing status of air quality.
- Ground water samples were collected from the existing tube wells, while samples for surface water were collected from river & small ponds. The samples were analyzed

for parameters necessary to determine water quality (based on IS: 10500 criteria) and those, which are relevant from environmental impact point of view of the proposed river bed mining project.

- Soil samples were collected and analyzed for relevant physical and chemical characteristics in order to assess the impact of the proposed mining on soil.
- Inventory of flora and fauna species present in the area was made through field visits and survey by ecologists.
- Socio-economic data was collected from primary sources through village – level surveys and household visits.
- The land use patterns of the study area were assessed through latest satellite imaging and topographical sheets of Survey of India.

Appropriate methodologies have been followed in preparing the EIA-EMP report. The methodology adopted for the study is outlined below. The sampling locations were selected on the basis of the following:

- Predominant wind directions recorded by the India Meteorological Department (IMD), Karur observatory, Karur district;
- Existing topography;
- Drainage pattern and location of existing surface water bodies like lakes/ponds, rivers and streams;
- Location of villages/towns/sensitive areas, and;
- Areas, which represent baseline conditions;

3.3 METEOROLOGICAL DATA RECORDED AT IMD STATION, KARUR OBSERVATORY, KARUR DISTRICT

The meteorology of the project area plays very important role in dispersion of pollutants and build-up of pollution within the air atmosphere. In the present study, in the month of December 2025 – February 2026 meteorological data for site specific has been taken to find the dispersion of pollutant concentration. The mixing height, which is an important parameter to express the dispersive potential of atmosphere, has been taken from the atlas of hourly mixing height and assimilative capacity of atmosphere in India.

Table No. 3.1: Summary of the Meteorological data for the study period

S. No	Parameters	Months	December 2025	January 2026	February 2026
1	Temperature (°C)	Max	37	36	36
		Min	20	21	23
		Average	28.5	28	29.5
3	Humidity (%)	Average	40	54	76
4	Wind speed (mps)	Average	2.3	2.0	2.5

3.3.1 Wind Rose

Wind speed and wind direction data is useful in identifying the influence of meteorology on the air quality of the area. The observed wind pattern during the study period is described below. In the present study, in the month of December 2025 – February 2026 meteorological data has been taken to find the dispersion of pollutant concentration. Wind-rose diagram for the study period is shown given below in fig. 3.1.

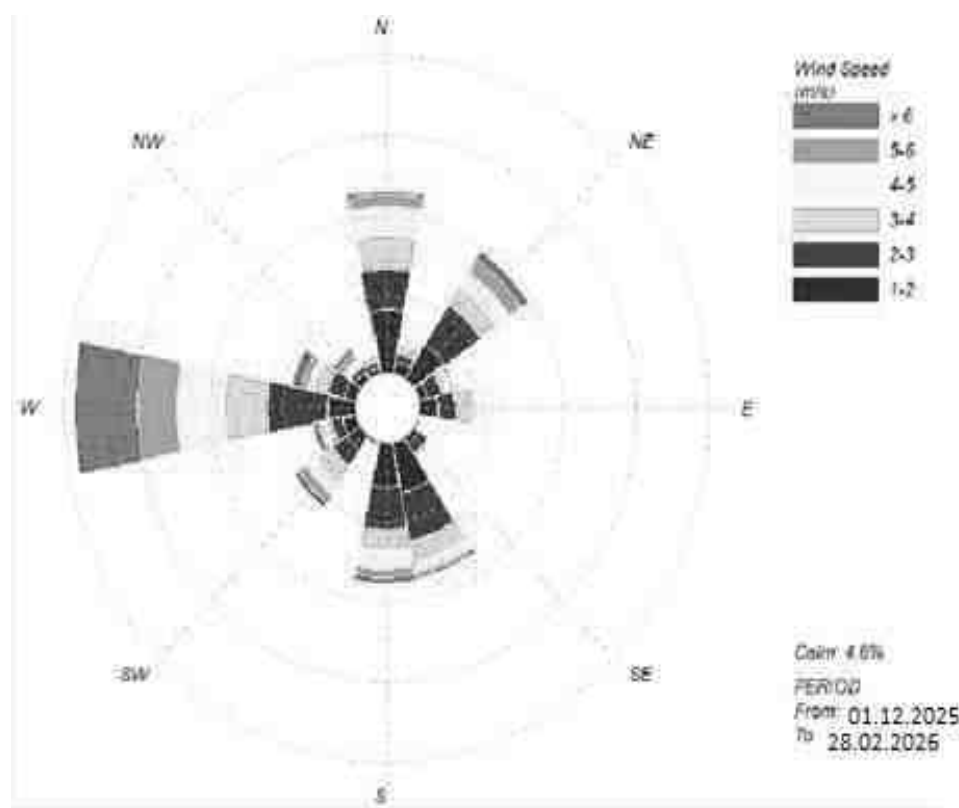


Fig No 3.1 Wind Rose Pattern for the Study period

3.4 AIR ENVIRONMENT

Prevailing air environment i.e. baseline conditions in an area is primarily governed by many factors' activities going on in that area. The pollutant level in atmosphere is also

governed by the meteorology, topography, natural settings in terms of plantation, forest cover, vegetation etc., as these factors in combination with each other are responsible for dispersion, diffusion, transportation and assimilation of pollutants in the local air shed.

3.4.1 Ambient Air Monitoring

The prime objective of baseline air quality study (10km radius) is to assess the existing air quality of the area to form base line information. The study area represents mostly rural environment. Ambient air monitoring was carried out at 5 locations. The locations were identified keeping in view of predominant wind directions prevailing during study period, sensitive receptors, human settlements and mining activities around. The details about sampling locations are mentioned below in fig. 3.2, 3.3 and presented in table 3.2.

The existing Ambient Air Quality status (AAQ) has been monitored for parameters PM₁₀, PM_{2.5}, SO₂ and NO_x. Ambient air quality monitoring was carried out at a frequency of two days per week at each location for three months at 8 hours continuously. Respirable dust samplers have been used for monitoring the existing PM₁₀ status and fine dust samplers are used for monitoring PM_{2.5} status in the study area. Methodologies adopted for sampling and analysis were carried out, as per the approved methods of Central Pollution Control Board (CPCB).

Table No. 3.2: Ambient Air Quality Monitoring Locations

S. No	Sample Location	Station Code	Direction/ Distance (w.r.t. mine)	Core Zone/ Buffer Zone	Latitude	Longitude
1	Cluster Core Zone	AAQ-1	--	Core	10°46'34.42"N	78° 4'59.03"E
2	Vellagoundanpatti	AAQ-2	1.0 km (SE)	Buffer	10°46'29.21"N	78° 4'33.76"E
3	Kottanatham	AAQ-3	0.8 km (S)	Buffer	10°46'17.79"N	78° 4'52.44"E
4	K.Pichampatti	AAQ-4	2.4 km (SW)	Buffer	10°47'35.22"N	78° 4'58.25"E
5	Thirumakkam Patti	AAQ-5	1.6 km (NE)	Buffer	10°46'11.77"N	78° 6'25.66"E

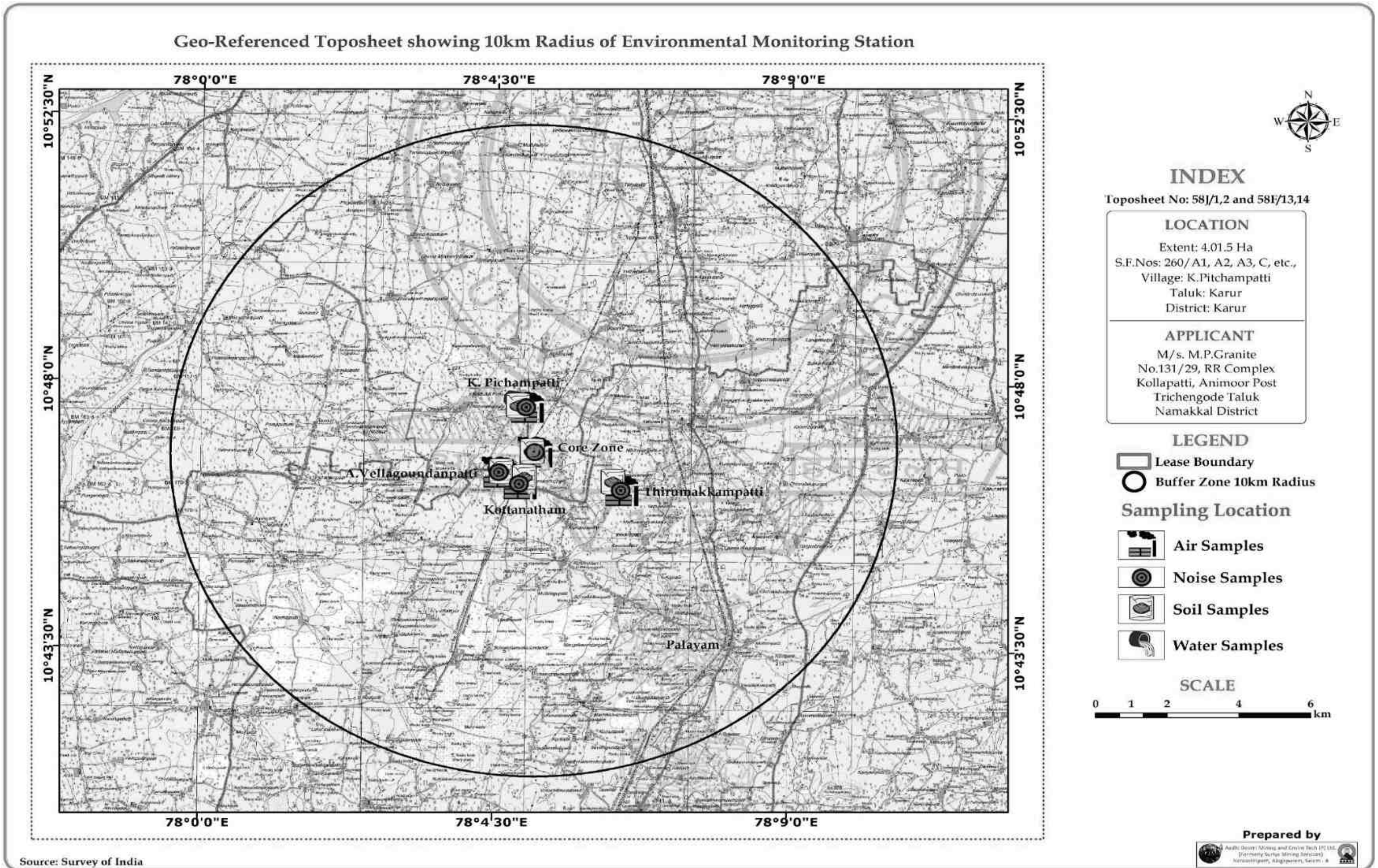


Fig No 3.2 Geo Referenced Toposheet showing Environmental Monitoring station around 10km radius

Geo-Referenced Toposheet showing 10km Radius of Air Sampling

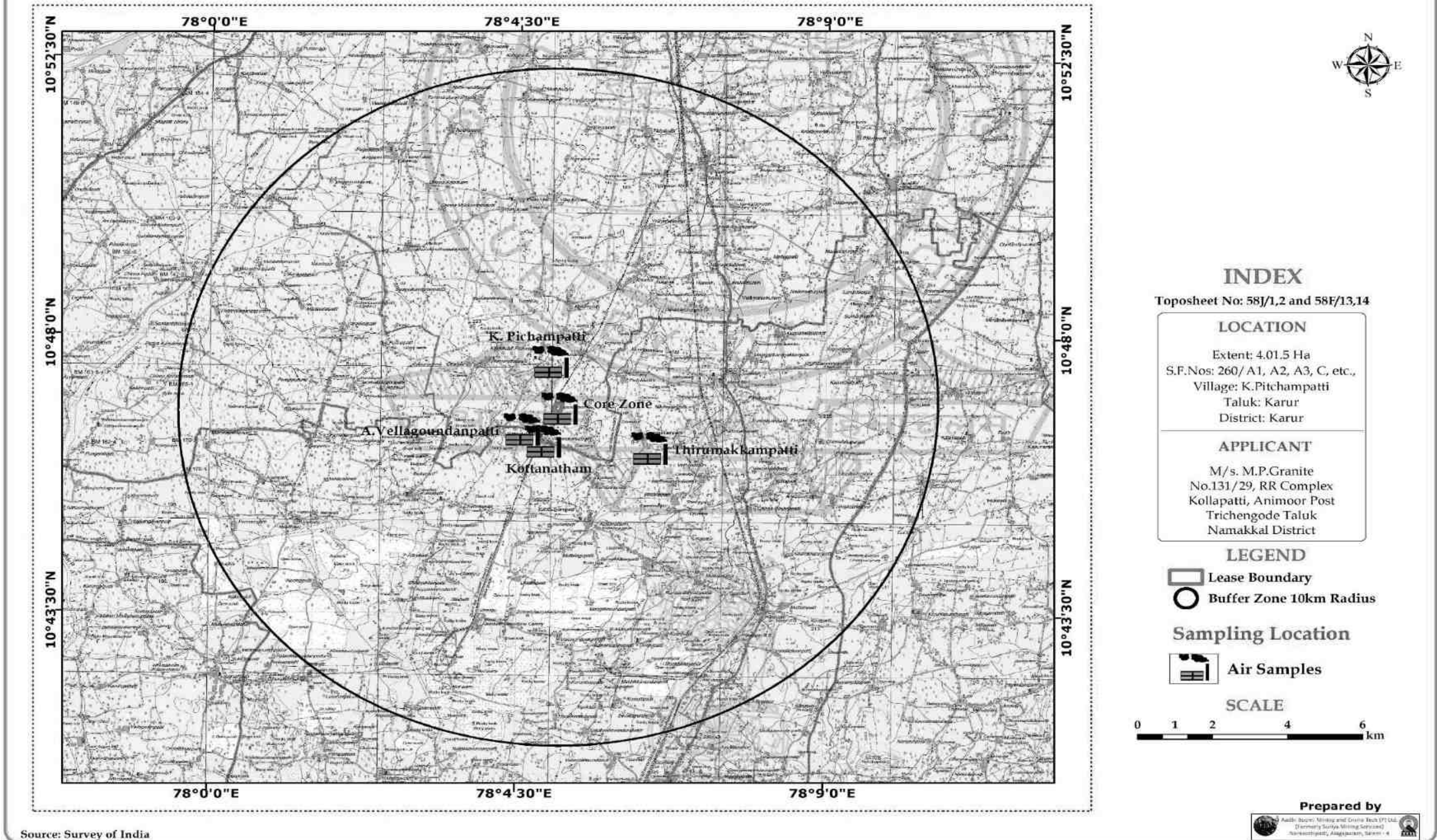


Fig No 3.2a: Geo Referenced Toposheet showing Air Sampling station around 10km radius



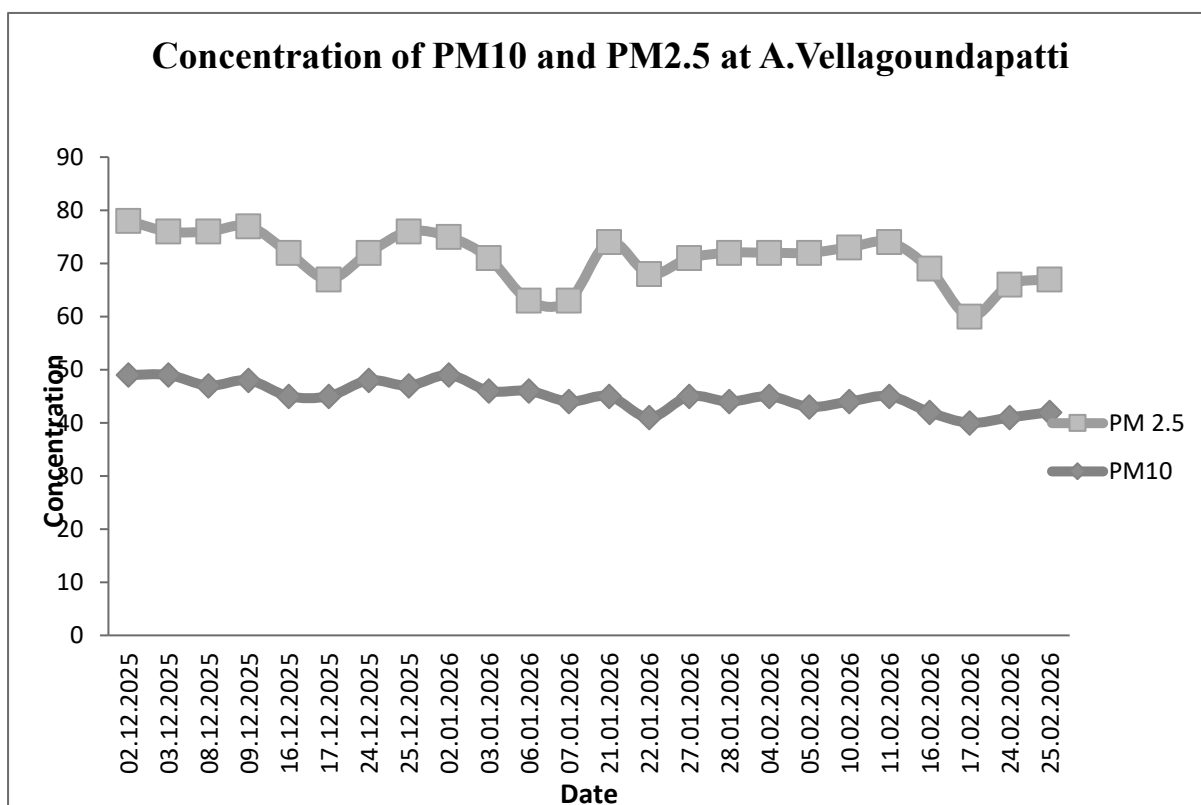
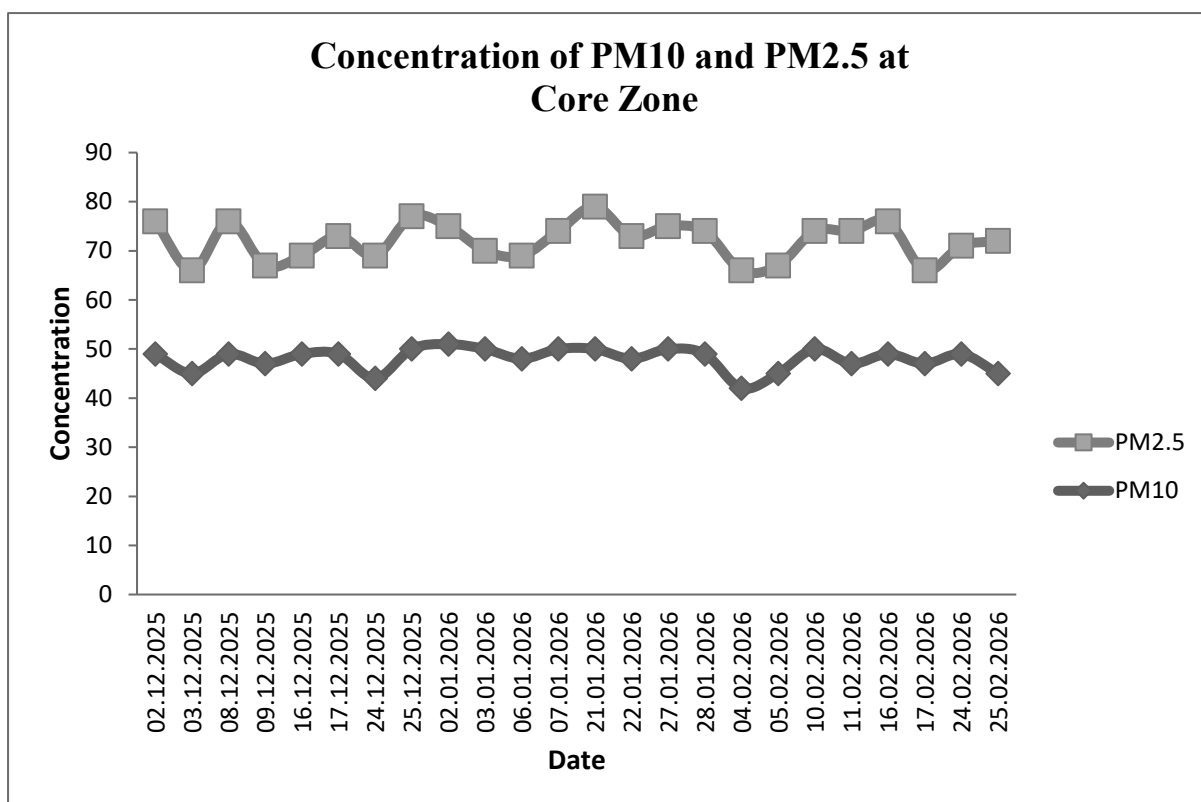
Fig No 3.3 Air Monitoring locations at Core and Buffer Zone

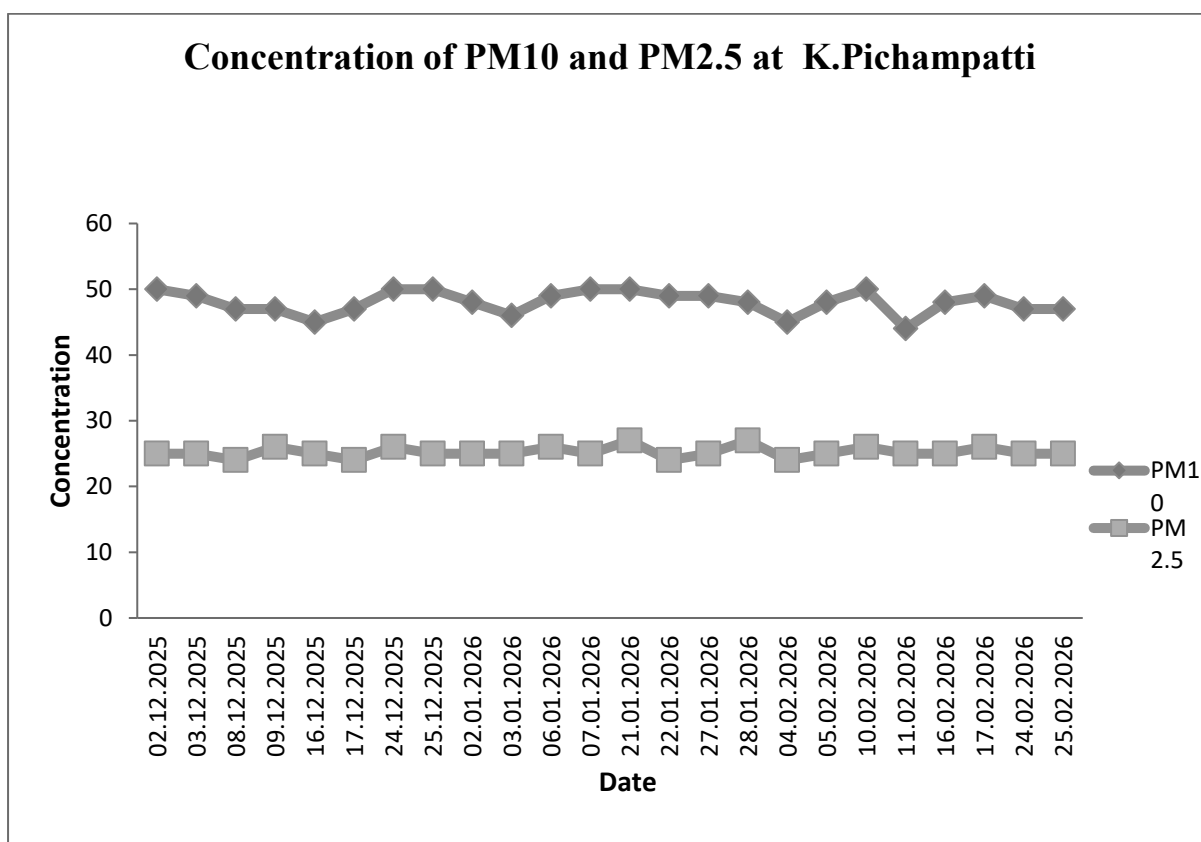
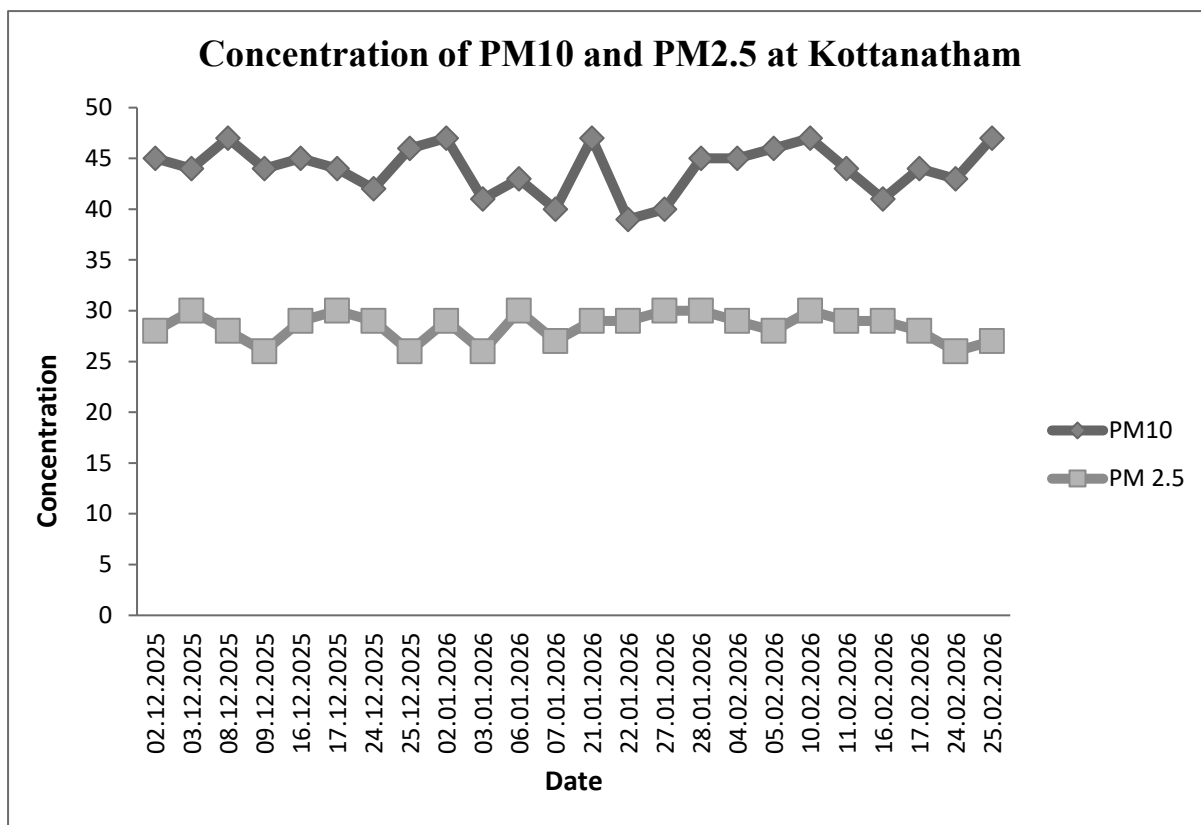
3.4.2 Monitoring Result

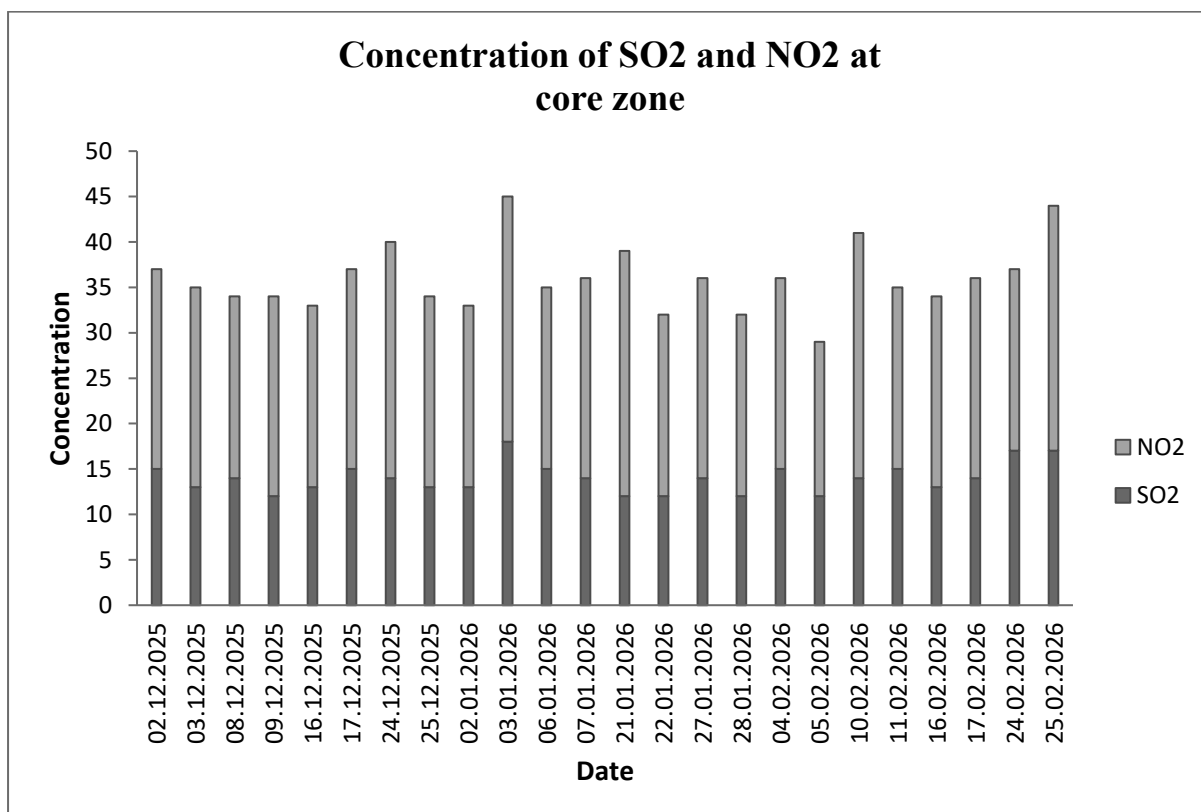
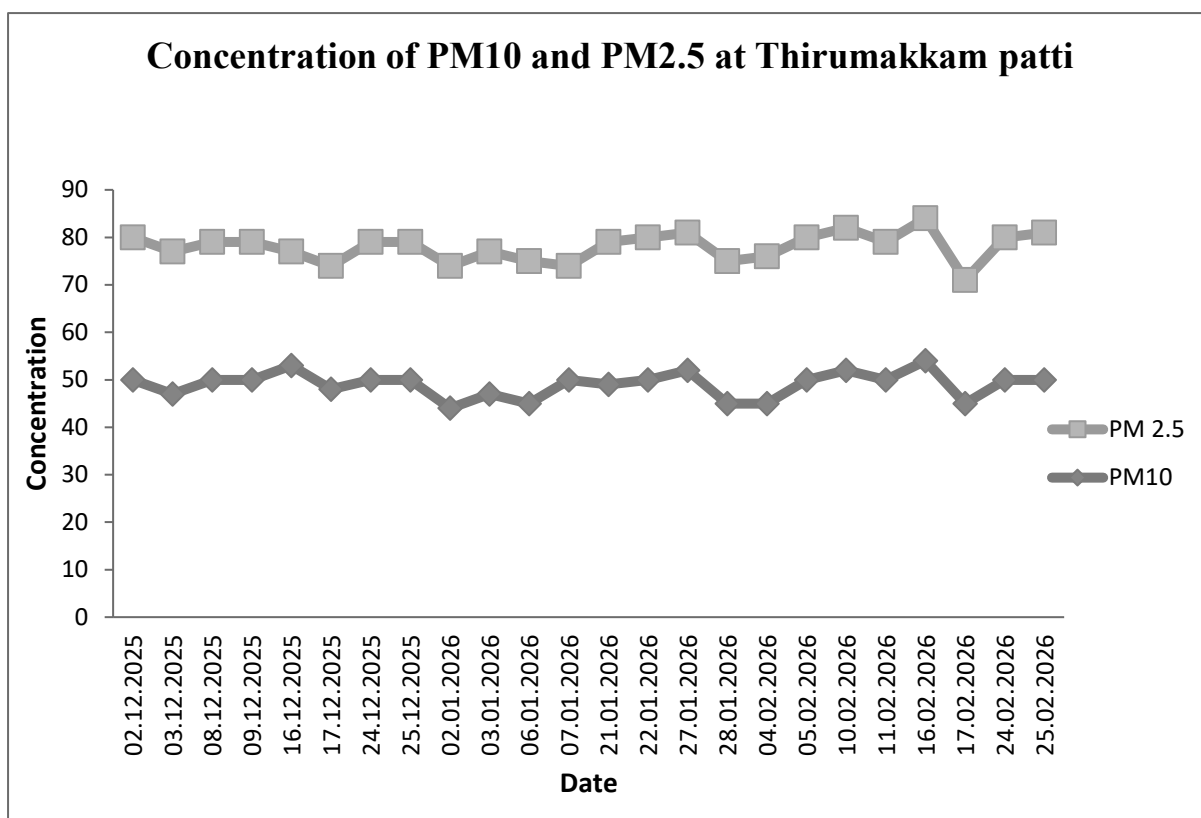
Monitoring station-wise minimum and statistical analysis (minimum, maximum, arithmetic mean) for measured levels of PM₁₀, PM_{2.5}, SO₂, NO_x in study area for the monitoring period are shown parameter wise in table 3.3 and graphical representation of concentration pollutants are showing in fig 3.4.

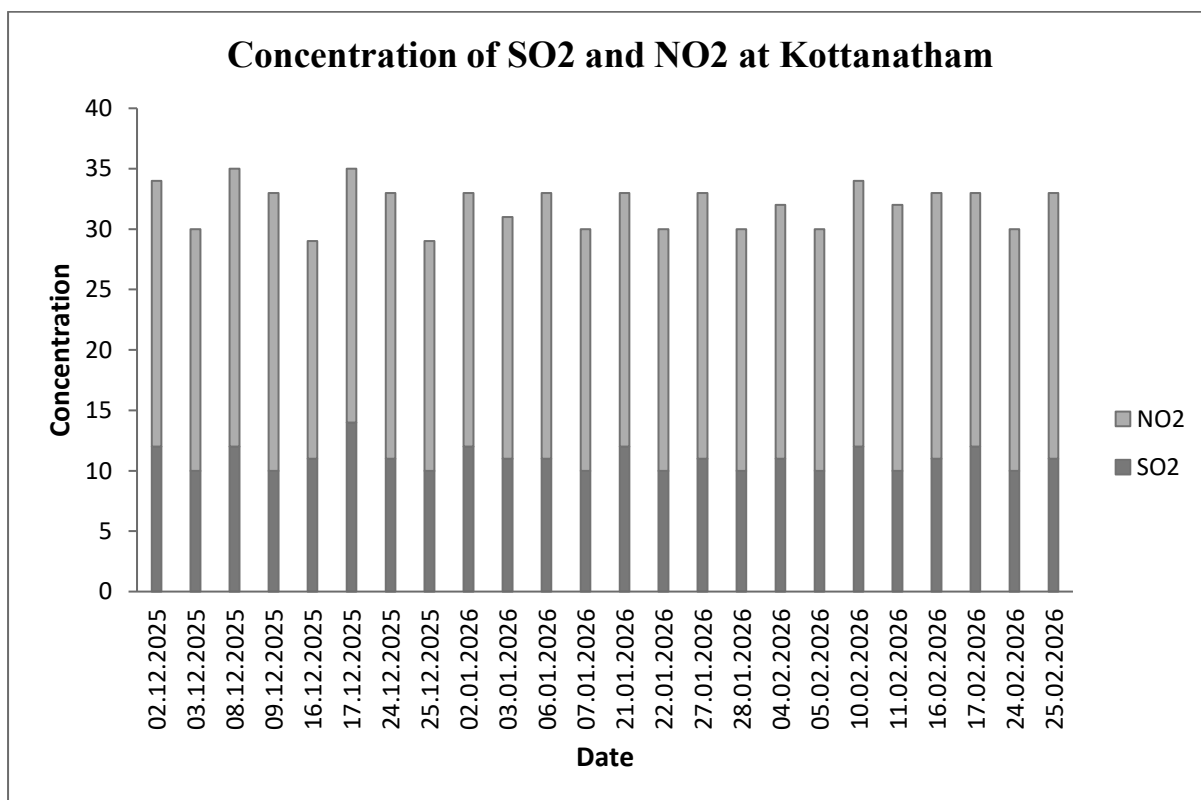
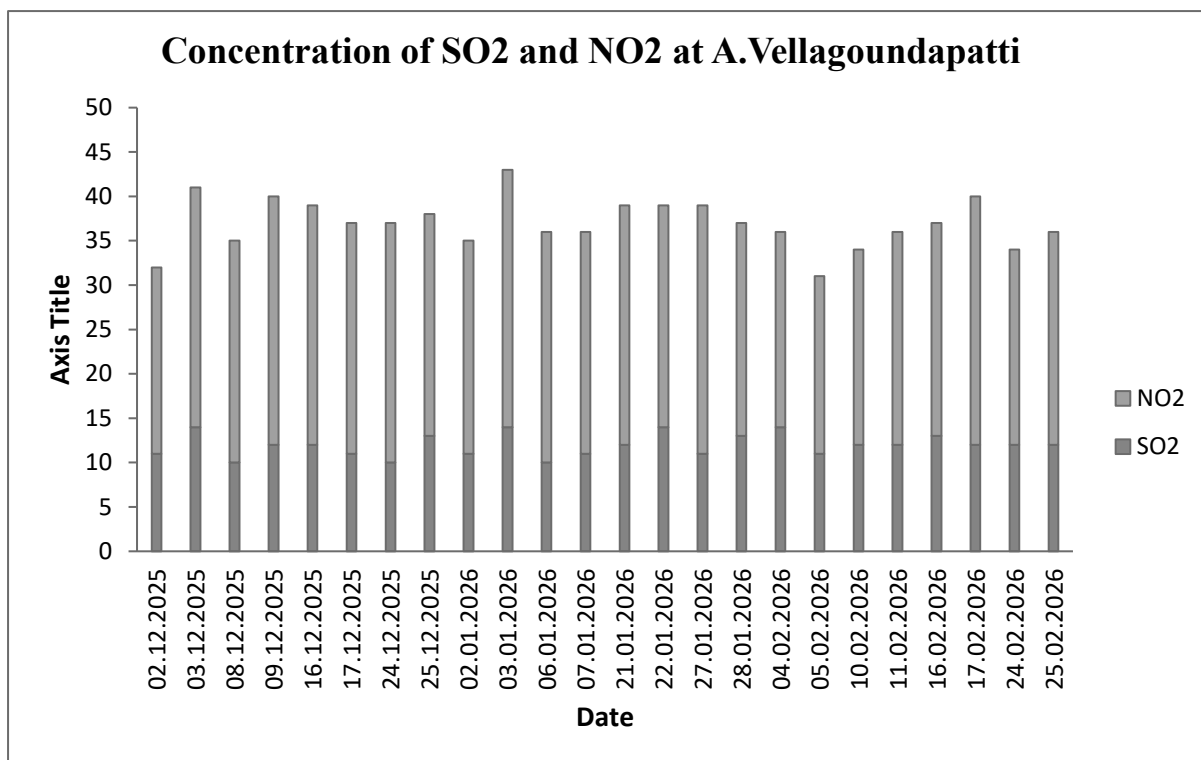
Table No. 3.3: Summaries of Ambient Air Quality Results

Location		Code	PM ₁₀ (µg/m ³)				PM _{2.5} (µg/m ³)				SO ₂ (µg/m ³)				NO _x (µg/m ³)			
			Min	Max	Avg	98%	Min	Max	Avg	98%	Min	Max	Avg	98%	Min	Max	Avg	98%
Cluster Core Zone		AAQ-1	42	51	48	50.54	19	30	24	28.08	9	19	14	18	15	28	22	27
Buffer zone	Vellagoundanpatti	AAQ-2	32	50	45	49	15	30	26	29	8	17	12	14	12	30	25	29
	Kottanatham	AAQ-3	35	48	44	47	18	30	28	30	7	14	11	13	11	25	21	23
	K.Pichampatti	AAQ-4	39	51	48	50	18	27	25	27	9	19	15	18	15	27	23	25
	Thirumakkam Patti	AAQ-5	40	54	49	54	19	31	29	31	9	17	13	16	12	25	22	24
NAAQS			100				60				80				80			









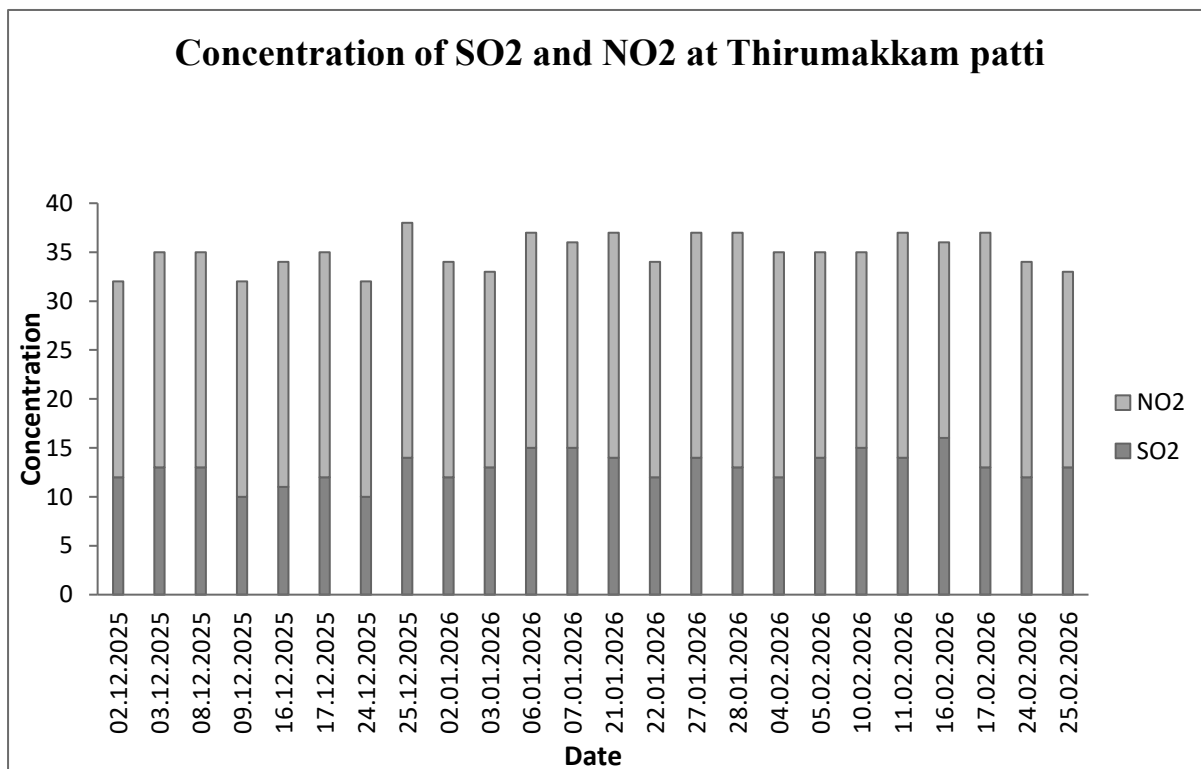
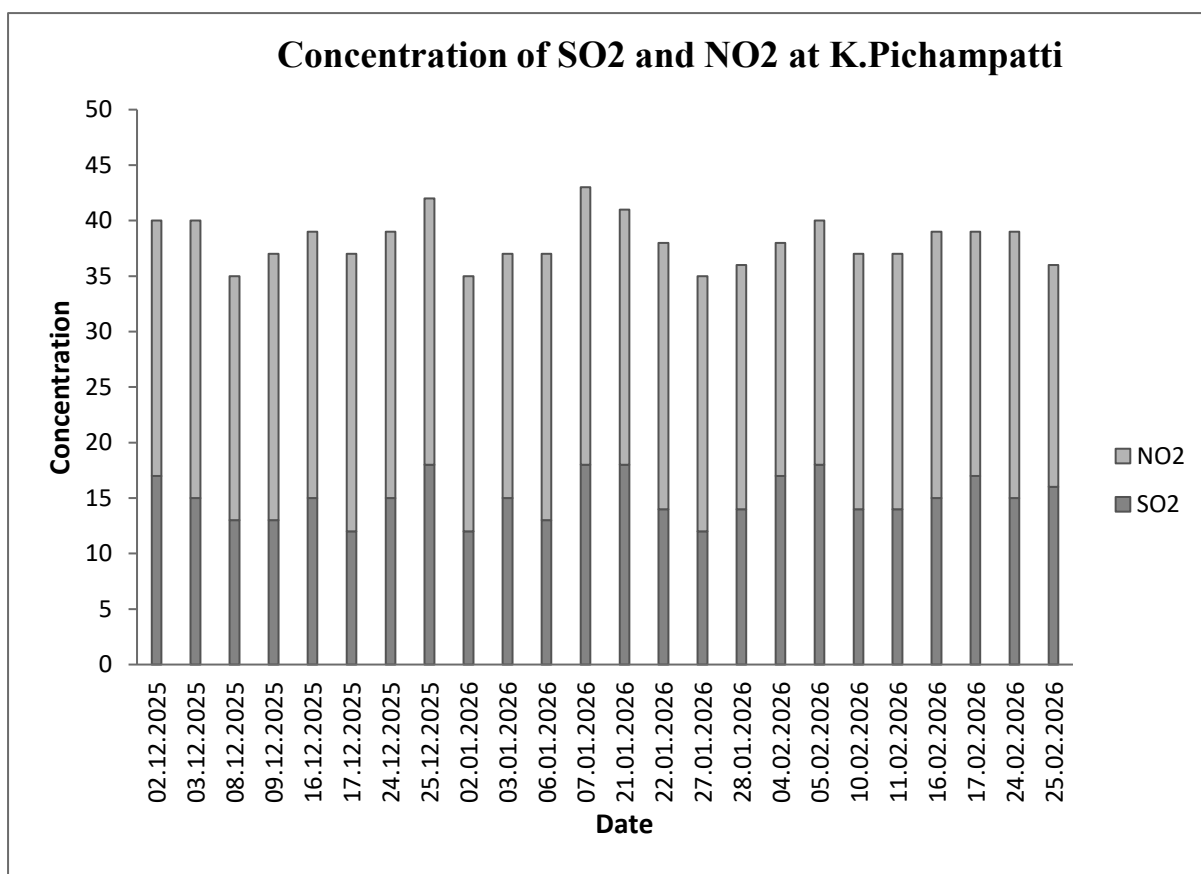


Fig No 3.4 Variation in Concentration of air pollutants

3.4.3 Observations of Primary Data

The area generally has low levels of pollutants in ambient air, which is well within the National Ambient Air Quality Standards for industrial or rural areas. This is due to the absence of any major pollution generating source in the vicinity.

- ✚ Ambient Air Quality Monitoring (AAQM) reveals that the minimum concentration of PM₁₀ for all the 5 stations was found to be 51µg/m³ at Core zone and other one station. The maximum concentration was observed in Thirumakkam Patti as 54µg/m³. The average PM₁₀ level at all stations varies from 44µg/m³ to 49µg/m³.
- ✚ The average PM_{2.5} level at all stations varies from 24µg/m³ to 29µg/m³. The minimum concentrations of PM_{2.5} for all the 5 stations were found to be 15µg/m³ and 19 µg/m³. The maximum concentration was found to be 31µg/m³ at Thirumakkam Patti.
- ✚ The maximum concentrations of SO₂ were found to be 19µg/m³ at K.Pichampatti village. The minimum concentration was found to be 7µg/m³ at Kottanatham village. The average SO₂ level at all stations varies from 11µg/m³ to 15µg/m³
- ✚ The minimum NO_x concentrations were recorded as 11µg/m³ at Kottanatham village. The maximum concentration was found to be 30µg/m³ at Vellagoundanpatti village. The average NO_x level at all stations varies from 21µg/m³ to 25µg/m³. The concentration levels of the above pollutants were observed to be well within the limits of AAQS prescribed by CPCB.

3.5 NOISE ENVIRONMENT

A preliminary reconnaissance was undertaken to identify the major noise generating sources in the area. Nine locations (Core Zone & Buffer Zone) were identified based on the activities in the study area, traffic and sensitive areas like hospitals and schools. The noise monitoring locations are shown in fig 3.5 & 3.6. The sampling locations are shown in table 3.4.

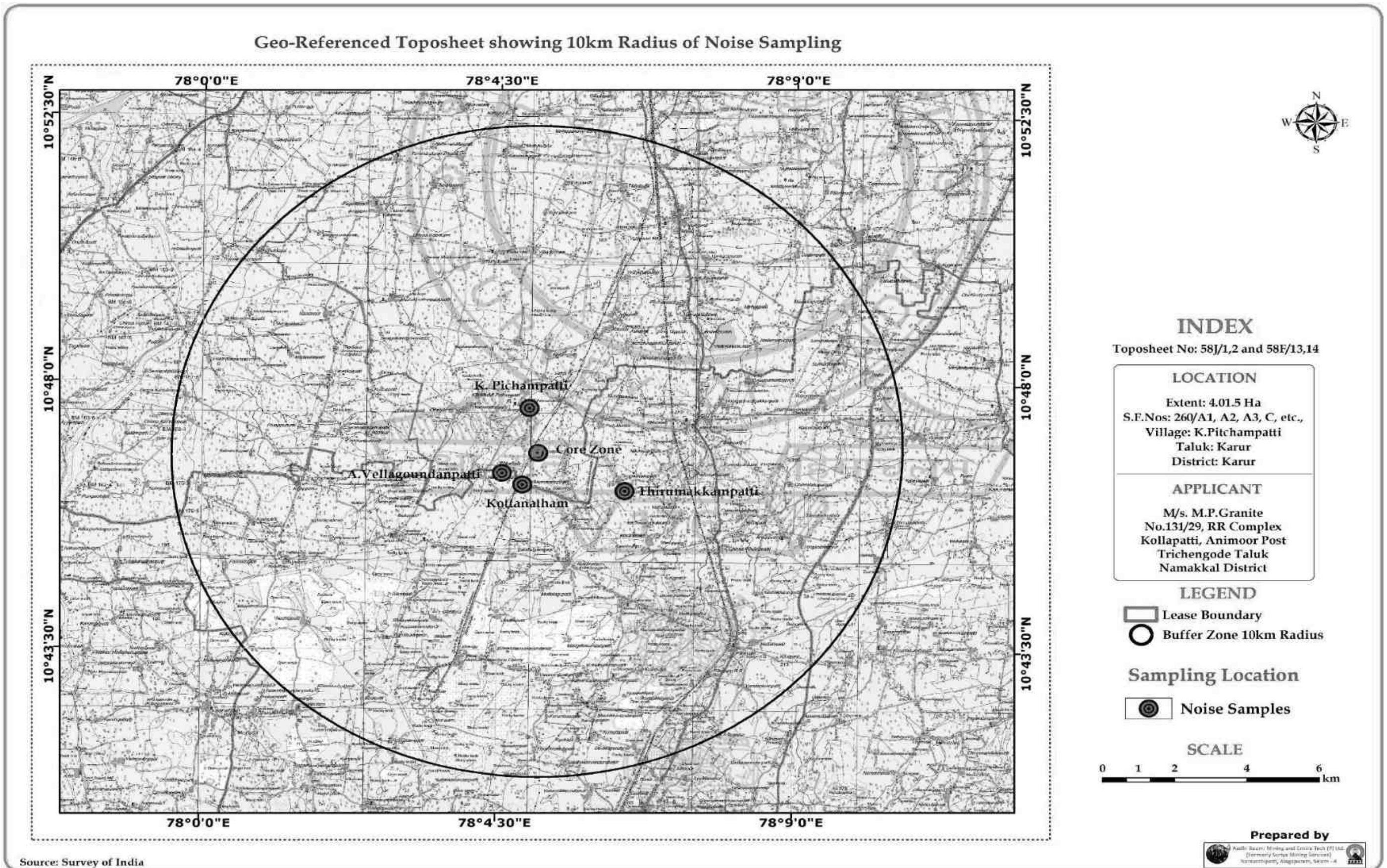


Fig No 3.5 Geo Referenced Toposheet showing Noise sampling stations around 10km radius

Table 3.4 Noise Sampling Locations

Sl. No	Location	Station code	Distance (km)	Direction
1	Cluster Core area	NQ1	--	--
	Lease boundary pillar (North)	NQ2	0.1	N
	Lease boundary pillar (South)	NQ3	0.1	S
	Lease boundary pillar (East)	NQ4	0.1	E
	Lease boundary pillar (West)	NQ5	0.1	W
2	Vellagoundanpatti	NQ11	1.0 km	SE
3	Kottanatham	NQ12	0.8 km	S
4	K.Pichampatti	NQ13	2.46 km	SW
5	Thirumakkam Patti	NQ14	1.67 km	NE

3.5.1 Method of Monitoring

One reading per hour was taken for 24 hours. The day time noise levels were monitored during 6 am to 10 pm and night time levels during 10 pm to 6 am at all the monitoring locations within the study area (Table 3.4(a)).

Table 3.4(a) Noise Monitoring Results in Core and Buffer Zone

Sample code	Location	Decibel dB (A)		TNPCB Standards
		Day Time	Night Time	
NQ1	Cluster Core area	44.1	42.0	<u>Industrial</u> Day Time- 75 dB(A) Night Time – 70 dB(A)
NQ2	Lease boundary pillar (North)	42.9	39.4	
NQ3	Lease boundary pillar (South)	39.9	37.2	
NQ4	Lease boundary pillar (East)	44.5	41.3	
NQ5	Lease boundary pillar (West)	47.2	42.6	
NQ6	Vellagoundanpatti	41.4	38.5	<u>Residential</u> Day Time - 55 dB(A) Night Time - 45 dB(A)
NQ7	Kottanatham	38.9	35.2	
NQ8	K.Pichampatti	41.3	37.8	
NQ9	Thirumakkam Patti	41.6	37.4	
Remarks	Day Time	Leq (6.00 AM to 10.00 PM)		
	Night Time	Leq (10.00 PM to 6.00 AM)		

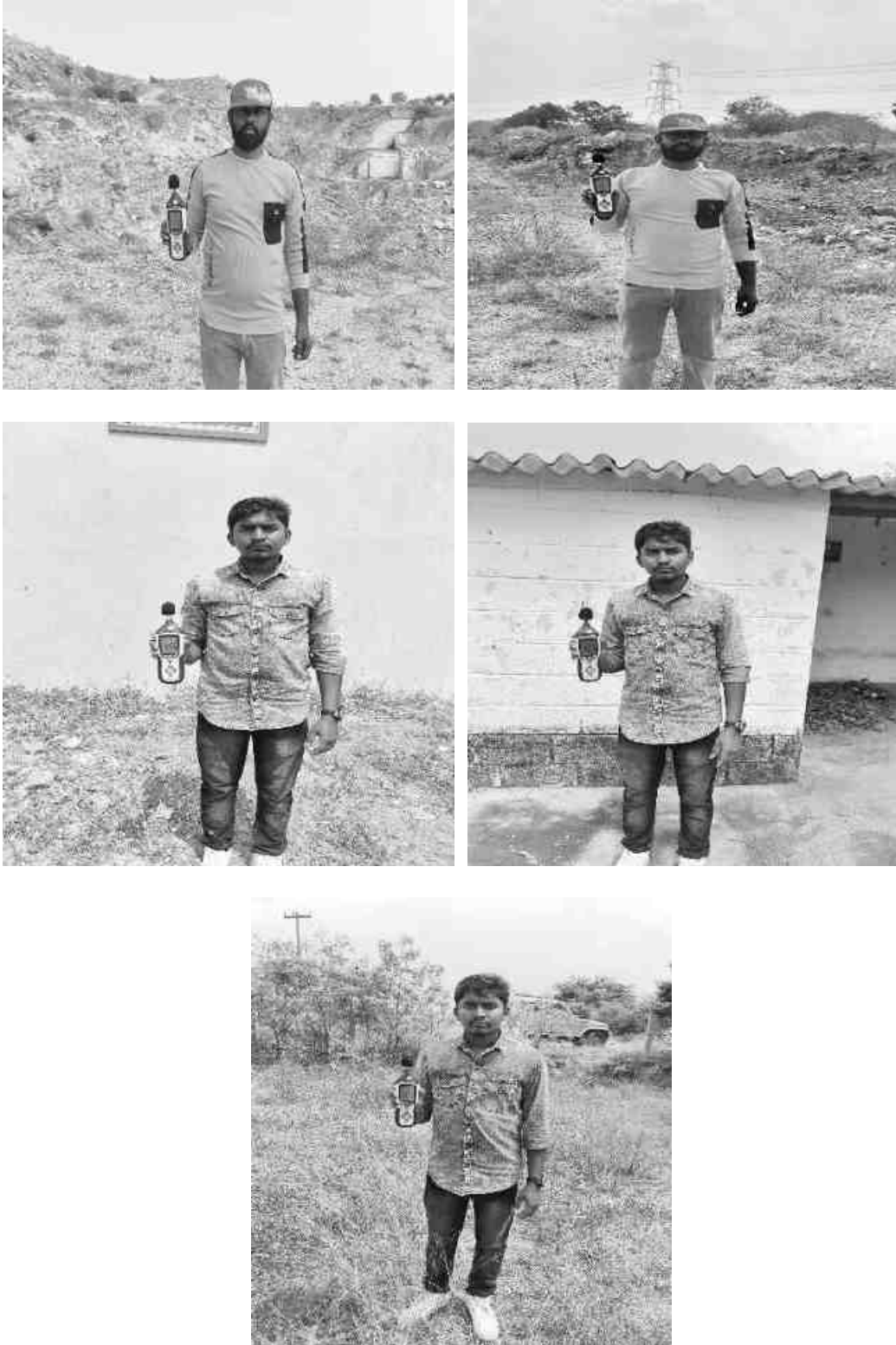


Fig No 3.6 Noise Monitoring at Lease and Buffer

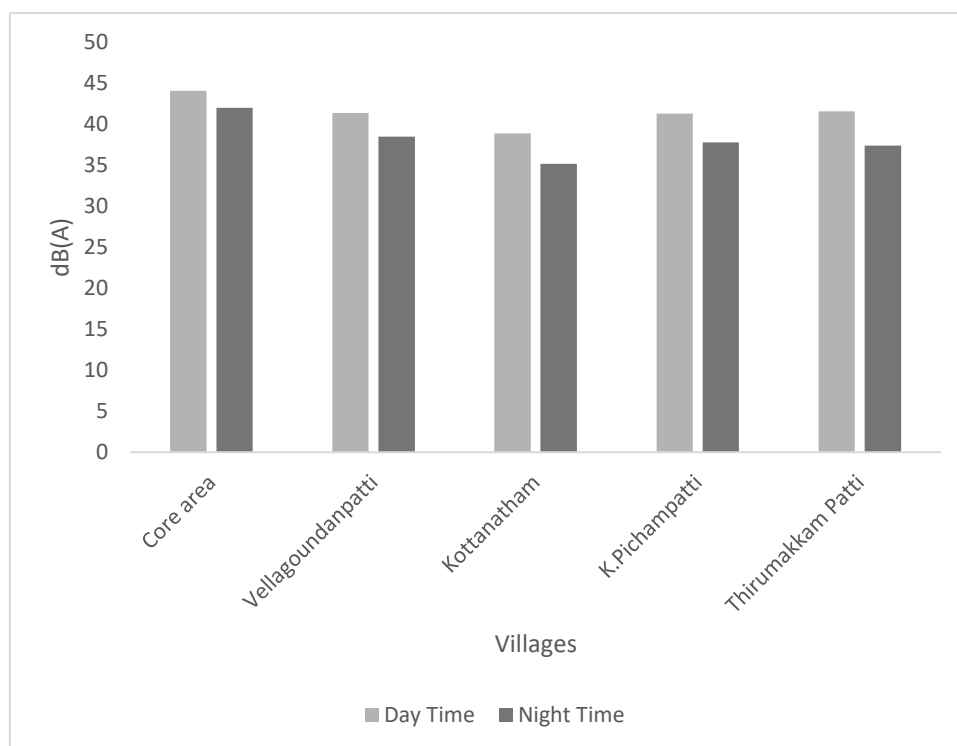


Fig No 3.7 Noise Level of the Study Area

3.5.2 Observations

3.5.2.1 Day Time Noise Levels

Noise Monitoring reveals that the maximum & minimum noise levels at day time were recorded as 41.6 dB (A) at Thirumakkam Patti village & 38.9 dB (A) at Kottanatham village respectively in buffer zone. The minimum and maximum noise level at core area is 47.2 dB (A) and 39.9 dB (A). The Noise level measured is found within the permissible limits during day time as specified by CPCB Standard.

3.5.2.2 Night Time Noise Levels

The night time noise levels, the maximum & minimum noise levels at Night time were recorded as 38.5 dB (A) at Vellagoundanpatti village & 35.2 dB (A) at Kottanatham village respectively in buffer zone. The minimum and maximum noise level at core area is 42.6 dB (A) and 37.2 dB (A). The Noise level measured is found within the permissible limits during night time as specified by CPCB Standard.

3.6 Water Environment

Assessment of baseline data on Water environment includes:

- a) Identification of surface and ground water sources
- b) Collection of water samples
- c) Analyzing water samples collected for Physico–chemical and biological parameters

3.6.1 Selection of Sampling Stations

The samplings were taken from the identified monitoring locations within the 10km radius of the study area. Water samples were collected to study the water quality of the study area.

3.6.2 Water Quality

Water samples from various locations in and around the project site within 10 km radius were collected for assessment of the physic-chemical and bacteriological quality to know the baseline status of water quality. Parameters for analysis of water quality were selected based on the utility of the particular source of water as per MoEF & CC guidance. Methodologies adopted for sampling and analysis of water in according to the Bureau of Indian Standards. The parameters thus analyzed were compared with IS10500:2012. Details of water sampling locations are present in table 3.5. In addition, water quality details are given in the table 3.6. Locations of Core and Buffer Zone water samples are given in the fig 3.8. The following image of Geo referenced Topomap showing locations of water samples are given in the fig 3.9.

Table 3.5 Water Sampling Locations

Sampling Code	Location	Surface/ Ground water	Latitude	Longitude	Distance (km)	Direction
WQ1	Cluster Core Zone	GW	10°46'43.71"N	78° 5'8.77"E	–	–
WQ2	Vellagoundanpatti	GW	10°46'28.36"N	78° 4'35.06"E	1.0	SE
WQ3	Kottanatham	GW	10°46'19.81"N	78° 4'55.45"E	0.8	S
WQ4	K.Pichampatti	GW	10°47'38.80"N	78° 4'49.29"E	2.4	SW
WQ5	Thirumakkam Patti	GW	10°46'16.03"N	78° 6'21.58"E	1.6	NE



Fig No 3.8 Water Sample Collection at Core and Buffer Zone

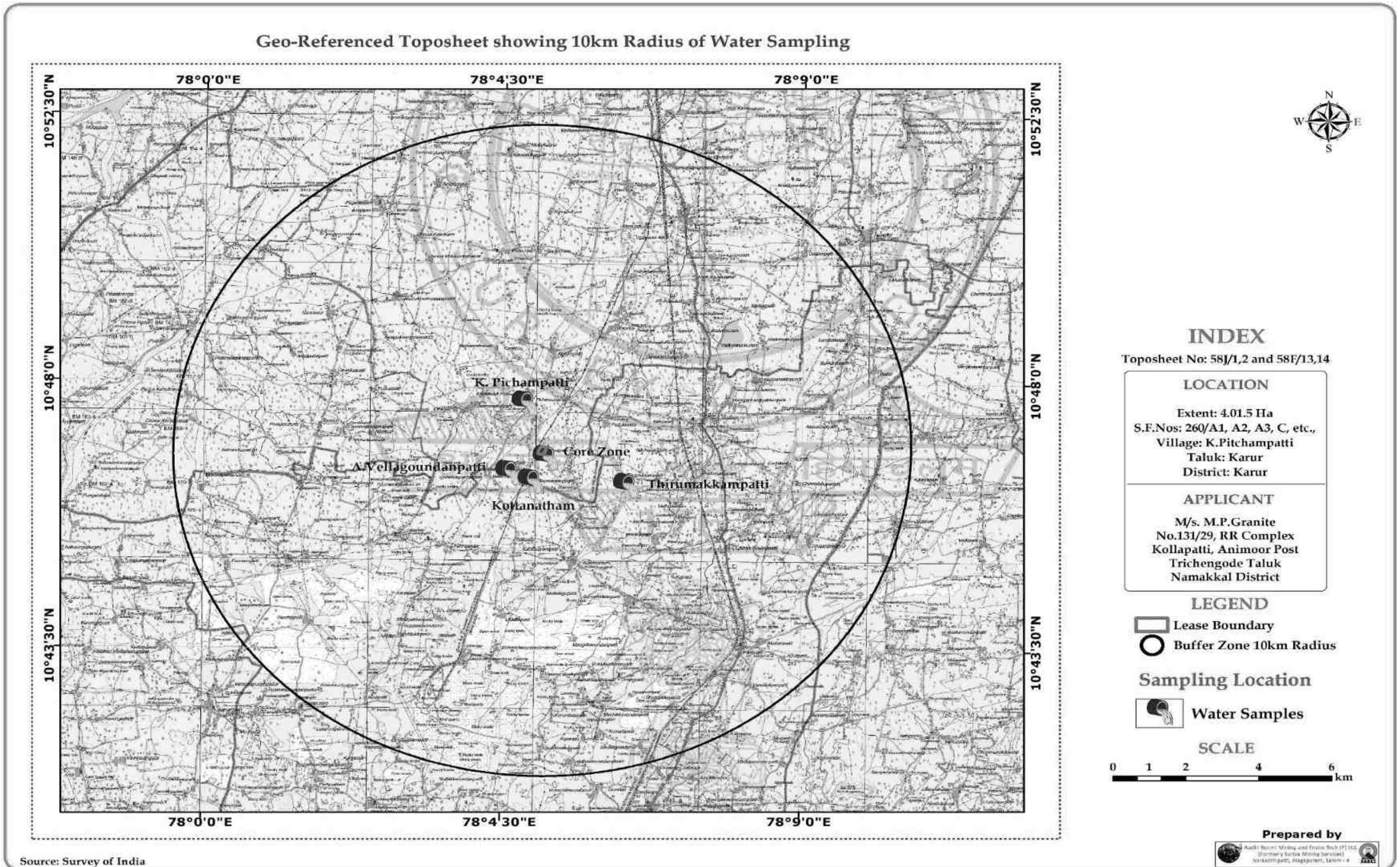


Fig No 3.9 Geo Referenced Toposheet showing water sampling station around 10km radius

Table 3.6 Result of Water Quality Analysis

Sampling Site		Parameters												
		pH	EC μs/cm	Tur (NTU)	TSS (mg/l)	TDS (mg/l)	TH (mg/l)	Ca (mg/l)	Mg (mg/l)	Cl (mg/l)	TA (mg/l)	BOD (mg/l)	SO ₄ ²⁻ (mg/l)	Fe (mg/l)
Cluster Core Zone		6.99	1205	4.8	24	724	524	149	37	159	168	12.2	88	0.34
Buffer Zone	Vellagoundanpatti	7.23	1649	5.7	28	988	708	208	46	240	148	14.2	114	0.06
	Kottanatham	6.90	1223	3.8	16	736	496	151	29	142	176	12.6	72	0.02
	K.Pichampatti	7.53	1753	5.9	28	1052	824	223	65	260	144	17.1	106	0.05
	Thirumakkam Patti	7.59	1380	3.8	24	828	584	96	84	207	220	11.8	65	0.03
IS 3025/Ref lab report	AL	6.5-8.5	-	1	-	500	200	75	30	250	200	-	200	0.3
	PL	6.5-8.5	-	5	-	2000	600	200	100	1000	600	-	400	0.3

*Protocol followed by: APHA 23rd Edition 2017

Tur- Turbidity, **TSS**- Total Suspended Solids, **TDS**-Total Dissolved Solids, **TH**- Total Hardness, **Ca²⁺**- Calcium, **Mg²⁺**-Magnesium, **Cl**-Chloride, **TA**-Total Alkalinity, **Phe**- Phenolphthalein, **SO₄²⁻**- Sulfate and **Fe**-Iron.

AL- Acceptable Limit.

PL-Permissible limit.

3.6.3 Interpretation of Water Quality Data

Water Quality results were compared with acceptable limits for Drinking Water as per the Standard IS 10500:2012. All the parameters of Water samples meet the acceptable limits of IS 10500: 2012 and found to be within the limits.

- pH of the water samples ranged from 6.90-7.59 pH in water samples collected from the locations are within the permissible limit between 6.5-8.5.
- EC of the water samples ranged from 1205 to 1753 Micro mhos/cm in the samples collected.
- Turbidity from the water samples collected from both core and buffer area was observed water samples ranged from 3.8-5.9 NTU.
- Total suspended solids are observed as 16-28 mg/l in all the water samples collected from both core and buffer area.
- Total Dissolved Solids found in the range of 724-1052 mg/l. In all the samples TDS was found beyond the acceptable limit of 500mg/l and maximum value was recorded at K.Pichampatti Village.
- Total Hardness of water sample of all the locations including core and buffer zone was found exceeding in the permissible limit of 500 mg/l. The maximum value of 824 mg/l was found in K.Pichampatti village and minimum value of 496 mg/l was observed in Kottanatham village.
- Calcium value observed in entire buffer locations were in the range of 96-223 mg/l, exceeds the acceptable limit of 75 mg/l as per Drinking water standards. Whereas in core zone the value was observed to be 149 which is well exceeding the limit of 75 mg/l.
- Magnesium value recorded in all the locations including the core zone was within the range of 29-84 mg/l.
- Chlorides in all the water samples were recorded and highest chloride concentration found in Vellagoundanpatti Village. In other villages the values observed were within permissible limits. The observed value was within the range of 142-260 mg/l.
- Iron & Sulfates in water samples collected from both core and buffer location were observed to be well within the limits.

3.7 Hydro Geology

3.7.1 Major Geological formations

Geology: Geologically, the entire district can be broadly classified into hard rock and sedimentary formations. a) Hard rock formations More than 90% of the district is underlain by hard rock of Archaean age. The gneissic type of formation is the major formation among the various types of hard rock's Charnockite occurs in this district as pockets in Karur and Aravakurichi taluks. Quartzites which are resistant to weathering are also seen as patches in charnockite and gneiss varieties. 4 b) Sedimentary formations Recent alluvial deposits such as sand, silt, clay, gravel, etc., which are transported sediments by river are found on either side of Cauvery river in Karur, Krishnarayapuram and Kulithalai blocks. These formations are overlying the hard rock. Drilling of bore holes: The occurrence and movement of groundwater in hard rock formations are restricted to the porous zones of weathered formations and the open systems of fractures, fissures and joints. Generally, in hard rock regions, occurrence of weathered thickness is discontinuous both in space and depth. Karur district is underlain entirely by Archaean Crystalline formations with recent alluvial deposits occurring along the river and streams courses. Weathered, fissured and fractured crystalline rocks and the recent alluvial deposits constitute the important aquifer systems in the district. The porous formations in the district are represented by river alluvium. These alluvial deposits are confined to the Major River and stream courses only. Ground water occurs under phreatic conditions. The maximum saturated thickness of these aquifers is upto 10 m depending upon the topographic conditions. The hard consolidated crystalline rocks of Archaean age represent weathered, fissured and fractured formations of gneisses, granites, charnockites and other associated rocks. Ground water occurs under phreatic conditions in the weathered mantle and under semi-confined conditions in the fractured zones. The thickness of the weathered mantle of the hard rocks is varying from less than a meter to as much as 20.10 m. It is within the depth of 15m in major part of the district. The Specific capacity of large diameter wells tested in crystalline rocks from 31 to 200 lpm / m. of drawdown. The yield characteristics of wells vary considerably depending on the topographic set-up, lithology and the degree of weathering. The yield of bore wells drilled down to a depth of 70 to 100 m, by various state agencies mainly for domestic purposes ranged from 100 to 600 lpm. The aquifer and well parameters of the wells shows wide variation.

3.7.2. Aquifer Parameters

More or less, 90 percent of Karur district is covered by crystalline formation of Archaean age. The thickness of aquifer in hard rock formation varies from 15 to 35 m. The inter granular porosity is essentially depend upon the intensity and degree of weathering and fracture development in the bed rock. Deep weathering is developed in gneissic formations and moderate weathering in charnockite formation. The alluvial formation stretches mainly along the river course of Cauvery. The aquifer parameters of the formations hard rock and alluvium are furnished in the table below.

3.7.3 Geophysical Electrical Resistivity Survey

For understanding subsurface hydrogeological conditions geophysical investigation is carried out. The geophysical investigation is especially useful in the areas where there are no adequate exploratory well data about the aquifer conditions. Electric resistivity method is one of the well-known geophysical methods for delineating lateral as well vertical discontinuities in the resistivity's of the earth's subsurface layers. It is mainly applied to locate aquifers in the field of hydrogeology. The present study makes use of vertical electric sounding (VES) to delineate earth's subsurface layers. The electrical resistivity investigation used four electrodes collinear set up where current is sent through outer electrodes into the ground and the inner electrodes measure the potential difference, as shown in Figure 3.10.

3.7.4 Methodology and Data Acquisition

Geophysical Electrical Resistivity survey conducted in schlumberger Configuration (VES) method using IPI2 win Software. The Schlumberger array is an array where four electrodes are placed in line around a common midpoint. The two outer electrodes, A and B, are current electrodes, and the two inner electrodes, M and N, are potential electrodes placed close together. With the Schlumberger array, for each measurement the current electrodes A and B are moved outward to a greater separation throughout the survey, while the potential electrodes M and N stay in the same position until the observed voltage becomes too small to measure (source). At this point, the potential electrodes M and N are moved outward to a new spacing. As a rule of the thumb, the reasonable distance between M and N should be equal or less than one-fifth of the distance between A and B at the beginning. This ratio goes about up to one-tenth or one-fifteenth depending on the signal strength. The Schlumberger array is commonly used for vertical electrical sounding (VES) for groundwater and aggregate minerals. Vertical electrical sounding (VES) using the Schlumberger array provides better resolution.

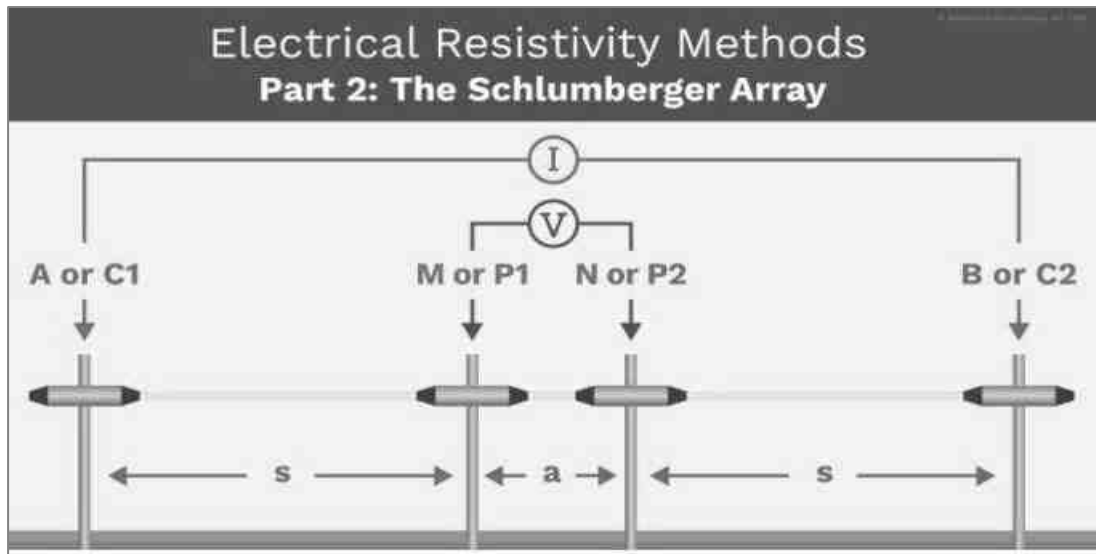


Figure 3.10 Schlumberger Array



Figure 3.11. DDR-3 Electrical Resistivity Meter

The resistivity surveys were carried by the consultants in the site at selected one point at Tested in the proposed Project site. The vertical electrical sounding (VES) using digital resistivity meter is carried out and the apparent resistivity curves are obtained. Ipi2 win software is used and the data are interpreted. The computer output of geo-electric layers are given in Figure 3.13 which gives the Resistivity cross section and Resistivity curve, depth wise resistance and interpreted layers with corresponding resistivity.



Figure 3.12. Photos showing Geophysical survey conducted at proposed project site

The study area of lies in the Northern latitude of $10^{\circ}46'35.78''N$ Eastern longitude $78^{\circ}4'59.29''E$ which is represented by Toposheet No. 58 J/2. The applied area is mostly plain, elevation of 226m above mean sea level.

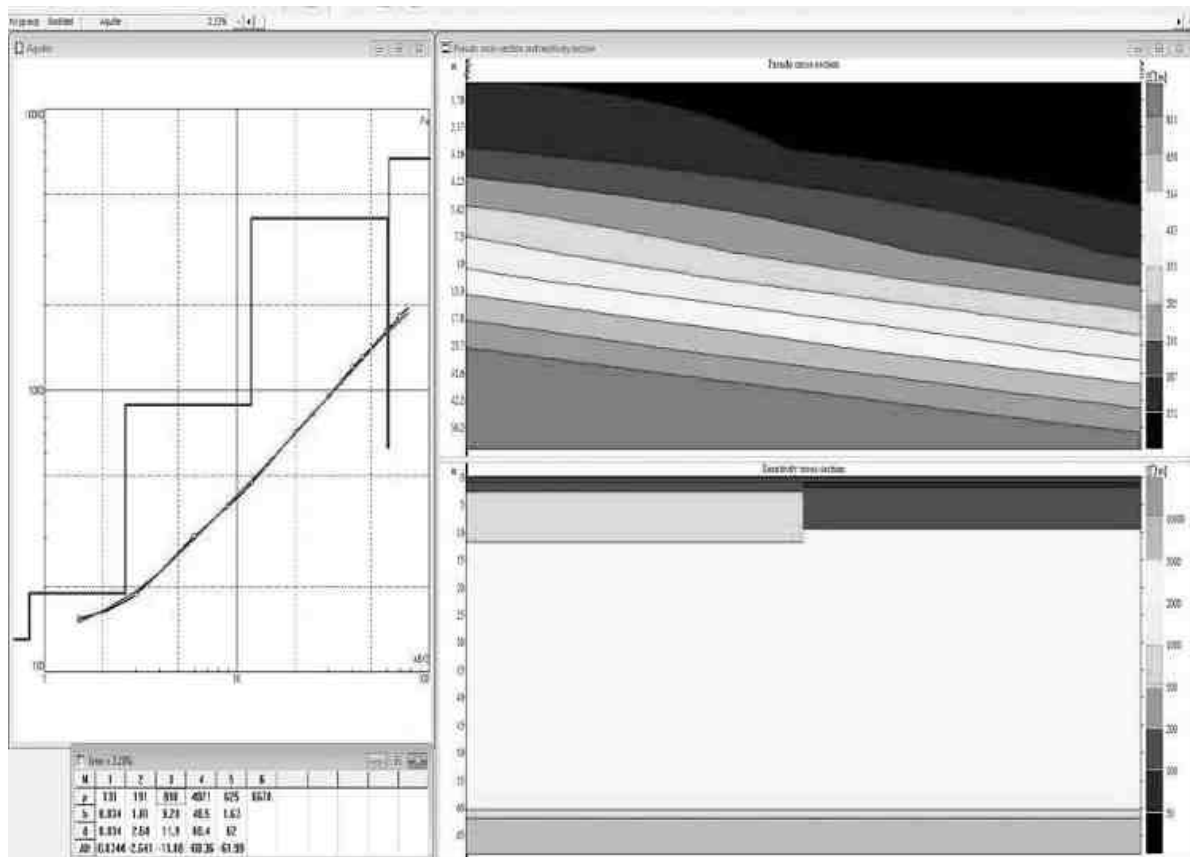


Figure 3.13. Image showing Resistivity cross section and Resistivity curve, depth of data

Table 3.7 Geophysical Vertical Electrical Sounding Data

Geo-Coordinates: Latitude 10°46'35.78"N, Longitude 78° 4'59.29"E					
S.No.	AB/2 (m)	MN/2 (m)	Geometric factor (K)	Resistance Value (R) ohm	Apparent Resistivity Rho ohm-meter
1	1.5	0.5	6.3	25.4	160
2	3	0.5	27.5	5.42	149
3	6	0.5	112.3	1.74	195
4	9	0.5	253.6	0.88	223
5	12	0.5	451.4	0.56	253
6	12	2	109.9	1.98	218
7	15	2	173.5	1.34	232
8	20	2	310.9	0.96	298
9	25	2	487.5	0.76	371
10	30	2	703.4	0.64	450
11	30	6	226.1	1.92	434
12	35	6	311.1	1.72	535
13	40	6	409.2	1.46	597
14	45	6	520.5	1.4	729
15	50	6	644.7	1.24	799
16	60	6	932.6	1.06	989
17	60	10	549.5	1.74	956
18	70	10	753.6	1.52	1145
19	80	10	989.1	1.47	1454
20	90	10	1256	1.43	1796
21	100	10	1554.3	1.4	2176

3.7.5 Geophysical Data Interpretation

0-2.64m: Top soil & Gravel with 191 Ohm. Resistivity

2.64-11.9m weathered rock formation with 890 ohm. Resistivity

11.9-60.4m: massive granite formation with 4231 Ohm. Resistivity

60.4-62m: Resistivity Jointed and fractured rock with about 625ohm. Resistivity

Above 62m: hard massive granite formation with 6670 Ohm. Resistivity

The presence of top soil and Gravel 0-2.64m followed by 2.64-11.9.8m with low resistivity is indicative of the weathered rock formation. 11.9-60.4m massive granite formation. The water table is having curve breaks around 60.4-62m depth with possible water level.

3.7.6 Groundwater Levels and flow direction

As the groundwater moves from the points of highest static groundwater elevation to the points of lowest static groundwater elevation under the influence of gravity, data regarding depth to groundwater levels are essential to infer the direction of groundwater movement within the study area. Knowledge of groundwater flow direction is important for selecting suitable locations for background groundwater quality monitoring wells and for identifying recharge and discharge zones. Therefore, data regarding groundwater elevations were collected from 6 open wells at various locations within 1km radius around the proposed project site for the period from December 2025 to February 2026. The data thus collected from 6 open wells are provided in Table 3.10 According to the data, the three months' average depths to the static water level in open wells range from 13.24 to 15.76m BGL. The depths to static water level and potentiometric surface data were used to calculate static groundwater table and potentiometric surface elevations for open wells, respectively to draw contour lines connecting groundwater elevation (also known as equipotential hydraulic head) to determine the groundwater flow direction perpendicular to the contour lines.

From the maps of groundwater flow direction (Figure 3.14), it is understood that most of the open well groundwater underneath the proposed project site flows towards the open well number 4 located in NE of the proposed project site. On the basis of the groundwater flow information, OW-6 (west) is proposed as the up gradient/background monitoring well, while OW-4 (north-east) is recommended as the down gradient sentinel well for periodic groundwater level and quality monitoring. However, groundwater flow is influenced by factors like the water table's elevation, the permeability of the surrounding soil and rock, and the presence of any geological structures like fractures or faults. Groundwater flows from areas of higher hydraulic head (pressure) to areas of lower hydraulic head, and it can be affected by pumping from bore wells, which can create cones of depression in the water table.

Table 3.10 Water Level of Open Wells within 1 km Radius

Open well ID	Latitude	Longitude	Depth to Static Water Level BGL (m)			
			Dec 2025	Jan 2026	Feb 2026	Average Water Level
OW-1	10°46'25.82"N	78° 5'8.11"E	13.96	14.94	16.35	15.08
OW-2	10°46'36.52"N	78° 5'16.85"E	13.85	14.4	15.87	14.71
OW-3	10°46'20.91"N	78° 5'26.89"E	12.9	13.85	14.93	13.89
OW-4	10°46'44.00"N	78° 5'33.20"E	12.08	13.14	14.5	13.24
OW-5	10°46'56.22"N	78° 5'4.52"E	12.63	13.74	14.8	13.72
OW-6	10°46'36.64"N	78° 4'36.19"E	14.6	15.77	16.92	15.76

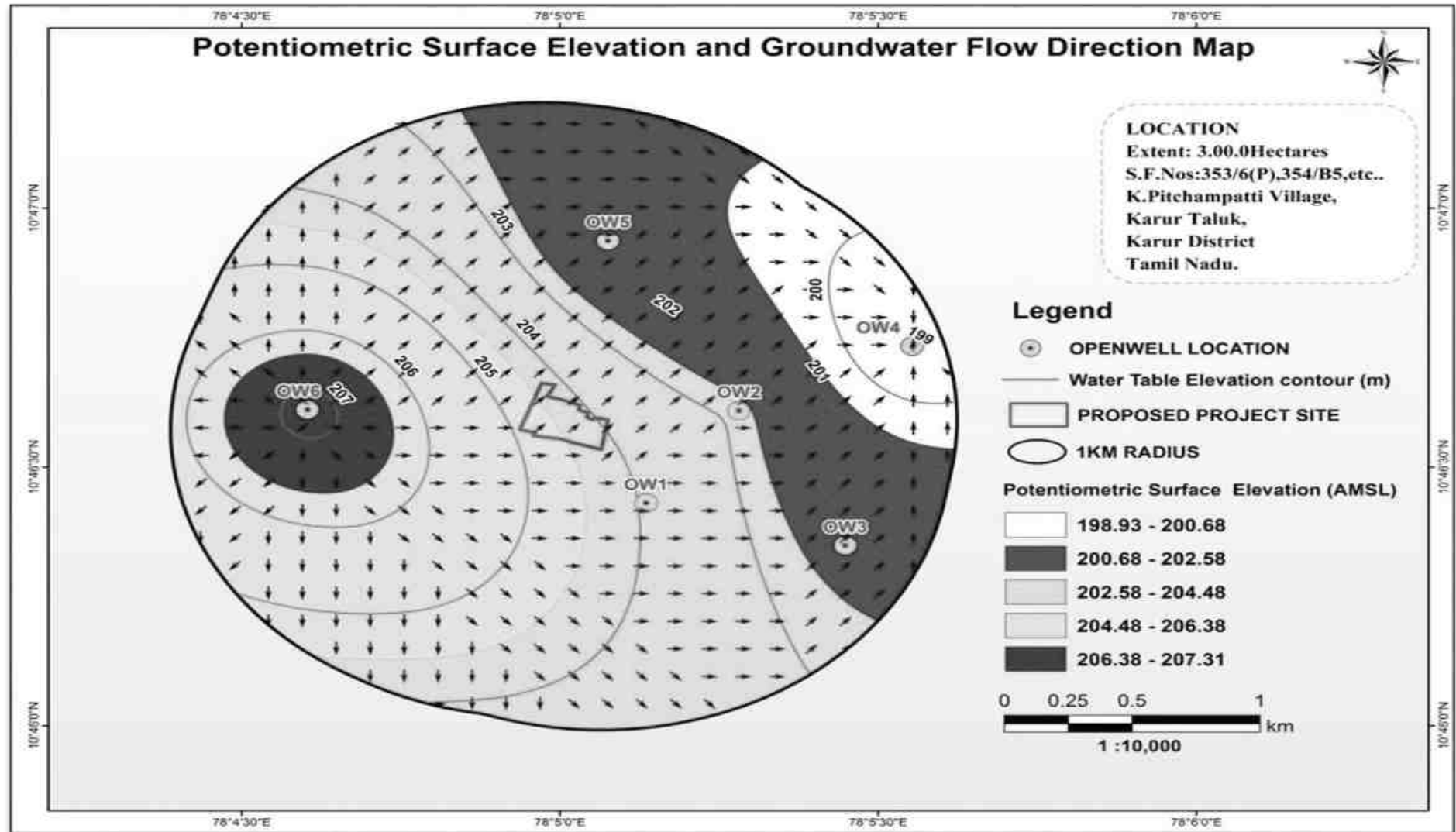
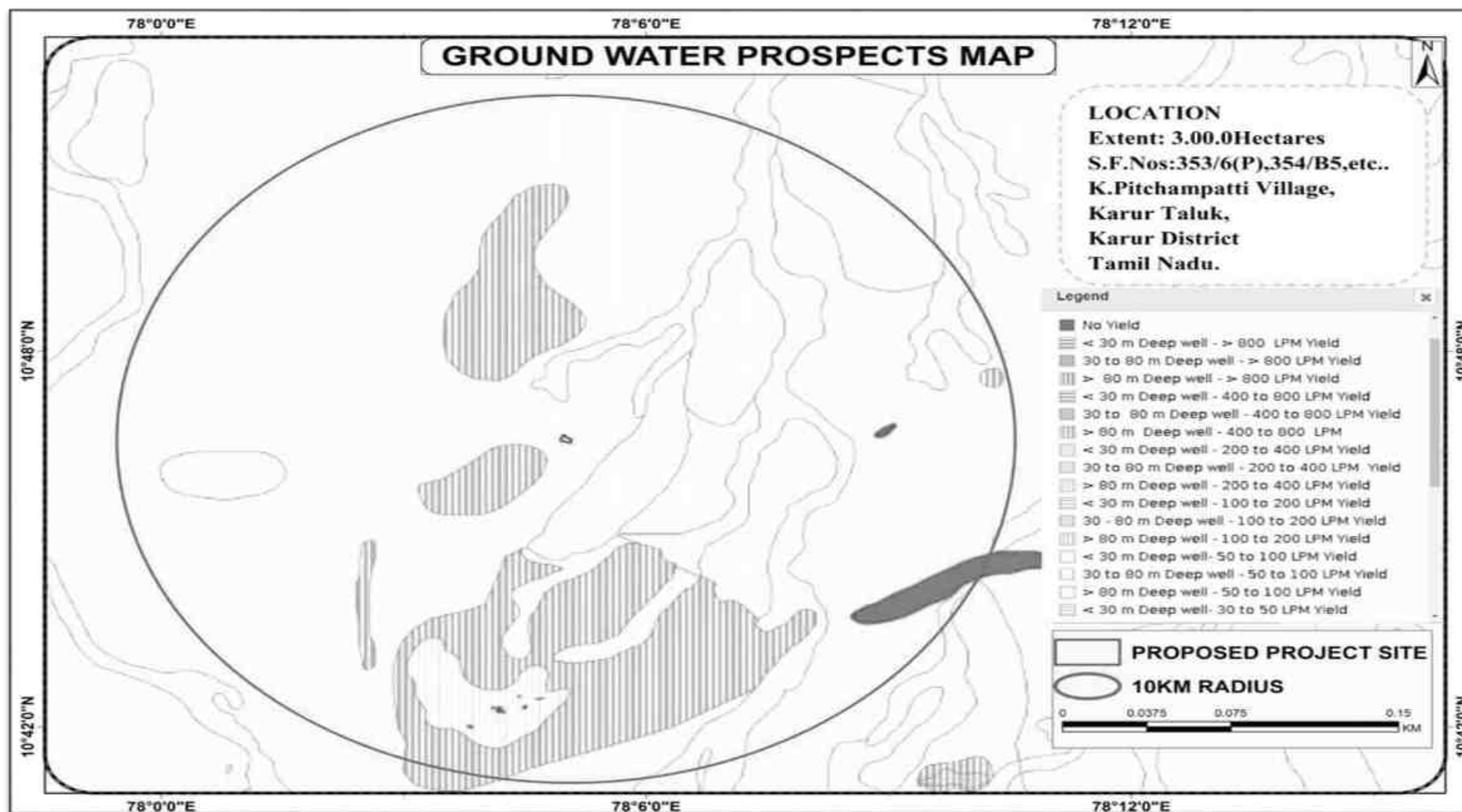


Figure 3.14 Potentiometric Surface Elevations and Groundwater Flow Direction Map within 1 km Radius of the Proposed Project Site



Source <https://bhuvan-app1.nrsc.gov.in/gwis/gwis.php>

Figure 3.15 Ground Water prospects map proposed project site around 10km Radius

3.7.7 Conclusion

The hydro geological, geophysical studies indicate the water bearing aquifer is located at 60-62m below ground level (BGL). The maximum depth of mining proposed project for five years 35m below ground level. Therefore, the mining operation will not affect the aquifer throughout the entire mine life period.

3.8 Soil Environment

The type of soil is an important factor for the growth of plants and crops in any area. The soil system has various criteria to classify the soils of a region such as geology, humidity, rainfall pattern, soil texture, soil salinity etc.

Soil quality study has been carried out at the site and in the study area of 10 km radius around the project site to understand the physical-chemical nature of the soil. Soil sampling was carried out at 3 selected locations.

The frequency and methodology of soil quality sampling process is given in table 3.11. Moreover, Georeferenced soil Map of around 10 km radius is given in fig 3.12. Table 3.12 presents the soil quality monitoring locations of the study area. The sampling was carried out once in the study period.

Table 3.11 Frequency and Methodology for Soil sampling & monitoring

S. No	Particulars	Details
1	Frequency	One sample from each station— once during the Study Period
2	Methodology	Soil Sample has been collected as per the CPCB standard

3.8.1 Methodology of Soil Environment

Soil samples were collected from different depth below the surface. The samples were filled in polythene bags, labeled in the field with number and site name and sent to laboratory for analysis. The samples were homogenized and the quality was reduced using the coning and quartering method to provide a respective sample for analysis. The samples were analyzed as per Indian Standards IS: 2720 (Revised Parts).

- ❖ To determine the baseline soil characteristics of the study area
- ❖ To determine the impact of the project on soil characteristics and
- ❖ To determine the impact on soils more importantly loss of fertility from agricultural productivity point of view.

Table 3.12 Soil Sampling Locations

CODE	Place	Latitude (N)	Longitude (E)	Distance (km)	Direction
SQ1	Cluster Core Zone	10°46'34.17"N	78° 5'1.23"E	-	-
SQ2	Vellagoundanpatti	10°46'30.12"N	78° 4'36.14"E	1.0	SE
SQ3	Kottanatham	10°46'24.31"N	78° 4'57.23"E	0.8	S
SQ4	K.Pichampatti	10°47'36.45"N	78° 4'50.80"E	2.4	SW
SQ5	Thirumakkam Patti	10°46'20.38"N	78° 6'18.47"E	1.6	NE

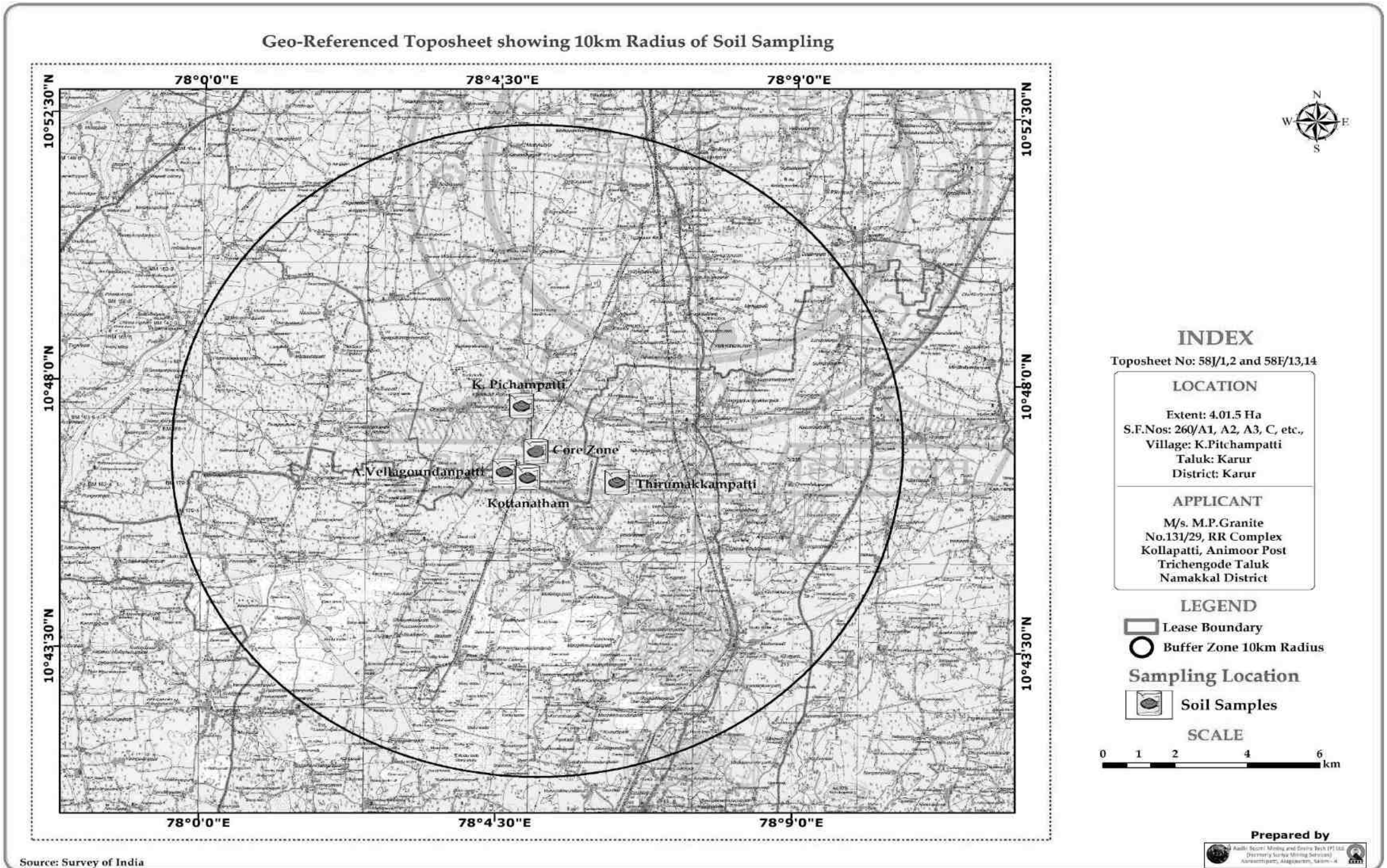


Fig No 3.16 Geo referenced Toposheet showing Soil sampling Locations around 10km radius



Fig No 3.17 Soil Sampling at Core and Buffer Zone

Table 3.9 Result of Soil Sample Analysis

Sample Site		Soil Parameters											
		pH (10%Sol)	EC (10% Sol) µs/cm	M (%)	BD (g/cc)	WHC (%)	Texture (%)			OM (%)	Ca (Meq/l)	Mg (Mqe/ l)	Cl (Meq/l)
							Sand	Silt	Clay				
Cluster Core Zone		7.16	258	2.4	1.2	48	48	32	20	0.2	0.8	0.6	0.7
Buffer Zone	Vellagoundanpatti	7.05	297	2.6	1.06	56	54	24	22	0.26	1.2	0.6	0.9
							Sandy Clay Loam						
	Kottanatham	7.16	185	1.9	1.24	64	52	28	20	0.3	1.2	1.0	0.8
							Sandy Loam						
	K.Pichampatti	6.96	215	2.5	1.04	44	48	28	24	0.2	1.8	1.0	1.4
							Sandy Loam						
	Thirumakkam Patti	7.68	294	2.1	1.30	56	52	28	20	0.2	2.2	0.6	1.2
							Sandy Loam						
EC-Electrical Conductivity, M - Moisture, BD - Bulk Density, WHC - Water Holding Capacity, OM - Organic Matter, Ca - Calcium, Mg -Magnesium and Cl -Chloride. BDL = Below the Detectable Limit. DL = Detection Limit.													

3.8.2 Observations

Soil characteristics were delineated through specific parameters viz. moisture, bulk density, texture, water holding capacity, organic matter and other parameters as depicted in table 3.9.

pH is an important parameter indicative of alkaline or acidic nature of soil. It greatly affects the microbial population as well as solubility of metal ions and regulates nutrient availability. The pH varies from 6.96 to 7.68 in the soil samples. In cluster Core area of pH 7.16 value of soil was neutral.

Electrical conductivity (EC), a measure of soluble salts in the soil was in the range of 185 $\mu\text{S}/\text{cm}$ to 297 $\mu\text{S}/\text{cm}$.

Regular cultivation practices increase the **bulk density** of soils thus inducing compaction. This results in reduction in water percolation rate and penetration of roots through soils. The soils with low bulk density have favorable physical conditions whereas those with high bulk density exhibit poor physical conditions for agriculture crops. The bulk density of the soil samples is in the range of 1.04g/cc to 1.30g/cc respectively, which indicate favorable physical condition for plant growth.

Water holding capacity was found to be in the range of 48% to 64% in all the soil samples collected from core and buffer villages.

Organic matter present in soil influences its physical and chemical properties and is responsible for stability of soil aggregates. Organic matter was found to be in the range of 0.2- 0.3%. This shows that soil was deficient in organic matter content.

Available Chlorides content range of between 0.7 to 11.4 meq/l in both core and buffer villages.

Magnesium level of soil sample in the core zone and buffer zone was found to be 0.6 to 1.0 meq/l in all the soil samples collected.

Calcium content in these soils ranges between 0.8 to 2.2 meq/l thereby indicating that the soils are with low levels of available Calcium content.

3.9 ECOLOGY AND BIOLOGICAL ENVIRONMENT

3.9.1 Description of Karur District Environment

Karur Taluk, which was once a part of Coimbatore district, was merged with Tiruchirappalli district during 1910. Karur District came into existence by the bifurcation of Trichy District as per G.O.(Ms) No.683 Revenue (RA1(1)) Department dated: 25.07.1996. It is bounded on the North by Namakkal, South by Dindugal, East by Tiruchirappalli and West by Erode districts. The District is located between 10° 37'N to 11°12' N Latitude, 77° 46' E to 78° 15'E Longitude. Karur town is located on the bank of Amaravathi River. Its area is 2895.6 Sq.Km.

Karur district comprises two divisions of Karur and Kulithalai, seven circles namely Karur, Aravakurichi, Manmangalam, Bukalur, Kulithalai, Krishnarayapuram and Kadavur and 203 revenue villages. The district has 157 panchayats and eight districts namely Karur, Dandoni, Aravakurichi, K.Paramathi, Kulithalai, Krishnarayapuram, Kadavur, Thogamalai. In this district there are two municipalities namely Karur and Kulithalai and eleven municipalities namely Aravakurichi, Krishnarayapuram, Marudur, Nangavaram, Old Jayangkonda Solapuram, Pallapatti, Puliur, Punchai Thotakurichi, Punsai Bukhlur, TNBL Bukhlur, Uppidamangalam.

The average annual rainfall is 652.2 mm. The district receives the rain under the influence of both southwest and northeast monsoons. The major rainfall occurs during north-east monsoon. The southwest monsoon rainfall is highly erratic and summer rains are negligible.

The mean maximum temperature ranges from 26.7 to 38.56 °C and the mean minimum temperature ranges from 18.7°C to 29.3°C. The day time heat is oppressive and the temperature are as high as 43.9°C. The lowest temperature recorded is of the order of 13.9°C.

3.9.2 Agriculture activities in Karur District

Karur district has specifically known for Moringa and Banana cultivation and other prominent crops under cultivation are Tapioca, Gloriosa, Betelvine, Jasmine, Ixora, Coconut and other vegetable crops. Karur district Soils types' clay l red soil dark red soil, the other soil series are Palladam, Palathurai, palaviduthi, Vannapatti and Mixed alluvium.

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

Table No. 3.15: Details of Important crops in Karur District

S. No	Common name	Scientific name	Family
1.	Paddy	<i>Oryza sativa</i>	Poaceae
2.	Cholam	<i>Sorghum bicolor</i>	Poaceae
3.	kambu	<i>Pennisetum glaucum</i>	Poaceae
4.	Ragi	<i>Eleusine coracana</i>	Poaceae
5.	Groundnut	<i>Arachis hypogaea</i>	Fabaceae
6.	Sugarcane	<i>Saccharum officinarum</i>	Poaceae
7.	Black gram	<i>Vigna mungo</i>	Fabaceae
8.	Cotton	<i>Gossypium herbaceum</i>	Malvaceae
9.	Vargu	<i>Paspalum crobiculatum</i>	Poaceae
10.	Maize	<i>Zea mays</i>	Poaceae
11.	Green gram	<i>Vigna radiata</i>	Fabaceae
12.	Red gram	<i>Cajanus cajan</i>	Fabaceae
13.	Castor	<i>Ricinus communis</i>	Euphorbiaceae
14.	Kuthiraivali	<i>Echinochloa frumentacea</i>	Poaceae
15.	Horsegram	<i>Macrotyloma uniflorum</i>	Fabaceae

3.9.3 Forest resources

The forest resources of this district are very meagre when compared to the State as a whole. Karur district has only about 3.11% of its land under forest cover. The total forest area of Karur District is 6187 Hectares. All the forests are degraded forests and tropical dry thorny forests.

3.9.4 Water resources

Major Rivers flowing the district are

- Cauvery
- Amaravathy
- Nanganjiyaaru
- Noyyal

Major part of Karur district is drained by Cauvery River. Amaravathi, Kodavanar and Pungar are the important rivers draining the western part of the district and the river Pungar drains in eastern part of the district. The drainage pattern, in general, is dendritic. All the rivers are seasonal and carry substantial flows during monsoon period. The River Cauvery is flowing on the northern and eastern boundaries.

3.9.5 Study Area Ecology

A survey was conducted to study the flora around 10 km radius. Some of the information was gathered from the local habitants. All the collected data were classified to interpret the impact of pollution on the flora and fauna of that region. Survey of the mild plants as well as cultivated crop plants was made and all the available information was recorded. The primary data collected was compared with the Secondary data collected from Forest Department. There are no ecologically sensitive areas such as Biosphere reserves, Wildlife Sanctuaries, national Parks and other protected areas in or around the project site in a radius of 10 km. Generate Baseline Data from field observations.

3.9.6 Methodology of Sampling

A methodology of Sampling Flora and fauna studies were carried out during the winter season to assess the list of terrestrial plant and animal species that occur in the core area and the buffer area up to 10 km radius from the project site. No damage is created to flora and fauna during the sampling. None of the specimens were collected as voucher specimens and for the herbarium. It is basically done through field observations only. The study of flora is conducted as per the guidelines of the Ministry of Environment Forest and Climate Change (MoEF&CC) and Botanical Survey of India (BSI).

The study involved in the collection of primary data by conducting a survey in the field, examination of flora and fauna records in previously published reports and records. Analysis of the information is the view of the possible alteration in the environment of the project site. For the survey of fauna, both direct and indirect observation methods were used

3.9.7 Flora

The present study on the floral assessment for the existing project activity is based on extensive field survey of the area. The plant species were identified with the help of plant taxonomy manual, literatures and Botanical Survey of India website (efloraindia.nic.in). In addition besides the collection of plant species, information was also collected with vernacular names of plant species made by local inhabitants.

3.9.7.1. Flora in Core Zone

Taxonomically a total of 27 species distributed in 16 families have been recorded from the core mining lease area. Based on habitat classification of the enumerated plants the majority of species were tree 15 (56%) followed by shrubs 6 (22%), herbs 5 (19%) and creeper 1 (3%) Details of flora with the scientific name were mentioned in table 3.16 and fig 3.21. No ecologically sensitive plant species has been reported from this area.

3.9.7.2. Flora in Buffer Zone

Taxonomically a total of 49 species distributed among 30 families have been recorded from the buffer area. Based on habitat classification of the enumerated plants the majority of species were tree 25 (51%) followed by shrubs 12 (24%), herbs 8 (16%) and rest 4 (4%) is a climber. Details of flora with the scientific name were mentioned in table 3.16 and fig 3.21.

3.9.7.3 Crop Pattern in Buffer Zone

The buffer area of mining lease area mostly cultivated for varieties of flowers such as, jasmine, firecracker flower, marigold and crops area mango and groundnut. Details crops with name mentioned in table 3.16.

Table No. 3.11: Floral Diversity in Core and Buffer area

Sl. No.	Common Name	Local Name	Family	Scientific Name	Core	Buffer
TREES						
1.	Pomegranate Tree	Mathulai Maram	Punicaceae	<i>Punica granatum</i>	+	+
2.	Coconut Tree	Tennai Maram	Arecaceae	<i>Coccus nucifera</i>	+	+
3.	Banana Tree	Vaazhai Maram	Musaceae	<i>Musa paradisiaca</i>	-	+
4.	Manila tamarind	Kodukkapuli Maram	Fabaceae	<i>Pithecellobium dulce</i>	+	+
5.	Palmyra palm Tree	Panai Maram	Arecaceae	<i>Borassus flabellifer</i>	+	+
6.	Bamboo Tree	Munkil Maram	Poaceae	<i>Bambusa vulgaris</i>	+	+
7.	Teak Tree	Tekku Maram	Lamiaceae	<i>Tectona grandis</i>	+	+
8.	Southwest Thorn	Seemai karuvellam Maram	Fabaceae	<i>Prosopis juliflora</i>	+	+
9.	Otaheite gooseberry Tree	Siru neli Maram	Phyllanthaceae	<i>Phyllanthus acidus</i>	+	+
10.	Drumstick Tree	Murungai Maram	Moringaceae	<i>Moringa oleifera</i>	+	+
11.	Guava Tree	Koiya Maram	Myrtaceae	<i>Psidium guajava</i>	+	+
12.	Neem Tree	Vempa Maram	Meliaceae	<i>Azadirachta indica</i>	+	+
13.	Papaya Tree	Papali Maram	Caricaceae	<i>Carica Papaya</i>	+	+
14.	Indian date Tree	Elandhai Maram	Rhamnaceae	<i>Ziziphus mauritiana</i>	+	+
15.	Mango Tree	Maa Maram	Anacardiaceae	<i>Mangifera indica</i>	+	+

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16.	Iron wood Tree	Savukku Maram	Casuarinaceae	<i>Casuarina equisetifolia</i>	+	+
17.	Lemon Tree	Ealumichai Maram	Rutaceae	<i>Citrus limon</i>	-	+
18.	Black plum Tree	Naval Maram	Myrtaceae	<i>Syzygium cumini</i>	+	+
19.	Sapodilla Tree	Sappota Maram	Sapotaceae	<i>Manilkara zapota</i>	-	+
20.	Lemon-Scented Gum	Thaila Maram	Myrtaceae	<i>Eucalyptus citriodora</i>	+	+
21.	Chebolicmyrobalan	Kadukkai Maram	Combretaceae	<i>Terminalia chebula</i>	-	+
22.	Pungamin Tree	Pungai Maram	Fabaceae	<i>Pongamia pinnata</i>	+	+
23.	Custard apple	Seethe pazham Maram	Annonaceae	<i>Annona squamosa</i>	+	+
24.	Thorn mimosa	Karuvelam Maram	Mimosaceae	<i>Acacia nilotica</i>	+	+
25.	Tamarind	Puliya Maram	Fabaceae	<i>Tamarindus indica</i>	+	+
26.	Sweet acacia Tree	Kastuurivel Maram	Fabaceae	<i>Vachellia farnesiana</i>	-	+
27.	Bodhi Tree	Arasa Maram	Moraceae	<i>Ficus Religiosa</i>	-	+
28.	Cannonbal tree	Nagalinga Maram	Lecythidaceae	<i>Couroupita guianensis</i>	-	+
29.	Scarlet Wistaria Tree	Aagathikerai Maram	Fabaceae	<i>Sesbania grandiflora</i>	-	+
30.	Banyan Tree	Ala Maram	Moraceae	<i>Ficus benghalensis</i>	-	+
31.	Cluster fig	Aathi Maram	Moraceae	<i>Ficus racemosa</i>	+	+
32.	Portia Tree	Poovarasa Maram	Malvaceae	<i>Thespesia populnea</i>	+	+
SHRUBS						
1.	Sourbush	Vellai karpooravalli	Asteraceae	<i>Pluchea carolinensis</i>	+	+
2.	Spiny broom	Thumbanail	Fabaceae	<i>Calicotome spinosa</i>	+	+
3.	Japanese pittosporum	Kattu sammanki	Pittosporaceae	<i>Pittosporum oreillyanum</i>	+	+

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4.	Prickly pear	Sappathi kallai	Cactaceae	<i>Opuntia ficus indica</i>	+	+
5.	Madagascar Periwinkle	Nithiya kalyani	Apocynaceae	<i>Vinca rosea</i>	+	+
6.	Scarlet jungle flame	Ittili poo/ Sinduram	Rubiaceae	<i>Ixora coccinea</i>	-	+
7.	Henna plant	Maruthani chedi	Lythraceae	<i>Lawsonia inermis</i>	+	+
8.	Gwar patha	Katrazai	Liliaceae	<i>Aloe barbadensis miller</i>	+	+
9.	Peacock flower	Mayil kontai	Fabaceae	<i>Caesalpinia pulcherrima</i>	-	+
10.	Marigold	Samanthi cheedi	Asteraceae	<i>Tagetes erecta</i>	-	+
11.	Firecracker flower	Kanakambaram	Acanthaceae	<i>Crossandra infundibuliformis</i>	-	+
12.	Hibiscus	Cembarutti	Malvaceae	<i>Hibiscus rosanaceae</i>	-	+
13.	Jimson weed	Ummathai cheedi	Solanaceae	<i>Datura stramonium</i>	+	+
14.	Coat buttons	Kenathuppondu	Asteraceae	<i>Tridax porcumbens</i>	-	+
15.	Rose	Rosa	Rosaceae	<i>Rosa rubiginosa</i>	-	+
HERBS & GRASS						
1.	Giant milkweed	Earukkam poo chedi	Apocynaceae	<i>Calotropis gigantea</i>	+	+
2.	Castor bean	Aamanakku	Euphorbiaceae	<i>Ricinus communis</i>	+	+
3.	Comb bushmint	Selvantha chedi	Lamiaceae	<i>Hyptis pectinata</i>	+	+
4.	Bellyache Bush	Aathalai	Euphorbiaceae	<i>Jatropha glandulifera</i>	+	+
5.	Tanner's cassia	Avaram poo Maram	Fabaceae	<i>Senna auriculata</i>	+	+
6.	Majestic Agave.	Aanai katalalai	Agavaceae	<i>Agave beauleriana</i>	+	+
7.	Indian Copper leaf	Kuppaimeni chedi	Euphorbiaceae	<i>Acalypha indica</i>	-	+

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8.	Chinese chaste	Nocchi Chedi	Lamiaceae	<i>Vitex negundo</i>	+	+
9.	Bladder cherry	Sodakku thakkali chedi	Solanaceae	<i>Physalis minima</i>	-	+
10.	Black nightshade	Mana thakkali chedi	Solanaceae	<i>Solanum nigum</i>	-	+
11.	Holy basil	Thulasi chedi	Lamiaceae	<i>Ocimum tenuiflorum</i>	-	+
12.	Turkey berry	Sundakkai chedi	Solanaceae	<i>Solanum torvum</i>	-	+
13.	Balloon vine	Mudakattan chedi	Sapindaceae	<i>Cardiospermum halicacabum</i>	+	+
14.	Bitter cassava	Maravali kilanku chedi	Euphorbiaceae	<i>Manihot esculenta C.R</i>	+	+
15.	Palisade grass	Pala pul	Poaceae	<i>Brachiaria ramosa</i>	-	+
16.	Nut grasses	Korai pul	Cyperaceae	<i>Cyperus rotundus</i>	+	+
17.	Indian doab	Arugampul	Poaceae	<i>Cynodon dactylon</i>	+	+
18.	Carrot grass	Mookkuthi poo	Asteraceae	<i>Parthenium hysterophorus</i>	+	+
CREEPERS/CLIMBERS						
1.	Madras Pea Pumpkin	Musumusukkai	Cucurbitaceae	<i>Mukia maderaspatana</i>	+	+
2.	Melothria scabra	Paluvakkai	Cucurbitaceae	<i>Melothria scabra</i>	+	+
3.	Bitter melon	Pavakkai	Cucurbitaceae	<i>Momordica charantia</i>	-	+
4.	Veldt grape	Perandai	Vitaceae	<i>Cissusqua dranqularis</i>	+	+
5.	Ivy gourd	Kovakkai	Cucurbitaceae	<i>Coccinia grandis</i>	-	+



Fig a. *Pluchea carolinensis*



Fig b. *Calicotome spinosa*



Fig c. *Punica granatum*



Fig d. *Psidium guajava*



Fig e. *Mukia maderaspatana*

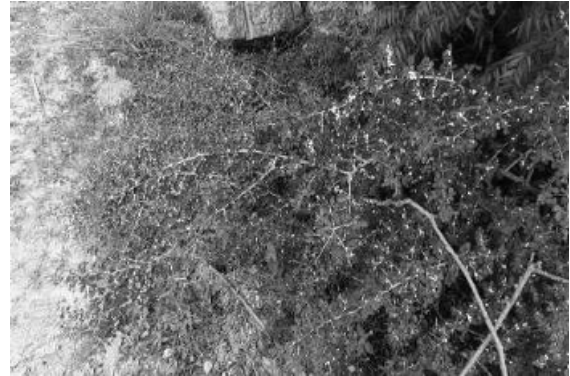


Fig f. *Pittosporum oreillyanum*



Fig g. *Calotropis gigantea*



Fig h. *Borassus flabellifer*

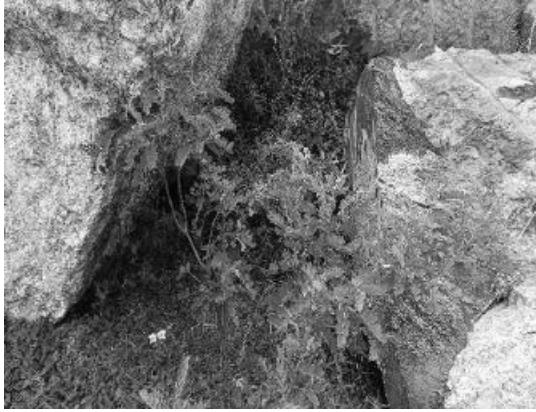


Fig i. *Senna auriculata*



Fig j. *Psidium guajava*



Fig k. *Hyptis pectinata*



Fig l. *Agave beauleriana*

Fig No 3.14 Photos of Flora in Core and Buffer Area

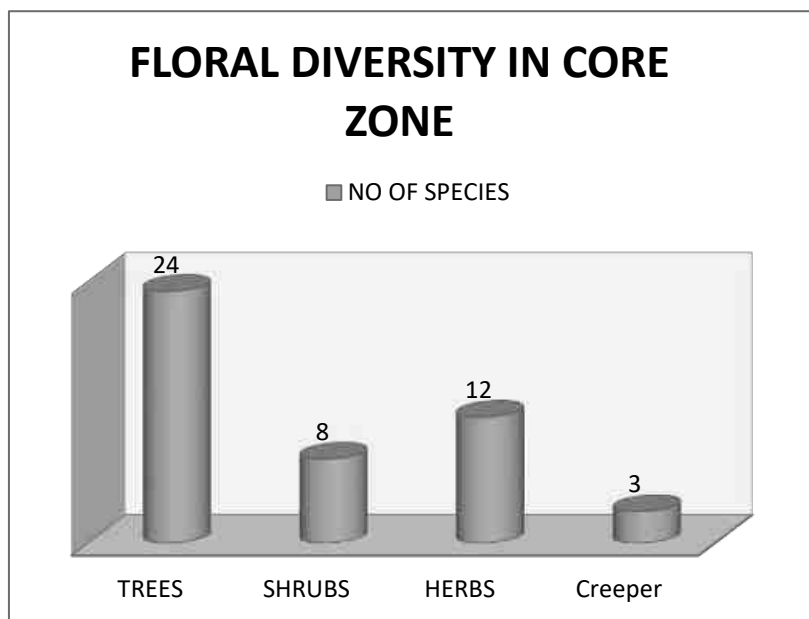


Fig No 3.15 Flora diversity in Core Zone

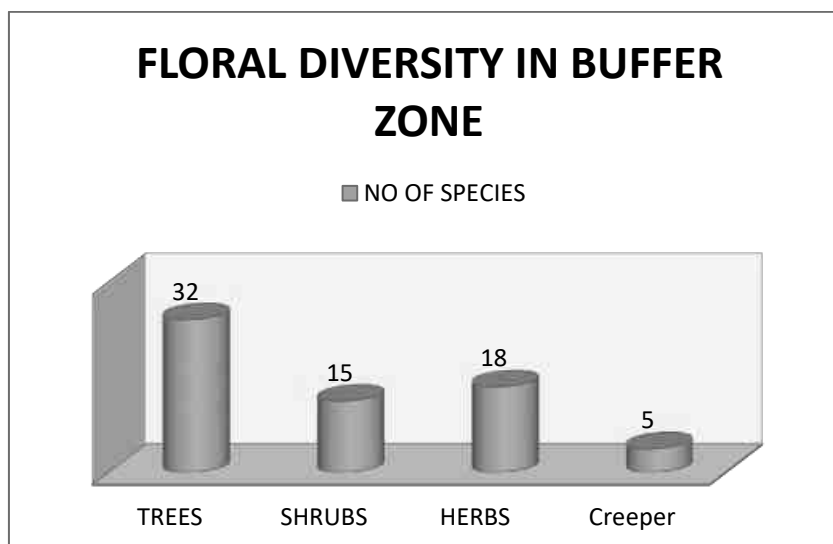


Fig No 3.16 Floral diversity in Buffer Zone

3.9.8. Fauna

The fauna 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 Red Data Book and Indian Wildlife Protection Act, 1972.

The study of fauna takes a substantial amount of time to understand the specific fauna characteristics of the area. The assessment of fauna has been done on the bases of primary data collected from the lease sites. The presence was also confirmed from the local inhabitants depending on the animal sightings and the frequency of their visits in the project area. In addition, officials, local peoples were another source of information for studying the fauna of the area. Field activities are physical/active search, covering rocks, burrows, hollow inspection and location of nesting sites and habitat assessment etc. Taxonomical identification was done by the field guide book and wildlife envis database (wiienvis.nic.in/Database/Schedule Species Database) and Zoological Survey of India (ZSI).

Table No. 3.12: Methodology applied during survey of fauna

S. No	Taxa	Method of Sampling	References
1	Insects	Random walk, Opportunistic observations	Pollard (1977); Kunte (2000)
2	Reptiles	Visual encounter survey (Direct Search)	Daniel J.C (2002)
3	Amphibians	Visual encounter survey (Direct Search)	
4	Mammals	Tracks and Signs	Menon V (2014)

5	Avian	Random walk, Opportunistic observations	Ali S (1941); Grimmett R (2011); Collins 2015

3.9.8.1. Fauna in Core Zone

Varieties of species were observed in the core zone (0-2km radius) of the Quarry. Number of species decreases towards the mining area this might be due the lack of vegetation and forest cover in mining lease area. None of these species are threatened or endemic. Taxonomically a total of 21 species belonging to 17 families have been recorded from the core mining lease area. Based on habitat classification the majority of species were birds 10 (45%) followed by insects 7 (32%), reptiles 2 (14%) and mammals 2 (9%). Dominant species were mostly birds and insects no amphibians were observed during the extensive field visit. Details of fauna with the scientific name were mentioned in table 3.13.

There are no critically endangered, endangered, vulnerable and endemic species were observed.

3.9.8.2. Fauna in Buffer Zone

Taxonomically a total of 39 species belonging to 28 families have been recorded from the buffer mining lease area. Based on habitat classification the majority of species were birds 16 (41%) followed by insects 14 (36%), reptiles 3 (8%) and mammals 6 (15%). There were no critically endangered, endangered, vulnerable and endemic species were observed. Details of fauna with the scientific name were mentioned in table 3.13.

There were no critically endangered, endangered, vulnerable and endemic species were observed.

Table No. 3.13 Faunal in Core and Buffer area

Sl. No	Common Name	Family Name	Scientific Name	Core Area	Buffer Area	Schedule list wildlife protection act 1972	IUCN Red list data
MAMMALS							
1.	Common mongoose	Herpestidae	<i>Herestes edwardsii</i>	-	+	NL	NL
2.	Palm squirrel	Sciuridae	<i>Funambulus pennantii</i>	+	+	NL	NL
3.	Bat	Pteropodidae	<i>Pteropus medius</i>	+	+	NL	NL
4.	Indian mole rat	Muridae	<i>Bandicota bengalensis</i>	-	+	NL	NL
5.	Indian rat	Muridae	<i>Mus rattus</i>	+	+	NL	NL
6.	Cat	Felidae	<i>Felis catus</i>	+	+	NL	NL
INSECTS							
1.	Blister beetle	Meloidae	<i>Mylabris phalerata</i>	+	+	Schedule IV	LC
2.	Peacock pansy	Nymphalidae	<i>Junonia almana</i>	+	+	NL	
3.	Mottled emigrant	Pieridae	<i>Catopsilia pyranthe</i>	+	+	Schedule IV	LC
4.	Red-veined darter	Libellulidae	<i>Sympetrum fonscolombii</i>	-	+	Schedule IV	LC
5.	Common grass yellow	Pieridae	<i>Eurema brigitta</i>	-	+	Schedule IV	LC
6.	Marbled white	Nymphalidae	<i>Melanargia galathea</i>	-	+	Schedule IV	LC
7.	Banded hairstreak	Lycaenidae	<i>Satyrium calamus</i>	-	+	Schedule IV	NE
8.	Blue basher	Libellulidae	<i>Pachydiplax longipennis</i>	+	+	NL	LC
9.	White butterfly	Pieridae	<i>Pieris rapae</i>	-	+	Schedule IV	LC

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10.	Milkweed butterfly	Nymphalidae	<i>Danaus plexippus</i>	+	+	NL	LC
11.	Red-veined darter	Libellulidae	<i>Sympetrum fonscolombii</i>	+	+	NL	LC
12.	Common Tiger	Nymphalidae	<i>Danauus genutia</i>	+	+	NL	NE
13.	Yellow pansy	Nymphalidae	<i>Junonia hierta</i>	+	+	NL	NE
14.	Lime butterfly	Papilionidae	<i>Papilio demoleus</i>	+	+		
REPTILES							
1.	Green Lizard	<u>Chamaeleonidae</u>	<i>Chamaeleon zeylanicus</i>	+	+	NL	NL
2.	Garden Lizard	Agamidae	<i>Calotes verticolor</i>	-	+	NL	NL
3.	Wall Lizard	Gekkonidae	<i>Hemidactylus sps.</i>	+	+	NL	LC
BIRDS							
1.	Common myna	Sturnidae	<i>Acridotheres tristis</i>	+	+	NL	LC
2.	Red vented bulbul	Pycnonotidae	<i>Pycnonotus cafer</i>	-	+	NL	LC
3.	Paddybird	Ardeidae	<i>Ardeola grayii</i>	+	+		
4.	Rock pigeon	Columbidae	<i>Columba livia</i>	-	+	NL	LC
5.	Purple heron	Ardeidae	<i>Ardea purpurea</i>	-	+		
6.	Thick billed warbler	Acrocephalidae	<i>Iduna aedon</i>	+	+	NL	LC
7.	Small mini vert	Campephagidae	<i>Pericrocotus cinnamomeus</i>	-	+	NL	LC
8.	Black kite	Accipitridae	<i>Milvus migrans</i>	+	+	NL	LC
9.	Common cuckoo	Cuculidae	<i>Cuculus canorus</i>	+	+	NL	LC
10.	Streak throated swallow	Hirundinidae	<i>Petrochelidon fluvicola</i>	-	+	NL	LC
11.	House Crow	Corvidae	<i>Corvus splendens</i>	+	+	NL	LC

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12.	koel	Cuculidae	<i>Eudynamys scolopaceus</i>	+	+	NL	LC
13.	Common hen	Phasianidae	<i>Gallus Gallus domesticus</i>	+	+	NL	LC
14.	Indian robin	Muscicapidae	<i>Saxicoloides fulicatus</i>	+	+	NL	LC
15.	Parrot	Psittacidae	<i>Psittacula eupatria</i>	-	+	NL	LC
16.	House sparrow	Passeridae	<i>Passer domesticus</i>	+	+	NL	LC

((+) Symbol indicate presence of Species, (-) Symbol indicate absence of Species, *NL- Not listed, NE- Not evaluated, LC- Least concern)



Fig. a. *Pteropus medius*



Fig. b *Funambulus pennantii*



Fig. c. *Pachydiplax longipennis*



Fig. d. *Ardeola grayii*



Fig.e. *Junonia almana*



Fig.f. *Chamaeleon zeylanicus*



Fig.g. *Ardea purpurea*



Fig.h. *Junonia hierta*

Fig No 3.17 Photos of Fauna in Core Area

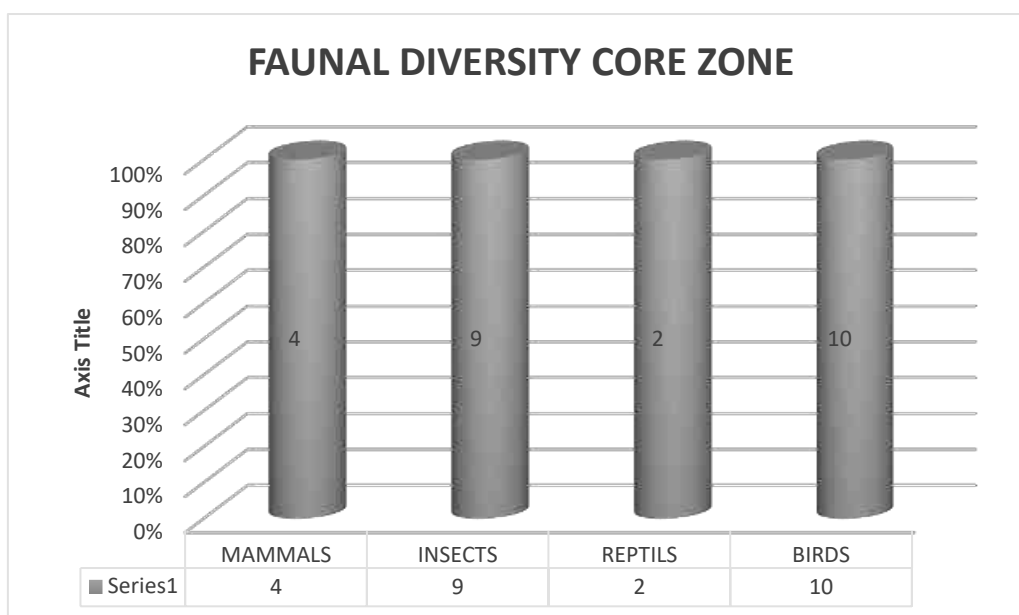


Fig No 3.18 Fauna diversity in Core Zone

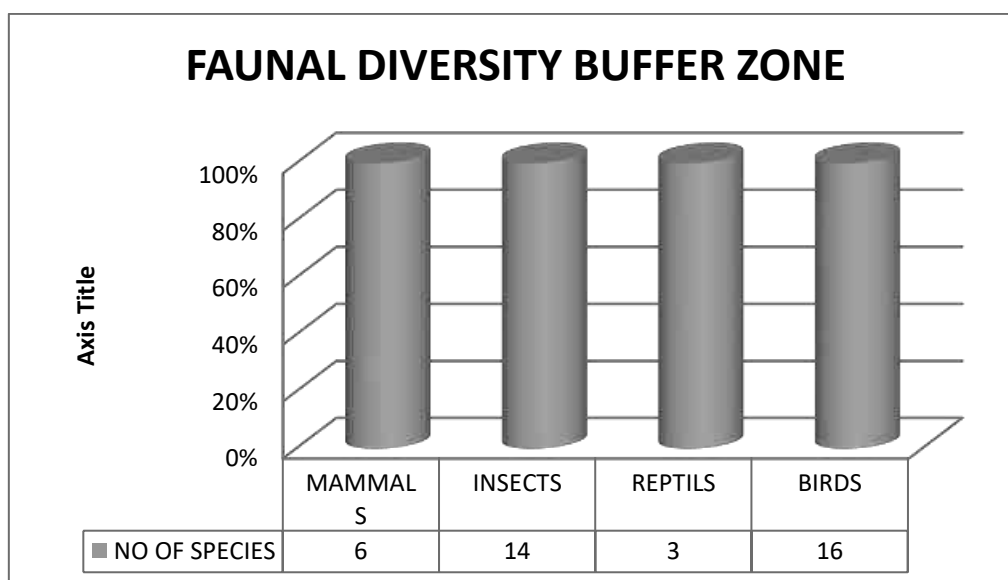


Fig No 3.19 Faunal diversity in Buffer Zone

3.10 SOCIO-ECONOMIC ENVIRONMENT

3.10.1 Introduction

Socio - economic Environment is the creation of new firms is a good indicator of economic development. The socio -economic environment are the external conditions that influence the standard of living, economic opportunities, development of individuals and communities. This section presents an overview of the socio - economic environment within the study area of the proposed Rough Stone and Gravel Quarry project to be undertaken by M/s. M.P. Granite. The project site is located at S.F. No. 260/A1, 260/A2, 260/A3, 260/B1, 260/B2, 260/B3, 260/C, 262/A3 (P), 262/A4 (P), 262/A5 (P), 262/A6 (P), 262/A7, 262/A8

(P), 262/B1 & 262/B2 Multicolour Granite Quarry over an extent of 4.01.50 Ha in K.Pitchampatti Village, Karur, Taluk, Karur District, Tamil Nadu.

Understanding the socio -economic characteristics of the region is essential to assess the potential impacts and benefits of the mining activity on the local community. This section includes an analysis of demographics, literacy, employment, land use, and infrastructure within the 5 km radius of the project area, based primarily on the 2011 Census data and field observations.

3.10.2 Objectives of the Study

The primary objective of this socio -economic assessment is to understand the existing human and economic conditions in the study area and to evaluate the potential social and economic impacts of the proposed quarry project. The specific objectives include:

To assess the demographic profile of the local population, including population size, sex ratio, literacy levels, and age distribution.

To understand the economic structure of the region, with particular focus on employment patterns, income sources, and dependence on agriculture, labor, or industrial activities.

To identify vulnerable and marginalized groups, such as Scheduled Castes (SC), Scheduled Tribes (ST), landless laborers, and women -h eaded households, for inclusive planning and benefit -sharing.

To evaluate the availability and quality of basic infrastructure such as education, healthcare, water supply, sanitation, electricity, and transport facilities in the surrounding villages.

To assess the potential positive and negative impacts of the quarry project on the local community in terms of employment, resource use, displacement (if any), and quality of life.

To conduct stakeholder consultations and document community concerns, expectations, and suggestions related to the project.

To recommend appropriate mitigation measures and CSR strategies to enhance local development and minimize any adverse impacts.

3.10.3 Scope of Work

The scope of the socio -economic study has been defined in alignment with the requirements of the Environmental Impact Assessment (EIA) Notification, 2006, and the Terms of Reference (ToR) issued by SEIAA, Tamil Nadu. The study covers all relevant socio -economic aspects within the 5 km radius of the project site, ensuring comprehensive

understanding of the local environment and people.

3.10.4 Study Area – K.Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu

The study area for the socio -economic environment assessment has been defined as a 5 kilometer (km) radius buffer zone surrounding the proposed Multicolour Granite Quarry in S.F. Nos. 260/A1, 260/A2, 260/A3, 260/B1, 260/B2, 260/B3, 260/C, 262/A3 (P), 262/A4 (P), 262/A5 (P), 262/A6 (P), 262/A7, 262/A8 (P), 262/B1 & 262/B2 over an extent of 4.01.50 Ha in K.Pitchampatti Village, Karur, Taluk, Karur District, Tamil Nadu.

This area has been delineated based on the guidelines of the Ministry of Environment, Forest and Climate Change (MoEF&CC) for B1 category projects. The study area includes multiple settlements of varying sizes, encompassing rural villages, agricultural zones, minor industries, and associated infrastructure. This area is representative of the direct and indirect impact zone in terms of resource use, transportation, employment, and potential environmental influences.

Table No. 3.14: K.Pitchampatti Village Census 2011 Data

Particulars	Details
Buffer Zone Radius	5 km from the project boundary
Total Villages Covered	Approximately 20 –25 villages
Core Zone (Project Site)	3.00.0 ha in K.Pitchampatti Village, Karur Dt,
Taluk	Karur
District	Karur
Geographical Coordinates	Toposheet -58J/1. Latitude 11° 02' 22.50" N to 11° 02' 26.21" N. Longitude- 77° 01' 52.33E' to 77° 15' 30.24" E
Land Use	Predominantly agricultural, with fallow land and minor rural industries
Nearest Habitation	K.Pitchampatti Village (~1 km)
Nearest Major Town	Karur (~8 km from project site)
Nearest Highway	State Highway SH -19 (~4 km)

3.10.5 Land Use and Settlement Pattern are characterized by

Predominantly agriculture -based rural settlements,

- Moderate population density,
- Villages with basic amenities such as schools, primary health centre's (PHCs), and bus connectivity,
- Employment dominated by agriculture, stone work, and textile - elated labour.

K.Pitchampatti Village, where the quarry is located, falls within a developing rural

industrial transition zone, and is typical of the regional socio-economic structure of western Tamil Nadu.

Table No. 3.15: Villages within 10 km of the Project Site

S.No	Village Name	Approx. Distance	Notes
1	K. Pitchampatti	Core	Project village; detailed in census data.
2	A.Vellagoundanpatti	2 km	Nearby census village
3	Gudalur	4.80 km	Census-listed, populous village
4	Thirumakkampatti	2 km	Demographic data available
5	S.Pudukottai	2.60 km	Census-recognized village
6	Kottanatham	4.25 km	Census village
7	Alambadi	4.28 km	Detailed demographic profile
8	Venjamangudalur	5 km	Census-listed
9	Kulathur	4.33 km	Census-listed
10	Lakshmipuram	3.23 km	Census-listed

Source: <https://www.census2011.co.in.html>

Demographics (population, literacy, SC/ST).

- Occupational pattern analysis (agriculture, labour)
- Infrastructure audit (schools, healthcare, roads). And Stakeholder consultations and CSR targeting.

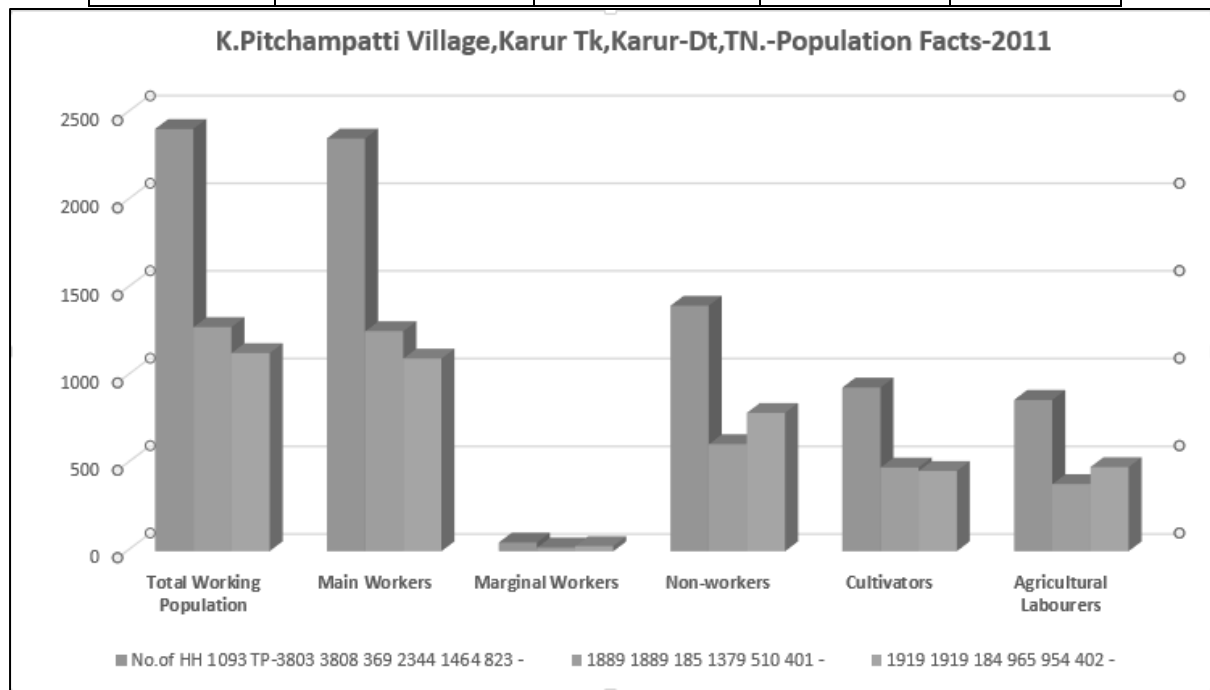
3.10.6 K.Pitchampatti Village – Census 2011 (Karur Taluk, Karur District)

Table No. 3.21: K. Pitchampatti Village – Census 2011 (Karur Taluk, Karur District)

S. No	Particulars	Total population	Male	Female
1	Number of Households	No. of HH 1093 TP-3803	1889	1919
2	Total Population	3808	1889	1919
3	Sex Ratio (females per 1,000 males)	369	185	184

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4	Literacy Rate (overall) Population	2344	1379	965
5	Illiteracy Population	1464	510	954
6	Scheduled Caste (SC) Population	823	401	402
7	Scheduled Tribe (ST) Population	-	-	-
8	Total Working Population	2408	1278	1130
9	Main Workers	2354	1255	1099
10	Marginal Workers	50	21	29
11	Non-workers	1400	611	789
12	Cultivators	934	478	458
13	Agricultural Labourers	863	383	480

**Fig No 3.20 K.Pitchampatti Village Population Facts**

The spatial distribution of settlements indicates that K. Pitchampatti Village lies within an interconnected rural cluster comprising Paganatham, Velianai and other nearby villages. Given the short inter-village distances and shared socio-economic activities, the study village functions as part of a broader rural system rather than as an isolated unit. Hence,

any changes in land use, employment opportunities, or environmental conditions within K. Pitchampatti may extend their influence to the surrounding villages, necessitating an integrated regional planning and impact assessment approach.

The total population of K. Pitchampatti Village as per Census 2011 was 3808 comprising 1,889 males and 1919 females, indicating a moderate-sized rural settlement. Children (0–6 years) constitute over one-fourth of the total population, reflecting a young age structure and future demand for education and healthcare facilities.

The sex ratio of the village is 963 females per 1,000 males, which is slightly lower than the Tamil Nadu state average, indicating a marginal gender imbalance. The overall literacy rate of the village is Literates: $2344 / 3808 \times 100 = 61.56\%$ Illiterates: $1464 / 3808 \times 100 = 38.44\%$ revealing a noticeable gender gap in educational attainment that requires focused social interventions. Moderate literacy with scope for skill-based employment improvement.

The Scheduled Caste (SC) population accounts for approximately 14.2% of the total population, while no Scheduled Tribe (ST) population is reported. This highlights the importance of inclusive planning, employment opportunities, and CSR initiatives targeted towards socially vulnerable groups. Scheduled Caste (SC): $823 / 3808 \times 100 = 21.62\%$ Scheduled Tribe (ST): 0% SC population forms a significant social group requiring inclusive development measures.

The total working population (main + marginal workers) is 1,873, representing about 53% of the total population, indicating moderate workforce participation. The remaining 1,639 persons are non-workers, comprising 619 males and 1,020 females, suggesting higher economic dependency among women. Main Workers: $2354 / 2408 \times 100 = 97.76\%$ Marginal Workers: $50 / 2408 \times 100 = 2.08\%$ Employment is largely stable rather than seasonal. Among the main workers, occupational distribution shows that 503 persons are cultivators, followed by 164 agricultural labourers, indicating the dominance of agriculture-based livelihoods. In addition, 282 persons are engaged in household industries, while 903 workers fall under the 'other workers' category, reflecting limited diversification into non-agricultural sectors. Total Workers: $2408 / 3808 \times 100 = 63.22\%$, Non-Workers: $1400 / 3808 \times 100 = 36.78\%$, High workforce participation indicates livelihood dependence on local resources.

Occupational Structure;

(Percentage of total population)

Cultivators:

$934 / 3808 \times 100 = 24.53\%$

Agricultural Labourers:

$863 / 3808 \times 100 = 22.66\%$ Agriculture and allied activities dominate the village economy.

Gender Composition (Share of Total Population)

Male: $1889 / 3808 \times 100 = 49.58\%$

Female: $1919 / 3808 \times 100 = 50.42\%$

Balanced gender composition the socio-economic profile of K. Pitchampatti village indicates that 61.56% of the population is literate, while 63.22% constitutes the working population. Agriculture remains the dominant occupation, with cultivators and agricultural labourer's together accounting for nearly 47% of the total population. Scheduled Caste population forms about 21.62%, highlighting the need for inclusive development planning under the proposed project. Overall, the socio-economic profile of K. Pitchampatti village depicts a predominantly agrarian economy with moderate literacy levels, balanced workforce participation, and identifiable social groups requiring focused development measures, which are relevant while assessing the potential impacts and benefits of the proposed quarry project.

3.10.7 Occupational Characteristics- K.Pitchampatti

The population trend graph for K. Pitchampatti Village indicates a marginal decline in total population between 2001 and 2011. The decrease is more pronounced among the male population compared to females, resulting in a slight improvement in the sex ratio. This pattern suggests out-migration of the working-age male population to urban centres and industrial regions in search of employment. The observed demographic trend reflects rural-urban mobility and changing livelihood dynamics in the study area.

The graph depicting household growth in relation to total population shows an increase in the number of households despite a decline in overall population. This trend indicates a shift from joint family systems towards nuclear family structures, reflecting socio-economic transformation and changes in household composition within the village.

The literacy trend graph reveals a significant increase in the literate population accompanied by a substantial decline in the illiterate population during the study period. This improvement reflects enhanced access to educational facilities, increased enrolment, and growing awareness regarding the importance of education among rural communities.

The occupational structure graph illustrates a notable increase in main workers and a sharp decline in marginal workers between 2001 and 2011. This shift indicates a transition from seasonal and insecure employment to more stable livelihood opportunities. However,

the increase in non-workers suggests the influence of education-related non-participation, aging population, and migration-induced demographic changes.

The Scheduled Caste population graph shows a gradual increase over the decade, highlighting the presence of socially vulnerable communities in the study area. This emphasizes the need for inclusive development planning and targeted CSR initiatives focusing on education, skill development, and livelihood enhancement.

**Table No.3.16: Occupational Characteristics of Population –
K.Pitchampatti Village (2001–2011)**

S. No.	Demographic Parameter	2001	2011	Decadal Change (%)
1	Total Population	3912	3808	-2.66
2	Male Population	1956	1889	-3.43
3	Female Population	1956	1919	-1.89
4	Number of Households	1015	1093	+7.68
5	Sex Ratio (females per 1,000 males)	356	369	+3.65
6	Literacy Rate (overall) Population	2074	2344	+13.02
7	Illiteracy Population	1838	1464	-20.35
8	Scheduled Caste (SC) Population	749	823	+9.88
9	Scheduled Tribe (ST) Population	0	0	0.00
10	Total Working Population	2615	2408	-7.92
11	Main Workers	1703	2354	+38.24
12	Marginal Workers	912	50	-94.52
13	Non-workers	1297	1400	+7.94

Source: <https://www.census2011.co.in>

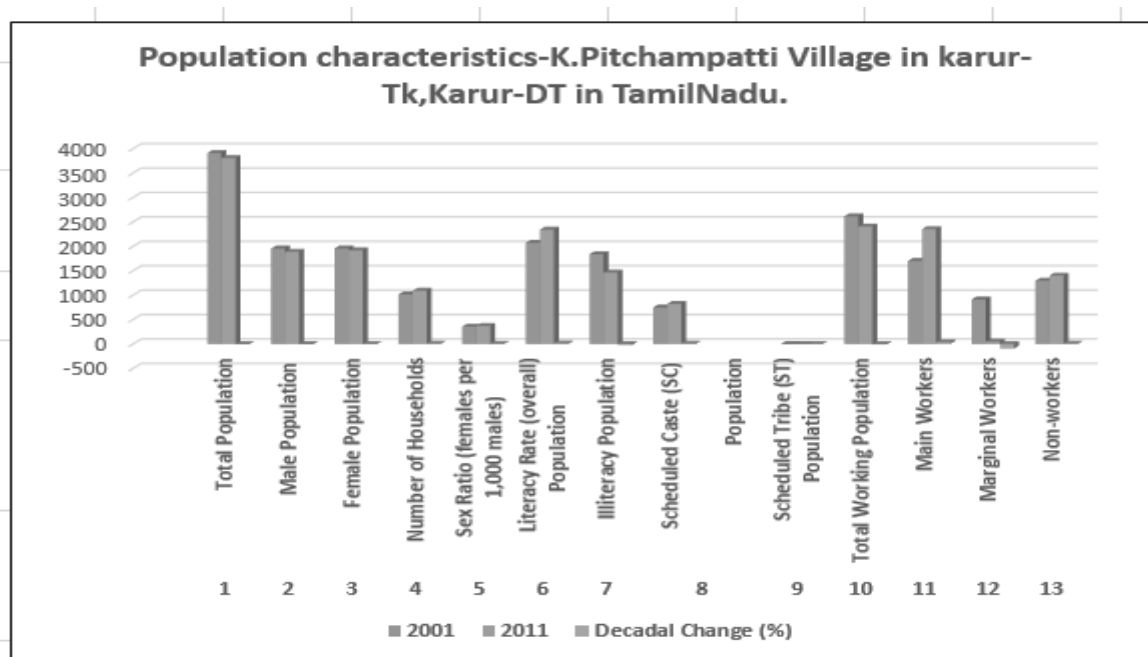


Fig No 3.21 Occupational Characteristics – K.Pitchampatti Village (2001–2011)

3.10.8 Impacts on Socio Economy and Mitigation Measures

Mostly positive impacts result from the long-term quarry unit. In this case, provision of job opportunities, business, transport, communication, laborers etc. are the major outcome due to this project. Thus, this unit highly favors the poor and landless people. Employment generation due to the project has generated direct and indirect employment for 0 persons, out of which no people are on company role and no one contract employees. Preference will be to the local population for employment in all categories including semi-skilled and unskilled.

The skilled employees are recruited through open recruitment process to meet competency required to operate the quarry. The villages and their inhabitants in the buffer zone will not be disturbed in their settlements due to the quarry operations.

3.10.9 Economic Impacts

Agricultural yield is positively benefitted due to the halt on quarrying. To ascertain the extent of the financial crisis and improvement in agriculture, horticulture, dairy, fishery, handicraft and tourism if any; the following parameters emerged:

There are some people who are engaged in trading of sand, stone and Bajri. Therefore, due to quarrying, the per capita income of local people has been improved. The local people have been provided with either direct employment or indirect employment such as business, contract works and development work like roads, etc. and other welfare amenities such as medical facilities, conveyance, free education, drinking water supply etc. The job/ business opportunities have improved the economic conditions of the persons. They

are in a position to utilize this money for purchase of tractors, trucks, jeeps, etc. which may be invested into use for business purposes. Part of money has been utilized in starting of some business as per personal skills.

To conclude, implementing the following measures can significantly reduce the negative impacts of quarry operations on the socio-economic environment:

- ❖ **Employment Opportunities:** Creating jobs and providing training for local residents to enhance their skills and improve their economic status.
- ❖ **Community Engagement:** Establishing open lines of communication with the community to address concerns, ensure transparency, and build trust.
- ❖ **Health and Safety Measures:** Enforcing strict health and safety regulations to protect workers and local residents from quarry-related hazards.
- ❖ **Local Business Support:** Sourcing materials and services from local suppliers to boost the local economy.
- ❖ **Infrastructure Development:** Investing in local infrastructure improvements, such as roads and public facilities, to benefit the community.
- ❖ **Environmental Conservation:** Implementing environmental protection measures to maintain a balance between economic activities and the preservation of natural resources.
- ❖ By adopting these practices, quarry operations can become more socially responsible and economically beneficial for the local community, fostering a sustainable and mutually advantageous relationship.

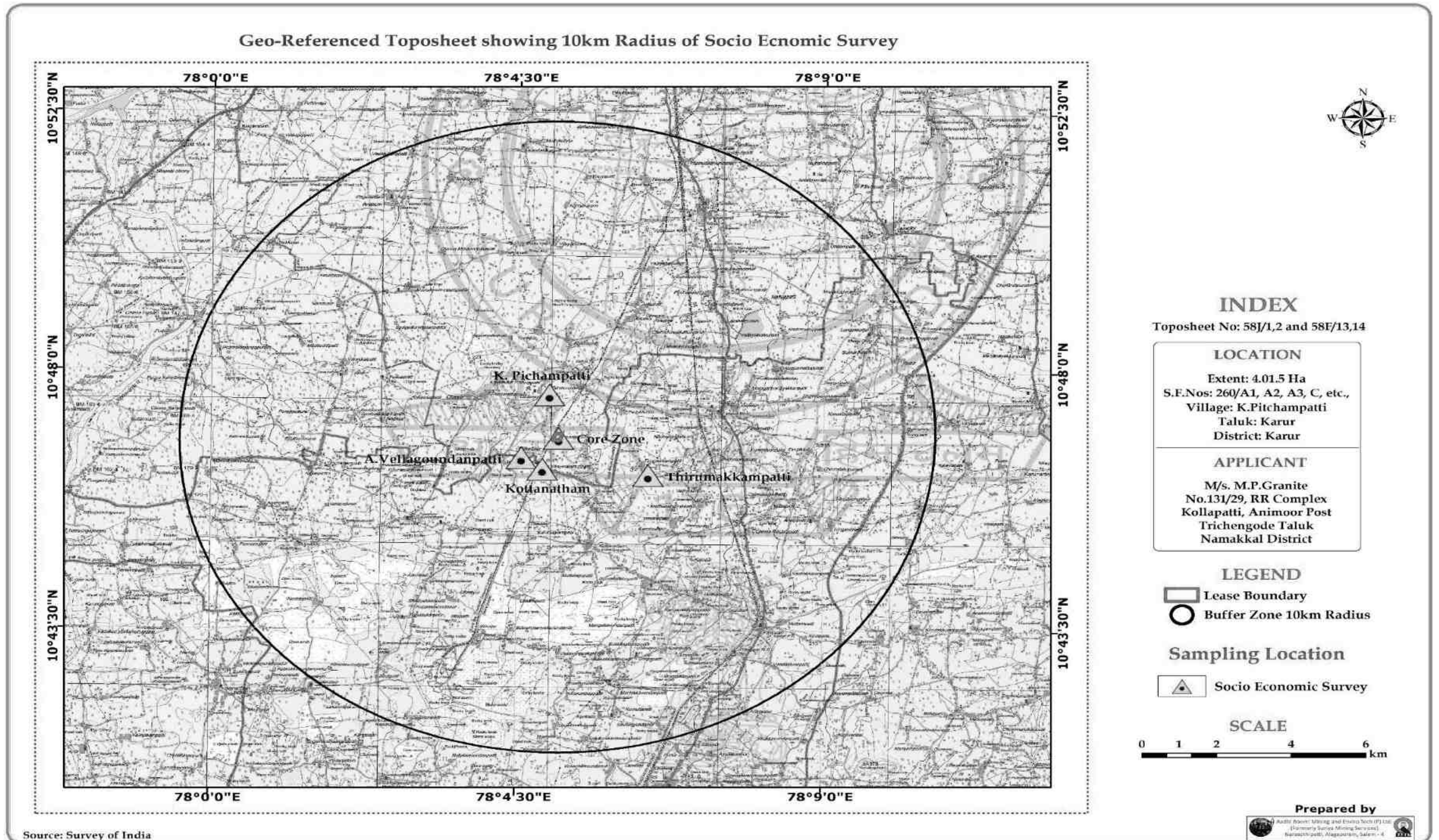


Fig No 3.22 Socioeconomic Survey Location

3.10.10 Summary and Conclusion

From the primary survey, it is found that the basic facilities such as water road, PHSC, schools are available within the surveyed villages. The people stated that they did not get benefits under CER and CSR activities. Also. they suggested that to operate the truck at minimum speed while crossing villages, schools, hospitals. The strongly asked to provide the employment opportunities only to the village people and registered their complaint on employment opportunities to other state people.

The proponent assured that he will improve facilities in government schools and hospitals under CER and CSR Schemes.

The socio-economic wellbeing of the area and its people is represented by the infrastructure and the social assets available in the area. The study area constituted of various infrastructures related to education, health care, communication, transportation, drinking waters etc.

3.11 LAND ENVIRONMENT

3.11.1 Land use of Study Area

The land-use & land cover map of the 10 km radial study area from the periphery of project site has been prepared using Landsat8 having 30 m spatial resolution and date of pass 22nd Sep 2022 satellite image with reference to Google Earth data. In order to strengthen the baseline information on existing land use pattern, the following data covering approx. 10°46'32.01463"N to 10°46'39.69873"N and eastern longitude of 78°04'56.21001"E to 78°05'04.49494"E.

Land use pattern of the study area as well as the catchment area was carried out by standard methods of analysis of remotely sensed data and followed by ground truth collection and interpretation of satellite data. The outcome of land use study is presented below in subsequent tables and figures.

Table No. 3.17: Data Specification Used for Present Study

Satellite Image	Sensor	Spatial Resolution	Date of Acquisition
Landsat8	*OLI & TIRS	30m	22 nd Sep 2022

* Operational Land Imager (OLI) and the Thermal Infrared Sensor (TIRS)

Landsat8 Operational Land Imager (OLI) and Thermal	Bands	Wavelength (Micrometers)	Resolution
	Band 1 - Coastal aerosol	0.43 - 0.45	30
	Band 2 - Blue	0.45 - 0.51	30

Infrared Sensor (TIRS) Launched February 11, 2013	Band 3 - Green	0.53 - 0.59	30
	Band 4 - Red	0.64 - 0.67	30
	Band 5 - Near Infrared (NIR)	0.85 - 0.88	30
	Band 6 - SWIR1	1.57 - 1.65	30
	Band 7 - SWIR2	2.11 - 2.29	30
	Band 8 - Panchromatic	0.50 - 0.68	15
	Band 9 - Cirrus	1.36 - 1.38	30
	Band 10 - Thermal Infrared (TIRS)1	10.60 – 11.19	100
	Band 11 - Thermal Infrared (TIRS)2	11.50 – 12.51	100

3.11.2. Objective

The objectives of Land use studies are:

- To determine the present land use pattern as per EIA/EMP norms by MoEF.
- To determine the drainage pattern present in the study area.

3.11.3 Data Used

A. Remote sensing data

- Landsat8-30m Resolution, OLI &TIRS (Sensor)

B. Collateral Data

Survey of India Toposheet bearing Toposheet No. 58 J/1 (1:50,000 Scale) and the Toposheet map representing the project site is given in Chapter 1.

3.11.4 Methodology

The land use pattern of the study area was studied by analyzing the available secondary data published in the District Primary Census abstract of the year 2001 & 2011. Salient features of the adopted methodology are given below:

- Acquisition of satellite data
- Preparation of base map from Survey of India Toposheet.
- Data analysis using visual interpretation techniques
- Ground truth studies or field checks using GPS & Digitization using head up vectorization method
- Topology construction in GIS Topography and location of surface water bodies like ponds, canals and rivers;

- Location of villages/towns/sensitive areas;
- Identified pollution pockets, if any within the study area;
- Accessibility, power availability and security of monitoring equipment;
- Areas which represent baseline conditions; and
- Collection, collation and analysis of baseline data for various environmental attributes.
- Area calculation for statistics generation.

The spatial resolution and the spectral bands in which the sensor collects the remotely sensed data are two important parameters for any land use survey. Landsat8 data offers spatial resolution of 30 m and 185 kilometer (115 mile) wide swath of the Earth in 15–30-meter resolution covering wide areas the data is collected in 11 visible bands namely **Band**

Number μm Resolution

1	0.433–0.453	30 m
2	0.450–0.515	30 m
3	0.525–0.600	30 m
4	0.630–0.680	30 m
5	0.845–0.885	30 m
6	1.560–1.660	30 m
7	2.100–2.300	30 m
8	0.500–0.680	15 m
9	1.360–1.390	30 m
10	10.6–11.2	100 m
11	11.5–12.5	100 m

3.11.5 Topography

Data covering approximately northern latitude of 10°46'32.01463"N to 10°46'39.69873"N and eastern longitude of 78°04'56.21001"E to 78°05'04.49494"E are used as per the project site confined within that area.

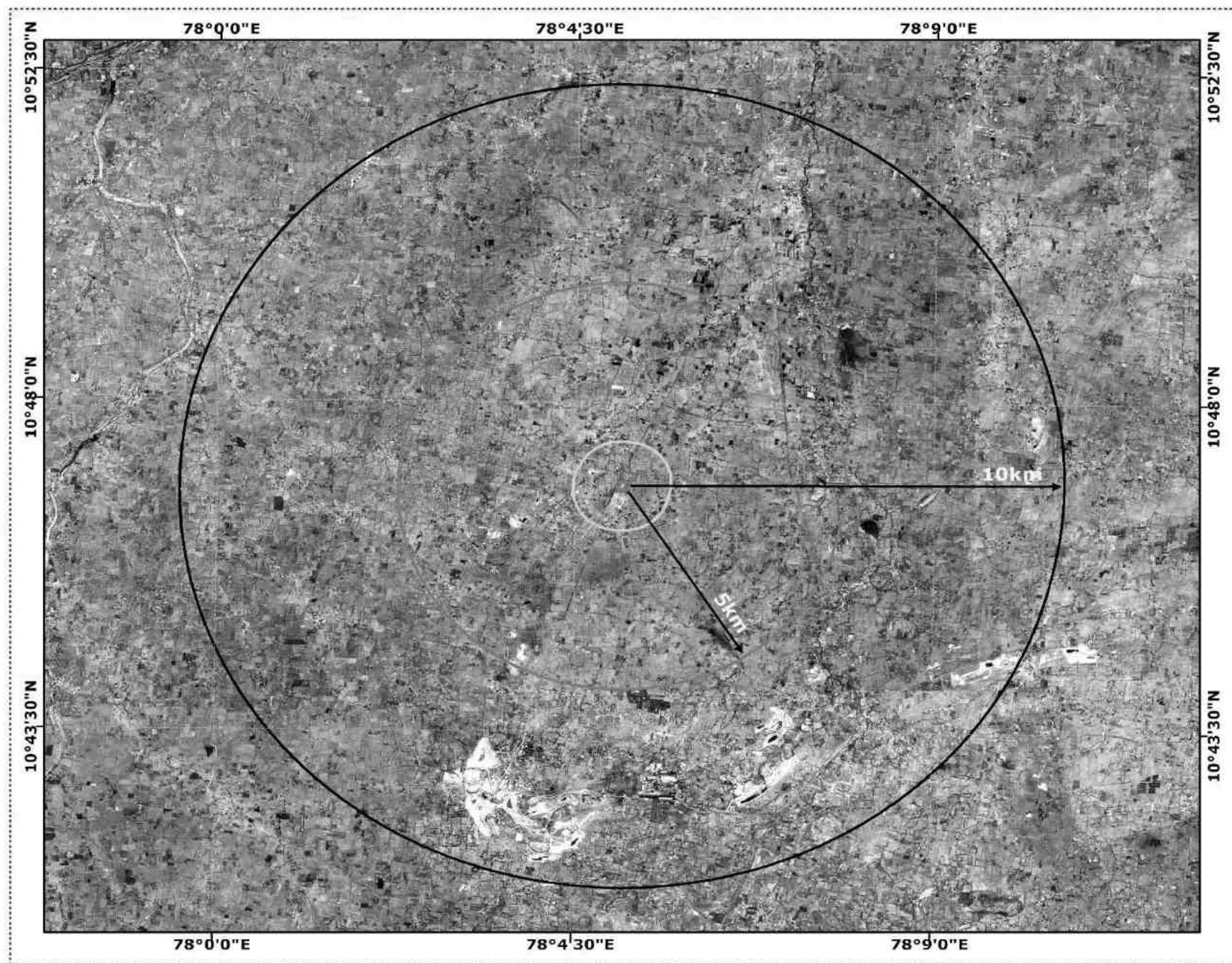
3.11.6 Land Use/Land Cover Classification

3.11.6.1 Land use/Land cover within the lease area:

The base maps of the study area were prepared, with the help of Survey of India Toposheet on 1:50,000 scale (fig 3.25). Preliminary interpreted land use and the land cover features boundaries from Landsat8 sensor OLI & TIRS having 30m spatial resolution, False Colour Composite were modified in light of field information and the final thematic details

were transferred onto the base maps. The final interpreted and classified thematic map was cartograph. The cartographic map was categorically differentiated with standard colour coding and described features with standard symbols. All the classes were identified and marked by the standard legend on the map. The following Land Cover classes were derived and classified as under.

Google Image showing Location of Lease Boundary around 1km, 5km and 10km Radius



INDEX

LOCATION

Extent: 4.01.5 Ha
S.F.Nos: 260/A1, A2, A3, C, etc.,
Village: K.Pitchampatti
Taluk: Karur
District: Karur

APPLICANT

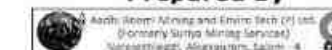
M/s. M.P.Granite
No.131/29, RR Complex,
Kollapatti, Animoor Post,
Trichengode Taluk,
Namakkal District.

- Lease Boundary
- Buffer Zone 10km Radius
- Buffer Zone 5km Radius
- Buffer Zone 1km Radius

SCALE



Prepared by



Source: Google Image

Fig No: 3.23 Google Image Showing Location Lease Boundary around 10km radius

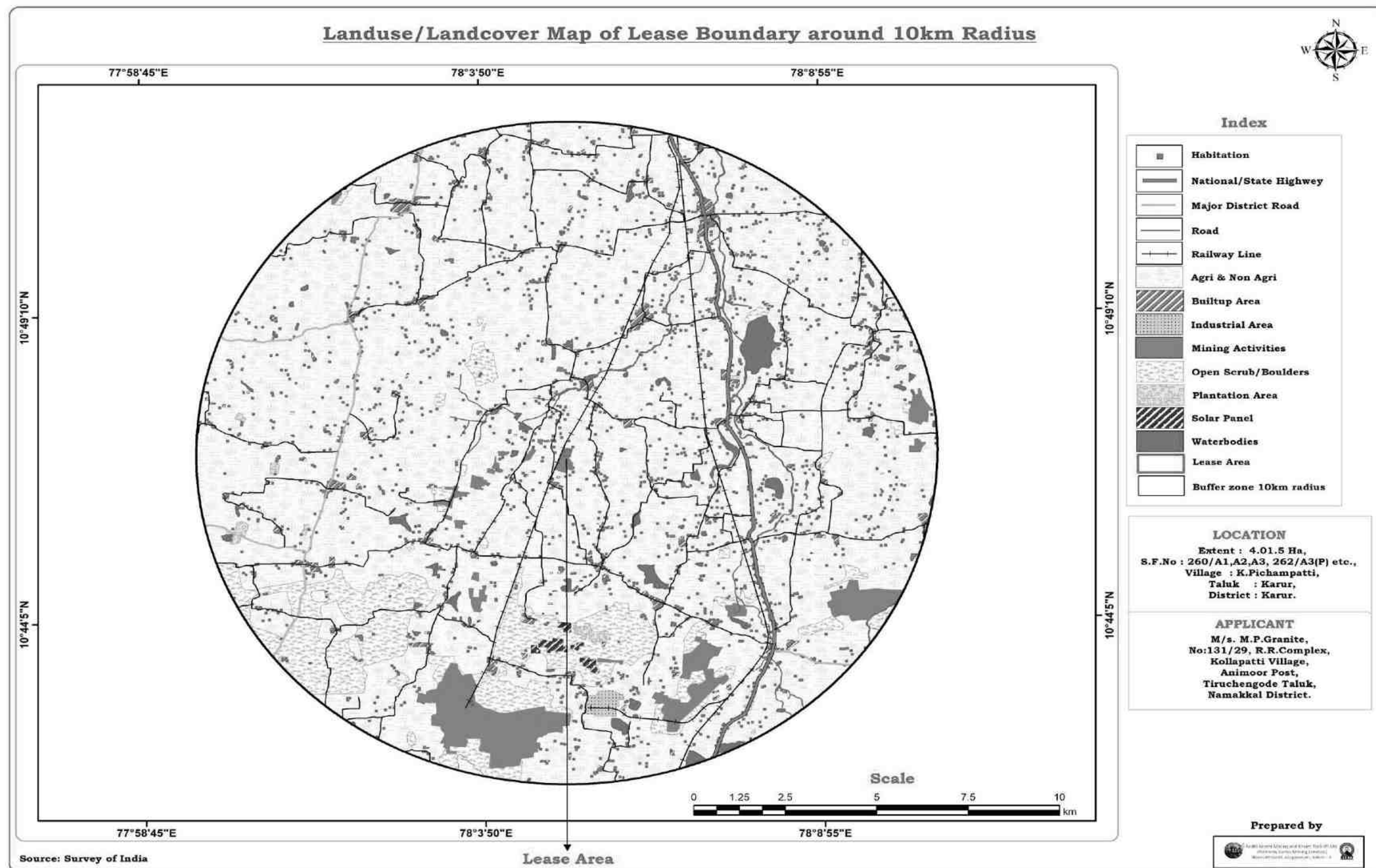


Fig No: 3.25 LANDSAT Image showing Location of Lease area around 10km radius

Table 3.18 Computation of existing and proposed land use pattern

S.No	Name	gridcode	Area (Ha)	%
1	Builtup Land	1	4076.04	11.64
2	Water Bodies	200	75.48	0.23
3	Agri & Vegetation Land	203	12351.54	38.32
4	Non Agricultural Land	204	2117.26	6.57
5	Seasonaly Agricultural Land	318	12524.37	38.85
6	Plantatin Area	394	335.95	1.04
7	Mining Ativities Area	404	754.46	3.34
Total			32235.10	100.00

3.11.7 Drainage Pattern of the Area

Drainage pattern of the area is dendritic with high stream density due to rugged topography. Drainage is mostly westerly and south westerly. Dendritic patterns, which are by far the most common, develop in areas where the rock (or unconsolidated material) beneath the stream has no particular fabric or structure and can be eroded equally easily in all directions. The project site itself is the river body. The drainage pattern of the area is dendritic – sub dendritic.

3.11.8 Contour

Contour lines are the greatest distinguishing feature of a topographic map. Contour lines are lines drawn on a map connecting points of equal elevation, meaning if you physically followed a contour line, elevation would remain constant. Contour lines show elevation and the shape of the terrain in the study area. The slope map was derived from a SRTM data of the study area. Contour interval at 20m, minimum 400m has very hilly with plain landforms and general terrain is quite elevated at maximum 900m above. To make topographic maps easier to read, because it's impractical to mark the elevation of every contour line on the map, the index contour lines are the only ones labeled.

3.11.9 Slope

The slope map was derived from a SRTM data of the study area. The slope of the study area was classified into five classes, such as less than 10 Percent/degree flat to almost flat no meaningful denudation process. Especially landslides that is flat. Slope zone 10-20° gentler, the same as above, but with a higher magnitude of the area, 20-30°, slightly steep, a lot of ground movement and erosion, especially landslides that area flat. 30-40° and above 40° very steep, rocks generally begin to unfold a very intensive denudation process have begun to produce rework material.

3.11.10 Soils

The 10km study area is covered with Alfisols, Entisols, Inceptisols and Hill type soil. The type of soil found in the lease area is Hill soil.

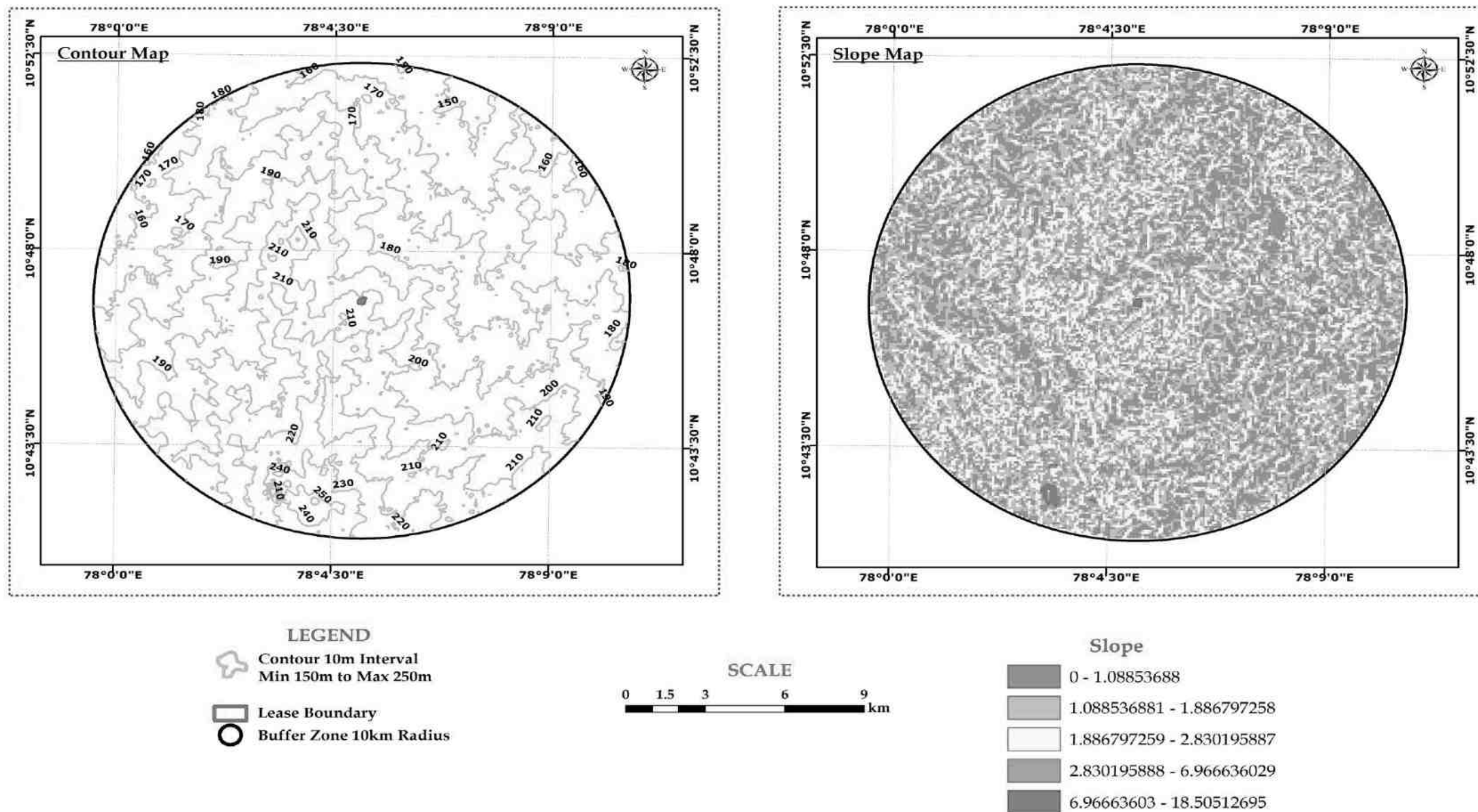
3.11.11 Geology

Fissile Hornblende biotite gneiss, Charnockite, Tiruppur anorthosite, epidote-hornblende Gneiss is found largely found in Erode area. Sedimentary rocks namely Charnockite, Granitoid gneiss, (sand stone mixed clay), and quartz vein. Granitoid gneiss is a composition of primary lateritic capping, basement crystalline complex, and conglomerate, which are found along the middle part of the river valley. The younger alluvium formations are seen predominantly in the northern part of the area and are considered as highly permeable. The storage capacity of the rock formations depends on the porosity of the rock. In the rock formation the water moves from areas of recharge to areas of discharge under the influence of hydraulic gradients depending on the hydraulic conductivity or permeability. The study area contains Gneisses, Granites, Charnockite, and Granitoid gneiss as major geological structure. The entire firka is underlain by the crystalline metamorphic gneiss complex consisting gneisses and granites. Ground water is occurring in phreatic conditions in weathered and fractured gneiss rock formation.

3.11.12 Geomorphology

The prominent geomorphic units identified in the district through interpretation of satellite imagery are structural hills in the southwestern part of the area, denudational land forms like buried pediments in the plains and inselbergs and plateaus represented by conical hills aligned with major lineaments. Erode district forms part of the upland plateau region with many hill ranges and undulating plains. The western part of the district has hill ranges of Mysore plateau with a chain of undulating hills and deep valleys extending in NNE-SSW direction.

Contour and Slope Map analysis around 10km Radius



Prepared by
Aadhi Boomi Mining and Enviro Tech (P) Ltd.
(Formerly Suria Mining Services)
No. 40/2020, Alagunur, Salem - 636 001

Fig No 3.28 Image Representing Contour and Slope analysis around 10km radius

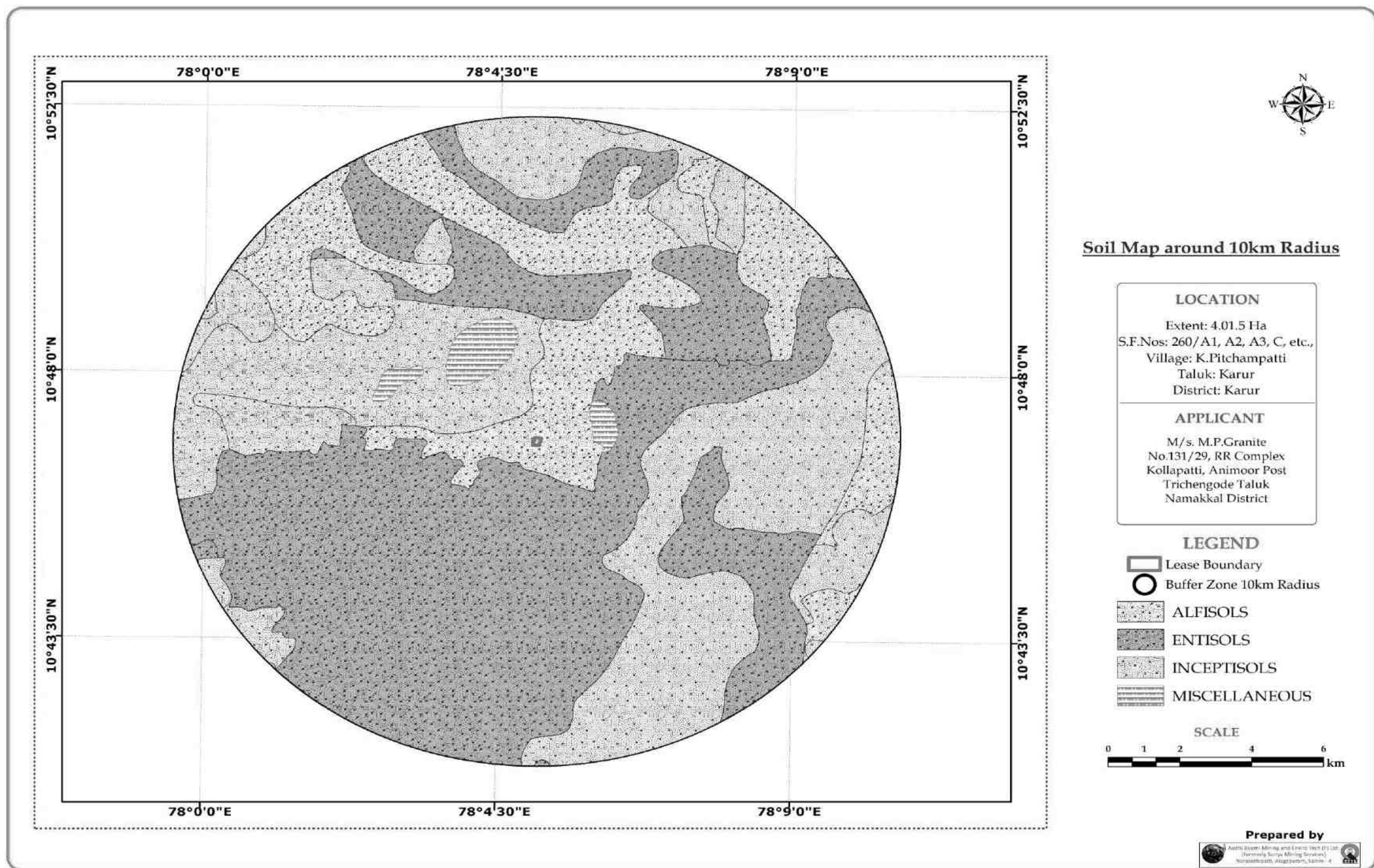
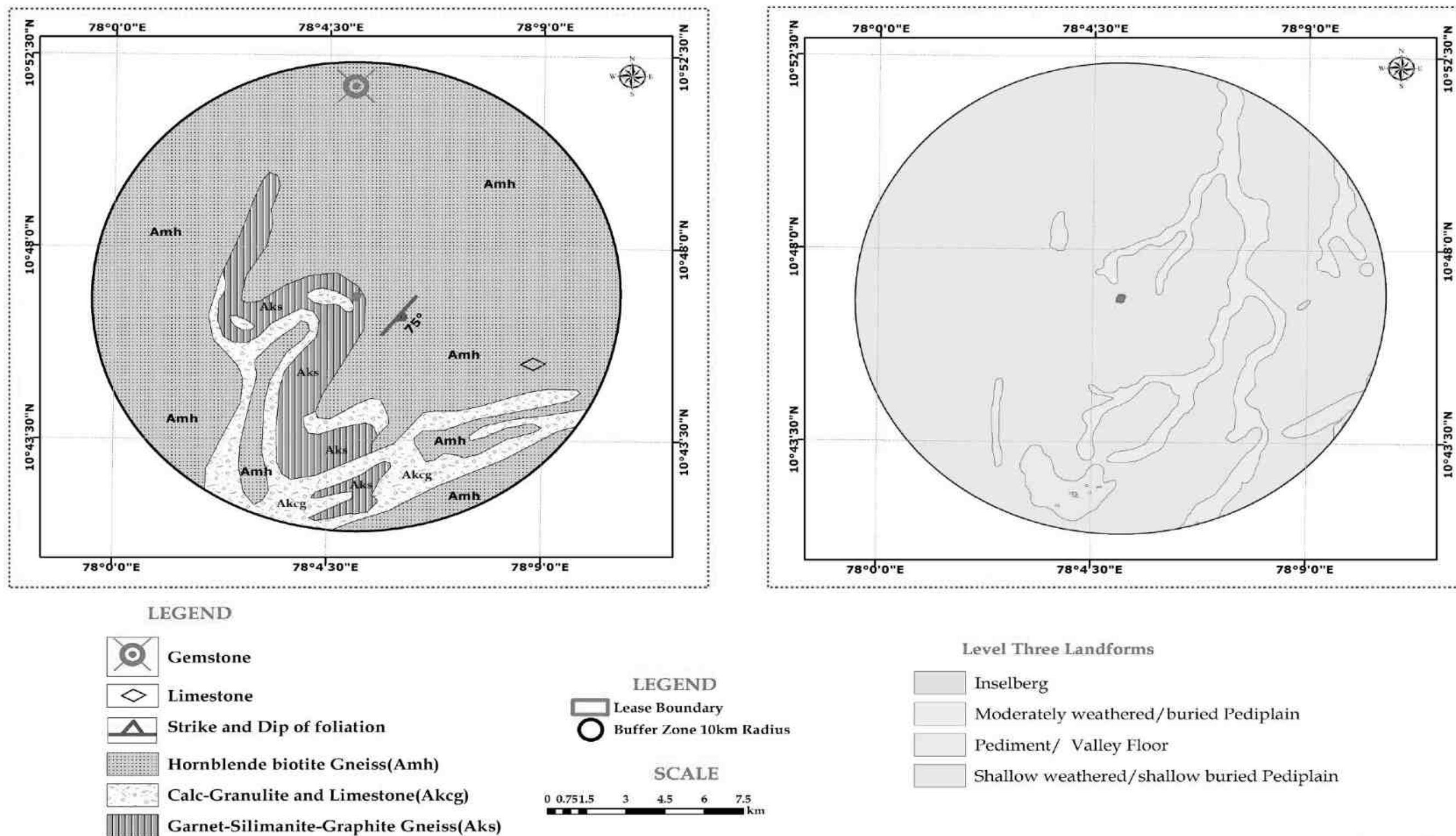


Fig No 3.29 Image Representing the Soil Characteristics around 10km of the Lease area

Geology and Geomorphology Features map of Lease area around 10km radius



Source: Geological Survey of India, 1995

Prepared by
Aadhi Boomi Mining and Enviro Tech (P) Ltd.
(Formerly Sathy Mining Services)
Narasimharthi, Alappuram, Salem - 6

Fig No 3.30 Image Showing Geology and Geomorphology of the lease area

CHAPTER – 4: ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Open cast mining is carried out by using excavators and dumpers combination. Scientific mining with proper benches with width and slope will be enabled as per MMR, 1961. Jackhammers with compressors will be deployed for drilling. Manual labors will be engaged for jack hammer drilling, sorting of waste and excavator will be used for loading the granite into trucks. Primary blasting will be carried out nonel blasting techniques with minimum vibration or detonating card with electric detonator initiation system. Sizing of materials shall be done by rock breakers or muffle blasting or pop shooting to the required size for better loading into trucks.

All these operations can disturb the environment in various ways, such as removal of mass, change of landscape, flora and fauna of the area, surface drainage, and change in air, water and soil quality. Therefore, it is essential to assess the impacts of mining on different environmental parameters before starting the mining operations, so that abatement measures could be planned in advance for eco-friendly mining in the area. The likely impacts on various environmental aspects and mitigation measures are discussed below.

4.1 Air Environment

The air borne particulate matter is the main air pollutant by opencast mining. The mining operation will be carried out by jack hammer drilling, blasting, excavation, loading and transportation.

4.1.1. Anticipated Impact

The air borne particulate matter generated by handling, operations and transportation of granite are the main air pollutant. The emissions of Sulphur dioxide (SO₂), Oxides of Nitrogen (NO₂) contributed by diesel operated excavation/loading equipment and vehicles plying on haul roads are marginal. Prediction of impacts on air environment has been carried out by considering generation of rejects and overburden per annum of the granite quarry 4.01.5 Ha.

4.1.2 Emissions Details

Drilling, Blasting, Loading, unloading and transportation of granite and wind erosion of the exposed area and movement of light vehicles will be the main polluting source in the mining activities that releasing Particulate Matter (PM₁₀ and PM_{2.5}) affecting ambient air of the area. Emission during blasting, loading and unloading was calculated as the area sources. Transportation of the granite by trucks operated on the haul road was calculated as the line sources. Details of emission during loading/unloading and transportation on the haul road,

wind erosion of the exposed area and road maintenance were discussed and combined impact was predicted in the worst-case scenario under worst meteorological condition given as follows:

4.1.2.1 Drilling

Drilling is the process of making holes in granite to carry out smooth blasting. The drilling is most representative for point source. The rate of emission from the drilling process will be very high when compared to loading, unloading, transporting and blasting. So wet drilling will be proposed for the granite quarry which completely suppresses the dust emitted during drilling process. Also dust extractor will be used over the wet drilling for the effective emission control system.

4.1.2.2. Loading of Granite

Chakraborty et al. (2002) was used to calculate emission of particulate matter released into the atmosphere during loading of mineral.

$$E = [(100 - m) (m)^{-1}]^{0.1} [(s) (100 - S)^{-1}]^{0.3} h^{0.2} [(u) (0.2 + 1.05)^{-1}] [(xl) (15.4 + 0.87xl)^{-1}]$$

Table No. 4.1: Source Parameters (Loading of Granite)

S. No	Description	Symbol	Quantity
1	moisture content (%)	m	2.4%
2	silt content (%)	s	0.1(approx)
3	wind speed (m s ⁻¹)	u	2.5
4	drop height (m)	h	1m above the tipper body
5	Size of loader (m ³)	l	1.60
6	Frequency of loading(no.h ⁻¹)	x	24 times
7	Area of Source (m ²)	a	10520
8	Controlled emission rate (g s ⁻¹)	CE	0.037

Totally 2 tippers and 2 hydraulic excavators will be proposed for granite quarry. The maximum rate of production per hour is estimated at 4.95 m³. The loading capacity of excavator is 1.60 m³.

x = frequency of loading (no. h⁻¹) = 4.95/1.60 = 3 times.

4.1.2.3 Loading of Overburden (Weathered rock)

Chakraborty et al. (2002) was used to calculate emission of particulate matter released into the atmosphere during loading of gravel.

$$E = [0.018\{(100-m) (m)^{-1}\}^{1.4}\{s (100-s)^{-1}\}^{1.4}(uhxl)^{0.1}]$$

Table No. 4.2: Source Parameters (Loading of Weathered rock)

S.No	Description	Symbol	Quantity
1	Moisture content (%)	m	10
2	Silt content (%)	s	12
3	Wind speed (m)	u	2.5
4	Drop height (m)	h	1m above the tipper body
5	Capacity of tipper (t)	c	1.20
6	Frequency of unloading (no.h ⁻¹)	y	4 times (maximum)
7	Area of Source (m ²)	a	1700
8	Controlled emission rate (g s ⁻¹)	CE	0.0020

The maximum rate of production of Weathered rock per hour is estimated at 2.33 m³.
 The loading capacity of excavator is 1.60 m³.

x = frequency of loading (no. h⁻¹) = 2.33/1.60 = 2 times

Emission of PM₁₀ during Weathered rock loading was calculated and found to be 0.037 g/s and 0.0020 g/s respectively based on moisture content 2.4% and 10% respectively and average wind speed was 2.5 m/s as observed with site data.

4.1.2.4 Haul Road

Chaulya (2006) was used to calculate emission of particulate matter released into the atmosphere during transportation of granite by truck operated per hour on haul road.

$$E = \{[(100-m) (m)^{-1}]^{0.35} \{(us) (100-s)^{-1}\}^{0.7} \{0.5 + 0.1(f + 0.42v)\} 10^{-3}$$

Table No. 4.3: Source Parameters (During Vehicle Movement on Haul Road)

S. No	Description	Symbol	Quantity
1	Moisture content (%)	m	70
2	Silt content (%)	s	14
3	Wind speed (ms ⁻¹)	u	2.5
4	Frequency of transporting (no. h ⁻¹)	f	28 times (maximum)
5	Average vehicle speed(ms ⁻¹)	v	4.1
6	Haul road area (m ²)	a	100
7	Controlled emission rate (g s ⁻¹)	CE	0.0010

Emission of PM₁₀ due to transportation of granite and granite waste on haul road was 0.0010 g/s based on assumption that silt content spread on road surface was 14% and average

wind speed of 2.5 m/s as observed with site data. Based on the above consideration there was low emission of PM₁₀ during transportation of granite.

4.1.2.5 Blasting

In another scenario when controlled blasting is carried out at the mine site and all the other activities are brought to halt. Significant amount of PM₁₀ is released during blasting at mining site for very short-term.

$$E = E_f \times Q$$

Table No. 4.4: Source Parameters (During Blasting)

S. No	Description	Symbol	Quantity
1	Uncontrolled Particulate matter emissions rate in pounds per year	UE	61
2	Emission factor in unit of pounds of particulate per ton shifted by blasting	E _f	TSP E _f = 0.0001 pounds/ton PM ₁₀ E _f = 0.0008 pounds/ton PM _{2.5} E _f = 0.0008 pounds/ton
3	Amount of material of all types shifted by blasting during the year in tons	Q	31482
4	Control efficiency (%)	c	30
5	Controlled Particulate matter emissions rate in pounds per year	CE	50

(Reference: Mojave Desert Air Quality Management District, 1403 Park Avenue, Victoria, CA 92392 -2310).

Loading of granite, overburden, movement of trucks on haul roads and open pit source were considered as combined action. So, the emission during loading, unloading and transportation were taken combined and US EPA based Dispersion AERMOD model was used for prediction of impact with 1-h meteorological data of the study period for the assessment of incremental GLC. Then blasting was considered as separate action and US EPA based Dispersion AERMOD model was used for prediction of impact separately.

4.1.2.6 Summary of calculated Emission Rates

Table No. 4.5: Emissions Rates of PM₁₀

Source type	Controlled Emission Rate (g/s/m ²)
Granite loading	2.5 x 10 ⁻⁶
Overburden Loading	1.4 x 10 ⁻⁷
Haul Road	4.5 x 10 ⁻⁶
Blasting	1.7 x 10 ⁻⁷

Table No. 4.6: Emissions Rates of SO₂

Source type	Average Emission rate for HDDV as per EPA	Emission rate (Proposed Project)
Tippers	0.012 g/mile	7.5×10^{-8} g/s/m ²
Excavators	0.012 g/mile	4.2×10^{-7} g/s/m ²
Total Emission Rate		4.9×10^{-7} g/s/m ²

Table No. 4.7: Emissions Rates of NO₂

Source type	Average Emission rate for HDDV as per EPA	Emission rate (Proposed Project)
Tippers	0.725 g/mile	4.5×10^{-6} g/s/m ²
Excavators	0.725 g/mile	2.3×10^{-5} g/s/m ²
Total Emission Rate		2.8×10^{-5} g/s/m ²

4.1.3 Frame work of Computation & Model details

By using the above-mentioned inputs, ground level concentrations due to the mining activities have been estimated to know the incremental rise in ambient air quality and impact in the study area. The effect of air pollutants upon receptors are influenced by concentration of pollutants and their dispersion in the atmosphere. Air quality modeling is an important tool for prediction of dispersion of pollutants with GLC and it is used to find the air pollution control activities which controls the emission rates of different activities.

4.1.3.1 Model Input data

The air pollution modeling carried out represents the normal operating scenarios. As the proposed activity is mining the major source of pollution is particulate matter and gaseous emission. The following data has required as input data for dispersion pattern.

- 1) Baseline data of PM₁₀, SO₂ and NO₂ is needed along with meteorological data. Meteorological data preprocessor (AERMET) needs meteorological data which calculates atmospheric turbulence characteristics, mixing heights, surface heat flux for finding the atmospheric dispersion. Site specific data recorded during post monsoon season (1st December 2025 to 28th February 2026) at project site for executing modeling studies.
- 2) The emission rates of PM₁₀, SO₂ and NO₂ from the various sources was taken.
- 3) Location of the project.

4.1.3.2 Model Results

The Air Quality Impact Prediction has been done by using AERMOD of USEPA”.

The main sources of air pollution with regard to the proposed project for the purpose of estimation of increase in PM₁₀, SO₂ and NO₂ are identified due to –

1. Scenario 1 – PM₁₀

- (i) Loading/unloading of granite rejects and overburden
- (ii) Transportation of granite rejects, overburden by trucks on the Haul roads from mining benches.

2. Scenario 2 - PM₁₀

- (i) Due to blasting

3. Scenario 3 – SO₂ and NO₂

- i. From Operation of Excavator and movement of transporting vehicle

Scenario1:

Table No. 4.8: Total predicted GLC of PM₁₀ in core and buffer zone due to combined action of loading, unloading and Transportation of granite by trucks on the haul road, open pit source of the mining lease area.

Location	Location Code	Background value in $\mu\text{g}/\text{m}^3$	Incremental GLC in $\mu\text{g}/\text{m}^3$	Total Predicted GLC in $\mu\text{g}/\text{m}^3$
Mine site	AQ1 - Centre	48	20.07	68.07
Receptor 01	AQ2 – 190m - S	48	2.39	50.39
National Ambient Air Quality Standards (NAAQS)				100

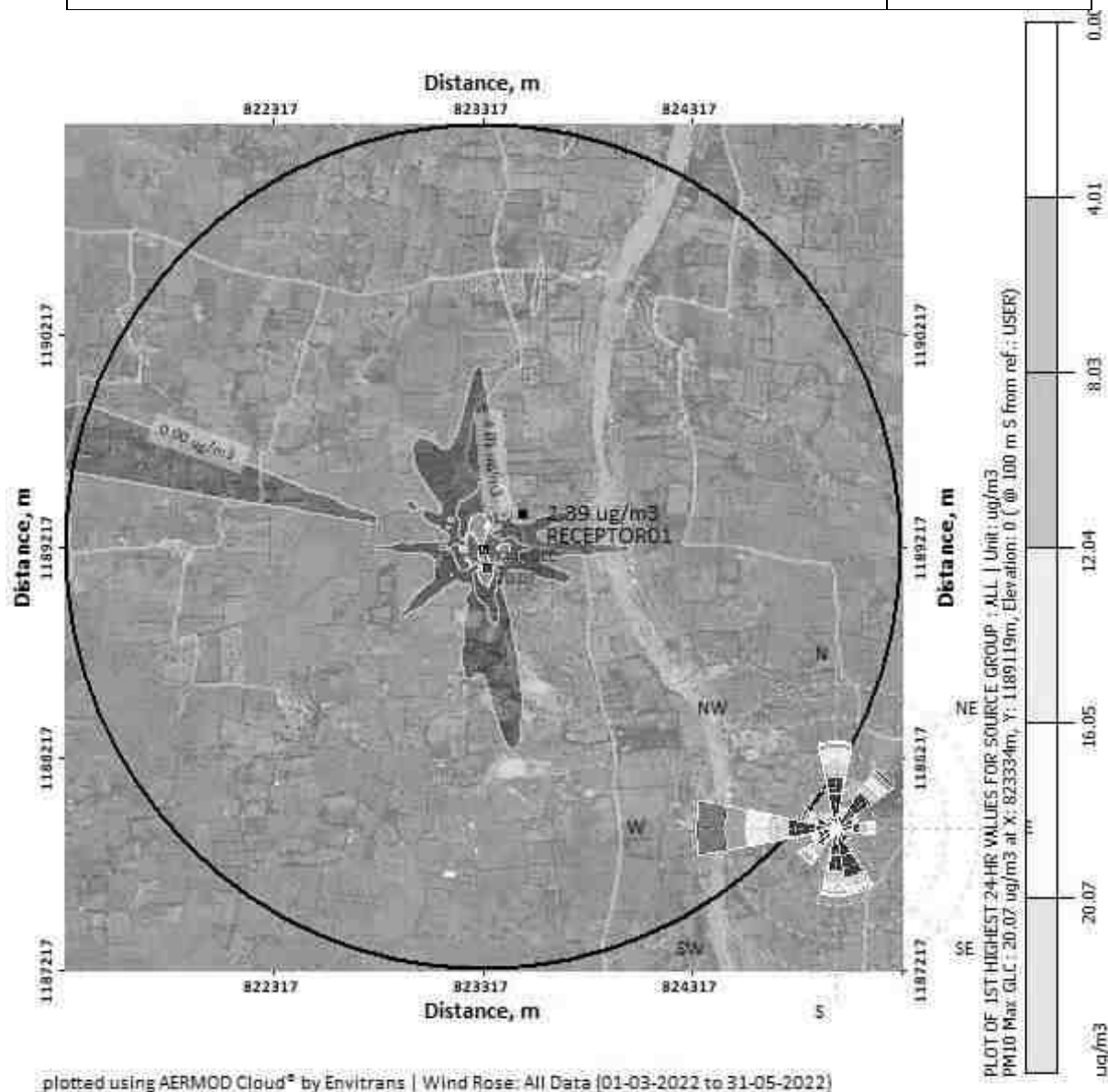


Fig No.4.1: Isopleth indicating Incremental value of PM₁₀ due to combined action of loading, unloading, transportation of granite on haul road

Total predicted 24-h maximum GLC of PM₁₀ at project site for scenario 1 i.e. loading-unloading, transportation and scenario 2 i.e. Blasting was 68.07µg/m³ and 54.18µg/m³ respectively after superposition of base-line value 48µg/m³ over the incremental GLC 20.07µg/m³ and 6.18µg/m³ respectively due to combined impact of loading, unloading, open pit and transportation over the haul road and due to blasting.

Maximum Impact of PM₁₀, SO₂ and NO₂ was observed close to the source within the lease area due to moderate wind speeds.

4.1.3.4 Combined Impact on Air Environment due to proposed quarry and adjacent quarry within 500m radius.

There are two existing quarries namely M.P Granites located within the 500m radius of proposed quarry for M.P. Granite multicolor granite quarry. The predicted incremental GLC of PM₁₀, PM_{2.5}, SO₂ and NO₂ due to the proposed mining activity is given in below table.

Table No. 4.12: Incremental GLC of PM₁₀, PM_{2.5}, SO₂ and NO₂ due to the proposed mining activity

S. No	Air Pollutants	Incremental GLC due to proposed quarry (Controlled) µg/m ³
1.	PM ₁₀	20.07
2	SO _x	1.95
3.	NO _x	3.31

Assume that emission rate from the various mining activity in adjacent 2 quarries are same as the proposed quarries. So, the incremental GLC will also be same as proposed quarry. Therefore, the when the proposed quarry and two adjacent quarries are working together, the incremental GLC and total predicted GLC are given below table.

Table No.4.13: Total predicted GLC of PM₁₀, PM_{2.5}, SO₂ and NO₂ due to the combined activity in the cluster

S.No	Air Pollutants	Baseline Value	Incremental GLC due to proposed quarry and two quarries µg/m ³	Total Predicted GLC due to proposed quarry and two adjacent quarry µg/m ³
1.	PM ₁₀	48	60.21	108.21
2.	SO _x	9	5.85	14.85
3.	NO _x	15	9.93	24.93

From the above table it is found that, when the three quarries are working together the Total predicted GLC of SO₂ and NO₂ (Controlled) due to mining activities was found within

the NAAQS in the cluster area. PM₁₀ is slightly beyond the limits which shall be controlled by installation of more number of sprinklers in the lease area.

4.1.4. Air Quality Index

An air quality index is defined as an overall scheme that transforms the weighed values of individual air pollution related parameters (for example, pollutant concentrations) into a single number or set of numbers (Ott, 1978). Air quality standards are the basic foundation that provides a legal framework for air pollution control. The basis of development of standards is to provide a rational for protecting public health from adverse effects of air pollutants, to eliminate or reduce exposure to hazardous air pollutants, and to guide national/ local authorities for pollution control decisions.

The objective of an AQI is to quickly disseminate air quality information (almost in real-time) that entails the system to account for pollutants which have short-term impacts. To present status of the air quality and its effects on human health, the following description categories have been adopted for IND-AQI.

AQI breakpoints for eight pollutant parameters considered for AQI and these are summarized below in Table with color scheme to represent the AQI bands.

Table No. 4.14: AQI and its associated Health Impacts

AQI	Associated Health Impacts
Good	Minimal Impact
Satisfactory	May cause minor breathing discomfort to sensitive people
Moderate	May cause breathing discomfort to the people with lung disease such as asthma and discomfort to people with heart disease, children and older adults
Poor	May cause breathing discomfort to the people on prolonged exposure and discomfort to people with heart disease with short exposure
Very Poor	May cause respiratory illness to the people on prolonged exposure. Effect may be more pronounced in people with lung and heart diseases
Severe	May cause respiratory effects even on healthy people and serious health impacts on people with lung/heart diseases. The health impacts may be experienced even during light physical activity

Table No. 4.15: Proposed Breakpoints for AQI Scale 0-500
 (Units: $\mu\text{g}/\text{m}^3$ unless mentioned otherwise)

AQI Category (Range)	PM ₁₀ 24-hr	PM _{2.5} 24-hr	NO ₂ 24-hr	O ₃ 8-hr	CO 8-hr (mg/m ³)	SO ₂ 24-hr	NH ₃ 24-hr	Pb 24-hr
Good (0-50)	0-50	0-30	0-40	0-50	0-1.0	0-40	0-200	0-0.5
Satisfactory (51-100)	51-100	31-60	41-80	51-100	1.1-2.0	41-80	201-400	0.5-1.0
Moderately polluted (101-200)	101-250	61-90	81-180	101-168	2.1-10	81-380	401-800	1.1-2.0
Poor (201-300)	251-350	91-120	181-280	169-208	10-17	381-800	801-1200	2.1-3.0
Very poor (301-400)	351-430	121-230	281-400	209-748*	17-34	801-1600	1200-1800	3.1-3.5
Severe (401-500)	430+	230+	400+	748+*	34+	1600+	1800+	3.5+

*One hourly monitoring (for mathematical calculation only)

4.1.4.1. Interpretation of Air quality using IND-AQI:

Table No. 4.16: Computation of AQI with Baseline data

Air pollutants	Total Predicted GLC due to proposed quarry $\mu\text{g}/\text{m}^3$	AQI	Associated Health Impacts
PM ₁₀	68.07	Satisfactory (51-100)	May cause minor breathing discomfort to sensitive people
SO ₂	10.95	Good (0-50)	Minimal Impact
NO ₂	17.31	Good (0-50)	Minimal Impact

The above table shows the AQI quality due to total predicted GLC of quarry in core area. PM₁₀ is between 51-100 and 31-60 of AQI which is satisfactory and may cause minor breathing discomfort to sensitive people. SO₂ and NO₂ are between 0-40 of AQI which is good and may cause Minimal Impact. When all the quarries in the cluster area are working together the incremental GLC will be high and it may cross the prescribed limits by NAAQS. To overcome such situation, cluster committee should be formed and adopt the environmental management plan effectively as per EIA report.

4.1.5. Mitigation Measures

The pollutants from nearby ongoing mining activities, residential and commercial activities are the primary sources of air pollution. However, in the study area adequate control measures will be implemented in future at the time of mining operation. Mitigate measures suggested for air pollution controls are based on the baseline ambient air quality of the area. From the point of view of maintenance of an acceptable ambient air quality in the region, it is desirable that air quality is monitored on a regular basis to check compliance of standards as prescribed by regulatory authorities. However, to further minimize the pollutant

concentration especially PM₁₀, the following control measure should be adopted by the project proponent.

- ❖ Regular water sprinkling on haul roads, blasted heaps, service roads and overburden dumps at regular intervals will help in reducing considerable dust pollution
- ❖ 1.0 KLD of water will be used for dust suppression of the quarried.
- ❖ Use of Sharp drill bits for drilling holes and charging the holes by using optimum charge and using time delay detonator.
- ❖ Conventional low explosives are being used.
- ❖ The scale of blasting is however very less considering the rate of production.
- ❖ Covering of material when transport through trucks/dumper
- ❖ The drilling and blasting are being carried out as per the proposals laid down in the approved plan.
- ❖ Proposed to follow up muffle blasting so as to prevent fly rock fragments
- ❖ Avoiding blasting during high windy periods and temperature inversion periods
- ❖ Delay blasting under unfavorable wind and atmospheric conditions
- ❖ Use of appropriate explosives for blasting and avoiding overcharging of blast holes
- ❖ The vehicles and machinery will be kept in well maintained condition so that emissions will minimize
- ❖ Provision of green belt all along the periphery of the lease area for control of dust
- ❖ Information on wind direction and meteorology will be considered while planning, so that pollutants, which cannot be fully suppressed by engineering technique, will be prevented from reaching the residential areas
- ❖ Cabins for shovel and dumpers and dust masks to workmen will be provided
- ❖ The dust respirators should be provided to all workers working in dusty environment
- ❖ Regular health check-up of workers and nearby villagers in the impacted area should be carried out and also regular occupational health assessment of employees should be carried out as per the Factories Act
- ❖ Ambient Air Quality Monitoring will be conducted on regular basis to assess the quality of ambient air.

As discussed above under each activity, there will be increase in terms of dust load and gaseous emissions. However, it can be stated that these incremental contributions will remain within the prescribed limits/norms. Further, the mitigation measures will further bring down these concentrations making the mining activities more eco-friendly.

4.2 Carbon emission and carbon sinks due to proposed mining activity

4.2.1 Carbon emissions

There are both natural and human sources of carbon dioxide emissions. Natural sources include decomposition, ocean release and respiration. Human sources come from industrial activities such as cement production, deforestation as well as the burning of fossil fuels like coal, oil and natural gas.

4.2.1.1 Carbon emission due to natural activity in project site and carbon sinks

a) Carbon from decomposition

As the proposed mining activity is carried out in existing mining pit, there will be no need of cutting of any trees or plants. So, the process of decomposition will not take place which emits carbon dioxide into the atmosphere.

b) Carbon from respiration

The carbon dioxide we exhale does not contribute to global warming for the simple reason. Since all the carbon dioxide we exhale captured by plants during photosynthesis, we are not disturbing the carbon dioxide content of the atmosphere by breathing.

4.2.1.2 Carbon emission due to human activity in project site and carbon sinks

a) Carbon from Vehicles

The proposed method of mining is semi mechanized which involves activity of excavator and tippers. The burning of fossil fuels used for the tippers and excavators' releases carbon monoxide, carbon dioxide and nitrogen oxide into the atmosphere. When those gases are emitted into the atmosphere it affects the amount of greenhouse gases, which are linked to climate change and global warming. In average based on the production per day, two tippers can travel 21 miles within the lease area for transporting the granite. Plants not only absorb carbon dioxide but also absorb other gases and remove the impurities from it.

Table No. 4.17: Emission of carbon monoxide carbon dioxide from vehicle

Source type	Average Emission rate of CO for HDDV as per EPA	Emission rate of CO
Tippers	2.311 g/mile	0.05 kg/day
Excavators	2.311 g/mile	0.23 kg day
Total Emission Rate		0.28 kg/day

Remediation

The project proponent proposed to plant nearly 500 numbers of one-year taller tree sapling along the safety zone of mining lease area to overcome the emission of carbon gases and other gases by vehicles in the quarry. Moreover, they will plant trees along the village

road and government schools under CER and CSR schemes. BS –VI model of tippers are proposed to use in the quarry for the controlled emission of gases.

4.3 Soil Carbon stock

Soil carbon sequestration is a process in which CO₂ is removed from the atmosphere and stored in the soil carbon pool. This process is primarily mediated by plants through photosynthesis, with carbon stored in the form of SOC. Carbon is the main component of soil organic matter and helps give soil its water-retention capacity, its structure, and its fertility.

The dense carbon stocks below and above the soil are mostly seen in dense forest where more process of photosynthesis takes place and tons of leaves, branches gets decomposed. The agricultural activity in field can degrade and deplete the SOC levels during the process of tillage in paddy, sugarcane turmeric crop field.

The No Reserve Forest and Wildlife Sanctuaries within 10km Radius and this area do not fall under Wildlife Conservation Act.,

As it is mining project which is carried out within lease area it will not affect any soil carbon stock in the nearest reserve forest.

4.4 Noise Environment

Noise survey has been conducted in the study area to assess the background noise levels in different zones. The anticipated noise level due to proposed mining activity has been assessed considering baseline noise level, distance involving mining site to nearest village and noise generated due to proposed mining activity. Following are the sources of noise in the proposed open cast granite quarry project.

- Drilling;
- Blasting;
- Vehicular Movement.

The drilling operation is being carried out by Jack hammer operated by compressor mounted with tractor. The noise levels in the working environment are being and will be maintained within the standards prescribed by Occupational Safety and Health Administration (OSHA). These standards were established with the emphasis on reducing the hearing loss. The permissible limits, as laid down by CPCB, are presented in below in table 4.18.

Noise generated from blasting is always instantaneous. The noise produced by blasting is for extremely short duration of around 0.5 seconds, though with a high intensity. Blasting time is generally fixed at lunch interval or after the working shift taking. Noise of blast is site specific and depends on type, quantity of explosives, dimensions of drill holes,

degree of compaction of explosive in the hole and rock. Blasting, in addition to easing the hard strata, generates ground vibrations and instantaneous noise. The noise levels in many situations will be above Threshold Limit Value. Exposure to noise levels, above Threshold Limit Value may have detrimental effect on the workers' health. The adverse effects of high noise levels on exposed workers may result in Annoyance, Fatigue, Temporary shift of threshold limit of hearing, Permanent loss of hearing and Hypertension and high blood cholesterol, etc.

Noise pollution poses a major health risk to the mine workers. When noise in the form of waves impinges the eardrum, it begins to vibrate, stimulating other delicate tissues and organs in the ear. If the magnitude of noise exceeds the tolerance limits, it is manifested in the form of discomfort leading to annoyance and in extreme cases to loss of hearing. Detrimental effects of noise pollution are not only related to sound pressure level and frequency, but also on the total duration of exposure and the age of the person.

Table No. 4.18: Permissible Exposures in Cases of Continuous Noise (CPCB)

Sound Level (dB A)	Continuous Duration (Hours)
85	8
88	4
91	2
94	1
97	0.5
100	0.25

Table No. 4.19: Noise Exposure Levels & Its Effects

Noise Levels dB(A)	Exposure Time	Effects
85	Continuous	Safe
85-90	Continuous	Annoyance and Irritation
90-100	Short term	Temporary shift in hearing threshold, generally with complete recovery
Above 100	Continuous	Permanent loss of hearing
100-110	Several years	Permanent deafness
110-120	Few months	Permanent deafness
120	Short term	Extreme discomfort
140	Short term	Discomfort with actual pain
150 and above	Single exposure	Mechanical damage to the ear

Source: Hand Book of EIA, Rao & Wooten

4.4.1 Anticipated Impacts due to Noise in cluster core zone

During the operation phase of mining, movement of HEMM also add some noise level whose impact is being minimized by continuous maintenance of vehicle. The likely generations of noise levels due to operation of HEMM are given in table 4.20.

Table No. 4.20: Expected Noise Levels

Equipment's	Expected Noise Levels dB(A)
Mining	
Drilling	90-100
Shovel	75-80
Tipper	75-80
Dozers	85-90
Crusher	85-95

The mine site where heavy earth moving machinery will operate, noise level will be within the stipulated 90 dB (A) norm of DGMS. The protection measures for the operators of this equipment will reduce the impact/exposure.

Predicted noise levels due to mining operations using Mathematical Equations

$L_2 = L_1 - 20 \log_{10} (R_2/R_1)$ Where L_1 dB (A) = Noise level at a distance R_1 (m)

L_2 dB (A) = Noise level at a distance R_2 (m) &

$L = 10 \log_{10} (10^{L_1/10} + 10^{L_2/10} + \dots + 10^{L_n/10})$

Where L_1 , L_2 and L_n are noise level dB (A)

Table No. 4.21: Predicted Noise levels in Core Zone and buffer zone

Location Code	Distance, km	Source Noise Level, dB (A)	L (Day) dB (A)	L (Night) dB(A)	Noise level at Receptor from Mining sources, dB(A)	Resultant noise level, dB(A) day time	Resultant noise level, dB(A) Night time
Core Zone	--	100	44.1	42.0	100	100	42.0
Vellagoundanpatti	1.0	100	41.4	38.5	39.2	44.6	38.5
Kottanatham	0.8	100	38.9	35.2	43.5	45.2	35.2
K.Pichampatti	2.4	100	41.3	37.8	39.1	44.4	37.8
Thirumakkam Patti	1.6	100	41.6	37.4	43.4	47.7	37.4

Green colour- Baseline Value, **Red Colour** – Noise level due to mining,

Blue colour- Baseline + Noise level due to mining

Although the noise level due to the operation of various mining machineries is 100dB(A), the noise level at different receptors is lower due to the distance involved and other topographical features adding to the noise attenuation. The calculated values at the receptors and resultant noise level are based on the mathematical formula as mentioned above.

The anticipated noise level in buffer villages due to mining activity is calculated by considering operation of one quarry only. **When all the quarries in the cluster work together in same time, the resultant noise level may increase up to 5 decibels.**

To overcome the noise pollution due to operation of quarries in the cluster area the following mitigation measure should be followed.

4.4.2 Mitigation measures for Control of Noise

The following noise mitigation measures are proposed for control of Noise.

- ❖ Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas.
- ❖ Limiting time exposure of workers to excessive noise.
- ❖ Proper and regular maintenance of vehicles, machinery and other equipments.
- ❖ The noise generated by the machinery will be reduced by proper lubrication of the machinery and other equipments.
- ❖ Speed of trucks entering or leaving the mine will be limited to moderate speed to prevent undue noise from empty vehicles.
- ❖ Carrying out blasting only during day time and not on cloudy days.
- ❖ Noise levels will be controlled by using optimum explosive charge, proper delay detonators and proper stemming to prevent blow out of holes.
- ❖ Providing proper noise proof enclosure for the workers separated from the noise source and noise prone equipment
- ❖ Provision of Quiet areas, where employees can get relief from workplace noise.
- ❖ The development of green belts around the periphery of the mine to attenuate noise.
- ❖ Regular medical check-up and proper training to personnel to create awareness about adverse noise level effects.

4.5 Ground Vibrations

Ground vibration due to mining activities in the area are anticipated due to operation of mining machines like excavators, wheel loaders, drilling and blasting, transportation vehicles, etc. However, the major source of ground vibration from this mine is blasting. Another impact due to blasting activities is fly rocks. These may fall on the houses or agriculture fields nearby the mining lease area and may cause injury to persons or damage to the structures. The nearest major habitation, K.Pitachampatti village is located in northeast Side. The study area does not involve any mining activity so anticipated impact has been assessed using the empirical equation. The empirical equation used for assessment of peak particle velocity (PPV) is:

$$V = 417.8 \{D / (Q^{0.5})\}^{-1.265}$$

Where,

V= Peak particle velocity in mm/s

D= Distance between location of blast and gauge point in m

Q=Quantity of explosive per blasting in kg.

The standards for safe limit of PPV are established by Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997. Permissible standards of Ground vibration due to blasting as per guidelines of Director General of Mines Safety (DGMS), Dhanbad are given in table 4.23.

Table No. 4.22: Estimated Peak Particle velocities for different Explosive Charges

Nearest Habitation	Quantity of Explosive/Blast, Kg	PPV, mm/s
190m -S	7	2.6
370m -S	7	1.7

Quantity of broken rock per hole = $0.45 \times 2.6 = 1.17 \text{ m}^3$

Blasting efficiency @ 90% = $1.17 \times 90\% = 1.05 \text{ m}^3/\text{hole}$

Charge per hole = 140gm of 25mm dia. Ctg

Quantity of rock broken per day = 29 m^3 or 80 M.T

Requirement of explosive per day = 6kg @ 7 M.T per kg of expl.

No. of holes to be drilled per day = $80 / 1.05 = 53$ holes

Table No. 4.23: Permissible Peak Particle Velocities (mm/s)

S. No	Type of Structure	Dominant excitation Frequency		
		< 8 Hz	8 – 25 Hz	> 25 Hz
A)	Buildings/structures not belonging to the owner			
1	Domestic houses/structures (Kuchcha brick and cement)	5	10	15

2	Industrial Buildings (RCC and framed structures)	10	20	25
3	Objects of historical importance and sensitive structure	2	5	10
B)	Buildings belonging to the owner with limited life span			
1	Domestic houses/structures (Kuchcha brick and cement)	10	15	25
2	Industrial buildings (RCC & framed structures)	15	25	50

Source: DGMS Circular No. 7 dated 29/08/1997

From the above results in table 4.22, it can be seen that the charge per blast of 7kg is well below the Peak particle Velocity of 5mm/s for the habitation located at the distance of 190m.

4.5.1 Mitigation measures for Control of Vibration

Blasting is the major source of vibration and fly rocks. The following mitigation measures are proposed for control of vibration and fly rocks.

- ❖ Specific charge pattern has to be designed by proper trial vibration studies with varying charge ratios.
- ❖ Milli second detonators shall be used preferably 25–50ms per delay to control vibrations.
- ❖ Inclined holes shall minimize back break and intensive shocks.
- ❖ In case of development work if any, cushion blasting and Deck loading system shall be adopted to minimize throw of fragments and ground vibration.
- ❖ Air blast due to usage of Detonating Cord with 10gms/m shall be reduced to 5gms/m to minimize air reverberation.
- ❖ If the vibration still exceeds the limit a long Trench to a depth of 6m may cut in the direction of wave's movement to break longitudinal waves which travel close to surface, preferably near mine buffer zone.
- ❖ No deep hole blasting shall be practiced.
- ❖ Heavy machineries with high ground pressure shall not be used in the mines.
- ❖ Proper warning signals should be used.
- ❖ In spite of all measures periodical testing of vibration and noise using approved seismograph by DGMS has to be followed as a part of Environmental monitoring.

Though all mitigation measures are pointed out, as such no adverse effects on human life, wild life and other biotic system.

4.6 Water Environment

Mining operations can affect groundwater quality in several ways. The most obvious occurs in mining below the water table, either in underground workings or open pits. This provides a direct conduit to aquifers. Groundwater quality is also affected when waters (natural or process waters or wastewater) infiltrate through surface materials (including overlying waste or other material) into ground water.

Whereas Impacts on surface water include the build-up of sediments or other toxic products, short and long-term reductions in pH levels (particularly for lakes and reservoirs), destruction or degradation of aquatic habitat, and contamination of drinking water supplies and other human health issues. The water balance for the proposed project is presented in fig 4.3.

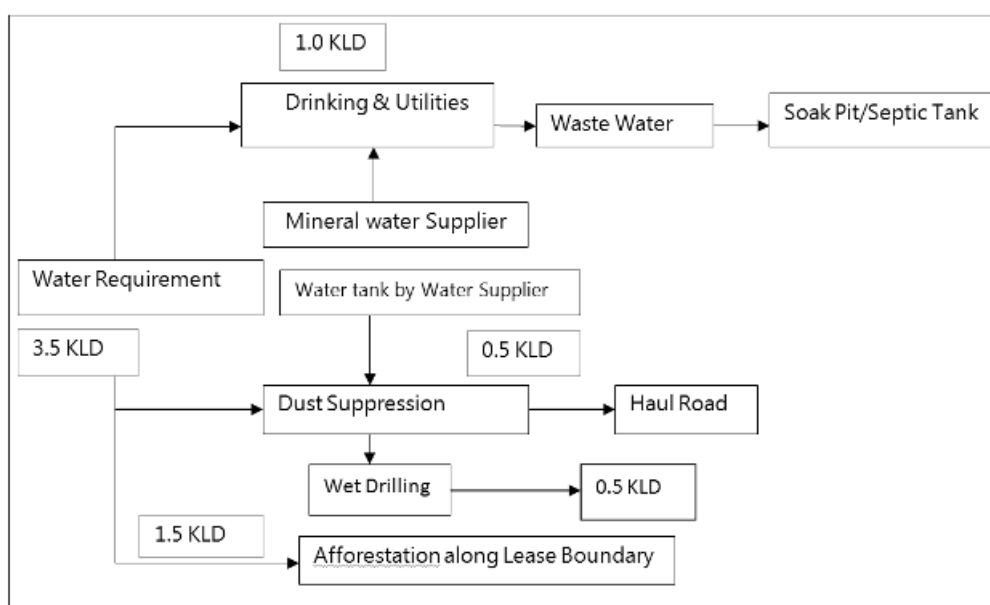


Fig. No. 4.3: Water Balance chart for proposed quarry

Drinking & Utilities = 1.0 KLD

Wastewater = $(1.0 \text{ KLD} \times 75\%) = 0.75 \text{ KLD}$

Water required For Dust Suppression, Green Belt, wet drilling = 2.5 KLD

Total Water Requirement = 3.5 KLD

There are no probable sources of liquid effluents in this project. The 0.75 KLD of domestic effluent/ wastewater generated from office will be discharged into soak pit via septic tank.

4.6.1. Anticipated Impact on Surface Water body due to proposed projects

There is no nalla or water body location within the leasehold area. From the Drainage Pattern Map, it is found that the 3rd order stream connects the lease area of M/s. M.P. Granite in located in Karur. So, the probability of siltation in that stream due to dumping of rejects

within the lease area is high. So, the following mitigation shall be followed to overcome the pollution of surface water bodies due to mining activity.

4.6.1.1 Mitigation Measures:

- i. The garland drainage will be provided around the dump to prevent the escape of runoff along with silt and stone from the dump.
- ii. The repair works of the machineries are strictly prohibited within the lease area to prevent the spillage of grease, oil etc.

4.6.2 Anticipated Impact on Ground water due to proposed project

The water table in this region is about 50. The proposed depth of mining for quarry is 35m bgl. Thus, the mining activity will not intersect ground water table. No chemical having toxic elements will be used for carrying out mining activity. Also, granite does not contain any kind of toxic element which can contaminate the water. So, the rain water or water used for drilling purposes which infiltrates into the ground in the lease area does not affect the quality of ground water.

4.6.3 Management of rain water in the pit during Monsoon Season

During monsoon season, the rain water gets stored in the quarried-out pit. For the working purpose, rain water will be pumped and allowed to store in the surface setting tank constructed outside the lease area to remove suspended solids if any. After the sedimentation process, the water from the settling tank will be used for dust suppression, and green belt development within the lease area.

4.6.4 Water Quality Index

Water Quality Index value has been calculated for the observed values and compared with drinking water specification as per IS 10500:2012 and results were discussed. The WQI has been calculated by using the standards of drinking water quality recommended by the World Health Organization (WHO), Bureau of Indian Standards (BIS) and Indian Council for Medical Research (ICMR). The weighted arithmetic index method (Brown et. al.,) has been used for the calculation of WQI of the water body.

$$\text{Water Quality Index} = \frac{\sum q_n W_n}{\sum W_n}$$

Further quality rating or sub-index (q_n) was calculated using the following expression.

$$q_n = 100 * [V_n - V_{io}] / [S_n - V_{io}] \text{ Where,}$$

q_n = Quality rating for the nth water quality parameter.

V_n = Estimated value of the nth parameter at a given sampling station.

S_n = Standard permissible value of the nth parameter.

V_{io} = Ideal value of nth parameter in a pure water.

Ideal value in most cases $V_{io} = 0$ except in certain parameters like PH and dissolved oxygen.

V_{io} for PH = 7 and V_{io} for DO = 14.6

W_n = Unit weight for the nth parameter.

The overall Water Quality Index (W.Q.I.) was calculated by aggregating the quality rating with the unit weight linearly.

Table No. 4.24: Unit weight of the water quality parameters

Parameters	Water quality standard (WHO/BIS)	Assigned weight (AW)	Unit weight (UW)
pH	6.5-8.5 (8)	3.66	0.1628
EC ($\mu\text{S}/\text{cm}$)	250	2.50	0.1112
TDS (mg/l)	500	3.33	0.1481
TH (mg/l)	200	3.33	0.1481
Ca^{2+} (mg/l)	75	3.0	0.1334
Mg^{2+} (mg/l)	30	2.66	0.1183
Cl^- (mg/l)	250	4.0	0.1779
Total	-	22.48	1.0

Table No. 4.25: Water quality index of water samples

Sampling Site Name	Water Quality Index Value	Water Quality Index Status
Cluster Core	147.5	Unfit for Drinking
Vellagoundanpatti	65.7	Poor water quality
Kottanatham	80.9	Very Poor water quality
K.Pichampatti	218.4	Unfit for Drinking
Thirumakkam Patti	301.4	

Note: Water Quality is calculated only for Physical and Chemical Parameters

Table No. 4.26: Water quality scale

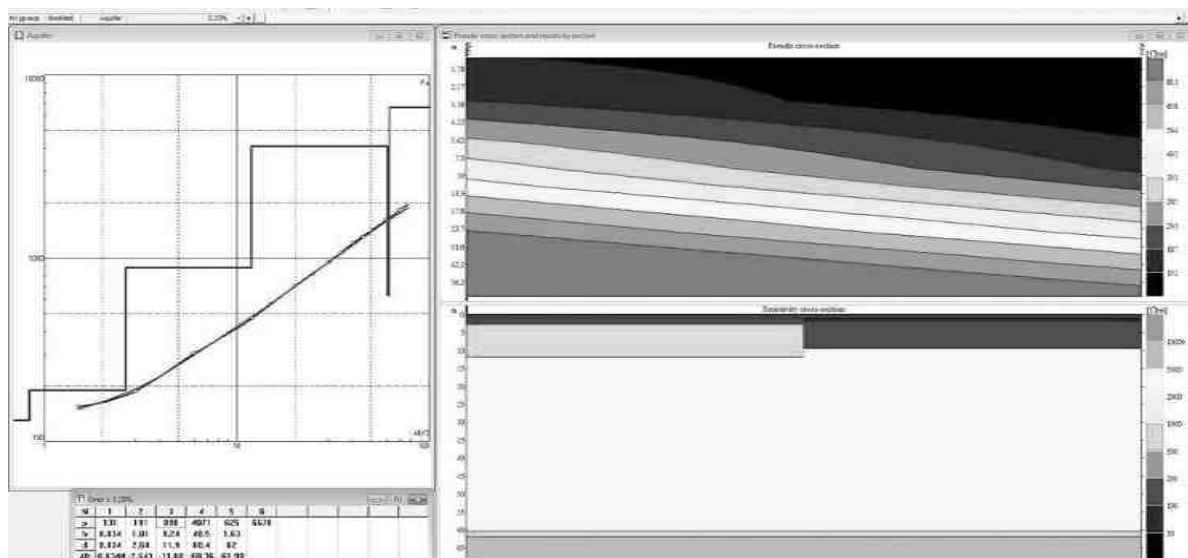
Water quality	WQI Yadav et al 2016	WQI Ramakrishnaiah 2004	WQI Mohanty 2001
Excellent	0–25	<50	<50
Good	26–50	50–100	50–100
Poor	51–75	100–200	100–200
Very Poor	76-100	100–200	200–300
Unsuitable	Above 100	<300	<300

Note: Water Quality is calculated only for Physical and Chemical Parameters

The WQI of the samples collected from the study area are given in table 4.25. It can be seen that the study area has water quality index value ranging from 65.7 to 301.4 which reflects the Poor water quality to unfit for drinking status of the groundwater quality. The findings demonstrate the varying consistency of groundwater at different locations. All the groundwater samples under poor to unfit for drinking category; it may be due to the absorption of fertilisers, geological condition, channel water, solid waste, sewer drainage, septic tanks, and agricultural waste. The water should be treated by reverse osmosis to reduce dissolved solids and total hardness to the required rate.

4.6.5 Impact on Hydrogeology

In general, the groundwater prospects are less in hard rock areas, especially in Hard rock terrains. The deeper aquifers in hard rock terrains have potential only when they are fed by fractures and thick weathered layer. In the present study, to know the subsurface Lithology and layer thickness of groundwater potential zone were carried out vertical electrical soundings (VES). The resistivity signal dimensions were collected by using DDR-3 model resistivity meter. AB/2 electrode spacing of 100m is used by Schlumberger configuration. The data were analyzed by curve matching techniques. From the apparent resistivity data, the interpreted resistivity curve obtained using the software it is observed that 3-layer curves shown in the fig 4.4. Data collection is another important factor for the success of resistivity method. The interpretation of resistivity data four-layer master curve matching technique has been used. Interpreted Resistivity and layer thickness of various layers shown in table 4.27.



11.9-60.4m: massive granite formation with 4231 Ohm. Resistivity

60.4-62m: Resistivity Jointed and fractured rock with about 625ohm. Resistivity

Above 62m: hard massive granite formation with 6670 Ohm. Resistivity From the results of Resistivity Survey, it is understood that the study area is composed of granite deposit, with little geological disturbances by folding. There is no any seepage in this lease area.

4.7 Soil Environment

4.7.1 Impact on Soil Environment

For the mining plan period of five years, the generation of top soil is estimated at 31590 m³. It will be dumped along mining lease boundary as earth bund and it will be utilized for green belt development within the lease area. No chemical or toxic elements will be used during mining activity. So, the health of soil in and around the quarry will not be affected.

4.7.2 Mitigation measures for Soil Conservation

- ❖ Low height retaining wall will be provided along the toe of dumps to prevent the soil along the slopes being carried away by the rain water.
- ❖ Top soil should not be mixed with other waste or reject materials. It should be conserved by judicious utilization in the mine premises.

4.8 Waste Dump Management

The proposed rate of production of granite for five years is about 47790 MT at the rate of 40% recovery up to permissible depth. The 60% reject of 71676 MT. The rejects materials are dumped along lease and backfilled at the end of mine life.

4.8.2 Mitigation measures

The mineral rejects and waste shall be dumped systematically with proper repose angle and stabilization as given below,

- ❖ The rejects\ waste dump shall be properly terraced in to 1.5m benches with proper repose angle and then the top soil shall be spread over the dumps and slope to make them humus for some time, after the soil suitable for water retention, trees will be planted at the top, slope and toe of the stabilized dumps to form vegetation.
- ❖ Gradation of dump shall be done automatically as coarser materials go to the bottom and finer at the top and therefore drain of rain water flow freely to the bottom without endangering the stability of dump,
- ❖ More over the dump height shall be less than 6m with natural repose angle and hence dump will be more stable.

- ❖ Garland drainage around dump shall prevent under wash of dump by hydrostatic pressure to be developed by surface water and control wash outs and collapse.
- ❖ The runoff from the slopes of dump will be collected by garland drainage around the dump and it will be taken up to settling tank to settle down the suspended solids. After that the water will be used for greenbelt development and dust suppression purposes.

4.9 Municipal solid waste management

The human waste shall be treated by temporarily built septic tank and soak pit within the mine lease area. The municipal solid waste generated by workers will be properly segregated into biodegradable and non-biodegradable and disposed through garbage collector of particular location in Karur District.

4.10 Ecology and Biodiversity

4.10.1 Impact on Ecology and Biodiversity

The details and list of flora, fauna, reserved forest and cropping pattern within the 10km radius of study area is given in chapter 3. The impact on ecology and biodiversity due to the proposed mining activity has to be studied in detail to prepare the management plan to safeguard the flora, fauna, forest products and aquatic living organism etc.

A detailed anticipated impact of Ecology and Biodiversity due to mining activity is described in table 4.28 & 4.29.

Table No. 4.28: Ecological Impact Assessments and Its Mitigations -Part 1

Sl. No	Issues	Assessment	Mitigations
1	Proximity to national park/ wildlife sanctuary / reserve forest / mangroves / coastline/estuary/sea	No forests are situated within 10km radius. The proposed project does not attract Forest Conservation Act, 1980. There is no wild life sanctuaries found around 10km radius. Quarry area is 145km (E) away from the Bay of Bengal. Hence the area does not attract Wildlife Protection Act, 1972 and C.R.Z. Notification, 1991.	-
2	Activities of the project affects the breeding/nesting sites of birds and animals	No breeding and nesting site was identified in mining lease site. The fauna sighted mostly migrated from buffer area. The fauna in the buffer zone may be affected by noise generated due to mining activity.	The noise due to the mining activity will be controlled developing green belt all along the lease boundary, regular maintenance of tippers, excavators, transporting

			the empty tipper within the speed the 20 km/hr.
3	Located near an area populated by rare or endangered species	No endangered, critically endangered, vulnerable species sighted in core mining lease area and also in buffer zone.	Nil
4	Proposed project restricts access to waterholes for wildlife	No waterholes are in core zone. No Wild life sanctuary within 10km radius.	Nil
5	Proposed mining project impact surface water quality that also provide water to wildlife	'NO' scheduled or threatened wildlife animal sighted regularly in core area.	Nil
6	Proposed mining project increase siltation that would affect nearby Biodiversity area.	Yes, the runoff from the dump which carries the solid materials may get silt in the adjacent agricultural land and affect the cropping pattern. Also, it may get silt in the adjacent river bed and reduce its water carrying capacity	Garland drainage will be excavated around the dump to arrest the runoff from dump. The drainage will be desilted after every precipitation.
7	Risk of fall/slip or cause death to wild animals due to project activities	'NO'. No Wild life sanctuary within 10km radius.	Nil
8	The project release effluents into a water body that also supplies water to a wildlife	As the proposed project is mining activity there will be no possibilities of release of effluents. Also, no Wild life sanctuary within 10km radius.	Nil
9	Mining project effect the forest-based livelihood/ any specific forest production which local livelihood depended	No reserve forest around 10km radius from the periphery of the lease applied area. Hence the proposed mining activity will not affect the nearest forest.	-
10	Project likely to affect migration routes	No migration route observed during monitoring period.	Nil
11	Project likely to affect flora of an area, which have medicinal value	No flora having medicinal value found within the lease area	The flora such as neem having medicinal value found in the study area of buffer zone. Those floras will not be affected by the proposed mining activity at it will be carried out only within the lease area.

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12	Forestland is to be diverted, has carbon high sequestration	'NO'. There is no forest land within the lease area.	Nil
13	The project likely to affect wetlands, fish breeding grounds, marine ecology	'NO'. No wetland, fish breeding grounds, marine ecology present in core mining area.	Nil

(Format Source: EIA Guidance Manual-Mining and Minerals, 2010)

Table No. 4.29: Ecological Impact Assessments – Part 2

Ecological Criteria	Identified Impacts	Ecological significance of Impact	Magnitude	Duration /Timing/ Frequency	Reversibility	Mitigation	Cumulative Impact
Zone of Influence	Project site Habitat due to Site Clearance.	The proposed mining lease is located in K.Pitachampatti Village. Since it is a fresh area, some shrubs will be cleared before the commencement of the project. The fauna which depends on the shrubs for habitat will be disturbed. No clearance of vegetation in the buffer zone	Low Impact	-	Irreversible in quarry area	During the clearance, it will find the alternate habitat in the buffer zone. During the operation of quarry, the proponent will develop the green belt along the lease boundary. This afforestation will provide the habitat for the migrated fauna.	No Cumulative Impact
Zone of Influence	Ecological Impact Surrounding habitat due to fugitive emission	The fugitive emission due to the mining activities such as drilling, blasting, loading and transportation on the haul road will be deposited on the flora and crop field in the buffer zone which affects growth and its productivity.	Temporary Impact	During the mining plan period	Reversible	Before loading the granite will be moisturized to minimize the emission. The sprinkling of water over the haul road will be done. Then completely wet drilling will be take place. The transportation vehicles	No Cumulative Impact

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						will be maintained and serviced Properly.	
Accessibility	Ecological Impact due to road construction	No Road construction is required to assess the project site. The existing village road connects the project site to the existing MDR road.	No Impact		-	-	No Impact
Zone of Influence	Ecological Impact On Surrounding/ Eco sensitive habitat due to waste water generated from the project activity.	Since the proposed project is a mining activity no waste water generation is expected. Human waste and municipal solid waste will be generated due to the workers.	No Impact	-	-	Human waste will be properly treated by septic tank and soak pit in the lease area and dispose periodically. The municipal solid waste generated by workers will be properly segregated into biodegradable and non-biodegradable and disposed through garbage collector of Coimbatore Corporation.	No Impact

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Zone of Influence	Ecological Impact on Surrounding / Eco sensitive habitat due to Noise generated from the project activity.	During drilling or blasting, transportation of granite, noise will be generated and it may slightly affect the movement of fauna around the lease area.	Temporary impact	Only during drilling, blasting operation and transportation period. (5 years)	No	Avenue trees will be planted along the lease area to minimize the noise level. Milli second detonators shall be used preferably 25–50ms per delay to control vibrations. Regular maintenance of vehicles and driving the empty tipper within 20km/hr speed also control the noise generations.	No Impact
Zone of Influence	Ecological Impact On Surrounding/ Eco sensitive habitat due to Transportation	There is no eco sensitive habitat found around the lease area. The fugitive emission from drilling, blasting, vehicle movement will form layer in leaves thus reducing the gaseous exchange process. This Ultimately affects the growth of plants. The animals like dog, cattle may get accident due to truck movement.	Temporary impact	During Operation Phase	No	The truck driver will be advised to drive the vehicle within 20km/hr inside the lease area and 40km/hr outside the lease area. Before loading the granite will be moisturized to minimize the emission. The sprinkling of water over the haul road will	No Impact

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						be done. Then completely wet drilling will be take place.	
Zone of Influence	Ecological Impact on Natural ecosystem, the soil micro flora and fauna and soil seed banks.	There are no forests and wild life sanctuary within 10km radius of the project site. The Kodaganar river is located at the distance of 10.43 km in NW direction. During raining season, the runoff from the lease may affect the habitants in the river and reduce river carrying capacity	Temporary Impact	Nil	--	The garland drainage will be around the quarry pit and dump to prevent the escape of runoff from the lease area to the river. The maintenance of vehicle will be strictly prohibited in the lease area to prevent the spillages of oil, grease.	No Impact
Zone of Influence	Fish habitats and the Food web/food chain in the water body and Reservoir	The Kodaganar river is located at the distance of 10.43 km in NW direction.	No Impact	Nil	--	The garland drainage will be around the quarry pit and dump. The maintenance of vehicle will be strictly prohibited in the lease area	No Impact

Table No. 4.30: Afforestation Plan of proposed quarry

Year	Place	Type of Trees	Number	Spacing	Rate of survival
I	Lease Boundary	Neem, Panai,casuarinas and other regional trees	30	5m X 5m	80%
II	Lease Boundary	Neem, Panai,casuarinas and other regional trees	30	5m X 5m	80%
III	Lease Boundary	Neem, Panai,casuarinas and other regional trees	30	5m X 5m	80%
IV	Lease Boundary	Neem, Panai,casuarinas and other regional trees	30	5m X 5m	80%
V	Lease Boundary	Neem, Panai,casuarinas and other regional trees	30	5m X 5m	80%

4.11 Socio Economic

4.11.1 Anticipated Impact

This project will generate direct and indirect employment for more than 100 persons. Preference will be given to the local population for employment in all categories including semi-skilled and unskilled. The villages and their inhabitants in the buffer zone will not be disturbed from their settlements due to the mining operations.

It is obvious to assume that the activities of the mining operations will improve the socio-economic levels in the study area. The anticipated impact of this project on various aspects is described in the following sections

- Impact on human settlement: Overall, due to employment generation and economic progress, there will be positive changes in the socio-economic condition of the people residing in the vicinity of the project site. The local population will have preference to get an employment. No resettlement has occurred due to mining activity. Built up land has been increased marginally.
- Impact on Population Growth: Population rate grows annually and demand of primary needs and employment will increase due to population growth. It will provide some direct and indirect employment to the people in and around the villages.
- Impact on Vegetation: No decline in agricultural land. It has been increased over a period of time by utilizing the water stored in the working pits. No deforestation will be happened.

Therefore, due to mining, per capita income of local people will be improved. The local people have been provided with either direct employments or indirect employment such as business, contract works and development work like roads, etc. and other welfare amenities such as Sanitary facilities, Solar Lighting to Govt school, Health Care to the villages in buffer zone, Maintenance of village road or Providing funds to local body or Prime minister's fund on Socio economic Development and relief measures. The job/business opportunities will improve the economic condition of the persons. They are in a position to utilize this money for purchase of tractors, trucks, etc. which may be put into use for business purposes. Many **positive impacts** can be resulted from a long-term mine unit. In this context, provision of job opportunities, business, transport and communication, laborer etc are the major ones. Thus, this unit is highly favorable to poor and landless people.

4.11.2 Mitigation Measures

- Good maintenance practices will be adopted for plant 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.
- Drilling, blasting etc at specified location will be followed with proper schedule.
- Appropriate air pollution control measure will be taken so as 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 has been provided which meet 'BIS' (Bureau of Indian Standards).

Thus, no significant impact on health and safety will be occurred due to this project.

4.12 Land Environment

4.12.1 Anticipated Impact on Land Use / Land Cover

Granite quarry project will result in disturbance of the land use pattern of the mine lease area. The impact on the topography in the form of changed landscape is unavoidable during mining activities like excavation, overburden dumping, soil extraction etc. Land requirement for the project has been assessed considering functional needs. So, reclamation of mined out land will be given due importance as a step for sound land resource management. There is no release of toxic elements into the ground. No adverse impact is anticipated on land use of buffer zone associated due to the mining activity, as all the activities will be confined within the project site. The mining operations will impact the land usage and land aesthetics of quarry lease area.

The land use analyses show that the Tree plantation was done around the mining lease area of M/s. M.P. Granite. The rate of plantation increases over a period of time due to quarry activity. At the end of the project, the quarried pit will be act as water storage pond. The stored water will be used for developing Tree plantation around the mining lease area. It will improve the livelihood of village people. The evaporation rate of the water in the pit is given detail in the report.

4.12.2 Mitigation measures

- ❖ The restoration of the degraded land would cover backfilling and terracing with the overburden / wastes and surfacing the same with top soil.
- ❖ Provision of Garland drainage around the dumps
- ❖ Fast growing trees and other native shrubs would be planted to stabilize the reclaimed land
- ❖ Appropriate measures will be taken for Green belt development.
- ❖ The rain water will be stored in the pit which will recharge the ground water as a part of rain water harvesting scheme for irrigating the nearby agricultural lands.

4.13 Occupational Health Risks

4.13.1 Anticipated Impact

Occupational health and safety hazards occur during the operational phase of mining. The problem of occupational health, in the operation and maintenance phases is primarily due to dust, which could affect breathing. Health and Safety Measures to control dust inhalation; precautions would be adopted to prevent dust generation at site and dispersing in the environment. Long-term exposure to silica dust may cause silicosis. Workers are likely to get exposed to excessive noise levels during mining activities. Occupational Safety hazards related to blasting activities may result in accidental explosions, if not properly mitigated.

4.13.2 Anticipated occupational and safety hazards

- ❖ Health Impact due to Physical activity, Extremes of age, poor physical condition, fatigue, Cardiovascular disease, Skin disorders
- ❖ Noise
- ❖ Burns and shocks due to electricity
- ❖ Respiratory hazards due to Dust exposure
- ❖ Physical hazards
- ❖ Explosives
- ❖ Fire

4.13.3 Anticipated health impacts on people in nearby villages

The mining activity not only causes health hazards to quarry workers but also affect the health of nearby village people. The fugitive emission during heavy wind period travel along the predominant wind direction and people in village located along predominant wind direction gets affected. The chances of changing water quality in villages due to mining activities lead to causes various diseases in the nearby village people.

4.13.4 Mitigation measures

For the safety of workers at site, the following mitigation measures are proposed

- ❖ Excavators, dumpers, drills other automated equipments will be enclosed
- ❖ Use of personal breathing protection will be made compulsory
- ❖ Spraying with water on all working faces & haul roads, by water-sprinkler
- ❖ Regular health monitoring of workers once in 6months for silicosis
- ❖ Random health check up village people around the lease area for identify diseases if any due to mining activity
- ❖ No employee will be exposed to a noise level greater than 75 dB(A) for a duration of more than 8 hours per day without hearing protection
- ❖ Ear muffs provided will be capable of reducing sound levels at the ear to at least 75 dB(A).
- ❖ During mining operations, all the statutory provisions of the Indian Electricity Rules 1956, and Indian Standards for installation and maintenance of electrical equipment etc. will be observed.
- ❖ Care will be taken to evacuate the mining area completely at the time of blasting operations.
- ❖ A blasting SIREN will be used at the time of blasting for audio signal
- ❖ Before blasting and after blasting, red and green flags will be displayed as visual signals.
- ❖ Warning notice boards indicating the time of blasting and NOT TO TRESSPASS are displayed prominently.
- ❖ First-aid facilities as per provisions under Rule (44) of Mines Rules 1955
- ❖ Initial and Periodical medical examination shall be conducted for the employees under Rule 29B & 45 (A).
- ❖ Insurance will be taken in the name of the labourers working in the mines.

4.14 Agricultural Environment

4.14.1 General

The general impacts on agricultural lands will be dust pollution, as volume of dust is discharged into the air during the process of quarrying. Dust gets deposited on the leaves of plants, flowers and soil. This affects the photosynthetic and fruiting ability of the crops. Silt from the excavation, screening process and reject during monsoon season gets washed and chokes the agricultural fields, rendering them useless for the growth of crops. Due to blasting, fly rocks may fall on agricultural fields making it difficult for the farmer to cultivate.

There is a need for dust control on haul road movements. Vehicles emit fugitive gases during transportation of materials. Those gases enter the plants through the stomata pores; it destructs chlorophyll and affects photosynthesis leading to stunted growth or death of crops. The pumping of water from the ground for the mining activity will reduce the availability of water for the agricultural purposes.

4.14.2 Anticipated Impacts of Proposed project on Agriculture, Horticulture and livestock

The land use analyst sighted that the agricultural land is surrounded around the project site. Field crops such as maize, groundnuts are cultivated and the plantation crops such as coconut trees are planted within 1km radius of the project site. The field crop paddy is cultivated along the Amaravathi River which is located more 8k away from project site. Other than coconut plantation, maize, groundnuts mostly shrubs are identified within 1km.

As the villages are located around the project site, the people in the villages are farming animals like goat, cow, and sheep for their livelihood. The above-mentioned impact may be observed on the nearest agricultural farm during the quarrying activity. So, the following mitigation measures will be suggested to protect the nearest farm. The requirement of water for the proposed project will be taken from bottom of the existing pit and water vendors. The ground water for the proposed project site will not be extracted at the same place and the proposed mining activity is 4-10m above ground water table. So, the proposed mining activity does affect the ground water resource.

4.14.3 Mitigation Measures

- Spraying of water on the haul roads will be done to suppress the dust in the source itself. Interval of sprinkling depends on the environmental factors such as temperature, rainfall and humidity of the proposed site.
- The trees having tolerance to different air pollutants will be planted along the boundary to prevent the escape of dust to the surroundings.

- Garland drainage will be provided around the lease area to prevent the leach of silt into the farm.
- Regular check and proper maintenance of Vehicles will be carried out to minimize the emission of pollutants.
- Adequate Blast shield or blast mats will be provided wherever necessary for fly rock protection during blasting, thus to prevent the accident on the nearest farms.
- During monsoon season the dust deposited on the surface of plant body is washed out naturally.
- Making two bore holes which have direct conduit with the water table in the lease area will help ground water recharge during monsoon seasons. It helps the agricultural activity in the buffer area of project site.

4.15 Post COVID Health Management Plan

- The vaccinated persons only will be given employment.
- The labors and other skilled, semi-skilled employees will be given a new mask daily.
- The body temperature of the labors will be checked using the temperature monitoring gun while getting into the quarry and getting out from the quarry.
- The labors will be advised to maintain the social distance of at least 10m and also advised to sanitize the hand.
- The general awareness program will be conducted about the handling of COVID-19 in two weeks once.
- The board referring the “Wear mask” and “Maintain social distance” will be placed in two sides of entrance of the quarry in local language.



Fig No. 4.5: Maintain social distance of 2m in work place

CHAPTER – 5: ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)

Consideration of alternatives to a project proposal is a requirement of the 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 environment friendly and cost-effective options. Analysis of alternatives should be similar to the content of the approved mining plan.

The selection of the site is based on the following considerations which are feasible in terms of location, deposit characteristics, availability of reserves, percentage recovery, road facilities, labor availability, requirement of health and safety and environmental concerns, production scheduling, scope of mechanization/automation, land reclamation, and operating and capital cost estimates.

CHAPTER – 6: ENVIRONMENTAL MONITORING PROGRAMME

Environmental Monitoring program is mandatory to check the impact of the mining activity in the core and buffer zone. Hence regular monitoring of various environmental parameters helps in maintaining sound operating practices of the mining in line with mining and environmental regulations. Environmental Monitoring program will be conducted for various environmental components as per conditions stipulated in Environmental Clearance Letter issued by SEIAA & Consent to Operate issued by TNPCB.

6.1 Measurement methodologies

The following instruments will be used for environment monitoring for various environmental parameters.

Table No: 6.1 Instruments used for Monitoring

S. No	Instruments	Purpose of Monitoring
1	Respirable Dust Sampler	Air Pollution
2	Fine Particulate Sampler	Air Pollution
3	Sound level meter	Noise level
4	Digital Seismograph	Vibration monitoring
5	Water level indicator	Water level
6	Geophysical Instruments (DDR3)	Water table
7	Camera, Binocular & Lens	Flora, Fauna
8	GPS & DGPS	For fixing the coordinates of sampling location
9.	Electronic Total station	Reduced level & topography monitoring

In addition to the above, Primary data on land use, socio economics will be collected by visiting the field and secondary data will be collected from Government Department and other sources.

6.2 Monitoring Schedule and Frequency

The sampling and analysis of the environmental attributes will be as per the guidelines of Central Pollution Control Board (CPCB). Monitoring program will be followed till the mining operation ceases as per the schedule below.

Table 6.2: Monitoring Schedule

S. No.	Environment Attributes	Location	Monitoring		Remarks
			Duration	Frequency	
1	Meteorology and Air Quality	Continuous monitoring weather station in core zone/ nearest IMD station	24 hours	Monthly Once	Wind speed, direction, Temperature, Relative humidity and Rainfall.
2	Air Pollution Monitoring – PM _{2.5} , PM ₁₀ , SO ₂ and NO _x	6 locations (One station in the core zone and at least one in nearby residential area, one in the upwind, two station on the downwind direction and one in cross wind direction).	8 hours	Six months once	Fine Dust Sampler and Respirable Dust Sampler
3	Water Pollution Monitoring	Mine effluents, Set of grab samples during pre and post monsoon for ground and surface water in the vicinity.	–	Six months once	Physico–chemical, microbiological characteristics
4	Hydrogeology	Water level in open wells in buffer zone around 1km at specific wells	-	Six months once	Water level monitoring devices may be used.
5	Noise	Mine Boundary, high noise generating areas within the lease and at the nearest residential area	24 hours	Monthly Once	Sound level meter
6	Vibration	At the nearest habitation (in case of reporting)	–	During blasting operation	Digital Seismograph
7	Soil	Core Zone and Buffer zone (Grab samples)	–	Six months once	Physical and Chemical characteristics

6.3 Data Analysis

Data analysis will be done by MoEFCC/NABL approved laboratory as per CPCB guidelines & compliance reports shall be submitted to concerned authority (specified in Environment Clearance Letter issued by SEIAA, Tamil Nadu and Consent issued by TNPCB, Namakkal) on regular basis.

6.4 Emergency procedures

The mines manager monitors the emergencies that may occur in opencast mining operations and prepares an emergency plan to deal with emergency situations during the operation of the mine. Preparation of a preventive maintenance schedule program based on recommendations given and maintenance schedules for all equipments and instruments as per recommendations of the manufacturer's user manuals.

6.5 Detailed Budget

Detailed budgetary provisions for monitoring program are detailed in the following Table No 6.3.

Table No 6.3 Environment monitoring budget

S. No	Environmental Monitoring Program	No. of samples per year	Cost per sample	Cost
1	Ambient Air Quality monitoring	4	Rs 26,000	Rs 2,60,000
2	Water quality	1	Rs 9000	Rs 90, 000
3	Noise monitoring	4	Rs 1000	Rs 10, 000
4	Ground Vibration	2	Rs 2000	Rs 20, 000
	Total			Rs 3,80,000

CHAPTER – 7: ADDITIONAL STUDIES

7.1. Public Consultation

The present Draft EIA report is for Public Consultation only. The proceedings of the Public Consultation will be included in the Final EIA report.

7.2 Risk assessment and Disaster Management Plan

Risk Assessment is all about prevention of accidents and to take necessary steps to prevent it from happening. The mining operation is carried out under the management control and direction of a qualified mines manager. The DGMS have been issuing a number of standing orders, model standing orders and circulars to be followed by the mine management in case of disaster, if any.

To overcome such risks, help/aid would be sought from emergency services providers like Police station, fire station, Hospital, Ambulance services in the vicinity of the mine site. Their telephone numbers and communication facilities are to be provided and displayed on the board at the mine office as well as mine site. Responsibility of coordinating rescue activities is entrusted to quarry-in-charge at the quarry site in addition to quarry-in-charge is also looking after statutory obligatory under Mines Act, 1952. Name and Address of Contact Person coordinating in case of Eventuality is stated below:

Name and Address of the Proponent	M/s. M.P. GRANITE No. 131/29, RR Complex, Kollapatti, Animoor Post, Trichengode Taluk, Namakkal District - 637211. TAMIL NADU. mpkexport2017pvtltd@gmail.com

However, the following natural/industrial hazards may occur during normal operations.

- i. Operational Phase,
- ii. Inundation of mine pit due to flood/excessive rains,
- iii. Accident due to transport & other equipments, Safety and Environmental aspects.

Table 7.1 Risk Assessment and Disaster Management Plan

S. No	Hazards	Mitigation measures
1	Surface Fire	➤ Fire Extinguishers ➤ Sand Buckets
2	Explosives/Blasting	➤ The applicant is directly purchasing explosives from an authorized dealer and they are blasting with help of certified blaster. Agreement is made with License holder

		in Form-22 for store, use and sale of explosives. ➤ Shot holes blasting using compressor and Jack Hammers combination are adopted to release the mineral.
3	Flooding of Rain water	➤ Escape Routes will be provided to prevent inundation of storm water ➤ Garland drains will be provided at the toe of dump
4	Radioactive hazard	➤ Not Anticipated
5	Failure of Mine Benches and Pit Slope	➤ Ultimate or over all pit slope shall be 45° and each bench height shall be 6m height equal to the boom height of excavator and vertical. ➤ During working normally 3-6m will be maintained as per the plan.
6	Failure of Waste Dumps	➤ Stabilization of dump with top soil and tree plantation shall make the dump more stable. ➤ Garland drainage around dump shall prevent under wash of dump by hydrostatic pressure to be developed by surface water and control wash outs and collapse.
7	Dust	➤ Periodical wetting of land by spraying solutions. ➤ Regular water sprinkling on haulage roads ➤ Provision of Dust mask to workers ➤ Green Belt shall be carried out within the mine premises by planting trees, to improve the aesthetics of the area and also to reduce the pollution outside the activity area
8	Noise	➤ Rotation of workers to minimize exposure time of noise ➤ The equipments and machineries shall be maintained properly ➤ Provision of earmuffs to workers
9	Transportation	➤ Convex mirrors should be kept at all corners ➤ All vehicles should be fitted with reverse horn with one spotter at every tipping point ➤ Loading according to the vehicle capacity ➤ Regular checking of brakes to avoid failures ➤ Periodical maintenance of vehicles

10	General measures	➤ No entry for any unauthorized persons ➤ S1 type fencing as per DGMS circulars ➤ Quarrying as per Approved Plans only ➤ Provision of Personal Protective Equipments ➤ In case of any closure of mine the compensation under Industrial Dispute Act will be paid as per law

7.2.1 Care and Maintenance during temporary discontinuance

Watch and ward are provided permanently in the Mine premises to monitor the Mine openings to prevent inadvertent entry. Top soil bund is made partly and Stone fencing is proposed all around lease boundary to safe guard the mine and the adjacent livings. Temporary discontinuance will be minimal as there is good demand for this material in construction work.

7.2.2 Economic repercussions of closure of mine and manpower retrenchments

7.2.2.1 Number of local residents employed in the mine, status of continuation of family occupation and scope of joining occupation back

There are 40 person employed in the quarry. Most of labors are Agriculturist. In case of closure of mine, they may continue their own work.

7.2.2.2 Compensation given or to be given to the employees connecting with sustenance of himself and their family members

In case of any closure of mine the compensation under Industrial Dispute Act will be paid as per law. All workers shall get retrenchment benefits as per labour laws under enforcement.

7.2.2.3 Satellite occupations connected to the mining industry – number of persons engaged therein – continuance of such business after mine closes

The quarrying activity shall lead to development of several ancillary units and business, which are explained below:

- i. Other than mine employment, workshops, spare parts, hotels, tea shop and related several self-employment opportunities.
- ii. Several shops and service providers shall grow in the public adjacent to mines.
- iii. Schools and city development shall also be possible owing to the fact of economic growth in the village.

7.2.2.4 Continued engagement of employees in the rehabilitate status of mining lease area and any other remnant activities.

In the event of closure of mine, the mine worker shall get alternate work or business like agriculture etc. No serious repercussions envisaged in the event of cessation of mining activity, as they will be provided employment in other mines belong to the company.

7.2.2.5 Envisaged repercussions on the expectation of the society around due to closure of mine

Persons on roll at the time of closure will get benefit as per State Govt. guidelines as applicable at the time of retrenchment.

7.2.3 Time Scheduling for abandonment

The following works are scheduled before abandoning the mine,

- i. Parapet wall of 2m height will be constructed around the pit,
- ii. Planting and monitoring of Afforestation program.

There is no proposal for closure of mine for the next 10 years. The parapet and plantations will be done during operation of mine. In case of any abandonment the following time is required,

Activities	Days for schedule
Time schedule for fencing	6 months
Time schedule for reclamation of mined out area	1 year

7.3 Social Impact Assessment, R&R Action Plans

The Multicolour Granite quarry project of **M/s. M.P. Granite** does not involve any kind of displacement of the population since the mining will be concentrated only in the mining area only. Not much disturbance in respect of fauna, flora and human settlement of the villages. The impact of mining activity on the population will be insignificant. Hence, Rehabilitation of settlements is not anticipated under this project as it will not be required. Thus R&R Action Plans not proposed.

The project proponent will help in uplifting the poor section of the society as part of CSR activity by undertaking social welfare programs. The Project proponent contributes 2.5% of profit towards CSR activities. This project will have a positive impact on the socio economic as it will provide considerable employment to the families in the nearby villages. Improved health care facilities are expected to come-up in the area for catering to the health needs of the miners. The impact of mining on the civic amenities will be substantial after the

commencement of mining activities. The local people who are currently depending on forest and agriculture will have new avenue from the mine.

7.4 Detail study of Rainwater harvesting after the completion of project.

I.	Total Pit Area	= 10520m ²
II.	Annual rainfall of the area	= 0.652 m
III.	Total rainwater available to store in pit area	= 6859.04m ³
IV.	Total volume of quarried pit	= 473400m ³

Since the rainwater directly getting stored in the quarried pit, the runoff will not take place. The Quarried Pit will be act as **Artificial Ground Water Recharge Pond**.

After the rainwater getting stored in quarried pit, the water slowly infiltrates into the ground and reaches the ground water table. This will greatly increase the ground water table around the lease area.

By electrical resistivity survey it is found that there is massive rock formation at 35m bgl. So, the infiltration rate of rain water is very less. If the rain water stored in pit for long period the evaporation loss will take place.

Meyer's Formula (1915) is used to find the loss of water in pit due to natural evaporation process.

Meyer's Formula (1915)

$$E_L = K_M (e_w - e_a) (1 + u_9/16)$$

Where

- E_L = Evaporation Rate (mm/day)
- e_w = the saturation vapor pressure at the water temperature in mm of mercury
- e_a = the actual vapor pressure in the air in mm of mercury
- u_9 = monthly mean wind velocity in km/h at about 9m above ground
- K_M = coefficient accounting for various other factors with a value of 0.36 for large deep and 0.50 for small shallow waters.

Here,

e_w = 29.77 mm of Hg (considered average temperature in Karur district during summer season)

e_a = 0.61 x 29.77 = 18.15 mm of Hg. (0.61 is Humidity)

u_1 = 10.6 km/hr

u_9 = $10.6(9)^{1/7}$ = 13.7 km/hr

Substitute the above parameters in Meyer's equation,

$$E_L = 0.36 (29.77 - 18.15) (1 + 13.7/16)$$

$$E_L = 7.73 \text{ mm/day or } 0.0077 \text{ m/day}$$

$$\text{Evaporated Volume per day} = 10520 \times 0.0077 = 81 \text{ m}^3/\text{day or } 81 \text{ KLD}$$

The total quantity of rain water to be stored in quarried pit is 6859.04 m^3 . The evaporation rate of water per day is 81.0 m^3 based on the average temperature in Karur District. It takes nearly 4 months for the complete evaporation of water. Before that the stored water will be used to irrigate the crop around the quarry area.

Other benefits are that the water will be used for the domestic purposes after the water properly treated by Sedimentation-Filtration processes. A higher quantity of about 20 liters per capita per day should be assured to take care of basic hygiene needs and basic food hygiene.

Thereby the Proposed quarry benefits the daily needs of water to so many families around the quarry area for every year. This is very important positive impact of the proposed Multicolour Granite Quarry.

7.5 Plastic/Microplastic waste Management Plan

This is proposed Multi Colour Granite quarry. So, the project does not need any plastic related material for quarry operations. The plastic materials will be used by the employee and labours in the form of carry bags, water bottles, etc. To avoid such situations the employees and labours will be strictly instructed to avoid the plastic materials in the lease area. Moreover, they will be advised to use cloth bags, jute bags and bring the food by Steel tiffin box.

Water will be provided by the project proponent for both drinking and domestic purposes. So, the dustbins will not be needed in the quarry. To manage the unavoidable situations, Dustbins will be placed in the quarry for both decompose and non-decompose waste separately of Municipal solid waste. The collected waste will be disposed periodically as instructed by TNPCB. The board with the instruction "**Avoid plastics**" is placed in the two sides of quarry and awareness program will be conducted to the labours monthly once.

Microplastics are small pieces of plastics less than 5mm. As usage of plastics is totally devoid in the quarry premise, the chance of Microplastic pollution is negligible inside the lease area.



CHAPTER – 8: PROJECT BENEFITS

Mining activity will help in improving the socio-economic benefits in areas like employment, communication and infrastructure development etc.

8.1 Physical Infrastructure

The Multicolour Granite project located in K.Pitchampatti Village of Karur District has well established roads, communications and other facilities. The impact on the civic amenities will be substantial after increasing the mining capacity.

The following physical infrastructure facilities will further improve due to mine.

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

Under plantation program, it is suggested to develop green belt further all along the boundary of mining lease area. The species to be grown in the areas will be dust tolerant and fast growing species so that a permanent green belt is created. Apart from the green belts and aesthetic plantation for eliminating fugitive emission and noise control, all other massive plantation efforts will be executed with the assistance of experts and cooperation of the local community.

8.2. Social Infrastructure

The mining activity will create rural employment. It has been observed that local people mainly depend upon agricultural, where the income is irregular and low. The mining activity in the region will have positive impact on the social economic condition of the area by way of providing employment to the local in-habitants; wages paid to them will increase the per capita income, housing, education, medical and transportation facilities, economic status, health and agriculture by improving the life style of the people. 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. Part of the royalty is given to local bodies by the State Govt. for the welfare and development of the village. District Mineral Fund @30% of the Royalty shall be given to the Dept. of Geology and Mining, Karur District. The State

Government will also benefit directly from the mine, through increased revenue from royalties, excise duty and etc.,

8.3 Employment Potential

The proponent employed about 40 persons for carrying out the mining operations of which 6 are skilled, 21 semi-skilled, 6 unskilled worker personnel. In addition, there will be indirect employment to many more people in the form of contractual jobs like construction of infrastructural facilities, transportation of Granite to destinations, sanitation, supply of goods and services to the mine and other community services, etc., The local population will have preference to get an employment. The economic status of the local people will be enhanced due to mining project.

8.4 Other tangible benefits

8.4.1 Corporate Social Responsibility

Corporate Social Responsibility (CSR) refers to voluntary actions undertaken by the project proponent either to improve the living conditions (economic, social, environmental) of local communities or to reduce the negative impacts of mining activity. By definition, voluntary actions are those that go beyond legal obligations, contracts, and license agreements.

CSR programs usually invest in infrastructure (potable water, electricity, schools, roads, hospitals, hospital equipment, drainage repairs, etc.), building social capital (providing high-school and university education, providing information on HIV prevention, workshops on gender issues, information on family planning, improving hygiene, etc.), and building human capital (training local people to be employed by the mining enterprise or to provide outsourced services, promote and provide skills on micro business, aquaculture, crop cultivation, animal rearing, textile production, etc.)

8.4.2 CSR activities

The following activities which may be included by companies in their Corporate Social Responsibility Policies are notified as CSR activities under Schedule VII ((See section 135) of the Companies Act 2013:

- i. Eradicating extreme hunger and poverty;
- ii. Promotion of education;
- iii. Promoting gender equality and empowering women;
- iv. Reducing child mortality and improving maternal health;
- v. Combating human immunodeficiency virus, acquired immune deficiency Syndrome, malaria and other diseases;

- vi. Ensuring environmental sustainability;
- vii. Employment enhancing vocational skills;
- viii. Social business projects;
- ix. Contribution to the Prime Minister's National Relief Fund or any other fund set up by the Central Government or the State Governments for socio-economic development and relief and funds for the welfare of the Scheduled Castes, the Scheduled Tribes, other backward classes, minorities and women; and
- x. Such other matters as may be prescribed.

The Board of every company referred to in sub-section (1), shall ensure that the company spends, in every financial year, at least 2% of the average net profits of the company made during the three immediately preceding financial years, in pursuance of its Corporate Social Responsibility Policy. Provided that the company shall give preference to local area and areas around it, where it operates for spending the amount earmarked for Corporate Social Responsibility activities. Provided further that if the company fails to spend such amount, the Board shall report under clause (o) of sub-section (3) of section 134, specify the reasons for not spending the amount.

Explanation: For the purposes of this section “average net profit” shall be calculated in accordance with the provisions of section 198.

8.4.2.1 CSR Cost Estimation

CSR activities will be taken up in the nearby villages 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.

Under this programme, the project proponents will take-up following activities for social and economic development of villages through local panchayat.

- ✚ Employment to eligible persons during operational phase of the mine
- ✚ Conducting Medical Camps
- ✚ Infrastructure Development like repair of roads, renovation of ponds, rainwater harvesting schemes, etc.,
- ✚ Financial grant to the existing educational institutions for development of physical infrastructures
- ✚ Training for Self-Employment
- ✚ Plantation in villages and all along roads.
- ✚ Providing solar lamps to nearby schools and villages by going eco-friendly.

8. 4.3 Corporate Environment Responsibility (CER)

CER Activity	Project Cost (Rs. In Lakhs)	Cost allocated for CER activity (Rs. In Lakhs)
Developing Sanitary facilities and Library Facilities, RO Water supply system, tree plantation and environmental awareness sign Boards to Government High School, K.Pitchampatti Village.	361	7
Total Cost Allocation	361	7

CHAPTER – 9: ENVIRONMENTAL COST BENEFIT ANALYSIS

9.0 PROJECT COST

After making exhaustive study, it is considered that the mining project may be implemented.

Project cost for the existing Multicolour Granite Quarry of M/s. M.P. Granite over an area of 4.01.50 Ha falling in K.Pitchampatti village in Karur district is Rs. 3,61,18,000/- and EMP Cost is Rs. 3,80,000/-

- This project provides direct employment to 40 people and indirect employment to nearly 20 people. In a family 5 persons, totally 215 persons will get benefit because of the project.
- Surrounding people will get benefit as they get Granite for construction purposes with less transportation cost.
- The Management will ensure good production and in turn there will be good revenue to the Government of Tamil Nadu and Government of India through taxes. The industry is an asset to the nation.
- At the end of the project the pit will act as rain water harvesting tank which is useful for agricultural purpose. Thereby it will increase the survival of people around the quarry.

CHAPTER - 10: ENVIRONMENTAL MANAGEMENT PLAN

The **Environment Management Plan (EMP)** is required to ensure sustainable development in the study area. Hence it needs to be a comprehensive plan for which the industry, Government, regulating agencies likes Pollution Control Board working in the region and more importantly the population of the area need to extend their co-operation and contribution.

It has been evaluated that the project area will not be affected significantly due to mining activity. Mitigation measures at the source level and an overall Management Plan at the site level are elicited so as to improve the surrounding environment.

Table 10.1 Environmental Management Plan

S. No	Parameters	Mining Activity	Mitigation measures
1	Air Environment	Drilling	○ Dust extractor or wet drilling to be followed to control dust at source of emission ○ Use of Sharp drill bits for drilling holes and charging the holes by using optimum charge and using time delay detonator
		Blasting	○ Regular water sprinkling on blasted heaps at regular intervals will help in reducing considerable dust pollution
		Loading	○ Water sprinkling be done before loading by making it moist
		Transportation	○ Water sprinklers along the sides of haul road shall be fixed to control fly of dust while transporting minerals and waste ○ Overloading will be prevented ○ Trucks/Dumpers covered by tarpaulin covers
		DG Sets	○ DG sets will be used only during power failure ○ Adequate stack height for DG sets will be provided as per CPCB norms
		General measures	○ Avenue trees along roads around ML boundary shall be planted as per the norms of MoEF to control fly of dust. ○ Labours engaged in such dust prone areas should be provided with safety devices like ear muff, mask, and goggles as per the MMR, 1961 amendments and circulars of DGMS. ○ Regular health check-up of workers and nearby villagers in the impacted area should be carried out and also regular occupational health assessment of employees should be carried out as per the Factories Act ○ Ambient Air Quality Monitoring will be conducted on regular basis to assess the quality of ambient air.
2	Water Environment	Surface water	○ Wastewater discharge from mine if any will be treated in settling tanks before using for dust suppression and tree plantation purposes.

		Ground water	○ The mining activity will not intersect the ground water table ○ De silting will be carried out before and immediately after the monsoon season
		Storm water	○ Pit will be used for Storage of rainwater ○ Rain water will be collected in sump in the mining pit 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 onwards 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 rain water harvesting
		General measures	○ Regular monitoring and analyzing the quality of water
3	Noise Environment	Drilling	○ Limiting time exposure of workers to excessive noise
		Blasting	○ Carrying out blasting only during day time and not on cloudy days ○ Noise levels will be controlled by using optimum explosive charge, proper delay detonators and proper stemming to prevent blow out of holes. ○ Providing proper noise proof enclosure for the workers separated from the noise source and noise prone equipment
		Transportation	○ Proper and regular maintenance of vehicles, machinery and other equipments. ○ The noise generated by the machinery will be reduced by proper lubrication of the machinery and other equipments. ○ Speed of trucks entering or leaving the mine will be limited to moderate speed to prevent undue noise from empty vehicles. ○ Adequate silencers will be provided in all the diesel engines of vehicles. ○ Minimum use of horns and speed limit of 10 km/hr in the village area.

			○ It will be ensured that all transportation vehicles carry a valid PUC Certificates
		General measures	○ Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas ○ Provision of Quiet areas, where employees can get relief from workplace noise. ○ The development of green belts around the periphery of the mine to attenuate noise. ○ Regular medical check-up and proper training to personnel to create awareness about adverse noise level effects.
4	Vibration	Blasting	○ No deep holes blasting envisaged. ○ Small dia shot holes are used for breaking boulders. ○ Specific charge pattern has to be designed by proper trial vibration studies with varying charge ratios. ○ If the vibration still exceeds the limit a long Trench to a depth of 6m may cut in the direction of wave's movement to break longitudinal waves which travel close to surface, preferably near mine buffer zone ○ In spite of all measures periodical testing of vibration and noise using approved seismograph by DGMS has to be followed as a part of Environmental monitoring
5	Soil Environment	Topsoil	○ Humus top soil shall be preserved for reuse in afforestation and agriculture ○ Top soil should not be mixed with other waste or reject materials. It should be conserved by judicious utilization in the mine premises ○ Garland drains will be provided around the mine and dumps to arrest any soil from the mine area being carried away by the rain water. This will also avoid the soil erosion and siltation in the mining pits and maintaining the stability of the benches

6	Waste Dump	Stabilization of Dumps	○ The rejects\ waste dump shall be properly terraced in to 1.5m benches with proper repose angle and then the top soil shall be spread over the dumps and slope to make them humus for some time, after the soil suitable for water retention trees will be planted at the top, slope and toe of the stabilized dumps to form vegetation. ○ Garland drainage around dump shall prevent under wash of dump by hydrostatic pressure to be developed by surface water and control wash outs and collapse ○ Dump should be terraced for every 5m height and stabilized
7	Plantation	Mine lease boundary and waste dump	○ Provision of green belt all along the periphery of the lease area for control of dust and to attenuate noise ○ Stabilization of Dump with plantation ○ It is strongly recommended that the loss of plant in each year will be counted and again planted in subsequent plantation. ○ The plant should be planted taken from nursery, where the survival rate is high.
8	Land Environment		○ The restoration of the degraded land would cover backfilling and terracing with the overburden / wastes and surfacing the same with top soil. ○ Provision of Garland drainage around the dumps ○ Fast growing trees and other native shrubs would be planted to stabilize the reclaimed land ○ Appropriate measures will be taken for Green belt development. ○ The rain water will be stored in the pit which will recharge the ground water as a part of rain water harvesting scheme for irrigating the nearby agricultural lands.
9	Socio Economic		○ Good maintenance practices will be adopted for 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. ○ Drilling, blasting etc at specified location will be followed with proper schedule. ○ Appropriate air pollution control measure will be taken so as to minimize the environmental impact within the core zone. ○ An emergency preparedness plan will be prepared in advance, to deal with firefighting, evacuation and local communication. ○ For the safety of workers, personal protective appliances like hand gloves, helmets, safety shoes, goggles, aprons, nose masks and ear protecting devices has been provided which meet 'BIS' (Bureau of Indian Standards). ○ As a part of CSR activities, community welfare activities will be undertaken by the proponent which leads to socio economic development
10	Occupational Health	○ First-aid facilities as per provisions under Rule (44) of Mines Rules 1955 ○ Initial and Periodical medical examination shall be conducted for the employees under Rule 29B & 45 (A). ○ Insurance will be taken in the name of the labourers working in the mines ○ Workers involved in mining work shall be provided protective equipments such as Thick Gloves, Goggles, ear plugs, safety boot wears, etc...

10.1 Description of the administrative aspects of ensuring that mitigative measures are implemented and their effectiveness monitored, after approval of the EIA

In order to maintain the environmental quality within the standards, regular monitoring network to maintain environmental quality will be implemented.

Table 10.2 EMP Budget for Plan period

S. No	Description	Budget
1.	Personal protective equipment	Rs 1,00,000
2.	Environmental Monitoring	Rs 2,25,000
3.	Occupation Health	Rs 1,00,000
4.	Green Belt & Dust suppression	Rs. 4,00,000
	Total	Rs. 8,25,000

Table 10.3 Budget Allocation for Mine Closure Plan as per ToR

S. No	Description	Budget
1.	Parapet wall around dump (1m = Rs 500)	Rs 1,00,000
2.	Fencing around mines	Rs 2,00,000
3.	Making Pit for pond after the activity of mines	Rs 50,000
4.	Green belt development	Rs 1,00,000
	Total	Rs 4,50,000

CHAPTER – 11: SUMMARY AND CONCLUSIONS

11.0 Introduction

The applicant, M/s. M.P.Granite having registered office at No.131/29, RR Complex, Kollapatti, Animoor Post, Trichengode Taluk, Namakkal District, Tamil Nadu-637211 has applied for grant of Granite quarry lease to the secretary to Government, Industries Dept, Fort St. George, Chennai-9 through District Collector, Karur District and Director of Geology and Mining, Chennai for quarrying Multicolour Granite from a patta land over an extent of 4.01.5 Hectares in S.F. Nos: 260/A1, 260/A2, 260/A3, 260/C, 262/A3, 262/A4, 262/A5, 262/A6, 262/A7, 262/A8, 262/B1 and 262/B2 in K.Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu.

M/s. M.P.Granite is a partnership firm. The Partnership deed executed on 09.07.2012 with two partners under Indian Partnership Act, 1932. The details of the partners are given below.

S. No	Name of the Partners	Designation
1	Tmt. N.Madhavi	Partner
2	Thiru. G.P. Panneer	Managing Partner

Thiru G.P.Panneer is the partner of the firm and he is an authorised person for signing all the documents on behalf of this company.

The principal secretary, Govt. of Tamil Nadu directed the applicant M/s. M.P.Granite, through his precise area communication letter No. 11030/MMB.2/2016-1, Dated: 17.10.2016 to get approved mining plan and obtain Environmental clearance from the Environment Impact Assessment Authority (SEIAA) as per the EIA Notification, 2006 and its amendments for grant of quarrying for Multicolour Granite over an extent of 4.01.5 hectares of patta land in S.F. No's: 260/A1, 260/A2, 260/A3, 260/C, 262/A3, 262/A4, 262/A5, 262/A6, 262/A7, 262/A8, 262/B1 and 262/B2, K.Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu for a period of 20 years.

Accordingly, Mining Plan is prepared under Rule 12 & 13 of Granite conservation and development Rules, 1999 for quarrying Multicolour Granite with due consideration of environmental parameters so as to obtain Environmental clearance (EC) from Environment Impact Assessment Authority (SEIAA) vide MoEF&CC Notification S.O 141(E) dated 15th January, 2016. The mining plan was approved by Department of Geology and Mining, Guindy, Chennai and the PP obtained EC from DEIAA. The Government has issued vide

letter G.O.(3D) No.10 Industries (MMB.2) Department dated: 11.08.2017. The lease was executed on 18.08.2017 and expired on 17.08.2037. The mining plan and EC was expired on 01.08.2022.

Now the PP obtained Scheme of Mining Plan approval from the Commissionerate of Geology and Mining, Chennai, vide his letter Roc No. 4342/MM2/2022 Dated. 29.09.2022 for the period of 2022-23 to 2026-27.

The cluster letter issued by Deputy Director, Department of Geology and Mining, Karur vide No.2374/MM2/2022 Dated 12.12.2025 for M/s. M.P.Granite, (4.01.5 Ha) the lease area of above said there is 3 existing quarries comes under the cluster of 500m radius. Namely M/s. M.P. Granite it's an extent of 4.01.50 Ha, 2.43.5 Ha and 4.45.0 Ha respectively the total area of cluster is 13.90.0 Ha. Which is above 5 hectares hence the proposed project comes under Category B1 as per EIA Notification 2006 and its amendments. Now the application has been made for Terms of Reference for carrying out EIA studies. The project cost is about Rs. 31.92 lakhs and EMP cost is Rs. 0.76 lakhs.

Proposed Quarries

1. M/s. G.P Exports – 3.00.0 Ha

Existing Quarries

1. M/s. M.P Granites - 2.43.50 Ha
2. M/s. M.P Granites - 4.01.50 Ha
3. M/s. M.P Granites - 4.45.50 Ha

Abandoned Quarries

Nil

As the projects comes under B1(cluster) category, the applicant made TOR application individually the PARIVESH website for carrying out EIA Studies for obtaining Environmental clearance. The details are given in below table 1.1.

Table 11.1 Details on Terms of Reference

S. No	Name of Applicant	ToR Application No	SEAC and SEIAA Meeting	TOR Identification No
1	M/s. M.P Granite	SIA/TN/MIN/570774/2026, Dated 11.03.2026	697 th SEAC Meeting dated 26.03.2026 & 990 th SEIAA Meeting dated 07.04.2026	TO26B0108TN5488 325N Dated: 13.04.2026

The Draft EIA report has been prepared based on the Terms of Reference issued by SEIAA. The points raised in the public hearing and the commitments of the project proponent will be given detail in the Final EIA Report which will be submitted to SEAC/SEIAA, TN for obtaining environmental clearance. The production achieved by the Lessee since inception of mining activity as against approved Mining plan/Scheme is given below.

11.2. IDENTIFICATION OF PROJECT AND PROJECT PROPONENT

11.2.1. IDENTIFICATION OF PROJECT

Table 11.3 Details on Project and Project Proponent

Particulars	Details
Address of the Project Proponent	M/s. M.P. Granite No.131/29, RR Complex, Kollapatti, Animoor Post Trichengode Taluk Namakkal District Tamil Nadu-637211
S. F. No	260/A1, 260/A2, 260/A3, 260/B1, 260/B2, 260/B3, 260/C, 262/A3 (P), 262/A4 (P), 262/A5 (P), 262/A6 (P), 262/A7, 262/A8 (P), 262/B1 & 262/B2
Lease Area	4.01.5 Hectares
Site Location	K. Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu
Geographical Co-ordinates	Latitude: 10°46' 47.1743"N to 10°46'54.9115"N Longitude: 78°05' 01.7543"E to 78°05'09.5432"E
Toposheet No.	58J/1
Precise Area Communication	Rc. No. 11030/MMB.2/2016-1, Dated: 17.10.2016
Mining Plan Approval	Rc. No. 4342/MM2/2022 Dated. 29.09.2022
Period of Lease	20 years
AD Cluster letter	Rc. No. 2374/MM2/2022 Dated 12.12.2025

Table 11.4 Land Particulars

State & District	Taluk	Village	S.F. No.	Total Extent of area (Ha)	Ownership Occupancy
Tamil Nadu & Karur	Karur	K.Pichampatti	260/A1, 260/A2, 260/A3, 260/B1, 260/B2, 260/B3, 260/C, 262/A3 (P), 262/A4 (P), 262/A5 (P), 262/A6 (P), 262/A7, 262/A8 (P), 262/B1 & 262/B2	4.01.5	Own patta land

1.3 BRIEF DESCRIPTION OF THE PROJECT

1.3.1. Nature and Size of the Project

Open cast, mechanized mining will be adopted to extract Granite of required size from the quarry area. Hydraulic excavators and diamond wire saw will be used for cutting the rocks. Close spaced cutting of 1m is adapted along a straight line. The Wire saw cutting is adopted below second bench to recover more granite blocks to increase the rate of recovery.

Geological resources and Mineable reserves: Geological resource of total ROM is estimated to be 4,04,622m³ including the resources of safety zone of which, Multicolour granite is about 2,42,773m³ at the recovery of 60% and granite rejects is about 1,61,849m³. The mineable reserve of total ROM is estimated as 2,73,726m³ by deducting the reserve safety zone, block in benches from the total mineable resources of which, Multicolour granite is about 1,64,236m³ at the recovery of 60% and granite rejects are 1,09,490m³ of 40% up to a depth of 45m below the ground level (Refer Plate No's. VIII).

Proposed production schedule: Total proposed production of ROM is about 59,400m³ out of which, Multicolour granite is about 35,640m³ at the recovery of 60% and granite rejects are 23,760 @40%, up to a depth of 40m below the ground level for first five years scheme of mining plan period. Annual Peak production is RoM 12,150m³ of Multicolour granite (Refer Plate No. VIIIA).

11.2 SCOPE OF THE PROJECT

The proposal for Environmental Clearance of Multicolour Granite quarry of M/s. M.P. Granite requires EIA/EMP Report as per Terms of Reference for conducting public hearing and obtaining environmental clearance from SEAC/SEIAA.

11.3 ENVIRONMENTAL SETTINGS & MINING DETAILS

FEATURE	DETAILS
Name of the Proponent and address	M/s. M.P. Granite, No.131/29, RR Complex, Kollapatti, Animoor Post, Trichengode Taluk, Namakkal District, Tamil Nadu-637211.
Existing/New Quarry	Existing
Survey number	260/A1, 260/A2, 260/A3, 260/C, 262/A3, 262/A4, 262/A5, 262/A6, 262/A7, 262/A8, 262/B1 and 262/B2
Geographical features	Latitude: 10°46' 47.1743"N to 10°46'54.9115"N

	Longitude: 78°05' 01.7543"E to 78°05'09.5432"E Toposheet No: 58J/1
Site Location	K. Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu.
Type of Project	Multicolour Granite
Category	B1
Mining lease area	4.01.5 Hectares
Depth of Mining	45 m bgl
Water Table	60 m bgl
Method of Mining	Open cast semi mechanized mining
Blasting Pattern	Chemical rock blasting, also known as non-explosive rock blasting, uses a chemical agent that expands when mixed with water, creating pressure that fractures the rock.
Types of Explosives	Chemical explosive is not proposed chemical powder called as Rock breaking powder $\text{Ca}(\text{OH})_2$ are also used for granite splitting.
Measures proposed to minimize ground vibrations due to blasting	It is an Eco-friendly quarry operation; diamond wire saw cutting method shall be practiced to this quarrying operation. Chemical rock blasting, also known as non-explosive rock blasting No impact on surroundings due to blasting.
Storage of Explosive	Not Applicable
Category	B1
Mining plan approval	Director of Geology and Mining, Chennai vide Rc. No: 4342/MM2/2022 Dated. 29.09.2022.
Period of Lease	20 years.
Does it attract any general conditions specified in the EIA notification, 2006?	Not applicable
Man Power	40 persons
Water requirement	Total water requirement – 7.0 KLD Drinking water – 1.0 KLD Domestic purposes – 2.0 KLD Water sprinkling – 2.0 KLD, Wet drilling and Green Belt 2.0 KLD. Source: Mineral water supply and nearby bore wells
EMP Cost	Rs. 0.76 Lakhs
Project Cost	Rs. 31.92 Lakhs
Nearest habitation	630m -South
Nearest Village	K. Pitchampatti -0.630m -South
PMHC	P. Kullampatti –3.2km –North
Nearest Town	Velliyanai – 8.0km –NE
Nearest Road	SH 74- 4.3km- NE

	NH 44 –13.4 km- NW Approach road for the Transportation is located at the north-eastern side.																																																	
Nearest Railway station	Velliyanai – 7.5 km –NE																																																	
Nearest Airport	Tiruchirapalli –68.6km –East																																																	
Water bodies	Tank- 0.83km East Erattai kulam -1.3km NW Kodaganar River-10.43km -NW, Amaravathi River-15.8km- NW, Cauvery River -23.7km NE Mayanur check dam -26km NE																																																	
Interstate Boundary	Tamil Nadu -Kerala Interstate Boundary –104km (SW)																																																	
Coastal Zone	Bay of Bengal – 145km - East																																																	
Reserve Forest	No reserve forest around 10km radius from the periphery of the lease applied area.																																																	
Wildlife Sanctuary	There is no wild life sanctuary or National Park found within 10km radius Kadavur Slender Loris Sanctuary – 23.0km – SE Vellode Birds Sanctuary–70km- North-western Side																																																	
Land use pattern	<table><tr><th>S. No</th><th>Description</th><th>Present Area (Ha)</th><th>Proposed land use (Ha)</th><th></th></tr><tr><td>1</td><td>Mine working area</td><td>0.88.2</td><td>1.05.0</td><td></td></tr><tr><td>2</td><td>Road</td><td>0.01.0</td><td>0.01.0</td><td></td></tr><tr><td>3</td><td>Safety and Area under plantation</td><td>---</td><td>0.16.0</td><td></td></tr><tr><td>4</td><td>Labour shed and office</td><td>---</td><td>---</td><td></td></tr><tr><td>5</td><td>Waste Dump</td><td>0.51.0</td><td>0.51.0</td><td></td></tr><tr><td>6</td><td>Garland drainage& settling tank</td><td>---</td><td>---</td><td></td></tr><tr><td>7</td><td>Stocking Blocks</td><td>2.61.3</td><td>2.28.5</td><td></td></tr><tr><td colspan="2">Total</td><td>4.01.5</td><td>4.01.5</td><td></td></tr></table>					S. No	Description	Present Area (Ha)	Proposed land use (Ha)		1	Mine working area	0.88.2	1.05.0		2	Road	0.01.0	0.01.0		3	Safety and Area under plantation	---	0.16.0		4	Labour shed and office	---	---		5	Waste Dump	0.51.0	0.51.0		6	Garland drainage& settling tank	---	---		7	Stocking Blocks	2.61.3	2.28.5		Total		4.01.5	4.01.5	
S. No	Description	Present Area (Ha)	Proposed land use (Ha)																																															
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4	Labour shed and office	---	---																																															
5	Waste Dump	0.51.0	0.51.0																																															
6	Garland drainage& settling tank	---	---																																															
7	Stocking Blocks	2.61.3	2.28.5																																															
Total		4.01.5	4.01.5																																															

Table 11.5 Mining Details

Particulars	Details
Method of Mining	Open cast – mechanized mining
Geological resources	4,04,622m ³ (2,42,773m ³ at the recovery of 60% and granite rejects is about 1,61,849m ³ @ 40%)
Mineable reserves	2,73,726m ³ (1,64,236m ³ at the recovery of 60% and granite rejects are 1,09,490m ³ of 40%)
Production	59,400m ³ (35,640m ³ at the recovery of 60% and granite rejects are 23,760 @40%,) up to a depth of 40m during the first scheme of mining plan period.

Reject	23,760 m ³ (Rejects 40%)
Top soil	-
Side Burden	35,375 m ³
Weathered rock	5,592 m ³
Ore: Waste ratio	1: 5.4
Depth of Mining	45m bgl
Water Table	60mbgl
Road design	1: 10 inside the pit and ramp 1:16 for transport
Overall Pit Slope	45°
Period of Lease	20 years

11.4 Description of the environment

11.4.1 Base line environmental study

Collection of base line data is an integral part of the preparation of environmental impact assessment reports. The baseline monitoring study has been carried out during December, 2025 – February, 2026 to assess the existing environmental scenario in the area. For the purpose of EIA studies, mine lease area was considered as the core zone and area outside the mine lease boundary up to 10km radius from the lease boundary was considered as buffer zone.

Table No 11.6 Baseline Data

Particulars	Details	Standards
Meteorology (December, 2025 – February, 2026)		
Rainfall (Avg.)	37.4 mm	--
Temperature (Avg.)	20-37°C	--
Wind speed	2.5 m/s	--
Wind Direction	From east to west directions	
Ambient Air Quality (NAAQS)		
PM ₁₀	32-54 µg/m ³	100 µg/m ³
PM _{2.5}	15 – 31 µg/m ³	60 µg/m ³
SO ₂	7 - 19 µg/m ³	80 µg/m ³
NO _x	11 - 30 µg /m ³	80 µg/m ³
Noise Level (CPCB Standards)		
Day time (6:00 am - 10:00 pm)	Core zone – 39.9 – 47.2 dB (A) Buffer zone – 37.2- 42.6 dB (A))	Industrial Area Day Time - 75 dB (A) Residential Area Day Time – 55 dB (A)

Night time (10:00 pm - 06:00 am)	Core zone – 38.9 – 41.6 dB (A) Buffer zone – 35.2 – 38.5 dB(A)	Industrial Area Night Time – 70 dB(A) Residential Area Night Time – 45 dB (A)
Water Quality IS 10500:2012 (Desirable limits)		
pH	6.90 – 7.59	6.5 to 8.5
TDS	724-1052 mg/l	500 mg/l
Electrical conductivity at 25°C	1205-1753 micromhos/cm	
Total Hardness as CaCO ₃	496-824 mg/l	200 mg/l
Total suspended solids	16 - 28 mg/l	IS 3025:P.17: 1984: R. 2017
Chlorides Cl	142 - 260mg/l	250
Total iron Fe	0.02 – 0.34	0.3mg/l
Sulfates SO ₄	65-114mg/l	200 mg/l
Soil Quality		
pH	7.05 – 7.68	Neutral to slightly alkaline
Bulk density	1.04-1.30 g/cc	Favorable physical condition for plant growth.
EC	185 – 297 µs/cm	-
Organic Matter	0.2 – 0.3 %	-
Hydro Geology		
Water Table	60 m bgl	

Proponent: M/s. M.P. Granite, Multicolour Granite Quarry, Karur District



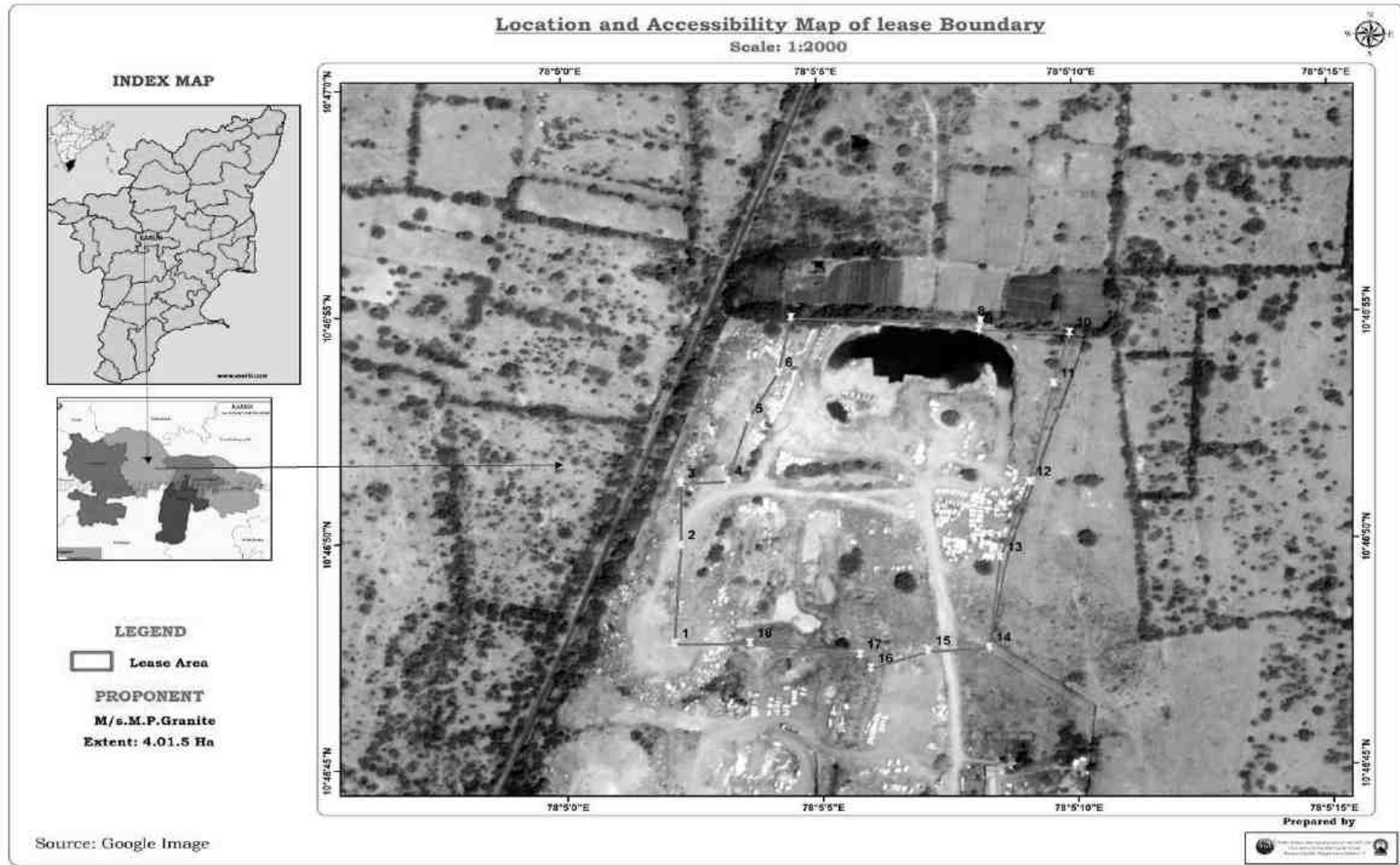


Fig No 11.2 Map Showing the Location and Accessibility of Quarry Lease Boundary



Fig No 11.3 Google Earth Image showing 300m and 500m radius around lease area

11.5 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

11.5.1 Air Environment

The air borne particulate matter is the main air pollutant by opencast mining. The mining operation will be carried out by adopting semi-mechanized methods which involves Jack Hammer drilling and blasting, excavation, loading and transportation.

Total predicted 24-h maximum GLC of PM₁₀ at project site for scenario 1 i.e. loading-unloading, transportation and scenario 2 i.e. Blasting was 68.07µg/m³ and 54.18µg/m³ respectively after superposition of base-line value 48µg/m³ over the incremental GLC 20.07µg/m³ and 6.18µg/m³ respectively due to combined impact of loading, unloading, open pit and transportation over the haul road and due to blasting.

Maximum Impact of PM₁₀, SO₂ and NO₂ was observed close to the source within the lease area due to moderate wind speeds.

11.5.2 Noise Environment

Noise pollution poses a major health risk to the mine workers. The sources of noise in the proposed open cast granite quarry are such as Drilling, Blasting, and during movement of vehicles.

The noise generated by the mining activity is dissipated within the core zone. This is because of distance involved and other topographical features adding to the noise attenuation. From the results, it can be seen that the ambient noise levels (day time and night time) at all the locations will remain within permissible limits prescribed by CPCB and 90dB (A) norms of DGMS. At present there is no mining activity carried out. However, the expected noise levels are not likely to have any effect. Precaution will be made to keep down the noise exposure level of 85 dB (A) to the operating personnel for 8 hrs duration.

11.5.3 Ground Vibration

From the above results, it can be seen that the charge per blast of 7 kg is within the Peak Particle Velocity of 5mm/s for the habitation located at the distance of 190m. So, the project proponent if any changes for the production (G.P Exports) is recommended to adopt delay detonators to keep PPV of ground vibration below 5mm/s.

11.5.4 Water Environment

Mining operations can affect groundwater quality in several ways. The most obvious occurs in the mining below the water table, either in underground workings or open pits. This

provides a direct conduit to aquifers. Groundwater quality is also affected when waters (natural or process waters or wastewater) infiltrate through surface materials (including overlying waste or other material) into ground water. But this multicolour granite quarry mine is devoid of any such impacts.

The WQI of the samples collected from the study area are given in table 4.25. It can be seen that the study area has water quality index value ranging from 65.7 to 301.4 which reflects the Poor water quality to unfit for drinking status of the groundwater quality. The findings demonstrate the varying consistency of groundwater at different locations. All the groundwater samples under poor to unfit for drinking category; it may be due to the absorption of fertilisers, geological condition, channel water, solid waste, sewer drainage, septic tanks, and agricultural waste. The water should be treated by reverse osmosis to reduce dissolved solids and total hardness to the required rate.

11.5.5 Soil Environment

The generation of top soil is estimated as 31590 m³. It will be dumped along mining lease boundary as earth bund and it will be utilized for green belt development within the lease area. No chemical or toxic elements will be used during mining activity. So, the health of soil in and around the quarry will not be affected.

11.5.6 Waste Dump

The proposed rate of production of multicolour granite for five years is about 47790 MT at the rate of 40% recovery up to permissible depth. The 60% reject of 71676 MT shall be dumped over existing dump in South west side and on virgin barren land in east side as per approved scheme of mining. During monsoon seasons, the runoff from the dump will carry silts and small stones and it affect the land use around the project site which means it may affect the carrying capacity of stream, water holding capacity of lakes and affect nearest agricultural lands.

11.5.7 Biological Environment

There are no notified endangered species in the area, which may be affected due to the quarry activities; therefore, the biological environment will not have significant impact due to quarrying activity. The impact on the biological environment due to amount of dust generation is minimized by well-developed green belt in and around the quarry lease area.

11.5.8 Land Environment

Multi colour granite Quarry project will result in disturbance of the land use pattern of the mine lease area. The impact on the topography in the form of changed landscape is

unavoidable during mining activities like excavation, overburden dumping, soil extraction etc. Land requirement for the project has been assessed considering functional needs. So, reclamation of mined out land will be given due importance as a step for sound land resource management. There is no release of toxic elements into the ground. No adverse impact is anticipated on land use of buffer zone associated due to the mining activity, as all the activities will be confined within the project site. The mining operations will impact the land usage and land aesthetics of quarry lease area. The rate of plantation increases over a period of time due to quarry activity. At the end of the project, the quarried pit will be act as water storage pond. The stored water will be used for developing mango plantation around the mining lease area. It will improve the livelihood of village people. The evaporation rate of the water in the pit is given detail in the report.

11.5.9 Socio Economic Environment

The quarrying activity will definitely increase the employment opportunity (directly as well as indirectly) in the project area. Some of these impacts would be beneficial. The expectation of the people of area is concerned towards employment, education, road and health facilities. The literacy rate may be increased with the economic benefits which may arise from the quarrying activities.

Direct Employment – 40 persons

Indirect Employment - 20 persons

Table 11.7 Environmental Management Plan

S. No	Parameters	Mining Activity	Mitigation measures
1	Air Environment	Drilling	○ Dust extractor or wet drilling to be followed to control dust at source of emission ○ Use of Sharp drill bits for drilling holes and charging the holes by using optimum charge and using time delay detonator
		Blasting	○ Regular water sprinkling on blasted heaps at regular intervals will help in reducing considerable dust pollution
		Loading	○ Water sprinkling be done before loading by making it moist
		Transportation	○ Water sprinklers along the sides of haul road shall be fixed to control fly of dust while transporting minerals and waste ○ Overloading will be prevented ○ Trucks/Dumpers covered by tarpaulin covers
		DG Sets	○ DG sets will be used only during power failure ○ Adequate stack height for DG sets will be provided as per CPCB norms
		General measures	○ Avenue trees along roads around ML boundary shall be planted as per the norms of MoEF to control fly of dust. ○ Labours engaged in such dust prone areas should be provided with safety devices like ear muff, mask, goggles as per the MMR, 1961 amendments and circulars of DGMS. ○ Regular health check-up of workers and nearby villagers in the impacted area should be carried out and also regular occupational health assessment of employees should be carried out as per the Factories Act ○ Ambient Air Quality Monitoring will be conducted on regular basis to assess the quality of ambient air.

2	Water Environment	Surface water	Wastewater discharge from mine will be treated in settling tanks before using for dust suppression and tree plantation purposes.
		Ground water	- The mining activity will not intersect the ground water table - Desilting will be carried out before and immediately after the monsoon season
		Storm water	- Pit will be used for Storage of rainwater - Rain water will be collected in sump in the mining pit 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 onwards 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 rain water harvesting
		General measures	Regular monitoring and analyzing the quality of water
3	Noise Environment	Drilling	Limiting time exposure of workers to excessive noise
		Blasting	- Carrying out blasting only during day time and not on cloudy days - Noise levels will be controlled by using optimum explosive charge, proper delay detonators and proper stemming to prevent blow out of holes. - Providing proper noise proof enclosure for the workers separated from the noise source and noise prone equipment
		Transportation	- Proper and regular maintenance of vehicles, machinery and other equipments. - The noise generated by the machinery will be reduced by proper lubrication of the machinery and other equipments. - Speed of trucks entering or leaving the mine will be limited to moderate speed to prevent undue noise from empty vehicles.

			○ Adequate silencers will be provided in all the diesel engines of vehicles. ○ Minimum use of horns and speed limit of 10 km/hr in the village area. ○ It will be ensured that all transportation vehicles carry a valid PUC Certificates
		General measures	○ Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas ○ Provision of Quiet areas, where employees can get relief from workplace noise. ○ The development of green belts around the periphery of the mine to attenuate noise. ○ Regular medical check-up and proper training to personnel to create awareness about adverse noise level effects.
4	Vibration	Blasting	○ Specific charge pattern has to be designed by proper trial vibration studies with varying charge ratios. ○ Milli second detonators shall be used preferably 25–50ms per delay to control vibrations ○ If the vibration still exceeds the limit a long Trench to a depth of 6m may cut in the direction of wave's movement to break longitudinal waves which travel close to surface, preferably near mine buffer zone ○ In spite of all measures periodical testing of vibration and noise using approved seismograph by DGMS has to be followed as a part of Environmental monitoring
5	Soil Environment	Topsoil	○ Humus top soil shall be preserved for reuse in afforestation and agriculture ○ Top soil should not be mixed with other waste or reject materials. It should be conserved by judicious utilization in the mine premises ○ Garland drains will be provided around the mine and dumps to arrest any soil from the mine area being carried away by the rain water. This will

			also avoid the soil erosion and siltation in the mining pits and maintaining the stability of the benches
6	Waste Dump	Stabilization of Dumps	○ The rejects\ waste dump shall be properly terraced in to 1.5m benches with proper repose angle and then the top soil shall be spread over the dumps and slope to make them humus for some time, after the soil suitable for water retention trees will be planted at the top, slope and toe of the stabilized dumps to form vegetation ○ Garland drainage around dump shall prevent under wash of dump by hydrostatic pressure to be developed by surface water and control wash outs and collapse
7	Plantation	Mine lease boundary and waste dump	○ Provision of green belt all along the periphery of the lease area for control of dust and to attenuate noise ○ Stabilization of Dump with plantation ○ It is strongly recommended that the loss of plant in each year will be counted and again planted in subsequent plantation. ○ The plant should be planted taken from nursery, where the survival rate is high.
8	Land Environment		○ The restoration of the degraded land would cover backfilling and terracing with the overburden / wastes and surfacing the same with top soil. ○ Provision of Garland drainage around the dumps ○ Fast growing trees and other native shrubs would be planted to stabilize the reclaimed land ○ Appropriate measures will be taken for Green belt development. ○ The rain water will be stored in the pit which will recharge the ground water as a part of rain water harvesting scheme for irrigating the nearby agricultural lands.
9	Socio Economic		○ Good maintenance practices will be adopted for 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. ○ Drilling, blasting etc at specified location will be followed with proper schedule. ○ Appropriate air pollution control measure will be taken so as to minimize the environmental impact within the core zone. ○ An emergency preparedness plan will be prepared in advance, to deal with firefighting, evacuation and local communication. ○ For the safety of workers, personal protective appliances like hand gloves, helmets, safety shoes, goggles, aprons, nose masks and ear protecting devices has been provided which meet 'BIS' (Bureau of Indian Standards). ○ As a part of CSR activities community welfare measures will be taken by Proponent through local Panchayat
10	Occupational Health		○ First-aid facilities as per provisions under Rule (44) of Mines Rules 1955 ○ Initial and Periodical medical examination shall be conducted for the employees under Rule 29B & 45 (A). ○ Insurance will be taken in the name of the labourers working in the mines ○ Workers involved in mining work shall be provided protective equipments such as Thick Gloves, Goggles, ear plugs, safety boot wears, etc.,

11.6 Analysis of Alternatives

The quarrying site is dependent on the geology and mineral deposition of the area. Hence, this project is, mineral and site specific and no alternative site considered for this project.

11.7 Environmental Monitoring Program

Success of any environmental management programme depends upon the efficiency of the organizational set up responsible for the implementation of the programme. Regular monitoring of the various environmental parameters is also necessary to evaluate the effectiveness of the management programme. Environmental Monitoring Programme will be conducted for various environmental components as per conditions stipulated in the Environmental Clearance Letter issued by SEIAA & Consent to Operate issued by TNPCB.

Table No: 11.8 Post Project Environmental Monitoring Program

S. No.	Environment Attributes	Location	Monitoring		Remarks
			Duration	Frequency	
1	Meteorology and Air Quality	Continuous monitoring weather station in core zone/ nearest IMD station	24 hours	Monthly Once	Wind speed, direction, Temperature, Relative humidity and Rainfall.
2	Air Pollution Monitoring – PM _{2.5} , PM ₁₀ , SO ₂ and NO _x	5 locations (One station in the core zone and at least one in nearby residential, area, one in the upwind, two station on the downwind direction and one in cross wind direction)	8 hours	Once in six months	Fine Dust Sampler and Respirable Dust Sampler
3	Water Pollution Monitoring	Mine effluents, Set of grab samples during pre and post monsoon for ground and surface water in the vicinity.	–	Once in six months	Phyiso–chemical, microbiological characteristics
4	Hydrogeology	Water level in open wells in buffer zone around 1km at specific wells	-	Once in six months	Water level monitoring devices may be used.
5	Noise	Mine Boundary, high noise generating	24 hours	Monthly Once	Sound level meter

		areas within the lease and at the nearest residential area			
6	Vibration	At the nearest habitation (in case of reporting)	–	During blasting operation	Digital Seismograph
7	Soil	Core Zone and Buffer zone (Grab samples)	–	Once in six months	Physical and Chemical characteristics

11.8 Project Benefits

The proponent, **M/s. M.P. Granite** is very much conscious of his obligations to society at large. Under plantation programme, it is suggested to develop greenbelt further all along the boundary of the quarry lease area. Apart from the green belts and aesthetic plantation for eliminating fugitive emissions and noise control, all other massive plantation efforts will be executed with the assistance of experts and cooperation of the local community. The quarrying activity will create rural employment. In addition, there will be indirect employment to many more people in the form of contractual jobs like construction of infrastructural facilities, transportation of Granite and gravel to destinations, sanitation, supply of goods and services to the quarry and other community services etc. The local population will have preference to get an employment. The proponent will help in socio economic development of the village by providing educational facilities to children, and welfare amenities like drinking water to school; road and medical facilities to villages and employment opportunities to nearby villagers. CSR budget is allocated as 2.5% of the profit.

11.9 Conclusion

As discussed, it is safe to mention that the project is not likely to cause significant impacts on the ecology and environment of the area, as adequate preventive measures will be adopted to contain the pollutants within permissible limits. The total operations shall be carried out with ease & minimum risk to the workers. The proposed Environmental Management Plan will keep the area in a safe environment with negligible impact on the environment. Plantation will substantiate the impact due to the quarrying activity. Quarrying activity will help in improving the socio-economic benefits in areas like employment, communication and infrastructure development.

CHAPTER - 12: DISCLOSURE OF CONSULTANTS ENGAGED

AADHI BOOMI MINING AND ENVIRO TECH (P) LTD, a QCI/NABET Accredited EIA Consultant Organization having its Registered Office at Salem and Branch at Porur, Chennai were promoted by a team of professional Geologists\ Mining\ Environment\ Civil\ Mechanical\ Chemical Engineers\ Scientists. The company has vast experience in various disciplines including Exploration and mining of minerals and was incorporated in 2002 in the name of Suriya Mining Services providing expert advice and solutions for clients' requirement in the field of Mineral prospecting, Exploration, Mining, Geo-technical, Techno economic Feasibility reports\evaluation, Mineral Engineering, Environment Impact Assessment (EIA), Environment Management Plan (EMP), Environment Monitoring and related liaison jobs like Environment Clearance, Wild life and Forest clearance from EAC/SEIAA/NBWL/CRZ, MoEF&CC etc., of all accredited sectors.

12.1 SCOPE

- EIA & EMP for all accredited sectors and monitoring as per SPCB/CPCB/MoEF&CC
- Environment/ Wild life/ CRZ/ Forest Clearance
- Social Impact Analysis (SIA) and Eco-Biodiversity studies for Mine Closure Plan
- Remote Sensing & GIS including Satellite data processing, ASTER, DEM etc for application in Forest, Agriculture, Disaster, Mineral Exploration, Environment Modelling, Town planning etc.,
- Geological Surveying, Mapping, Exploration and Project Management
- Geophysical, Geochemical & Geotechnical studies to locate concealed deposit\ formation including structural studies
- Noise and Vibration studies as per DGMS\MoEF&CC to design controlled blasting where inhabitations are located within 300m
- Mine Design and costing, selection of Machineries and Project Evaluation
- Statutory Mine Plans & Sections, Mining Plan and other mandatory projects
- Design and development of Mineral Beneficiation Plant including mineral separation studies.

12.2 INFRASTRUCTURE

- Our Human resources are well expertise in all functional areas as per Ver. 3 of NABET\QCI. Our Hi-Tech ISO certified Office and Lab are accredited by NABL and MoEF&CC.

- And have latest field Investigation devices like Respirable and Fine Dust Samplers, Digital Seismograph, DDR3 Resistivity Meter, Echo sounder, DGPS, Total Station, Water level monitoring meters, GPS 62S, Sound Level Meter etc.

12.3 DISCLOSURE OF CONSULTANT FOR EIA STUDY

The applicants, **M/s. M.P. Granite** appointed **Aadhi Boomi Mining and Enviro Tech Private Ltd**, having its office at 3/216, K.S.V Nagar, Narasothipatti, Alagapuram, Salem – 636 004, Tamil Nadu, for preparation of EIA/EMP report for obtaining Environment Clearance from SEIAA/SEAC, Tamil Nadu.

Aadhi Boomi Mining and Enviro Tech Private Ltd has MOU with **EKDANT Enviro Services (P) Ltd** laboratory at Chennai and has own Laboratory named **ABM Enviro Lab, accredited by NABL** for sampling and testing of air, water, noise and soil samples. Ekdant Enviro Services are recognized by the Ministry of Environment and Forests, Government of India under the relevant provision of Environment (Protection) Act 1986 and Accredited by NABL and NABET, Quality Council of India, New Delhi.

S. No.	Study	Consultants/LAB
1	Generation of Base Line Data	ABM Enviro Lab, Salem
2	Remote Sensing and Land use/Land cover Studies	Aadhi Boomi Mining & Enviro Tech P Ltd, Salem
3	Preparation of EIA and EMP Report	Aadhi Boomi Mining & Enviro Tech P Ltd, Salem

12.4 DECLARATION OF EXPERTS INVOLVED IN THE EIA REPORT PREPARATION

Names of the EIA coordinator, Functional Area Experts and other Team Members engaged and nature of consultancy rendered is provided in NABET Annexure –VII of EIA report. The multidisciplinary team comprises of Environmental Engineers, Geologists and Geographers who involved in preparation of Environmental Impact Assessment Report and Environment Management Plan for various functions like Air quality, Water quality, Noise levels, Soil Conservation, Hydro geology, Ecology and bio-diversity, Land use and Socio–Economics.

Declaration by Experts Contributing to the EIA/EMP

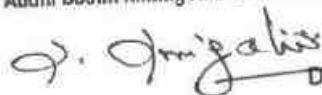
Declaration by experts contributing to the EIA/EMP for Multicolour Granite Quarry M/s. M.P. Granite over an extent of 4.01.5 Ha in K.Pitchampatti Village, Karur Taluk, Karur District of Tamil Nadu. It is also certified that information furnished in the above EIA study are true and correct to the best 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.S.Suriyakumar

Designation : EIA Coordinator

Signature :

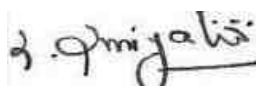
For Aadhi Boomi Mining And Enviro Tech (P) Ltd.,

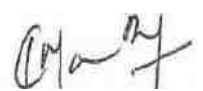
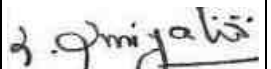
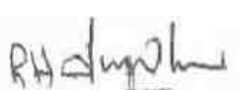

Director



Period of Involvement : December, 2025 to till date

Functional Area Experts Engaged in this Project

S. No	Name of the Expert	Cat.	Functional Areas	Involvement	Signature
1	Dr.S.Suriyakumar	A	SC	- Study of soil profile. - Assessing the impact on soil environment and proposed mitigation measures for soil conservation.	
			SHW	- Waste disposal method evaluation - Providing dump management plan	
			RH	Management plan for safety	
2	Mrs. S. Santhi	B	LU	- Collection of Remote sensing satellite data to study the land use pattern. - Construction of Land use Map. - Impact of project on surrounding land use.	
			SE	- Identification of villages in the study area and finalization of demographic profile of the villages within the study area - Revision in secondary data as per Census of India, 2011.	

3	R.R Prakash Babu	B	AP	• Identification of different sources of air pollution due to the proposed mine activity. • Identification of Impacts & suggestion of mitigation measures.	
4	S. Sagath Srikrishnan	B	WP	• Study of the monitored data with respect to the applicable standards. • Identification of Water requirement & Source. • Preparation of water balance diagram. • Impact of the project on the water quality, both surface and groundwater. • Suggestion of Mitigation measures to control water pollution.	
	Mrs. A. Nagadevi				
5	S. Sagath Srikrishnan	B	AQ	• Identifying different source of emissions and propose predictions of incremental GLC using AERMOD. • Recommending mitigations measures for EMP.	
6	Dr.S.Suriyakumar	B	NV	• Predict the noise level and vibration level due to proposed mining operation based on scientific evaluation. • Suggesting the Mitigation measures to control noise pollution, Suggesting the Mitigation measures to control ground vibration.	
	R.R Prakash Babu				
7	Dr. Nallathambi Varadarajan	A	HG	• Interpretation of ground water table and predict impact and propose mitigation measures. • Analysis and description of aquifer Characteristics. • Study about impact on the hydrology due to mining operation	
8	Mr. K. Velmurugan	B	Geo	• Field Survey for assessing the regional and local geology of the area. • Study of geology of the ML area and the surrounding areas. • Provide details about Mineral composition	
	Dr. Nallathambi Varadarajan				
9	Gyaneswar Bhuyan	B	EB	• Collection the primary data from project site and compare the secondary data from local DFO office.	
	Mrs. Sudha Vijay Anand				

List of FAA/Team Members Engaged in this Project

S. No	Name of the Expert	Cat.	Functional Areas	Involvement	Signature
1	Mrs.S. Sri Vidhya	B	WP, AQ	• Site Visit with FAE. • Analyse & provide inputs and assist FAE with meteorological data, emission estimation, AERMOD modelling and suggesting control measures	
2	Dr.M.Selvakumar	B	AP, WP	• Site Visit with FAE. • Assisting FAE on sources of Air pollution, its impacts and suggest control measures.	



File No: 13516
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA),
TAMIL NADU)



Dated: 13/04/2026



To,

Tmt. N. Madhavi
M/s. M.P. GRANITE
No. 131/29, RR Complex, Kollapatti, Animoor Post, Trichengode Taluk, Namakkal District - 637211.
TAMIL NADU.
mpkexport2017pvtltd@gmail.com

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

Sir/Madam,

Sub: SEIAA, Tamil Nadu – Proposed Multicolour Granite Quarry over an Extent of 4.01.5 Ha at S.F.No. 260/A1, 260/A2, 260/A3, 260/B1, 260/B2, 260/B3, 260/C, 262/A3 (P), 262/A4 (P), 262/A5 (P), 262/A6 (P), 262/A7, 262/A8 (P), 262/B1 & 262/B2 of K. Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu by M/s. M.P. Granite - under project category – “B1” of Item 1(a) “Mining of Minerals” of the Schedule to the EIA Notification, 2006– **ToR issued along with Public Hearing-** preparation of EIA report – Regarding.

Ref: 1. Online proposal No. SIA/TN/MIN/570774/2026, Dated 11.03.2026.
2. Minutes of the 697th meeting of SEAC-II held on 26.03.2026.
3. Minutes of the 990th meeting of SEIAA held on 07.04.2026

2. The particulars of the proposal are as below:

(i) TOR Identification No.	TO26B0108TN5488325N
(ii) File No.	13516
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vi) Name of Project	M P Granite, K. Pitchampatti Multicolour Granite Quarry
(vii) Name of Company/Organization	M P GRANITE
(viii) Location of Project (District, State)	KARUR, TAMIL NADU
(ix) Issuing Authority	SEIAA
(x) Applicability of General Conditions	no

1. In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1 (Part A and B) were submitted to the SEIAA for an appraisal by the SEAC under the provision of EIA notification 2006 and its subsequent amendments.
2. The above-mentioned proposal has been considered by SEIAA in the meeting held on 07.04.2026. The minutes of the meeting and all the Application and documents submitted [viz. Form-1 Part A, Part B] are available on PARIVESH portal which can be accessed by scanning the QR Code above.
3. The State Expert Appraisal Committee (SEAC), based on the information & clarifications provided by the project proponent and after detailed deliberations on all technical aspects recommended the proposal for grant of Terms of Reference with public hearing under the provision of EIA Notification, 2006 and as amended thereof subject to the stipulation of specific and general conditions as detailed in Annexure (2).
4. The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the SEAC hereby decided to issue the following Terms of Reference with public hearing for instant proposal of **M/s. M.P. Granite** under the provisions of EIA Notification, 2006 and as amended thereof.
5. The Ministry/SEIAA-TN reserves the right to stipulate additional conditions, if found necessary.
6. The Terms of Reference with public hearing to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/Regulations or Statutes, as applicable, to the project.
7. This issues with the approval of the Competent Authority.
8. The TORs with public hearing prescribed shall be valid for a period of three years from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

Copy To

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Additional Chief Secretary to Government, Environment and Forests Department, Tamil Nadu.
3. The Additional Chief Secretary to Government, Natural Resources Department, Tamil Nadu.
4. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
5. The Chairman, TNPC Board, 76, Mount Salai, Guindy, Chennai-32.
6. The District Collector, Karur District.
7. The Commissioner of Geology and Mines, Guindy, Chennai-32.
8. The Assistant Director, Department of Geology & Mining, Karur District.
9. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
10. Integrated Regional office of MoEF&CC, Sastri Bhawan, Nungambakkam, Chennai
11. File Copy.

Annexure 1

Specific Terms of Reference s for (Mining Of Minerals)

1. Seiaa Specific Conditions :

S. No	Terms of Reference
1.1	After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant Terms of Reference (ToR) along with Public Hearing for the quantity of 59,400m³ (ROM) of

S. No	Terms of Reference
	Multicolour Granite which includes 35,640m³ of Granite recovery @60% and 23,760m³ of Granite reject @40% up to the depth of 40m BGL (including the existing depth of 13m BGL) and the annual peak production should not exceed 7,290 m³ of Granite recovery @60% as per approved mining plan, under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal conditions & SEIAA Specific & Standard conditions

2. Seiaa Standard Conditions :

S. No	Terms of Reference
2.1	<u>Cluster Management Committee</u> - 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. - The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc., - The 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. - 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. - The committee shall deliberate on risk & emergency management plan, fire safety & evacuation plan and sustainable development goals pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan. - The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the Environmental policy devised shall be given in detail in the EIA Report. - The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner. - The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity. <u>Agriculture & Agro-Biodiversity</u> - Impact on surrounding agricultural fields around the proposed mining Area. - Impact on soil flora & vegetation around the project site. - Details of type of vegetation including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetation all along the boundary of the proposed mining area shall committed mentioned in EMP. - The Environmental Impact Assessment should study the agro-biodiversity, agro- forestry, horticultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem. - Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services. - The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock. <u>Forests</u> - The project proponent shall detailed study on impact of mining on Reserve forests and free ranging wildlife. - The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.

S. No	Terms of Reference
	17. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection. 18. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site. <u>Water Environment</u> 19. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period. 20. Erosion Control measures. 21. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas. 22. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. 23. The project proponent shall study and furnish the details on potential fragmentation impact on natural Environment, by the activities. 24. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts. 25. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components. 26. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites. 27. The EIA shall include the impact of mining activity on the following: - Hydrothermal/Geothermal effect due to destruction in the Environment. - Bio-geochemical processes and its foot prints including Environmental stress. - Sediment geochemistry in the surface streams. <u>Energy</u> 28. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished. <u>Climate Change</u> 29. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities. 30. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features. 31. Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood. <u>Mine Closure Plan</u> 32. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued. <u>EMP</u> 33. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs. 34. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan. <u>Risk Assessment</u> 35. To furnish risk assessment and management plan including anticipated vulnerabilities during

S. No	Terms of Reference
	operational and post operational phases of Mining. <u>Disaster Management Plan</u> 36. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/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. <u>Others</u> 37. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc. 38. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan. 39. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the Environment. The ecological risks and impacts of plastic & microplastics on aquatic Environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.



SEAC conditions - Site specific

Major Conditions:

1. **The Project Proponent shall furnish the Certified Compliance Report obtained from the competent authority for the EC previously issued during the EIA appraisal.**

General Conditions:

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

7. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.
8. The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures.
9. The PP shall prepare a conceptual working plan accommodating the inclusion of haul road accessibility keeping the benches intact, by ensuring the slope stability of the working benches to be constructed and existing quarry wall.
10. The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report.

SEAC Standard conditions

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

4. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry.
5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.
6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.
7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.
8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.
9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.
10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.
11. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.
12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,

13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?
14. Quantity of minerals mined out.
 - Highest production achieved in any one year
 - Detail of approved depth of mining.
 - Actual depth of the mining achieved earlier.
 - Name of the person already mined in that leases area.
 - If EC and CTO already obtained, the copy of the same shall be submitted.
 - Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.
15. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,
17. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.
18. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.
19. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.
20. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon

seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.

21. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.
22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.
23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.
24. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
25. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.
26. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.
27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
28. Impact on local transport infrastructure due to the Project should be indicated.
29. A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.

30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.
31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.
32. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.
33. Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner
34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
35. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
37. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
38. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.

39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
40. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.
42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.
43. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.

STANDARD TERMS OF REFERENCE

- 1) Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
- 2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
- 3) All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
- 4) All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ topo sheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
- 5) Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and

rivers and soil characteristics.

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

- 13) Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
- 14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
- 15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
- 16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
- 17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
- 18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.
- 19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.

- 20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- 21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
- 22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM₁₀, particularly for free silica, should be given.
- 23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
- 24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the

Project should be indicated.

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

contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.

- 33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
- 34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
- 35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
- 36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
- 37) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
- 38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
- 39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
- 40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- 41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- 42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
- 43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
- 44) Besides the above, the below mentioned general points are also to be followed:-

- a) Executive Summary of the EIA/EMP Report
- b) All documents to be properly referenced with index and continuous page numbering.
- c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
- d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
- e) Where the documents provided are in a language other than English, an English translation should be provided.
- f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
- g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
- h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.
- i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.
- j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

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

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

1. Project name and location (Village, District, State, Industrial Estate (if applicable)).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.
7. Details of village map, "A" register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be submitted along with EIA report.
9. Obtain a letter /certificate from the Assistant Director of Geology and Mining standing that there is no other Minerals/resources like sand in the quarrying area within the approved depth of mining and below depth of mining and the same shall be furnished in the EIA report.
10. EIA report should strictly follow the Environmental Impact Assessment Guidance Manual for Mining of Minerals published February 2010.
11. Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
12. The EIA study report shall include the surrounding mining activity, if any.
13. Modeling study for Air, Water and noise shall be carried out in this field and incremental increase in the above study shall be substantiated with mitigation measures.
14. A study on the geological resources available shall be carried out and reported.
15. A specific study on agriculture & livelihood shall be carried out and reported.
16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of acquisition, nearby (in 2-3 km.) water body, population, within 10km other industries, forest, eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and

safety system provided to mitigate the risk.

20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies
22. Issues raised during public hearing (if applicable) and response given
23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan
26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.
31. A detailed plan on plastic waste management shall be furnished. Further, the proponent should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986. In this connection, the project proponent has to furnish the action plan.

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

- a. A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.
- b. All documents may be properly referenced with index, page numbers and continuous page numbering.
- c. Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.
- d. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF& CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry should also be followed.

- e. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India (QCI)/National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other organization/Laboratories including their status of approvals etc. In this regard circular no F. No.J -11013/77/2004-IA-II(I) dated 2nd December, 2009, 18th March 2010, 28th May 2010, 28th June 2010, 31st December 2010 & 30th September 2011 posted on the Ministry's website <http://www.moef.nic.in/> may be referred.
- After preparing the EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006) covering the above mentioned points, the proponent will take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.
 - The final EIA report shall be submitted to the SEIAA, Tamil Nadu for obtaining Environmental Clearance.
 - The TORs with public hearing prescribed shall be **valid for a period of three years** from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

**ABSTRACT**

Mines and Quarries - Minor Mineral - Multi Colour Granite - Karur District, Karur Taluk, K.Pitchampatti Village - S.F.Nos. 260/A1 (0.03.5 hecets), 260/A2 (0.27.5 hecets), 260/A3 (0.25.5 hecets), 260/B1 (0.27.5 hecets), 260/B2 (0.14.0 hecets), 260/B3 (0.12.5 hecets), 260/C (0.17.0 hecets), 262/A3 (Part) (0.59.5 hecets), 262/A4 (Part) (0.29.0 hecets), 262/A5 (Part) (0.36.5 hecets), 262/A6 (Part) (0.78.0 hecets), 262/A7 (0.11.0 hecets), 262/A8 (Part) (0.16.0 hecets), 262/B1 (0.05.5 hecets) and 262/B2 (0.38.5 hecets) - Over an extent of 4.01.5 Hecets of Patta land - Quarry Lease Application of M/s. M.P. Granite - Grant of quarry lease - Sanctioned - Orders - Issued.

Industries (MMB.2) Department

G.O. (3D) No.10

Dated: 11.08.2017

ஹெவிஸ்பி-ஆடி 26

திருவள்ளூர் ஆண்டு 2048

Read:

- 1) From M/s. M.P. Granite, Quarry Lease Application dated: 03.02.2016.
- 2) From the District Collector, Karur, Letter Rc. No.122/Mines/2016, Dated: 3.8.2016.
- 3) From the Commissioner of Geology and Mining, Chennai, File No.5224/MM2/2016, Dated: 17.8.2016.
- 4) Government Letter No.11030/MMB.2/2016-1, dated: 17.10.2016.
- 5) From the Commissioner of Geology and Mining Letter No.5224/MM2/2016, dated: 24.11.2016.
- 6) From the District Collector, Karur / Chairman, DEIAA, Letter No.DEIAA-DIA/TN/MIN/5622/2017-KRR Ec.No. 22/2017/Mines, dated: 02.08.2017.

ORDER:

In the reference first read above, M/s. M.P. Granite has applied for grant of lease for quarrying Multi Colour Granite over an extent of 4.01.5 hectares of patta land in S.F.Nos. 260/A1 (0.03.5 hecets), 260/A2 (0.27.5 hecets), 260/A3 (0.25.5 hecets), 260/B1 (0.27.5 hecets), 260/B2 (0.14.0



-2-

hects), 260/B3 (0.12.5 hects), 260/C (0.17.0 hects), 262/A3 (Part) (0.59.5 hects), 262/A4 (Part) (0.29.0 hects), 262/A5 (Part) (0.36.5 hects), 262/A6 (Part) (0.78.0 hects), 262/A7 (0.11.0 hects), 262/A8 (Part) (0.16.0 hects), 262/B1 (0.05.5 hects) and 262/B2 (0.38.5 hects) of K.Pitchampatti Village, Karur Taluk, Karur District for a period of 20 years under rule 19A of the Tamil Nadu Minor Mineral Concession Rules, 1959.

2. In the reference second and third read above, the Collector of Karur District and the Commissioner of Geology and Mining have recommended and forwarded the application of M/s. M.P. Granite to the Government for passing orders.

3. Based on the reports of the District Collector, Karur and the Commissioner of Geology and Mining, the Government have examined the quarry lease application of the applicant company and communicated the area recommended by the Commissioner of Geology and Mining as precise area and requested the applicant company in the reference fourth read above to furnish the approved Mining Plan as per sub-rule (13) of rule 19A of the Tamil Nadu Minor Mineral Concession Rules, 1959 through the Commissioner of Geology and Mining and to produce environmental clearance from the DEIAA. The Commissioner of Geology and Mining in his reference 5th read above has approved the mining plan as per sub-rule (13) of rule 19A of the Tamil Nadu Minor Mineral Concession Rules, 1959 subject to the condition that the applicant company shall obtain the Environmental Clearance as per the orders of the Hon'ble Supreme Court of India Order dated: 27.2.2012 in I.A. No.12-13/2011 in SLP (C) No.19629/2009 and as per the Office Memorandum No.L11011/47/ 2011-1A II(M), dated: 18.5.2012 of Ministry of Environment and Forest, Government of India. The District Level Environment Impact Assessment Authority in their reference 6th read above have accorded Environment Clearance for mining in the above said area subject to certain conditions.

4. The Government after careful examination have decided to grant lease to quarry Multi Colour granite to M/s. M.P. Granite in the above patta lands. Accordingly, in exercise of the powers conferred under Rule 19A of the Tamil Nadu Minor Mineral Concession Rules, 1959, the Governor of Tamil Nadu hereby grant quarry lease to M/s. M.P. Granite for quarrying Multi Colour Granite over an extent of 4.01.5 hectares of patta land in S.F.Nos. 260/A1 (0.03.5 hects), 260/A2 (0.27.5 hects), 260/A3 (0.25.5 hects), 260/B1 (0.27.5 hects), 260/B2 (0.14.0 hects), 260/B3 (0.12.5 hects), 260/C (0.17.0 hects), 262/A3 (Part) (0.59.5 hects), 262/A4 (Part) (0.29.0 hects), 262/A5 (Part) (0.36.5 hects), 262/A6 (Part) (0.78.0 hects), 262/A7 (0.11.0 hects), 262/A8 (Part) (0.16.0 hects), 262/B1 (0.05.5 hects) and 262/B2 (0.38.5 hects) of K.Pitchampatti Village, Karur Taluk, Karur District for a period of twenty years, subject to the conditions specified in



the annexure to this order and also the following special conditions along with all the conditions imposed by the District Level Environment Impact Assessment Authority in the reference 6th read above.

- (1) A safety distance of 7.5 meters should be maintained to the adjacent patta lands.
- (2) No hindrance shall be caused to the adjacent pattadars while quarrying and transportation of granite.
- (3) A safety distance of 50 meters should be maintained to the low tension power line passing through the S.F. No.262/A2.
- (4) A safety distance of 50 meters should be maintained to the Chettinad railway track passing in North-South direction through S.F. No.259 at a distances of 35 meters from the western boundary of the applied area.
- (5) The applicant firm has to produce latest Mining due clearance certificate in respect of the quarry leases granted in favour of the applicant firm in Namakkal District before the grant of quarry lease.
- (6) The applicant firm should fence the lease granted area with barbed wire before the execution of lease deed as follows:-
 - The pillar post shall be firmly grounded with concrete foundation of height not less than 2 meters with a distance between two pillars shall not be more than 3 meters.
 - The applicant shall incorporate the DGPS readings for the entire boundary pillars of the area and the same should be clearly shown in the mining plan.
- (7) The lessee shall strictly adhere to the statutory and safety requirements.
- (8) The waste materials generated during quarrying operation shall be dumped only in the area granted under lease.
- (9) 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.



-4-

- (10) The lease grantee shall submit scheme of mining; mine closure plan and other statutory requirements within the time stipulated for submission of the above, as per rules.
- (11) The District Collector, Karur shall obtain a sworn-in-affidavit from the appellant containing the above conditions before execution of lease deed and also ensure that the instructions issued in Government Letter No.12789/- MMB.2/2002-7, Industries Department, Dated: 9.1.2003 are complied with.

5. The Collector of Karur District is requested to take necessary further action for the execution of agreement in the prescribed form and communicate the date of execution of agreement to the Government and Commissioner of Geology and Mining.

6. The District Collector, Karur is also directed to verify and furnish a certificate to the effect that all lease deed conditions and other conditions mentioned in paragraph 4 above have been complied with, duly incorporated in the lease agreement and send it to the Government. The District Collector, Karur is also instructed to include all the conditions imposed by District Level Environment Impact Assessment Authority in the reference 6th read above.

(BY ORDER OF THE GOVERNOR)

ATULYA MISRA
PRINCIPAL SECRETARY TO GOVERNMENT

To
M/s. M.P. Granite,
Door No.131/29, R.R. Complex,
Kollapatti, Animoor Post, Tiruchengode Taluk,
Namakkal District. Pincode - 637 211.

The Commissioner of Geology and Mining, Guindy, Chennai - 600 032.
The District Collector, Karur District.

Copy to:
Special Personal Assistant to Hon'ble Minister for Industries,
Chennai-600 009.
Industries (OP.II) Department, Chennai - 600 009.
Stock File / Spare Copy.

// Forwarded By order //

M. Senthil Kumar
SECTION OFFICER
11.5.17



Annexure

G.O (3D) No.10, Industries (MMB.2) Department, Dated: 11.08.2017

1. The applicant shall execute an agreement within one month from the date of receipt of the Government order.
2. The date of commencement of the period of lease shall be the date on which the agreement is executed.
3. The applicant shall pay seigniorage or dead rent whichever is more in respect of the actual quantity of granite removed at the rate prescribed from time to time in Appendix-II of the Tamil Nadu Minor Mineral Concession Rules, 1959.
4. The applicant should keep correct accounts showing the quantities and other particulars of all minerals obtained from the lands permitted to quarry.
5. The applicant should also allow any officer authorized by the District Collector 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.
6. The applicant shall carry out the quarrying operations in skilful, scientific systematic manner keeping in view, the proper safety of the labour conservation of minerals and preservation of environment ecology.
7. The applicant shall allow any officer authorized by the District Collector and Director of Geology and Mining to enter upon the area and inspect for the purpose mentioned in conditions 4 and 6 above and also carry out the directions issued to the satisfaction of the above said authorities.
8. No quarrying activities connected there to shall be done before the execution of the agreement and registration is at the cost of the applicant.
9. No hindrance shall be caused to the adjoining pattadars or public.
10. The applicant should restrict his mining operation strictly within the permitted area as defined in the sketch.



-6-

11. The terms and conditions are also subject to such further modifications, deletion and additions alternation as may be ordered by the Government to be included in the agreement to be executed for this purpose.
12. The applicant should maintain at his cost proper signboards indicating the survey numbers, years of the lease, name of the lease holder and the lease period to the satisfaction of the District Collector, Director of Geology and Mining and maintain it all time at the quarry site.
13. No quarrying shall be done within a distance of 7.5 metres of the boundaries of the permitted area.
14. The applicant should make his own arrangements to form the approach road from the public road to the place of his quarry.
15. The lessee shall strictly adhere to the statutory and safety requirements.
16. The waste materials generated during quarrying operation shall be dumped only in the area granted under lease.
17. 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.
18. That the approval of the mining plan does not in any way imply the approval of the Government in terms of any other provision, Mines and Minerals (Development and Regulation) Act, 1957, or any other connected Laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Indian Explosives Act 1884, (Central Act IV of 1884) and the Rules made there under and the Tamil Nadu Minor Minerals Concession Rules, 1959.
19. That the mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.

ATULYA MISRA
PRINCIPAL SECRETARY TO GOVERNMENT

// True copy //

M. Sathya
SECTION OFFICER 11.8.17
Somy
11.8.17

COMMISSIONERATE OF GEOLOGY AND MINING

From
Thiru.J.Jayakanthan, I.A.S.,
Commissioner,
Commissionerate of Geology and
Mining, Guindy I.E.,
Chennai-32

To
✓ M/s. M.P.Granite,
No.131/29, RR Complex,
Kollapatti, Animoor post,
Tiruchengode Taluk,
Namakkal District,
Tamil Nadu - 637211.

Rc.No. 4342/MM2/2022 dated 29.09.2022

Sir,

Sub: Mines and Mineral - Minor Mineral - Karur District -
Karur Taluk - K.Pitchampatti Village - S.F.Nos.
260/A1 (0.03.5 hecets), 260/A2 (0.27.5 hecets etc.- over
an extent of 4.01.5 hectares. - Quarry lease granted to
M/s.M.P. Granite - 1st Scheme of Mining submitted
for approval -Recommended and forwarded by the
Deputy Director (G&M), Karur -Approval accorded -
Regarding.

- Ref: 1) G.O.(3D) No.10, Industries (MMB.2), Department,
Dated:11.08.2017.
2) Mining plan approved by Commissioner of Geology
and Mining in Letter Rc. No. 5224/MM2/2016
Dated 24.11.2016.
3) M/s.M.P. Granite, No.131/29, R.R. Complex,
Kollapatti, Animoor Post, Tiruchengode Taluk,
Namakkal District,, letter dated: 11.04.2022.
4) Deputy Director(G&M), Karur letter
Rc.No.109/Mines/2022, dated 04.07.2022.

Kind attention is invited to the references cited above.

2) M/s.M.P. Granite has been granted quarry lease for quarrying Multi
Colour Granite in S.F.Nos. 260/A1 (0.03.5 hecets), 260/A2 (0.27.5 hecets),
260/A3 (0.25.5 hecets), 260/B1 (0.27.5 hecets), 260/B2 (0.14.0 hecets),
260/B3 (0.12.5 hecets), 260/C (0.17.0 hecets), 262/A3 (Part) (0.59.5 hecets),
262/A4 (Part) (0.29.0 hecets), 262/A5 (Part) (0.36.5 hecets), 262/A6 (Part)
(0.78.0 hecets), 262/A7 (0.11.0 hecets), 262/A8 (Part) (0.16.0 hecets), 262/B1
(0.05.5 hecets), 262/B2 (0.38.5 hecets) over an extent of 4.01.5 hectares., of

patta land in K.Pitchampatti Village, Karur Taluk and District vide the reference 1st cited above.

3) The Deputy Director (G&M), Karur District in the reference 4th cited has forwarded the 1st Scheme of Mining Plan submitted by the lessee M/s.M.P. Granite for the period 2022-23 to 2026-27 for approval in respect of multi-colour granite quarry K.Pitchampatti Village, Karur Taluk, Karur District.

4) The Deputy Director, Karur has reported that mineable reserves for the scheme of mining is calculated at 60% recovery factor is about 35,640cbm of Multi Colour Granite up to 40mts depth. Further, the Deputy Director has stated that the lessee has compiled the terms and conditions stipulated in the lease deed and there is no violations in the subject area and there is no litigation in the subject area. Finally, the Deputy Director (G&M), Karur has recommended the 1st Scheme of Mining submitted by the lessee M/s.M.P. Granite for approval as per Granite Conservation and Development Rules, 1999 and as per G.O.3(D)No.3 Industries (MMB.2) Department, dated 12.02.2014.

5) Based on the recommendation of the Deputy Director (G&M), Karur and in exercise of the powers conferred under Rule, 18(4) of Granite Conservation and Development Rules, 1999 read with G.O.(Ms).No.87, Industries (MMC.1) Department dated 22.02.2001, the 1st Scheme of Mining submitted by M/s.M.P. Granite is hereby approved for the period 2022-23 to 2026-27 for the ROM of 59,400Cbm of granite subject to the following conditions:

- i. A safety distance of 7.5 meters should be maintained to the adjacent patta lands.
- ii. No hindrance shall be caused to the adjacent pattadars while quarrying and transportation of granite.
- iii. A safety distance of 50 meters should be maintained to the low-tension power line passing through the S.F. No.262/A2.

- iv. A safety distance of 50 meters should be maintained to the Chettinad railway track passing in North-South direction through S.F. No.259 at a distance of 35 meters from the western boundary of the applied area.
- v. This scheme of 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.
- vi. The approval of the scheme of mining (including progressive mine closure plan) does not in any way imply the approval of the Government in terms of any other provisions of the Mines and Minerals (Development and Regulation) Act 1957, or any other law including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1986, Indian Explosives Act, 1884 (Central Act IV of 1884) and the rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.
- vii. This scheme of mining including progressive mine closure plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
- viii. Provisions of the Mines Act, 1952 and the Rules and Regulations made there under including submission of notice of opening, appointment of manager and other statutory officials as required under Mines Act, 1952 shall be complied with.
- ix. Provisions made under Mines and Minerals (Development & Regulation) Act, 1957, MMDR Amendment Act, 2015 and Granite Conservation and Development Rules, 1999 made there under shall be complied with.
- x. This approval of scheme of mining is restricted to the mining lease area only. The mining lease area is as shown on the statutory plan under Granite Conservation and Development Rules, 1999. The Directorate of Geology and Mining does not take any responsibility regarding correctness of the boundaries

of the lease shown on the ground with reference to the lease map and other plans furnished by the lessee.

- xi. If anything is found to be concealed as required by the Granite Conservation and Development Rules, 1999 and Tamil Nadu Minor Mineral Concession Rules, 1959 and proposal for rectification has not been made, the approval shall be deemed to have been withdrawn with immediate effect.
- xii. Relaxation to be obtained under Rule 106(2)(a)&(b) of Metalliferous Mines Regulations, 1961 from the Director of Mines Safety, if necessary.
- xiii. The lessee should obtain environmental clearance from the appropriate authority.
- xiv. This 1st Scheme of Mining is approved for the proposal contained therein and is applicable from the date of approval of the document for the quarrying activities to be carried out within the leasehold area.
- xv. The earlier instances of irregular / illegal quarrying, if any, shall not be regularized through the approval of this document.
- xvi. The lessee shall remit the penalty / cost of mineral / other dues if any as arrived by the Assistant Director/ Deputy Director (G&M), Karur District.
- xvii. The quarry labourers shall be registered with the Labour Board and shall be enrolled under the Insurance Scheme.
- xviii. Non adherence to any condition set-out above, the approval shall be deemed to have been withdrawn with immediate effect.
- xix. The applicant should comply with the conditions stipulated in the Government of India, Ministry of Mines order no.11/02/2020, dated 14.01.2020 issued as per the orders of the Hon'ble Supreme Court of India dated 08.01.2020 that, "the mining lease holders shall after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to this mining activities

and restore the land to a condition which is fit for growth of fodders, flora and fauna etc.”

xx. The lessee has to pay the stamp duty for enhanced quantity in the 1st scheme of mining and to execute the supplementary lease deed.

xxi. Child labour should not be engaged.

Approved scheme of mining is sent herewith for further necessary action.

Encl: Five Approved scheme of mining

Sd/- J.Jayakanthan
Commissioner of Geology and Mining

Forwarded / By Order


Deputy Director

Copy to :

1. The Director of Mines Safety,
Lapis Lagoon, AA Block,
Shanthi Colony, Anna Nagar,
Chennai-40. (With AMP)
2. The District Collector,
Karur. (With AMP)


3/10/22

Copy Submitted to:

Additional Chief Secretary to Government,
Industries, Investment Promotion and
Commerce Department,
Secretariat, Chennai-9.

From

To

Thiru.V.Sasikumar, M.Sc.,
Deputy Director,
Geology and Mining,
Karur.

M/s M.P.Granite
No.131/29 R.R.Complex
Kollapatti Animoor Post
Tiruchengodu Taluk
Namakkal District.

Rc.No.109/Mines/2022, Dated:23.03.2026

Sub: Mines and Quarries - Minor Mineral - Multicolour Granite - Karur District - Karur Taluk - K.Pitchampatti Village - S.F.Nos. 260/A1 (0.03.5 hecets), 260/A2 (0.27.5 hecets), 260/A3 (0.25.5 hecets), 260/B1 (0.27.5 hecets), 260/B2 (0.14.0 hecets), 260/B3 (0.12.5 hecets), 260/C (0.17.0 hecets), 262/A3 (Part) (0.59.5 hecets), 262/A4 (Part) (0.29.0 hecets), 262/A5 (Part) (0.36.5 hecets), 262/A6 (Part) (0.78.0 hecets), 262/A7 (0.11.0 hecets), 262/A8 (Part) (0.16.0 hecets), 262/B1 (0.05.5 hecets), 262/B2 (0.38.5 hecets) over an extent of 4.01.5 hectares., - Quarry lease granted to M/s.M.P. Granite - requested for the details of Existing/ Proposed/Expired and Abandoned quarries situated within 500 mts radial distance quantity and depth of Mining to obtain Environmental Clearance - furnished - Reg.

Ref:

1. G.O.(3D) No.10, Industries (MMB.2), Department, Dated:11.08.2017.

2. M/s. M.P. Granite, letter dated:10.03.2026.

In the reference 1st cited, M/s.M.P. Granite has been granted quarry lease for quarrying Multi Colour Granite in S.F.Nos. 260/A1 (0.03.5 hecets), 260/A2 (0.27.5 hecets), 260/A3 (0.25.5 hecets), 260/B1 (0.27.5 hecets), 260/B2 (0.14.0 hecets), 260/B3 (0.12.5 hecets), 260/C (0.17.0 hecets), 262/A3 (Part) (0.59.5 hecets), 262/A4 (Part) (0.29.0 hecets), 262/A5 (Part) (0.36.5 hecets), 262/A6 (Part) (0.78.0 hecets), 262/A7 (0.11.0 hecets), 262/A8 (Part) (0.16.0 hecets), 262/B1 (0.05.5 hecets), 262/B2 (0.38.5 hecets) over an extent of 4.01.5 hectares of patta lands in K.Pitchampatti Village, Karur Taluk, Karur District.

In the reference 2nd cited, the applicant has requested to the Deputy Director of Geology and Mining, Karur to provide the details of existing, proposed, expired and abandoned quarries situated within 500 meter radial distance from the subject area and the same has been furnished as detailed below:-

I. Existing Quarries: -

Sl No.	Name of the lessee/firm it holder	Taluk & Village	S.F.No.	Extent (hect)	Lease Period
1.	M/s M.P.Granite No.131/29 R.R.Complex Kollapatti Animoor Post Tiruchengodu Taluk Namakkal District.	Karur Taluk K.Pitchampatti Village	343/1B, 343/11B(P) 343/2, 344/A1 343/3, 354/A2 343/4, 354/A3 343/5, 354/A4 343/6, 354/A5 343/7, 354/B1A 343/8, 354/B13 343/9, 354/B14 343/10 354/B15 (P), 354/B16	2.43.5	15.02.2016 to 14.02.2036
2.	M/s M.P.Granite No.131/29 R.R.Complex Kollapatti Animoor Post Tiruchengodu Taluk Namakkal District.	Karur Taluk K.Pitchampatti Village	260/A1, 262/A3 (P) 260/A2, 262/A4(P) 260/A3, 262/A5(P) 260/B1, 262/A6(P) 260/B2, 262/A7 260/B3, 262/A8 (P) 260/C, 262/B1 262/B2	4.01.5	18.08.2017 to 17.08.2037
3.	M/s M.P.Granite No.131/29 R.R.Complex Kollapatti Animoor Post Tiruchengodu Taluk Namakkal District.	Karur Taluk K.Pitchampatti Village	353/6(P), 355/B4 354/A1, 356/1 355/A, 356/2 355/B1, 356/3 355/B2, 357/4 355/B3, 358/9(P)	4.45.0	28.09.2022 to 27.09.2042
4.	TVI.S.R.P Rock Exports 12/51, Maruthupandiyar Street, K.K.Nagar Madurai District.	Karur Taluk K.Pitchampatti Village	394/1B2 394/2 397/4	3.60.0	29.11.2016 to 28.11.2036

II. Proposed Quarries: -

Sl No.	Name of the lessee/firm it holder	Taluk & Village	S.F.No.	Extent (hect)	Lease Period
1	Tvl.G.P Exports, Door No. 12/128, Thalappatti, K. Pitchampatti, Karur Taluk, Karur District.	Karur Taluk K. Pitchampatti Village	353/6(P), 354/B2 353/7(P), 354/B3 354/A6, 354/B4 354/A7, 354/B5 354/A8, 354/B6 354/A9, 354/B7 354/A10, 354/B8 354/A11, 354/B9 354/A12, 354/B10 354/A13, 354/B11 354/A14, 354/B12 354/A15, 354/B17(P) 354/B1B, 354/B20(P)	2.93.0	-

III. Lease Expired Quarries: -

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

IV. Abandoned Quarries: -

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

[Signature]
Deputy Director,
Geology and Mining,
Karur.

[Signature]
22/03/26

திருத்திராயம்பள்ளி.

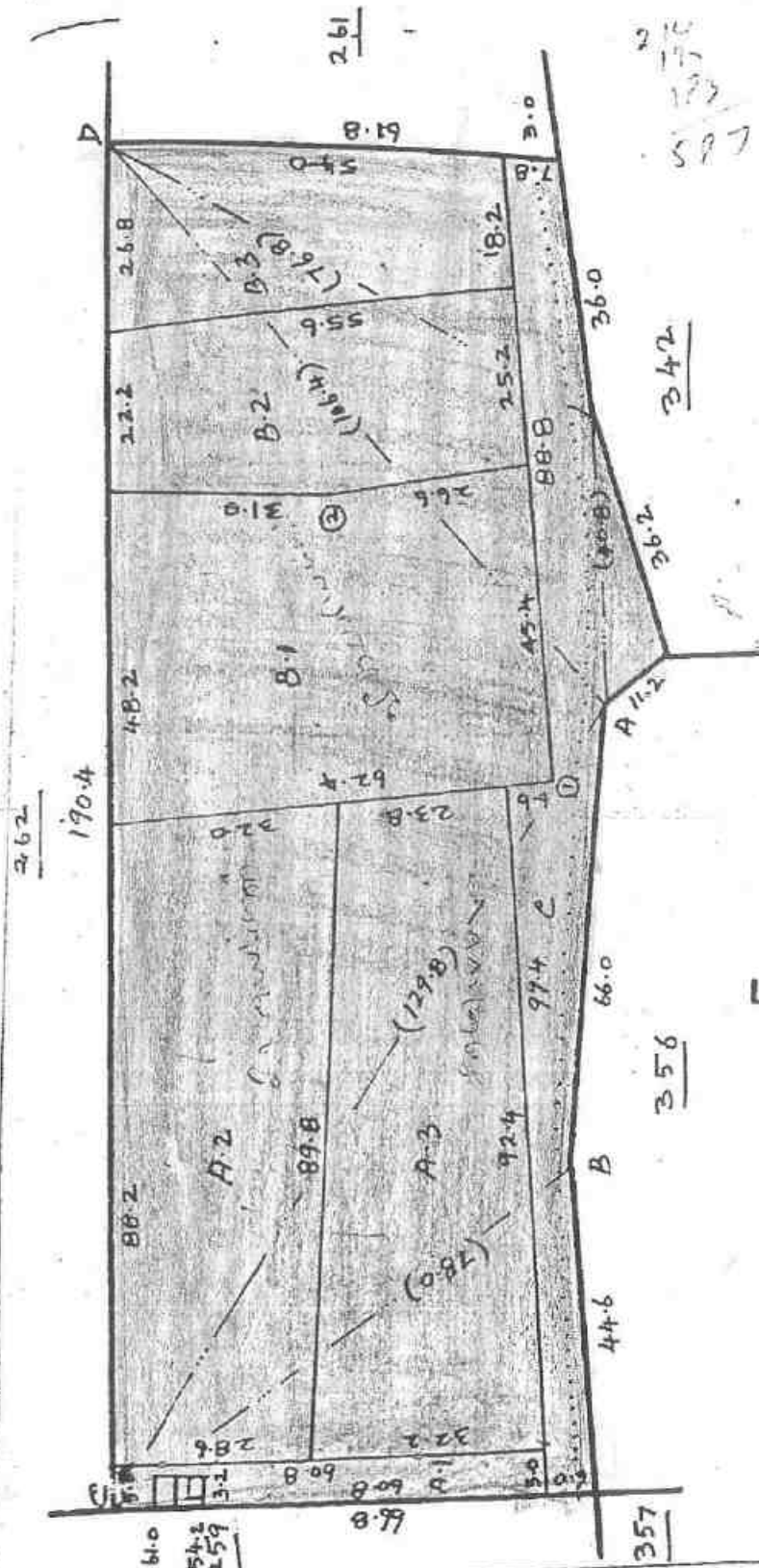
எண் (63) 44

தருள்

100 எலாம். 260.

பரப்பு: ஹெக்டேர்

1-27-ஏம். 5



LEASE AREA 

		C		
		(190.4)		
2	310	50.4		
		D		
		B		
		(660)		
		11.0	6.0	
		A		

கீராம நிர்வாக அலுவலர்
18-கா. நிச்சம்பட்ட கீராமம்
கஞர் வட்டம், கஞர் மாவட்டம்

அளவு. 1:1000 நி.பீ.

LEASE AREA 

இயல்பு
ந. கிருஷ்ணசுந்தர்
சென்னை
29/1/85

Scanned with CamScanner

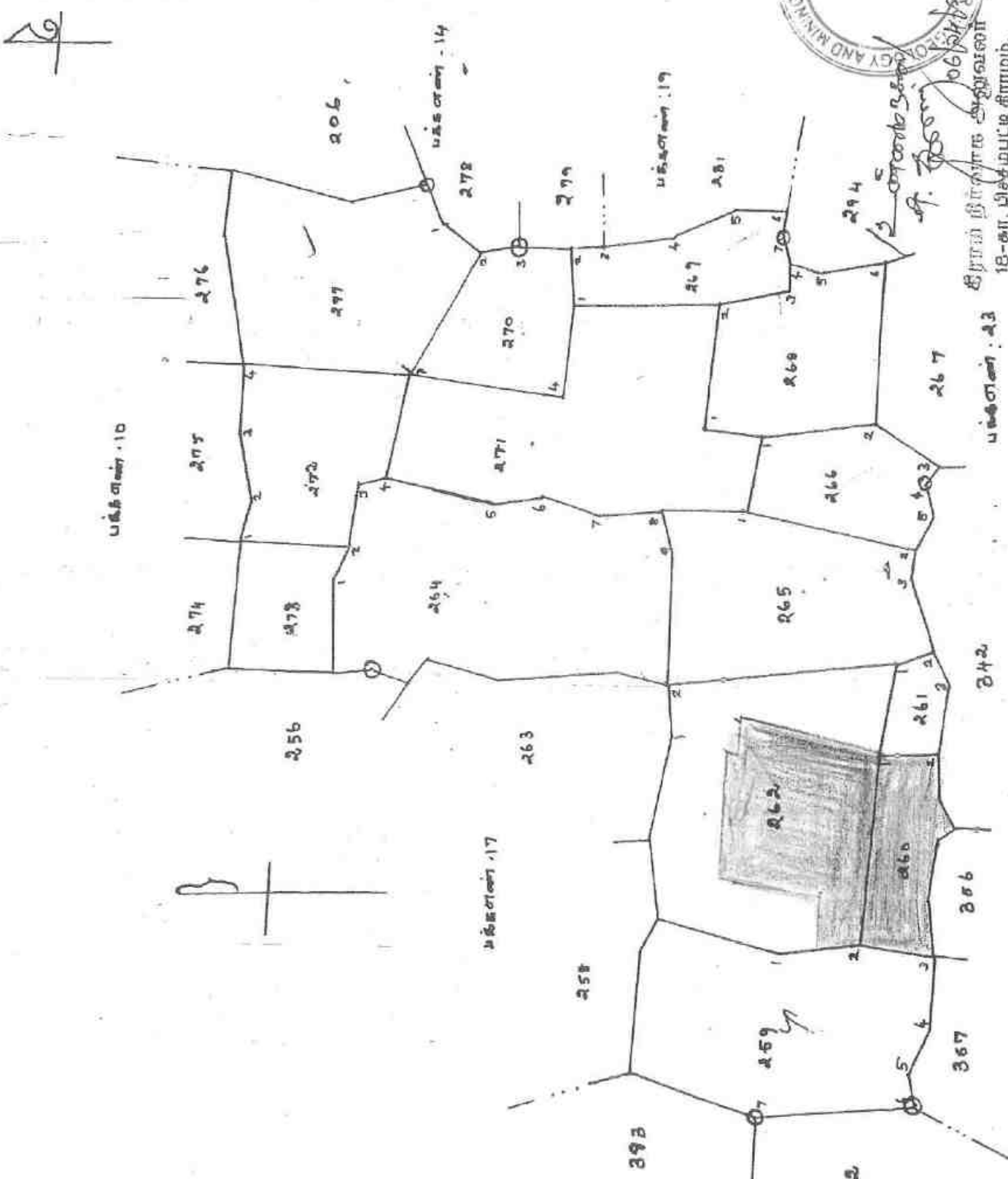
பாடகம் : திரு. ராஜசேகர்

வட்டம் : கீழ்

பக்கம் 18



தாக்கீதாதிபதி



திரு. ராஜசேகர்
18-கா. பிச்சம்பட்டி கிராமம்,
கருநாடகம், கருநாடகம்.

பக்கம் : 23

பக்கம் : 10

பக்கம் : 17

பக்கம் : 26

பக்கம் : 27

பக்கம் : 28

பக்கம் : 29

LEASE AREA

திரு. ராஜசேகர்	A	B



தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : கரூர்

வட்டம் : கரூர்

வருவாய் கிராமம் : க.பிச்சம்பட்டி

பட்டா எண் : 2829

உரிமையாளர்கள் பெயர்

1. பழனிச்சாமி

மகன்

பன்னீர்

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
259	B3	0 - 13.50	0.19	--	--	--	--	R6008/13--- -- 26-07-2001
259	B4	0 - 9.50	0.13	--	--	--	--	R6008/13--- -- 26-07-2001
259	B5	0 - 15.50	0.22	--	--	--	--	R6008/13--- -- 26-07-2001
259	B6	0 - 5.50	0.08	--	--	--	--	R6008/13--- -- 26-07-2001
260	A1	0 - 3.50	0.06	--	--	--	--	R6008/13--- -- 26-07-2001
260	A2	0 - 27.50	0.39	--	--	--	--	--- --07-10- 2014
260	A3	0 - 25.50	0.35	--	--	--	--	R6008/13--- -- 26-07-2001
262	B1	0 - 5.50	0.08	--	--	--	--	R6008/13--- -- 26-07-2001
262	B2	0 - 38.50	0.53	--	--	--	--	R6008/13--- -- 26-07-2001
342	A1	1 - 22.00	1.69	--	--	--	--	R6008/13--- -- 26-07-2001
343	10	0 - 41.00	0.82	--	--	--	--	R6008/13--- -- 26-07-2001
343	12	0 - 47.00	0.94	--	--	--	--	R6008/13--- -- 26-07-2001
343	3	0 - 22.00	0.44	--	--	--	--	R6008/13--- -- 26-07-2001
343	9	0 - 26.50	0.53	--	--	--	--	R6008/13--- -- 26-07-2001
		4 - 3.00	6.45					R6008/13--- -- 26-07-2001

குறிப்பு2 :

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 14/01/044/02829/20401 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

2. இத் தகவல்கள் 17-04-2022 அன்று 11:59:20 AM நேரத்தில் அச்சடிக்கப்பட்டது.



தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : கரூர்

வட்டம் : கரூர்

வருவாய் கிராமம் : க.பிச்சம்பட்டி

பட்டா எண் : 2852

உரிமையாளர்கள் பெயர்

1. பழனிச்சாமி

மகன்

பன்னீர்

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
259	A3	0 - 3.00	0.06	--	--	--	--	R1506A/14--- - 26-07-2001
260	B1	0 - 27.50	0.38	--	--	--	--	R1506A/14--- - 26-07-2001
260	B2	0 - 14.00	0.19	--	--	--	--	R1506A/14--- - 26-07-2001
260	B3	0 - 12.50	0.17	--	--	--	--	R1506A/14--- - 26-07-2001
260	C	0 - 17.00	0.24	--	--	--	--	---- 07-10- 2014
262	A3	0 - 81.50	1.12	--	--	--	--	R1506F/14--- - 26-07-2001
262	A4	0 - 44.00	0.61	--	--	--	--	R1506A/14--- - 26-07-2001
262	A5	0 - 50.00	0.69	--	--	--	--	R1506A/14--- - 26-07-2001
262	A6	1 - 5.00	1.45	--	--	--	--	R1506F/14--- - 26-07-2001
342	B1	0 - 58.50	0.81	--	--	--	--	R1506A/14--- - 26-07-2001
343	2	0 - 20.00	0.40	--	--	--	--	R1506A/14--- - 26-07-2001
		4 - 33.00	6.12					

குறிப்பு 2 :



- மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 14/01/044/02852/20437 என்ற குறிப்பு எண்ணை உள்ளிட்டு செய்து உறுதி செய்துகொள்ளவும்.
- இத் தகவல்கள் 17-04-2022 அன்று 12:01:15 PM நேரத்தில் அச்சடிக்கப்பட்டது.
- கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்



தமிழக அரசு

வருவாய்த் துறை

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



மாவட்டம் : கரூர்

வட்டம் : கரூர்

வருவாய் கிராமம் : க.பிச்சம்பட்டி

பட்டா எண் : 2842

உரிமையாளர்கள் பெயர்

1. பழனிச்சாமி

மகன்

பன்னீர்



புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
261	1	0 - 26.50	0.37	--	--	--	--	R556C/14--- -- 26-07-2001
262	A7	0 - 11.00	0.15	--	--	--	--	R556C/14--- -- 26-07-2001
262	A8	0 - 34.50	0.48	--	--	--	--	R556C/14--- -- 26-07-2001
		0 - 72.00	1.00					

குறிப்பு2 :



1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 14/01/044/02842/20436 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 17-04-2022 அன்று 12:02:17 PM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

சுருள் மாவட்டம்

380/26-R.F. III-A-10-50,00,000 Cps.-GBP.-Mdu-7-2018.

06

ANNEXURE

1	2	3	4	5	6	7	8	9	10	
							ரு.பை.	தொ.ஏர்ஸ்	ரு.பை.	
262	A6	262-பா	ர	4	...	8-4	6	1 38	1 05.0	1 45
	A7	-Aபா	ர	4	...	8-4	6	1 38	0 11.0	0 15
	A8	-Aபா	ர	4	...	8-5	6	1 38	0 34.5	0 48
	A9	-Aபா	ர	4	...	8-4	6	1 38	0 24.0	0 34
	B1	-Bபா	ர	4	...	8-4	6	1 38	0 05.5	0 08
	B2	-Bபா	ர	4	...	8-4	6	1 38	0 38.5	0 53
									4 81.5	6 70
263	1	263-பா	ர	4	...	8-4	6	1 38	0 05.5	0 08
	2	-பா	ர	4	...	8-4	6	1 38	0 17.0	0 24
	3	-பா	ர	4	...	8-4	6	1 38	0 69.0	0 95
	4	-பா	ர	4	...	8-4	6	1 38	0 96.0	1 32
	5	-பா	ர	4	...	8-4	6	1 38	0 11.0	0 15
	6	-பா	ர	4	...	8-4	6	1 38	0 28.0	0 39
	7	-பா	ர	4	...	8-4	6	1 38	0 05.0	0 07
	8	-பா	ர	4	...	8-4	6	1 38	0 22.0	0 31
	9	-பா	ர	4	...	8-4	6	1 38	0 13.5	0 19
	10	-பா	ர	4	...	8-4	6	1 38	1 08.0	1 49



* விவரப்பட்டியலைப் பார்க்கவும்.



1	2	3	4	5	6	7	8	9	10	11	12
250-B பா	ர	4	...	8-4	6	1	38	0 17.5	0 19	211 க. காளியப்பன்	
250-B பா	ர	4	...	8-4	6	1	38	0 09.5	0 11	233 க. காளியப்பன்	
250-B பா	ர	4	...	8-4	6	1	38	0 15.5	0 22	353 க. சாமியப்பன்	
250-B பா	ர	4	...	8-4	6	1	38	0 05.5	0 08	1784 க. காளி முத்து(1), காளி யப்பன்(2), சாமியப்பன்(3)	
260-A பா	ர	4	...	8-4	6	1	38	0 03.5	0 06	1784 க. காளி முத்து(1), காளி யப்பன்(2), சாமியப்பன்(3)	
260-A பா	ர	4	...	8-4	6	1	38	0 27.5	0 39	233 க. காளியப்பன்	
260-A பா	ர	4	...	8-4	6	1	38	0 25.5	0 35	353 க. சாமியப்பன்	
260-A பா	ர	4	...	8-4	6	1	38	0 27.5	0 38	758 வீ. பெரியம் மாள்.	
260-A பா	ர	4	...	8-4	6	1	38	0 14.0	0 19	1355 க. வீரப்ப பிள்ளை.	
260-A பா	ர	4	...	8-4	6	1	38	0 12.5	0 17	500 மா. நடராஜ்	
260-A பா	ர	4	...	8-4	6	1	38	0 17.0	0 24	2032 க. சாமி யப்பனும் மற்றும் ஐந்து பேர்களும்.	
261-பா	ர	4	...	8-4	6	1	38	0 25.5	0 37	500 மா. நடராஜ்	
261-பா	ர	4	...	8-4	6	1	38	0 17.5	0 24	1430 க. வைர முத்து.	
262-A பா	ர	4	...	8-4	6	1	38	0 01.0	0 06	1451 மதறான் செட்டிதாரு திமெண்ட் கார்ப்பரேஷன்.	
262-A பா	ர	4	...	8-4	6	1	38	0 86.5	1 19	1614 வீ. மாணிக் சும்(1), நிஷன் பன்(2).	
262-A பா	ர	4	...	8-4	6	1	38	0 81.5	1 12	500 மா. நடராஜ்	
262-A பா	ர	4	...	8-4	6	1	38	0 44.0	0 61	1355 க. வீரப்ப பிள்ளை.	
262-A பா	ர	4	...	8-4	6	1	38	0 50.0	0 69	758 வீ. பெரியம் மாள்.	

* விவரப்பட்டியலைப் பார்க்கவும்.

கிராம நிர்வாக அலுவலர்
18-கா. பிச்சம்பட்டி கிராமம்,
கரூர் வட்டம், கரூர் மாவட்டம்.



தமிழ்நாடு தமில்நாடு TAMIL NADU ரூ.20/-

8055
28/4/15
G. P. Panneer,
Madurai - 20.

14AB 923028

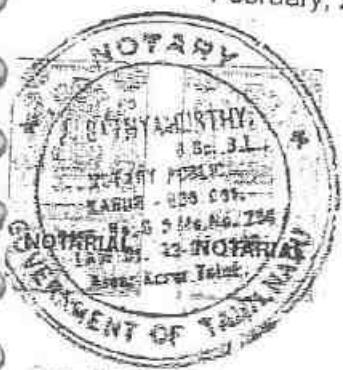
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M.K. கந்தசுமாரி, திரு. எஸ். என். கந்தசுமாரி
சுமார் கந்தசுமாரி, 28/2009/14AB
கந்தசுமாரி (கந்தசுமாரி), கந்தசுமாரி

CONSENT LETTER

I, G.P.PANNEER S/o M.Palanisamy, aged about 53 years, residing at No.31, Elangovadigal Street, K.K.Nagar, Madurai - 625020, I do hereby give my consent to M/s. M.P.GRANITE having office at 131/29, R.R.Complex, Kollapatti, Animoor Post, Tiruchengodu 637211.

To apply and quarry colour granite In S.F.No. 260/A1, 260/A2, 260/A3, 260/B1, 260/B2, 260/B3, 260/C, 262/A3(P), 262/A4(P), 262/A5(P), 262/A6(P), 262/A7, 262/A8(P), 262/B1, 262/B2, - Patta Number 2829, 2842, 2852 over an extent of 4.015 hectare in Pichampatti Village, Karur Taluk, Karur District.

This agreement shall be in force for a period of 35 years from the 3rd February, 2016.



Reg. No. G.O. No. 234 LAR
dated, 02.07.1970-Renewed
as Per G.O. (M) No. 339
dated, 11.06.2012. Expires
on 02.07.2017

[Signature]
S. Sathya Murthy
NOTARY PUBLIC
KARUR TALUK
03-02-16

[Signature]
Signature
Seen before me
P. Sathya Murthy
NOTARY PUBLIC
KARUR TALUK
03/02/16

Phone No: 281483
S. SATHYA MURTHY, S.Sc. S.L.
ADVOCATE & NOTARY PUBLIC,
WEST VANDIYAPURAM
KARUR - 625 020
PIN 625 020/7712

(145/2017)

1238/2017



தமிழ்நாடு தமிழ்நாடு TAMILNADU

B 866378



6992

M.P. Granite

17-8.17

Tiruchengode

Rs 25000/-

V. M. Subramanian
V. M. SUBRAMANIAN.
STAMP VENDOR.
L. No 44/97.
KARUR.

SANCTIONED IN G.O.(3D).No.10, INDUSTRIES (MMB2) DEPARTMENT.
DATED: 11-8-2017 FOR A PERIOD OF TWENTY YEARS.

APPENDIX - V

(See Rule 19A & 33 of TNMMCR-1959)

FORM OF JOINT AGREEMENT FOR QUARRYING AND CARRYING
AWAY MINOR MINERALS BY LESSEES IN RYOTWARI LANDS IN
WHICH THE MINERALS BELONG TO GOVERNMENT.

(Collector Ref: 122/Mines/2016)

THIS AGREEMENT MADE the 18th day of August - 2017, between Thiru.G.P. Panneer, S/o. M.Palanisamy, residing at 31, Elangovadigal Street, K.K.Nagar, Madurai (hereinafter referred as " the Registered holder " which expression shall where the context so admits include their heirs, executors, administrators, legal representatives and assigns) of the first part and M/s.M.P.Granite, 131/29, R.R.Complex, Kollapatti, Animoor Post, Thiruchengode, Namakkal - 637211 represented by its Partner Thiru. G.P. Panneer, S/o. M.Palanisamy, residing at 31, Elangovadigal Street, K.K.Nagar, Madurai (hereinafter referred to as "the Lessee" which expression shall where the context so admits shall include his heirs, executors, administrators, legal representatives and assigns) of the second part, the Governor of Tamil Nadu (hereinafter referred to as the Government

For M.P. GRANITE,

Partner.
REGISTERED HOLDER / LESSEE



DISTRICT COLLECTOR,
KARUR.



தமிழ்நாடு தமில்நாடு TAMILNADU



6993

18-8-17

(Rs. 25000/-)

M. P. Granite

Tiruchengode

B 866379

V. M. Subramanian
V. M. SUBRAMANIAN,
STAMP VENDOR,
L. No 44/97,
KARUR.

which expression shall where the context so admits shall include his successors in office and assigns) of the third part.

WHEREAS the Registered holder holds the lands described in the schedule hereto and intended, to lease out to the Lessee of the said lands for the purpose of quarrying Multi Colour Granite in the said lands and to deposit mining waste in the said lands and has lodged with the District Collector the lease and accurate map or sketch of the said lands.

AND WHEREAS, Lessee or tenant of the Registered holder has made application to the Government through the District Collector of the district of Karur (hereinafter referred to as "the Collector") seeking grant of quarrying lease for quarrying Multi Coloured Granite in the said lands and to deposit mining waste in the said lands and has lodged with the District Collector an accurate map or sketch of the said lands;

AND WHEREAS, the Government has granted a quarrying lease to the Lessee or tenant of the Registered holder and allowed him to commence quarrying operations for Multi Coloured Granite in the said lands and to deposit mining waste thereon by the Lessee or tenant of the Registered holder;

AND WHEREAS the State Government is prepared to allow the said tenant of the Registered holder or Lessee to commence mining operations and to deposit

For M. P. GRANITE,

G. P. Rammen

Partner

REGISTERED HOLDER / LESSEE



V. M. Subramanian
DISTRICT COLLECTOR,
KARUR.



தமிழ்நாடு தமில்நாடு TAMILNADU

B 866380



6994
18-8.17
Rs 25000/-

M. P. Granite
Tiruchengode

V. M. Subramanian
V. M. SUBRAMANIAN
STAMP VENDOR
L. NO. 44/97.
KARUR.

mining waste in or on the said lands described in the schedule for a term of Twenty years beginning on the 18th..... day of August..... 2017 upon the tenant of the Registered holder and the Lessee entering into the agreement herein contained. ✓

AND WHEREAS, the tenant of the Registered holder or Lessee has deposited with the District Collector the sum of Rs.20,000/-remitted at State Bank of India, Thanthoni in Chalan No.Nil, Dated: 17.08.2017 as security for the due performance of the covenants, agreements and provisos or damage which may be incurred by the Government by reason of any of the said lands described in the schedule hereto being rendered unfit for cultivation by the mining operations therein or by the deposit of mining waste thereon by either the Registered holder or the Lessee. ✓

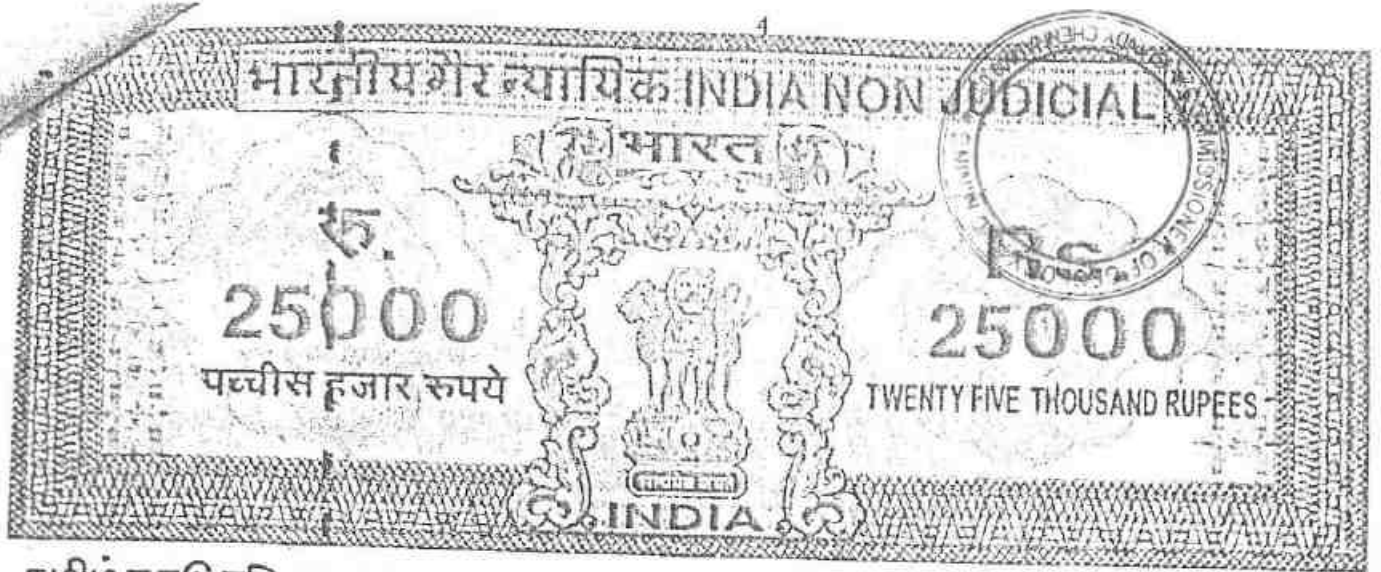
AND WHEREAS, the Lessee has at the request of the Registered holder and in consideration of such approval by the District Collector of the mining operations as herebefore recited agreed to join in these presents for the purpose of entering into covenants, agreements and provisos hereinafter contained as surety for the Registered holder. ✓

I. NOW THESE PRESENTS WITNESS and the Registered holder and the Lessee do hereby jointly and severally and each of them doth individually hereby covenant and agree with the Government as follows: ✓

For M.P. GRANITE.
Partner.
REGISTERED HOLDER / LESSEE



V. M. Subramanian
DISTRICT COLLECTOR,
KARUR.



தமிழ்நாடு தமில்நாடு TAMILNADU 25000 -

M.P. Granite
Tiruchengale

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18 AUG 2017

B 866143
R. RAMASAMY,
STAMP VENDOR
L.No:3861/83
D.M.COURT,KARUR.

1. To carry on mining operations during the said term in a proper and workman like manner and to deposit mining waste on the lands described in the schedule hereto and to answer and to account at all reasonable times to the Government for all acts and defaults committed by any servants, agents or workmen employed by the Registered holder or Lessee in carrying on such operations or in making such deposits.

2. To pay on the ...17th day of ...August... 2017 next and on the ...17th day of ...August... of every succeeding year so long as the operations aforesaid are carried on, into the State Bank of India, Thanthoni Branch in Karur District to the credit of the Government in addition to the land assessment for the time being payable in respect of the said lands Seigniorage on the minerals mined at the rates prescribed by the Government from time to time.

3. To abide by the Rules prescribed by the Government from time to time regarding quarrying of minor minerals (Multicoloured Granite).

4. To keep correct accounts in such form as the District Collector shall from time to time require and direct showing the quantities and other particulars of all minerals obtained by the Registered holder or the Lessee from the said lands and also the number of persons employed in carrying on the said mining operations therein and to prepare and maintain from time to time when so directed by the said District

For M.P. GRANITE
Partner,
REGISTERED HOLDER / LESSEE



District Collector,
KARUR.



தமிழ்நாடு தமில்நாடு TAMILNADU

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6995
18-8-17
PS 18/17

M.R. Granite
Tiruchengode.

V. M. Subramanian
V. M. SUBRAMANIAN.
STAMP VENDOR,
L. NO- 44/97.
KARUR.

Collector, Karur complete and correct plans of all mines and working in the said lands and to allow any officer thereunto authorised by the Commissioner/Director of Geology and Mining, Tamil Nadu, from time to time and at all times to examine such accounts and any such plans and to supply and furnish when so required all such information and returns regarding all or any of the matters aforesaid as the Government may from time to time require and direct.

5. To allow any officer authorized by the Commissioner/Director of Geology and Mining, Tamil Nadu in that behalf from time to time and at all times to enter upon any part of the said lands where mining operations may be carried on for the purpose of inspecting the same.

6. To forthwith send to the District Collector, Karur a report of any accident which may occur at or in the said land and also of the discovery therein of any minerals other than Multi Coloured Granite.

7. Not to claim any remission of assessment in respect of any of the said lands which shall be rendered unfit for surface cultivation by the carrying on of any mining operations or by the deposit of mining waste unless thirty times of the assessment thereon has been deducted under proviso 2 hereunder.

II. PROVIDED ALWAYS and it is hereby further agreed by and between the parties as follows:-

For M.R. GRANITE
Partner
REGISTERED HOLDER / LESSEE



DISTRICT COLLECTOR,
KARUR.

6/21



தமிழ்நாடு தமில்நாடு TAMILNADU



6997
18.8.17
Rs 15000/-

M.P. Granite
Tiruchengode.

875097

V. M. Subramanian
V. M. SUBRAMANIAN,
STAMP VENDOR,
L. NO 44/97,
KARUR.

1. That it shall be lawful for the Registered holder or Lessee as the case may be at any time to cease mining operations under these presents provided the Registered holder or Lessee shall pay the Government or the District Collector the land assessment, cess and seigniorage payable by the Registered holder or the Lessee under these presents upto the end of the year in which the Registered holder or the Lessee shall cease such minimum operations and shall restore the said lands fence or fill in abandoned pits and excavations therein if required by the District Collector as next hereinafter provided and upon, the Registered holder or the Lessee so doing their presence shall cease and determine.

2. That in case the Registered holder shall relinquish the whole or part of the said lands in case or the expiry or sooner determination of this agreement then and in any such case, the Registered holder in the case of relinquishment and the Registered holder and the Lessee in other cases shall restore said lands or the area relinquished or so much thereof as the District Collector shall require to be restored to a state fit for cultivation and shall securely and permanently fence or fill in all abandoned pits and excavation therein as the District Collector shall require to be so fenced or filled in and in case the Registered holder or the Lessee shall be fail, or neglect any such lands with the Registered holder or the Lessee be required to restore to a state fit for cultivation or to so fence or fill in any such abandoned pit or excavation which the

For M.P. GRANITE,
Partner
REGISTERED HOLDER/LESSEE



DISTRICT COLLECTOR,
KARUR.



தமிழ்நாடு தமிழ்நாடு TAMILNADU

875096



6996
18-8-17
1315200/-

M.P. Granite
Tiruchengode

V.M. Subramanian
V. M. SUBRAMANIAN
STAMP VENDOR
L. NO. 44/97
KARUR.

Registered holder or the Lessee shall be required to so fence or fill them and in any such case it shall be lawful for the District Collector to so restore any such lands or as the case may be so fence or fill in any pit or excavation at the expense of the Registered holder or the Lessee and to apply the said sum of Rs.20,000/- 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 as the case may be or to meet thirty times the assessment in the area rendered uncultivable, it shall be lawful for the Government to recover the balance by resort to Civil Court.

3. That all land assessment, cess and seigniorage payable under these presents shall be recoverable under the provisions of the Tamil Nadu Revenue Recovery Act, 1864, or any subsisting statutory modification thereof, as if the same were arrear of land revenue.

4. That in the event of any breach of the Registered holder or any of the conditions of these presents, it shall be lawful for the Government to levy enhanced seigniorage subject to the maximum of fifteen times the normal rate or for the District Collector to give notice in writing to the Registered holder of his intention to cancel

For M.P. GRANITE
Partner,
REGISTERED HOLDER/LESSEE



DISTRICT COLLECTOR,
KARUR.



காரைக்காடு தமிழ்நாடு TAMILNADU

U 635442

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12.8.17

Rs 5000/-

M.P. Granite
Tiruchengodu.

V. M. Subramanian
V. M. SUBRAMANIAN
STAMP VENDOR,
L NO 44/97,
KARUR.

these presents whereupon the same shall stand cancelled but without prejudice to any rights which the Government may have against the Registered holder in respect of any antecedent claim or breach of covenant or condition.

5. That any notice to be given to the Registered holder or the Lessee 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.

6. Should any question or dispute arise regarding an agreement executed in pursuance of these Rules or any matter or thing connected therewith or the powers of the Registered holder there under, the amount or payment of the seigniorage fee or area assessments made payable thereby, the matter in issue shall be decided by the Commissioner/Director of Geology and Mining. In case the Registered holder or the Lessee are not satisfied with decision of the Commissioner/Director of Geology and Mining, the matter shall be referred to the State Government.

**CONDITIONS SPECIFIED IN GO.(3D)NO.10, INDUSTRIES (MMB2)
DEPARTMENT, DATED 11.08.2017.**

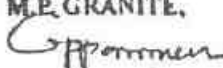
- 1) The applicant shall execute an agreement within one month from the date of receipt of the Government order.
- 2) The date of commencement of the period of lease shall be the date on which the agreement is executed.

For M.P. GRANITE,
Partner,
REGISTERED HOLDER/LESSEE

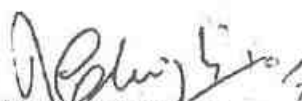


DISTRICT COLLECTOR,
KARUR.

- 3) The applicant shall pay seigniorage or dead rent whichever is more, in respect of the actual quantity of granite removed at the rate prescribed from time to time in Appendix-II of the Tamil Nadu Minor Mineral Concession Rules, 1959.
- 4) The applicant should keep correct accounts showing the quantities and other particulars of all minerals obtained from the lands permitted to quarry.
- 5) The applicant should also allow any officer authorized by the District Collector 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.
- 6) The applicant shall carry out the quarrying operations in skilful, scientific systematic manner keeping in view, the proper safety of the labour conservation of minerals and preservation of environment ecology.
- 7) The applicant shall allow any officer authorized by the District Collector and Director of Geology and Mining to enter upon the area and inspect for the purpose mentioned in conditions 4 and 6 above and also carry out the directions issued to the satisfaction of the above said authorities.
- 8) No quarrying activities connected there to shall be done before the execution of the agreement and registration is at the cost of the applicant.
- 9) No hindrance shall be caused to the adjoining pattadars or public.
- 10) The applicant should restrict his mining operation strictly within the permitted area as defined in the sketch.
- 11) The terms and conditions area also subject to such further modifications, deletion and additions alternation as may be ordered by the Government to be included in the agreement to be executed for this purpose.
- 12) The applicant should maintain at his cost proper signboards indicating the survey numbers, years of the lease, name of the lease holder and the leased period to the satisfaction of the District Collector, Director of Geology and Mining and maintain it all time at the quarry site.
- 13) No quarrying shall be done within a distance of 7.5 metres of the boundaries of the permitted area.
- 14) The applicant should make his own arrangements to form the approach road from the public road to the place of his quarry.
- 15) The lessee shall strictly adhere to the statutory and safety requirements.
- 16) The waste materials generated during quarrying operation shall be dumped only in the area granted under lease.
- 17) 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.

For M.P. GRANITE,

 Partner
 REGISTERED HOLDER / LESSEE




 DISTRICT COLLECTOR,
 KARUR.

18) That the approval of the mining plan does not in any way imply the approval of the Government in terms of any other provision, Mines and Minerals (Development and Regulation) Act, 1957, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Indian Explosives Act 1884, (Central Act IV of 1884) and the rules made there under and the Tamil Nadu Minor Minerals Concession Rules, 1959.

19) That the mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.

SPECIAL CONDITIONS IMPOSED IN G.O.(3D) NO.10 Industries (MMB2)
Department, Dated: 11.08.2017

1. A safety distance of 7.5 meters has to be provided for the adjacent patta lands.
2. No hindrance shall be caused to the adjacent pattadars while quarrying and transportation of Granite.
3. A safety distance of 50 meters should be maintained to the low tension power line passing through the S.F.No. 262/A2.
4. A safety distance of 50 meters should be provided to the Chettinad railway track passing North - South direction through S.F.No. 259 at a distance of 35 meters from the western boundary of the applied area.
5. The applicant firm has to produce latest Mining due clearance certificate in respect of quarry leases granted in favour of the applicant firm in Namakkal District before the grant of quarry lease.
6. The applicant should fence the lease granted area with Barbed wire before the execution of lease deed as follows:-
 - (i) The pillar posts shall be firmly grounded with concrete foundation of height not less than 2 meters with a distance between two pillars shall not be more than 3 meters.
 - (ii) The applicant shall incorporate the DGPS readings for the entire boundary pillars of the area and the same should be clearly showed in the mining plan.
7. The lessee shall strictly adhere to the statutory and safety requirements.
8. The waste materials generated during quarrying operation shall be dumped only in the area granted under lease.
9. 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.
10. The lease grantee shall submit scheme of mining; mine closure plan and other statutory requirements within the time stipulated for submission of the above, as per rules.

For M.P. GRANITE
Gppm
Partner
REGISTERED HOLDER / LESSEE



DISTRICT COLLECTOR,
KARUR.

11. The District Collector, Karur shall obtain a sworn-in-affidavit from the appellant containing the above conditions before execution of lease deed and also ensure that the instructions issued in the Government Letter No.12789/MMB.2/2002-7, Dated:9.1.2003 are complied with.

**Conditions imposed by the District Level Environment Impact
Assessment Authority
DEIAA-DIA/TN/MIN/5622/2017-KRR Ec.No.22/2017/Mines,
Dated:02.08.2017**

1. NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.
2. The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.
3. 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.
4. 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.
5. The proponent shall ensure that First Aid Box is available at site.
6. The excavation activity shall not alter the natural drainage pattern of the area.
7. The excavated pit shall be restored by the project proponent for useful purposes.
8. The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.
9. The quarrying operation shall be restricted between 7AM and 5 PM.
10. 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.
11. A minimum distance of 15 mts. from any civil structure shall be kept from the periphery of any excavation area.
12. 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.
13. 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.
14. 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.
15. Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
16. The explosives shall be stored at site as per the conditions stipulated in the permits issued by the licensing Authority.
17. Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.
18. 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.



For M.P. GRANITE
[Signature]
Partner/
REGISTERED HOLDER / LESSEE

[Signature]
DISTRICT COLLECTOR,
KARUR.

- 
19. 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.
 20. 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
 21. 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.
 22. Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoE&F, GoI to control noise to the prescribed levels.
 23. Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWB. Suitable measures should be taken for rainwater harvesting.
 24. Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.
 25. Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.
 26. 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.
 27. 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.
 28. 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.
 29. Rain water harvesting to collect and utilize the entire water falling in land area should be provided.
 30. Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the lease area and only the overflow after allowing settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season.
 31. The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, if it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out. District Collector/mining officer shall ensure this.
 32. No tree-felling shall be done in the leased area, except only with the permission from competent Authority.



M.P. GRANITE,
Gopparum
 Partner.

REGISTERED HOLDER/LESSEE

[Signature] 13/11
 DISTRICT COLLECTOR,
 KARUR.

- 
33. 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.
 34. It shall be ensured that the total extent of nearby quarries(existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 25 hectares within the mining lease period of this application.
 35. It shall be ensured that there is no habitation is located within 300 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 500m radius from the periphery of the quarry site.
 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 levelled 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 Project Proponent shall provide solar lighting system to the nearby villages.
 46. The Project Proponent shall comply with the mining and other relevant rules and regulations where ever applicable.
 47. Rainwater shall be pumped out Via Settling Tank only.
 48. Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.
 49. 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.
 50. 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.
 51. Safety equipments to be provided to all the employees.
 52. Safety distance of 50m has to be provided in case of railway, reservoir, canal/odai.
 53. The Deputy Superintendent of Police, Revenue Divisional Officer, and the Tahsildar concerned shall ensure that the proponent has engaged the blaster with valid Blasting license/certificate obtained from the competent authority before execution of mining lease.
 54. 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.
 55. The proponent shall erect the pillars in accordance with the Rules for depicting GPS details in the earmarked boundary of the quarry site to monitor electronically before execution of mining lease.
 56. The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh lease before commencing mining operation.



For M.P. GRANITE

Partner.

REGISTERED HOLDER/LESSEE

[Signature]
DISTRICT COLLECTOR,
KARUR.

- 
57. The proponent has to display the name board at the quarry site showing the details of Proponent, lease period, extent, etc., with respect to the existing activity before execution of mining.
 58. Heavy earth machinery equipments if utilized, after getting approval from the competent authority.
 59. Blasting shall be carried out after announcing to the public through adequate public address system to avoid any accident.
 60. Proper sanitation measures, first aid kit and protected drinking water should be provided to the labourers.
 61. The Environmental norms shall be monitored by the District Environmental Engineer, Tamil Nadu Pollution Control Board, Karur.
 62. Periodical medical examination of the quarry workers should be carried out by a registered medical practitioner and the report should be filed in the quarry office in a separate file and copy should be sent to the Deputy Director, Health Services, Karur.
 63. Artificial recharge structure should be constructed nearby the lease area to harvest the rain water.

General Conditions:

- 1) EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.
- 2) The Proponent shall obtain the Consent for Establishment from the TNPC Board before commencing the activity.
- 3) No change in mining technology and scope of working should be made without prior approval of the DEIAA, Karur District, Tamil Nadu.
- 4) No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.
- 5) Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- 6) Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.
- 7) A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.
- 8) Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
- 9) Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
- 10) Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
- 11) All Personnel shall be provided with protective respiratory devices including safety shoes, Masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
- 12) Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.
- 13) Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.



For M.R. GRANITE,

[Signature]

Partner.

REGISTERED HOLDER / LESSEE

[Signature] 15/12/21
DISTRICT COLLECTOR,
KARUR.

- 
- 14) The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.
 - 15) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its Regional Office located at Chennai.
 - 16) The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
 - 17) This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance.
 - 18) The DEIAA, Karur District may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.
 - 19) The DEIAA, Karur District may cancel the environmental clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this environmental clearance, if it is found or if it comes to the knowledge of this DEIAA, Karur District that the project proponent has deliberately concealed and/or submitted 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.

II. 7) The Lessee shall strictly comply with the provisions of labour legislations such as:-

- i. Minimum Wages Act 1948 and Central Rules, 1950.
- ii. Payment of Wages Act 1936 and Mines rules, 1955.
- iii. Equal Remuneration act and Central Rules, 1976.
- iv. The Explosives Act, 1884 (Central Act IV of 1884)
- v. The Lessee shall pay minimum rates of wages fixed by the Government to the labourers and furnish a certificate every month before 10th of the following



For M.R. GRANTIL.

Partner

REGISTERED HOLDER / LESSEE

[Signature] 16/11
DISTRICT COLLECTOR,
KARUR.

month to the District Collector, Karur that these wages are being paid. Non furnishing of this certificate will be taken as a violation of the conditions of this agreement. The Lessee should maintain the required registers as per labour laws. Any contravention of the provisions shall attract legal proceedings.

8) Any contravention of the Mines Act, 1952 shall amount to the cancellation of the lease.

9) Mining operations shall not be commenced/conducted unless a qualified manager and other supervisory staff appointed as required under the Metalliferrous Mines Regulations 1961 and relevant notices to be sent to the Director General of Mines safety, Dhanbad with a copy of the same to the concerned Director of Mines safety, Chennai Region, Chennai.

10) The Lessee should not employ child labourers in Granite quarry works.

11) Any other conditions stipulated by other Statutory / Government authorities shall be complied.

For the purpose of calculation of stamp duty Under Article No.35 (a) (IV) of the Stamp Act, 1% of total seigniorage amount of Rs.31,86,37,800/-, area assessment for Twenty years Rs.16,060/- and security deposit amount of Rs.20,000/- were taken into account.

In this regard for the total stamp paper value of Rs.31,86,800/- the lessee has submitted Stamp Paper worth of Rs.1,50,000/- only. The lessee should remit the remaining stamp duty of Rs.30,36,800/- in the Sub Registrar Office, Velliyani.

If any illicit quarrying is found in the area in S.F.No.260/A1, 260/A2, 260/A3, 260/B1, 260/B2, 260/B3, 260/C, 262/A3 (Part), 262/A4 (Part), 262/A5 (Part), 262/A6 (Part), 262/A7, 262/A8 (Part), 262/B1, 262/B2 of K.Pitchampatti Village, Karur Taluk, Karur District before the date of execution of lease deed this lease deed is liable to be cancelled and criminal action will be initiated.

For M.P. GRANITE,

Partner.

REGISTERED HOLDER / LESSEE



[Signature]
DISTRICT COLLECTOR,
KARUR.

- Karur ✓
- Karur ✓
- K.Pitchampatti
- Velliyana ✓
- 20 years ✓

From 18.08.2017 to 17.08.2037.						
Survey Number	Extent in hectares	Area Assessment Rs. P. (Rs.200/- per hect per year)	BOUNDARIES			
			North By S.F.No.	South By S.F.No.	East By S.F.No.	West By S.F.No.
260/A1	0.03.5	Rs. 16060/- (Rs.200/- per hect per year)	262/B2	260/C	260/A2,260/A3	359/B6
260/A2	0.27.5		262/B2	260/A3	260/B1	260/A1
260/A3	0.25.5		260/A2	260/C	260/B1	260/A1
260/B1	0.27.5		262/A6	260/C	260/B2	260/A2, 260/A3
260/B2	0.14.0		262/A7	260/C	260/B3	260/B1
260/B3	0.12.5		262/A8	260/C	261/1	260/B2
260/C	0.17.0		262/A1,A3, 260/B1,B2,B3	356/1,342/A1,3 42/A2	261/1	259/B2
262/A3 (P)	0.59.5		262/A2	262/A4, 262/A6	262/A3 (Part)	262/A3 (Part)
262/A4 (P)	0.29.0		262/A3	262/A5	262/A6	262/A4 (Part)
262/A5 (P)	0.36.5		262/A4	262/B1	262/A 6	262/A5 (Part)
262/A6 (P)	0.78.0		262/A3	260/B1,262/A7, 262/A8	262/A6(Part)	262/A4,A5, 262/B1,B2
262/A7	0.11.0		262/A6	260/B2	262/A8	262/A6
262/A8 (P)	0.16.0		262/A6	260/B3	262/A8(Part)	262/A7
262/B1	0.05.5		262/A5	262/B2	262/A6	259/B3
262/B2	0.38.5		262/B1	260/A2	262/A6	259/B4
Total	4.01.5					259



G. Springer
Partner

2. G. & C. 329 m. S. a. W. A. R. S. S. / O. S. a. W. A. R. S. S. 329. K. K. N. A. R. S. m. a. W. A. R. S. S.

Special Revenue Inspector
(Mines)
Rampur.

SK1

CERTIFICATE UNDER SECTION 42 OF STAMP ACT

SAL: 719 of 2017

I hereby certify that a sum of Rs. 30,340 Rupees Thirty Lakhs and thirty four thousand only or equivalent proper / deficit stamp duty has been levied under section 41 of the Stamp Act in respect of this instrument from PANNEER residing at Madurai

Velliyani

Date: 23/08/2017

Signature of SUB REGISTRAR & Collector
Under Section 41 of the Stamp Act.

Presented in the Office of SUB REGISTRAR of Velliyani and fee of Rs. 20330 paid between hours of 1 and 2 on 23/08/2017 by

1 Left Thumb



Name : PANNEER G.P
S/o PALANISAMY M
AS PER IN DOCUMENT

For M.P. GRANITE,
Partner.

Execution Admitted by

1 Left Thumb



Name : PANNEER G.P
S/o PALANISAMY M
AS PER IN DOCUMENT

For M.P. GRANITE,
Partner.



Endorsement Sheet no. 1 of 2

THE DISTRICT COURT
of the Registration Act

1 Dams.

AS PER IN
DOCUMENT

2 g. d. Casimiro

AS PER IN
DOCUMENT

1. பி.சி.சி. 2017-1238
பி.சி.சி. பி.சி.சி. பி.சி.சி.
2017-1238 பி.சி.சி. பி.சி.சி.
25 பி.சி.சி.

Lee

Velliyanai

சமீபத்தில்
பெயர்வியலான



⑧ ਉਰੂ :-


 ಕರ್ನಾಟಕ ಸರ್ಕಾರ
 ಆದಾಯ ಇಲಾಖೆ
 573355 (ಅಂ.
 24/10/2018)



Bnm: 25-9. 2017

Q2: Answer the question.


 உறுதுவாளர்
 பேரங்கியாளர்

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சிறப்பியல்பு எண் 23

புறப்படி.

எண் 63. 44

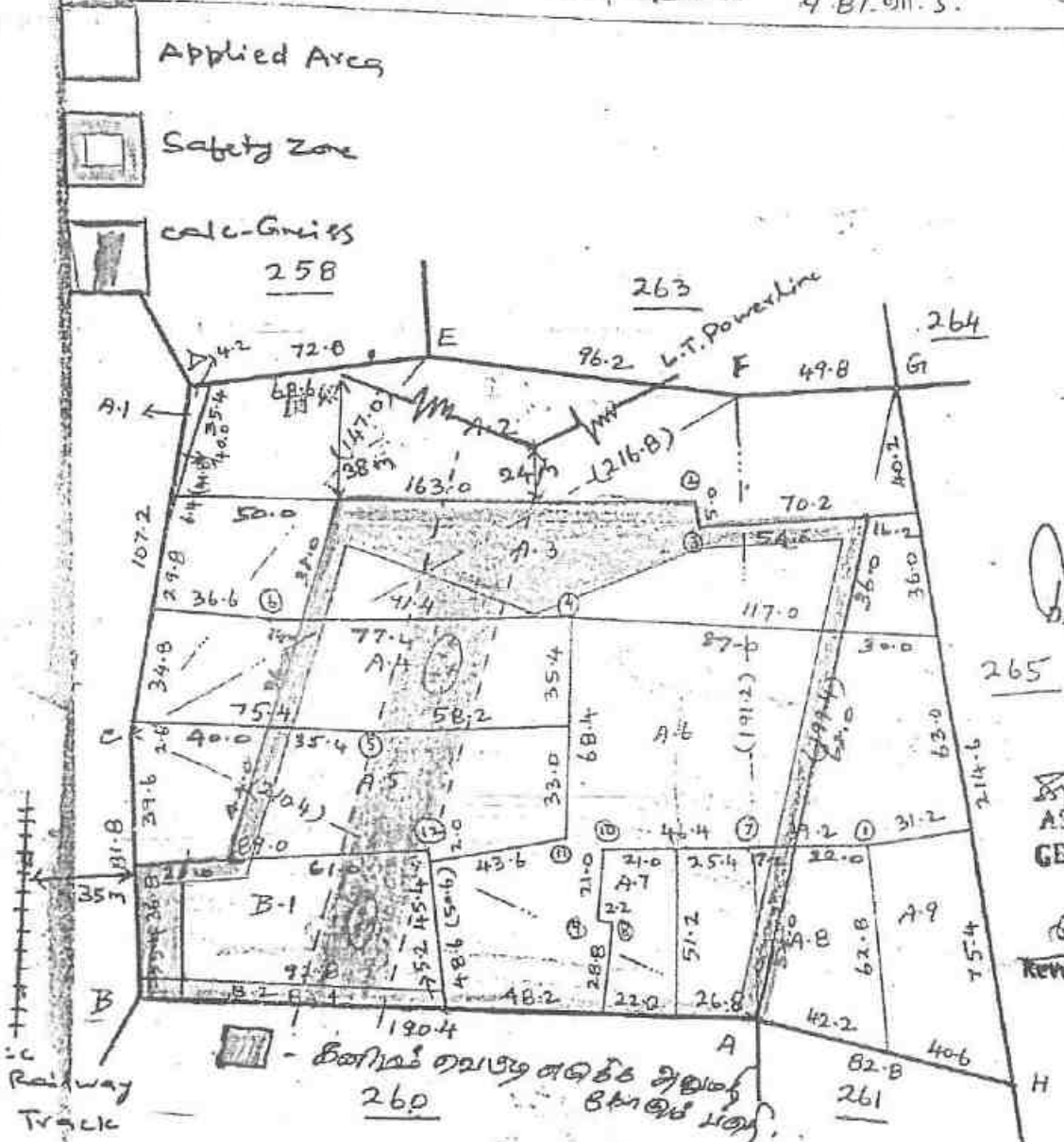
சிறப்பியல்பு

பெயர் கீழ்க் கிளவடி திட்டம்

எண். 242.

புறப்படி: சென்னை

4.B1. ஏ. 5.



[Signature]
DISTRICT COLLECTOR,
KARUR.

[Signature]
18.5.17
ASSISTANT DIRECTOR
GEOLOGY AND MINING
KARUR
[Signature]
11/2/14
Revenue Divisional Officer,
Karur.

For M.P. GRANITE,

Partner

REGISTERED HOLDER / LESSEE

L.

சிறப்பியல்பு எண் 23	54.2	8.4	8	4	31.4	72.2
சிறப்பியல்பு எண் 23	22.6	48.2	7	3	26.4	28.8
சிறப்பியல்பு எண் 23	A			2	22.0	25.4
சிறப்பியல்பு எண் 23	C	(216.8)				F
சிறப்பியல்பு எண் 23	115.4	26.4	11			G
சிறப்பியல்பு எண் 23	76.4	27.2	10			(214.6)
சிறப்பியல்பு எண் 23	64.0	7.8	9	5	36.8	150.6
சிறப்பியல்பு எண் 23	56.4					32.4
சிறப்பியல்பு எண் 23	8					77.6
சிறப்பியல்பு எண் 23						H



சிறப்பியல்பு எண் 23
சிறப்பியல்பு எண் 23

அளவு: 1:2000 மீட்டர்

சிறப்பியல்பு எண் 23
சிறப்பியல்பு எண் 23



தமிழ்நாடு தமிழ்நாடு TAMILNADU

Rs. 100.00

AE 545929

14801/08.07.12

ந. சதாசிவம்,

உரிமை எண் : 5/1995.

முத்திரைத்தாள் விநியோகம்
திருச்செங்கோடு.

PARTNERSHIP DEED OF

M P GRANITE

This deed of Partnership entered on 9th day of July 2012 into between:

1. N.MADHAVI W/O. G.P.PANNEER Indian, Hindu, aged about 40 years residing at 31 Elango Adigal street K.K.Nagar Madurai 625020.
2. G.P.PANNEER S/O PALANISAMY Indian, Hindu, aged about 48 years residing at 31 Elango Adigal street K.K.Nagar Madurai 625020.

Whereas the above said two parties have to carry on the business which is carried on under the name and style of M/S. M P GRANITE in accordance with the provision of the partnership deed entered on 9th July 2012.

Know all the men by these presence that we, the partners above referred to, entered into and constitute the partnership and we agree to start the business under the same name and style of "M P GRANITE" assuming all the responsibilities and liabilities of the firm.

G.P.PANNEER

N.MADHAVI



தமிழ்நாடு தமிழ்நாடு TAMILNADU

RS 100.00

AE 545933

14808 / 08.07.18

M.P. GRAMINE, TIRUCHENGODU

ந. சதாசிவம்,
உரிமம் எண்: 5/1895.
முத்திரைத்தரன் விற்பலையாக
திருச்செங்கோடு.

- 2 -

NOW THIS PARTNERSHIP DEED WITNESSETH AS FOLLOWS:

1. That the business of partnership shall be carried on at S.F.No.501/1, 501/2B Sithampoondi Village, Paramathi Vellore Taluk, Namakkal District and the Administrative office at Door No. 131/29 R R Complex, Kollapatti, Animoor Post, Tiruchengodu - 637211
2. That the business of the partnership concern shall carry on business of manufacture/ trade / purchase and sale of rough dimensional block of granite in and out side India. The firm carry on the execution of raising contracts for excavation of granite stones and civil contract work or labour etc. for central and state Government department and others. The firm shall also carry on manufacture / trade by cutting / purchase and sale of rough dimensional block of granite in and outside India, and allied business and to carry on any other business as the partners may desire to carry on.

G.P. Panneer
G.P.PANNEER

N. Madhavi
N.MADHAVI



தமிழ்நாடு தமில்நாடு TAMILNADU

₹100.00

AE 545934

14803 / 08.07.18

M.P. GRANTS, TAMILNADU

- 3 -

ந. சத்யசிவம்,
உரிமம் எண் 571905,
முத்திரைத்தாள் விநியோகம்
திருச்செங்கோடு.

3. The firm can acquire the land and obtain on lease under license or assignment or otherwise secure lands of every description and mines and running rights quarries, and to mine undertake and carry on the business of mining in all its branches, if any. To carry on the work of raising agent for a fixed sum agreed by an written agreement from time to time and to manufacture polished, semi - polished products and to do purchase and sale of mining land and also install polishing unit for processing.

4. That the capital required by the partnership business and when required shall be contributed by the partners as mutually agreed upon, and the investment of the partners at initial shall be

NAME OF THE PARTNER

AMOUNT(RS)

1.	Sri. G.P.PANNEER	2, 50, 000.00
2.	Sri. N.MADHAVI	2, 50, 000.00

5, 00,000.00

G.P.PANNEER

N.MADHAVI

5. The share in profit and Losses of the partnership concern be divided/borne as under

NAME OF THE PARTNER

RATIO

1.	Sri. G.P.PANNEER	50.00%
2.	Sri. N.MADHAVI	50.00%
		100.00%

6. It has been mutually agreed between the partners that the partners may contributed additional sum which may be credited as the current contribution either towards capital or current or loan or any other account.
7. Smt. N.MADHAVI, is to act as the Managing Partner and shall have all the powers to appoint labourers, clerks, staffs etc., in order to effectively carry on the business of the firm. He may be paid a monthly remuneration of Rs.7, 000/- (Rupees Seven Thousands only) and the same may be enhanced from time to time as may be mutually agreed upon by the partners, not exceeding the limits specified or deduction under section 40 (b) of the Income-tax Act, 1961 or any below than the allowable remuneration as determined on the closing day of the accounting year and the same shall be credited to the account of the partner concerned. If the same is found to be excessive, such excess of the allowable remuneration shall be treated as drawings of the partner concerned.
8. The Managing partner Smt. N.MADHAVI can undertake or can actively involve in any other trade, business either as a proprietor or in partnership with others or as a director of a company without causing any hindrance to this business.
9. The none of the partners shall be surety nor give any guarantee for any third party or parties or parties on behalf of the partnership concern without the consent of the other partners in writing.
10. That the partnership shall be entitled to open and operate bank account or accounts in favour of the firm, Smt. N.MADHAVI has to operate the Bank Account in favour of the firm.
11. That the partnership shall be entitled to hypothecate mortgage of the pledge any stock -in - trade of the partnership business for any arrangement of cash - credit, overdraft of loan account and to arrange for bill - discounting, Bill purchases etc., with any bank or banks or any other parties or party on such terms and conditions as may be mutually agreed upon amongst the partners.
12. That the books of accounts of the firm shall be closed once a year on 31st March and thereafter at the end of every financial year and account shall be maintained on mercantile basis and profits and loses of the business shall be divided and distributed between in the proportion set for the in col.NO.5

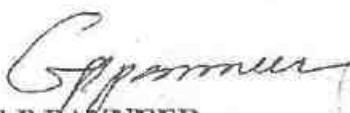
G.Panneer
G.P.PANNEER

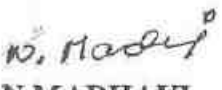
N.Madavi
N.MADHAVI

13. That the books of accounts of the partnership concern shall be regularly maintained and kept at the principal Place of business or as mutually agreed upon by the partners and the same shall not be removed without permission of the partners and that the partners shall be have access to the book of accounts.
14. That none of the partners can retire or withdraw from the business without by giving one month notice in writing of his intention to retire. The retiring partner shall be responsible for all the liabilities in connection with the partnership business outstanding upon the date of his retirement and shall have to pay of his share of such liabilities before his retirement.
15. That in case of death of any one of the partners the partnership business shall be continued and carried on by the other partners along with the administrator, executor or legal heirs of the deceased or retired partner as may be.
16. Licenses and permits necessary for carrying on the business of the firm may stand either in the name of the firm or the name of any one of the partners.
17. All assets purchased out of the funds of the firm are treated as the assets of the firm in its accounts and shall belong to the firm irrespective of the fact that such assets stand in the individual names of any one of the parties referred to above shall also be the business of the firm.
18. The terms and conditions of this deed may be altered, modified, varied, added or cancelled by any agreement arrived at between them and signed by all the partners thereof.
19. It is agreed between the partners that in respect of matters not specifically provided by these presence, the provisions of the partnership Act 1932 and any other statutory modification there of shall apply.

All disputes, differences and questions, whatsoever, which may at any time arise between the partners or their respective legal representatives relating to the interpretation of the terms and conditions hereof any matter concerning or affecting the rights of or touching the business of partnership, either during the tenure of partnership or after the dissolution of the firm shall be referred to arbitration in accordance with the provisions of the Indian Arbitration Act, 1940.

In witness where of the partners hereto have affixed their signature here to this day, month and year first above written.


G.P. PANNEER


N. MADHAVI

WITNESSES:

1.  R. Sundararamy & M. Rajagopal, Jointly



தமிழ்நாடு தமில்நாடு TAMIL NADU

M.P. கிரானைட்

559

61AB 474700

சுற்றுலாத்துறை

1 FEB 2019

G. BASKARAN,
STAMP VENDOR,

L. No: 5362/A1/92-6,

(6) Vaidyapuri Nagar Ind Cross,
KARUR, TAMIL NADU.

CODICIL

Further to our Partnership deed dated 09th July 2012 entered between Mr. G.P. PANNEER and Mrs. N. MADHAVI it is further resolved to authorize Mr. G.P. PANNEER to sign all GOVERNMENT DOCUMENTS LIKE DIRECTOR GENERAL OF MINES AND SAFETY, DIRECTOR OF MINES AND GEOLOGY, SALES TAX, INCOME TAX, CENTRAL EXCISE, POLLUTION CONTROL BOARD (SEIAA, DEIAA and TNPCB), EXECUTION OF MINING LEASE AGREEMENT, SUB-REGISTER OFFICE DOCUMENT REGISTRATION, OPEN AND OPERATE ANY BANK ACCOUNT AND ETC., in favour of the Firm name M.P. GRANITE.

G. P. Panneer

(G.P. PANNEER)

P. N. Gopalakrishnan

P. N. GOPALAKRISHNAN, B.A., LL.B.,
ADVOCATE & NOTARY

No: 65/41A, 1st Cross, Madras Road 285

KRISHNAGIRI-635 001





ANNEXURE XI
ANNEXURE XI



இந்திய அரசாங்கம்

Government of India

பன்னீர் பழனிச்சாமி

Panneer Palanisamy

தந்தை : பழனிச்சாமி

Father : Palanisamy

பிறந்தவருடம் / Year of Birth : 1962

ஆண்பால் / Male



6881 6133 0075

ஆதார் - சாதாரண மனிதனின் அதிகாரம்



ஆதார்

முகவரி:

S/O: பழனிச்சாமி, எண் 31,
இளங்கோ அடிகள் தெரு, கே கே
நகர், ஆளவந்தான், மதுரை,
காந்தி நகர் (மா), தமிழ் நாடு.
625020

Unique Identification Authority of India

Address:

S/O: Palanisamy, NO 31, ILNAGO
ADIKAL STREET, K-K NAGAR,
Alavandan, Madurai, Gandhi
Nagar (ma), Tamil Nadu, 625020

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THIRU.G.GOVINDARAJ, I.A.S.,
CHAIRMAN /
DISTRICT COLLECTOR.

Karur District Environment
Impact Assessment Authority,
Room No.302,Collectorate,
Karur.

ENVIRONMENTAL CLEARANCE

Lr.No.DEIAA-DIA/TN/MIN/5622/2017-KRR Ec.No.22/2017/Mines, Dated: 02.08.2017

To,

M/s.M.P.Granite,
 No.131/29, R.R. Complex,
 Kollapatti, Animoor Post,
 Tiruchengode Taluk,
 Namakkal District.

Sir,

Sub: DEIAA - Proposed - Multicoloured Granite - quarry at
 S.F.Nos.260/A1 (0.03.5 hecets), 260/A2 (0.27.5 hecets),
 260/A3 (0.25.5 hecets), 260/B1 (0.27.5 hecets), 260/B2
 (0.14.0 hecets), 260/B3 (0.12.5 hecets), 260/C (0.17.0
 hecets), 262/A3 (Part) (0.59.5 hecets), 262/A4 (Part) (0.29.0
 hecets), 262/A5 (Part) (0.36.5 hecets), 262/A6 (Part) (0.78.0
 hecets), 262/A7 (0.11.0 hecets), 262/A8 (Part) (0.16.0
 hecets), 262/B1 (0.05.5 hecets), 262/B2 (0.38.5 hecets) -
 K.Pitchampatti Village - Karur Taluk & District by
M/s.M.P.Granite - Environmental Clearance - Reg.

- Ref: 1. Your Application for Environment Clearance
 transferred from SEIAA, Dated.30.11.2016, Date of
 online application submitted to DEIAA,
 Dated:28.3.2017 and the date of receipt of application
 11.7.2017.
2. Minutes of the DEAC meeting No.2 DEAC held on
 DEAC meeting date 26.7.2017.
3. Minutes of the DEIAA meeting held on DEIAA meeting
 date 31.7.2017.

-o0o-

Details of Minor mineral Activity:-

This has reference to your application first cited. The proposal is for
 obtaining Environmental Clearance for mining / quarrying of category 'B2'
 minor minerals based on the particulars furnished in your application as
 shown below:

1.	Name of Project Proponent and address	M/s.M.P.Granite, No.131/29, R.R. Complex, Kollapatti, Animoor Post, Tiruchengode Taluk, Namakkal District.
2.	Location of the Proposed Activity	
	Survey Number	260/A1, 260/A2, 260/A3, 260/B1, 260/B2, 260/B3, 260/C, 262/A3 (Part), 262/A4 (Part), 262/A5 (Part), 262/A6 (Part), 262/A7, 262/A8 (Part), 262/B1, 262/B2

	Latitude and Longitude	:	10°46'47.17" N 78°05'01.75" E
	Village	:	K.Pitchampatti
	Taluk	:	Karur
	District	:	Karur
3.	Proposed Activity		
	i. Minor mineral	:	Multicoloured Granite
	ii. Mining Lease Area	:	4.01.5 hec
	iii. Approved quantity	:	Multicoloured Granite =36045 M ³ for first 5 years.
	iv. Depth of quarrying	:	13M below ground level
	v. Type of quarrying	:	Open cast Semi-mechanized
	vi. Category (B1/B2)	:	"B2" category.
	vii. Precise Area Communication	:	Government letter No.11030/MMB.2/2016-1/Industries department dated:17.10.2016.
	viii. Mining Plan approval	:	Commissioner of Geology and Mining, Chennai Letter No.5524/MM2/2016, Dated:24.11.2016.
	ix. Quarrying lease period	:	20 Years Environment Clearance is granted for first 5 years only.
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	:	40 Nos.
6.	Utilities		
	i. Source of Water	:	Water vendors / Existing borehole

2. NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.
3. The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.
4. 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.
5. 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.
6. The proponent shall ensure that First Aid Box is available at site.
7. The excavation activity shall not alter the natural drainage pattern of the area.
8. The excavated pit shall be restored by the project proponent for useful purposes.
9. The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.
10. The quarrying operation shall be restricted between 7AM and 5 PM.
11. 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.
12. A minimum distance of 15 mts. from any civil structure shall be kept from the periphery of any excavation area.
13. 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.
14. 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.
15. 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.
16. Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
17. The explosives shall be stored at site as per the conditions stipulated in the permits issued by the licensing Authority.
18. Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.
19. 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.

	ii.	Water requirement"	:	
		1. Drinking & domestic purposes (in KLD)	:	0.3 KLD
		2. Dust suppression (in KLD)	:	0.3 KLD
		3. Afforestation	:	0.4 KLD
	iii.	Power requirement	:	
	a.	Domestic purpose	:	Fuel is used for operating machineries and vehicles during quarrying process and electricity will be used only for mines office.
	b.	Industrial purpose	:	
7.		Cost		
	i.	Project Cost	:	Rs.2,28,50,000/-
	ii.	EMP Cost	:	Rs.2,55,000/-
8.		Public Consultation:-	:	Not required as per O.M. dated 24.12.2013 of MoEF, GOI
9.		Date of Appraisal by DEAC:	:	26.7.2017
		Agenda No.	:	2 nd Meeting -02
10.		Date of review / discussion by DEIAA and the Remarks:-		
		The proposal was placed before the DEIAA in its DEIAA meeting No.2 held on 31.7.2017 and the Authority after careful consideration, decided to grant Environmental Clearance to the said project Mining of "Multicoloured Granite" subject to the terms and conditions stipulated under the provisions of Environment Impact Assessment Notification, 2006 as amended.		
11.		Validity:		
		This Environmental Clearance is granted to Mining of "Multicoloured Granite" for the production quantity of production for the period of "five years" from the date of execution of the mining lease period.		

Conditions to be Complied before commencing mining operations:-

1. The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing the public that
 - I. The project has been accorded Environmental Clearance.
 - II. Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.
 - III. Environmental Clearance may also be seen on the website of the DEIAA.
 - IV. The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the DEIAA.

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.

S/d G.Govindaraj
CHAIRMAN
DEIAA

/ True copy / By Order /

MEMBER SECRETARY
DEIAA

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, Tamil Nadu 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 (Cuindy, Chennai-32).
7. The Chairman, SEIAA, Panagal Building, Chennai.
8. The Commissioner of Geology and Mining, Guindy, Chennai-32
9. E1 Division, Ministry of Environment and Forests Paryavaran Bhawan, New Delhi.
10. Spare.

20. 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.
21. 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
22. 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.
23. Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoE&F, GoI to control noise to the prescribed levels.
24. Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWB. Suitable measures should be taken for rainwater harvesting.
25. Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.
26. Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.
27. 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.
28. 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.
29. 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.
30. Rain water harvesting to collect and utilize the entire water falling in land area should be provided.
31. Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the lease area and only the overflow after allowing settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season.
32. The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular

monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, if it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out. District Collector/mining officer shall ensure this.

33. No tree-felling shall be done in the leased area, except only with the permission from competent Authority.
34. 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.
35. It shall be ensured that the total extent of nearby quarries(existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 25 hectares within the mining lease period of this application.
36. It shall be ensured that there is no habitation is located within 300 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 500m radius from the periphery of the quarry site.
37. Ground water quality monitoring should be conducted once in 3 Months.
38. Transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village road.
39. Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF , GOI.
40. Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF , GOI..
41. Bunds to be provided at the boundary of the project site.
42. 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.
43. At least 10 Neem trees should be planted around the boundary of the quarry site.
44. Floor of excavated pit to be levelled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.
45. The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity.
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, Gol, 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.

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 50m has to be provided in case of railway, reservoir, canal/odai.
54. The Deputy Superintendent of Police, Revenue Divisional Officer, and the Tahsildar concerned shall ensure that the proponent has engaged the blaster with valid Blasting license/certificate obtained from the competent authority before execution of mining lease.
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 mining 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 lease before commencing mining operation.
58. The proponent has to display the name board at the quarry site showing the details of Proponent, lease period, extent, etc., with respect to the existing activity before execution of mining.
59. Heavy earth machinery equipments if utilized, after getting approval from the competent authority.
60. Blasting shall be carried out after announcing to the public through adequate public address system to avoid any accident.
61. Proper sanitation measures, first aid kit and protected drinking water should be provided to the labourers.
62. The Environmental norms shall be monitored by the District Environmental Engineer, Tamil Nadu Pollution Control Board, Karur.
63. Periodical medical examination of the quarry workers should be carried out by a registered medical practitioner and the report should be filed in the quarry office in a separate file and copy should be sent to the Deputy Director, Health Services, Karur.
64. Artificial recharge structure should be constructed nearby the lease area to harvest the rain water.

General Conditions:

- 1) EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.
- 2) The Proponent shall obtain the Consent for Establishment from the TNPC Board before commencing the activity.
- 3) No change in mining technology and scope of working should be made without prior approval of the DEIAA, Karur District, Tamil Nadu.
- 4) No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.
- 5) Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- 6) Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.

- 7) A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.
- 8) Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
- 9) Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
- 10) Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
- 11) All Personnel shall be provided with protective respiratory devices including safety shoes, Masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
- 12) Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.
- 13) Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.
- 14) The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.
- 15) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its Regional Office located at Chennai.
- 16) The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
- 17) This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance.
- 18) The DEIAA, Karur District may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.
- 19) The DEIAA, Karur District may cancel the environmental clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this environmental clearance, if it is found or if it comes to the knowledge of this DEIAA, Karur District that the project proponent has deliberately concealed and/or submitted 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

சான்று

கரூர் மாவட்டம் கரூர் வட்டம் கே.பிச்சம்பட்டி கிராம முகவரியில் இயங்கும் MP Granite என்ற பெயரில் கனிமம் வெட்டி எடுக்க விண்ணப்பித்துள்ள மேற்படி கரூர் மாவட்டம்,வட்டம் கே.பிச்சம்பட்டி கிராம புல எண்கள் 260/A1, 260/A2,260/A3,260/B1,260/B2,260/B3,260/C, 262A3,262A4,262A5,262A6, 262A7,262A8 262/B1,262B2 மொத்தம் 4.01.05 ஹெக்டர் நிலப்பரப்பை சுற்றி 300 மீட்டர் சுற்றளவில் புராதன சின்னங்களோ கோவில்களோ உயர் மின்னழுத்த கம்பிகளோ மற்றும் தேசிய நெடுஞ்சாலைகளோ அரசு அங்கீகரிக்கப்பட்ட வீட்டுமனைகளோ . சரணாலயங்கள் மற்றும் ஆறுகள் எதுவும் இல்லை என்று சான்றளிக்கிறேன். (இது சுற்றுகுழல் அனுமதி பெற மட்டும் பொருந்தும்)

ச.மெய்யம்
கிராம நிர்வாக அலுவலர்
15-கா. பிச்சம்பட்டி கிராமம்,
கரூர் வட்டம், கரூர் மாவட்டம்.



TEST REPORT

Report Number: ABMEL/TR-30/2025-2026		Report Date:21.02.2026	
Customer Name /Address	M/s. G.P. EXPORTS No.12/128, Thalappatti, K. Pitchampatti, Karur Taluk, Karur District.		
Sample Mark	Core Zone	Sample Code	ABMEL/W/30(a)
Date of Sampling	16.02.2026	Sample Description	Colourless liquid
Sample Received on	17.02.2026	Sampling Method	ABMEL/QSP/20
Test Commenced on	17.02.2026	Sample BY	Customer
Test Completed on	21.02.2026	Sample Quantity	1Liter

Discipline		Chemical Testing		
Product Name		Bore Water		
S.no	Parameters	Protocol	Unit	Result
1	pH	IS 3025 (Part 11)	-	6.99
2	Electrical Conductivity (EC)	IS 3025 (Part 14)	µs/cm	1205
3	Turbidity	IS 3025 (Part 10)	NTU	4.8
4	Temperature	IS 3025 (Part 9)	°C	25.1
5	Total Suspended Solids (TSS)	IS 3025 (Part 17)	mg/l	24
6	Total Dissolved Solids (TDS)	IS 3025 (Part 16)	mg/l	724
7	Chemical Oxygen Demand as COD	IS 3025 (Part 58)	mg/l	72
8	Biological Oxygen Demand at 27°C 3 days (BOD)	IS 302 (Part 44)	mg/l	12.2
9	Total Hardness as CaCO ₃	IS 3025 (Part 21)	mg/l	524
10	Calcium as Ca	IS 3025 (Part 40)	mg/l	149

Note: 1. Test Results Shown in this test report only to the items tested

2. This test report shall not be reproduce anywhere except in full and in same format without the approval of the laboratory

3. Unless informed by the customer the test items will not be retained for more than 10 days from

The date of issue of test report (exceptional for microbiology and wastewater for which retaining time 7 days)

ABM ENVIRO LAB

(A Unit of Aadhi Boomi Mining and Enviro Tech (P) Ltd.,)



NIPBASS PLAZA
4/77-L, Indrani Nagar, Santhal Road
Narasothipatti, Salem - 636004, Tamil Nadu
Mob: 9842729655, 9443290855



suriyakumarsemban@gmail.com / abmenvirotech@gmail.com

11	Magnesium as Mg	IS 3025 (Part 46)	mg/l	37
12	Chloride as Cl ⁻	IS 3025 (Part 32)	mg/l	159
13	Total Alkalinity as CaCO ₃	IS 3025 (Part 23)	mg/l	168
14	Total Phosphorus as P	IS 3025 (Part 31)	mg/l	0.924
15	Nitrate as NO ₃	IS 3025 (Part 34)	mg/l	2.9
16	Nitrite as NO ₂	IS 3025 (Part 34)	mg/l	2.6
17	Ammonical Nitrogen	IS 3025 (Part 34)	mg/l	3.2
18	Sulphate	IS 3025 (Part 24)	mg/l	88
19	Iron	IS 3025 (Part 53)	mg/l	0.048
20	Fluoride as F ⁻	IS 3025 (Part 60)	mg/l	0.342
21	Silica as SiO ₂	IS 3025 (Part 35)	mg/l	3.4

BDL = Below Detectable Limit; DL = Detection Limit

Doel P.
Verified BY

A. Nagadevi

TECHNICAL MANAGER
ABM ENVIRO LAB

----- End of the Report -----

Page 1 of 2



For ABM ENVIRO LAB

S. Suriya Kumar
Authorized Signatory

Reviewed & Authorized by
Mr. S. SURIYA KUMAR
Quality Manager
Authorized Signatory

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ABM ENVIRO LAB

(A Unit of Aadhi Boomi Mining and Enviro Tech (P) Ltd.,)



NIPBASS PLAZA
4/77-L, Indrani Nagar, Santhai Road
Narasothipatti, Salem - 636004, Tamil Nadu
Mob: 9842729655, 9443290855



suriyakumarsemban@gmail.com / abmenvirotech@gmail.com

TEST REPORT

Report Number: ABMEL/TR-30/2025-2026		Report Date:21.02.2026	
Customer Name /Address	M/s. G.P. EXPORTS No.12/128, Vellagoundanpatti, K. Pitchampatti, Karur Taluk, Karur District.		
Sample Mark	BUFFER- I	Sample Code	ABMEL/W/30(a)
Date of Sampling	16.02.2026	Sample Description	Colourless liquid
Sample Received on	17.02.2026	Sampling Method	ABMEL/QSP/20
Test Commenced on	17.02.2026	Sample BY	Customer
Test Completed on	21.02.2026	Sample Quantity	1Liter

Discipline		Chemical Testing		
Product Name		Bore Water		
S.no	Parameters	Protocol	Unit	Result
1	pH	IS 3025 (Part 11)	-	7.23
2	Electrical Conductivity (EC)	IS 3025(Part 14)	µs/cm	1649
3	Turbidity	IS 3025 (Part 10)	NTU	5.7
4	Temperature	IS3025 (Part 9)	°C	25.4
5	Total Suspended Solids (TSS)	IS 3025 (Part17)	mg/l	28
6	Total Dissolved Solids (TDS)	IS 3025 (Part16)	mg/l	988
7	Chemical Oxygen Demand as COD	IS 3025 (Part 58)	mg/l	88
8	Biological Oxygen Demand at 27°C 3 days (BOD)	IS 302 (Part 44)	mg/l	14.2
9	Total Hardness as CaCO ₃	IS 3025 (Part21)	mg/l	708
10	Calcium as Ca	IS 3025 (Part 40)	mg/l	208

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11	Magnesium as Mg	IS 3025 (Part 46)	mg/l	46
12	Chloride as Cl ⁻	IS 3025 (Part 32)	mg/l	240
13	Total Alkalinity as CaCO ₃	IS 3025 (Part 23)	mg/l	148
14	Total Phosphorus as P	IS3025 (Part 31)	mg/l	0.984
15	Nitrate as NO ₃	IS 3025 (Part 34)	mg/l	3.2
16	Nitrite as NO ₂	IS 3025 (Part 34)	mg/l	2.8
17	Ammonical Nitrogen	IS 3025 (Part 34)	mg/l	3.6
18	Sulphate	IS 3025 (Part 24)	mg/l	114
19	Iron	IS 3025 (Part 53)	mg/l	0.066
20	Fluoride as F	IS 3025 (Part 60)	mg/l	0.446
21	Silica as SiO ₂	IS 3025 (Part 35)	mg/l	3.0

BDL = Below Detectable Limit; DL = Detection Limit

Deepa
Verified BY

A. Naga devi

TECHNICAL MANAGER
ABM ENVIRO LAB

----- End of the Report -----



For ABM ENVIRO LAB

S. S. Sriniva Kumar
Authorized Signatory

Reviewed & Authorized by
Mr. S. SRINIVA KUMAR
Quality Manager
Authorized Signatory

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TEST REPORT

Report Number: ABMEL/TR-30/2025-2026		Report Date:21.02.2026	
Customer Name /Address	M/s. G.P. EXPORTS No.12/128, Kottanatham, K. Pitchampatti, Karur Taluk, Karur District.		
Sample Mark	BUFFER - II	Sample Code	ABMEL/W/30(a)
Date of Sampling	16.02.2026	Sample Description	Colourless liquid
Sample Received on	17.02.2026	Sampling Method	ABMEL/QSP/20
Test Commenced on	17.02.2026	Sample BY	Customer
Test Completed on	21.02.2026	Sample Quantity	1Liter

Discipline		Chemical Testing		
Product Name		Bore Water		
S.no	Parameters	Protocol	Unit	Result
1	pH	IS 3025 (Part 11)	-	6.90
2	Electrical Conductivity (EC)	IS 3025 (Part 14)	µs/cm	1223
3	Turbidity	IS 3025 (Part 10)	NTU	3.8
4	Temperature	IS 3025 (Part 9)	°C	25.2
5	Total Suspended Solids (TSS)	IS 3025 (Part 17)	mg/l	16
6	Total Dissolved Solids (TDS)	IS 3025 (Part 16)	mg/l	736
7	Chemical Oxygen Demand as COD	IS 3025 (Part 58)	mg/l	64
8	Biological Oxygen Demand at 27°C 3 days (BOD)	IS 302 (Part 44)	mg/l	12.6
9	Total Hardness as CaCO ₃	IS 3025 (Part 21)	mg/l	496
10	Calcium as Ca	IS 3025 (Part 40)	mg/l	151

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11	Magnesium as Mg	IS 3025 (Part 46)	mg/l	29
12	Chloride as Cl ⁻	IS 3025 (Part 32)	mg/l	142
13	Total Alkalinity as CaCO ₃	IS 3025 (Part 23)	mg/l	176
14	Total Phosphorus as P	IS3025 (Part 31)	mg/l	0.810
15	Nitrate as NO ₃	IS 3025 (Part 34)	mg/l	2.6
16	Nitrite as NO ₂	IS 3025 (Part 34)	mg/l	2.2
17	Ammonical Nitrogen	IS 3025 (Part 34)	mg/l	2.4
18	Sulphate	IS 3025 (Part 24)	mg/l	72
19	Iron	IS 3025 (Part 53)	mg/l	0.029
20	Fluoride as F ⁻	IS 3025 (Part 60)	mg/l	0.246
21	Silica as SiO ₂	IS 3025 (Part 35)	mg/l	2.0

BDL = Below Detectable Limit; DL = Detection Limit

Verified By
A. Nagadevi
TECHNICAL MANAGER
ABM ENVIRO LAB

----- End of the Report -----



For ABM ENVIRO LAB

Authorized Signatory
Reviewed & Authorized by
Mr. S. SURAJA KUMAR
Quality Manager
Authorized Signatory

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TC-18822

suriyakumarsemban@gmail.com / abmenvirotech@gmail.com

TEST REPORT

Report Number: ABMEL/TR-30/2025-2026		Report Date:21.02.2026	
Customer Name /Address	M/s. G.P. EXPORTS No.12/128, K.Pichampatti, K. Pitchampatti, Karur Taluk, Karur District.		
Sample Mark	BUFFER - III	Sample Code	ABMEL/W/30(a)
Date of Sampling	16.02.2026	Sample Description	Colourless liquid
Sample Received on	17.02.2026	Sampling Method	ABMEL/QSP/20
Test Commenced on	17.02.2026	Sample BY	Customer
Test Completed on	21.02.2026	Sample Quantity	1Liter

Discipline		Chemical Testing		
Product Name		Bore Water		
S.no	Parameters	Protocol	Unit	Result
1	pH	IS 3025 (Part 11)	-	7.53
2	Electrical Conductivity (EC)	IS 3025(Part 14)	µs/cm	1753
3	Turbidity	IS 3025 (Part 10)	NTU	5.9
4	Temperature	IS3025 (Part 9)	°C	25.3
5	Total Suspended Solids (TSS)	IS 3025 (Part17)	mg/l	28
6	Total Dissolved Solids (TDS)	IS 3025 (Part16)	mg/l	1052
7	Chemical Oxygen Demand as COD	IS 3025 (Part 58)	mg/l	96
8	Biological Oxygen Demand at 27°C 3 days (BOD)	IS 302 (Part 44)	mg/l	17.1
9	Total Hardness as CaCO ₃	IS 3025 (Part21)	mg/l	824
10	Calcium as Ca	IS 3025 (Part 40)	mg/l	223

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NIPBASS PLAZA
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Narasothipatti, Salem - 636004, Tamil Nadu
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11	Magnesium as Mg	IS 3025 (Part 46)	mg/l	65
12	Chloride as Cl ⁻	IS 3025 (Part 32)	mg/l	260
13	Total Alkalinity as CaCO ₃	IS 3025 (Part 23)	mg/l	144
14	Total Phosphorus as P	IS3025 (Part 31)	mg/l	0.914
15	Nitrate as NO ₃	IS 3025 (Part 34)	mg/l	2.6
16	Nitrite as NO ₂	IS 3025 (Part 34)	mg/l	2.4
17	Ammonical Nitrogen	IS 3025 (Part 34)	mg/l	2.3
18	Sulphate	IS 3025 (Part 24)	mg/l	106
19	Iron	IS 3025 (Part 53)	mg/l	0.052
20	Fluoride as F	IS 3025 (Part 60)	mg/l	0.416
21	Silica as SiO ₂	IS 3025 (Part 35)	mg/l	2.8

BDL = Below Detectable Limit; DL = Detection Limit

Deepa A
Verified By
A. Nagadevi
TECHNICAL MANAGER
ABM ENVIRO LAB

End of the Report

Page 1 of 2



For ABM ENVIRO LAB
S. Suriya Kumar
Authorized Signatory
Reviewed & Authorized by
Mr. S. SURIYA KUMAR
Quality Manager
Authorized Signatory

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TC-15022

TEST REPORT

Report Number: ABMEL/TR-30/2025-2026		Report Date:21.02.2026	
Customer Name /Address	M/s. G.P. EXPORTS No.12/128, Thirumakkampatti, K. Pitchampatti, Karur Taluk, Karur District.		
Sample Mark	BUFFER - IV	Sample Code	ABMEL/W/30(a)
Date of Sampling	16.02.2026	Sample Description	Colourless liquid
Sample Received on	17.02.2026	Sampling Method	ABMEL/QSP/20
Test Commenced on	17.02.2026	Sample BY	Customer
Test Completed on	21.02.2026	Sample Quantity	1Liter

Discipline		Chemical Testing		
Product Name		Bore Water		
S.no	Parameters	Protocol	Unit	Result
1	pH	IS 3025 (Part 11)	-	7.59
2	Electrical Conductivity (EC)	IS 3025 (Part 14)	µs/cm	1380
3	Turbidity	IS 3025 (Part 10)	NTU	3.8
4	Temperature	IS 3025 (Part 9)	°C	25.2
5	Total Suspended Solids (TSS)	IS 3025 (Part 17)	mg/l	24
6	Total Dissolved Solids (TDS)	IS 3025 (Part 16)	mg/l	828
7	Chemical Oxygen Demand as COD	IS 3025 (Part 58)	mg/l	64
8	Biological Oxygen Demand at 27°C 3 days (BOD)	IS 302 (Part 44)	mg/l	11.8
9	Total Hardness as CaCO ₃	IS 3025 (Part 21)	mg/l	584
10	Calcium as Ca	IS 3025 (Part 40)	mg/l	96

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11	Magnesium as Mg	IS 3025 (Part 46)	mg/l	84
12	Chloride as Cl ⁻	IS 3025 (Part 32)	mg/l	207
13	Total Alkalinity as CaCO ₃	IS 3025 (Part 23)	mg/l	220
14	Total Phosphorus as P	IS3025 (Part 31)	mg/l	0.826
15	Nitrate as NO ₃	IS 3025 (Part 34)	mg/l	2.7
16	Nitrite as NO ₂	IS 3025 (Part 34)	mg/l	2.5
17	Ammonical Nitrogen	IS 3025 (Part 34)	mg/l	2.9
18	Sulphate	IS 3025 (Part 24)	mg/l	65
19	Iron	IS 3025 (Part 53)	mg/l	0.036
20	Fluoride as F	IS 3025 (Part 60)	mg/l	0.312
21	Silica as SiO ₂	IS 3025 (Part 35)	mg/l	2.4
BDL = Below Detectable Limit; DL = Detection Limit				

Devi P
Verified BY

A. nagadevi

TECHNICAL MANAGER
ABM ENVIRO LAB



For ABM ENVIRO LAB

S. Surin Kumar
Authorized Signatory

Reviewed & Authorized by
Mr. S. SURIN KUMAR
Quality Manager
Authorized Signatory

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TEST REPORT

Report Number : ABMEL/TR-30/2025-2026		Report Date: 21.02.2026	
Customer Name/Address	M/s. G.P. EXPORTS No.12/128, Thalappatti, K. Pitchampatti, Karur Taluk, Karur District.		
Sample Mark	Core Zone	Sample Code	ABMEL/S/30(b)
Date of Sampling	16.02.2026	Sample Description	Brown
Sample Received on	17.02.2026	Sampling Method	ABMEL/QSP/20
Test Commenced on	17.02.2026	Sample BY	Customer
Test Completed on	21.02.2026	Sample Quantity	1Kg

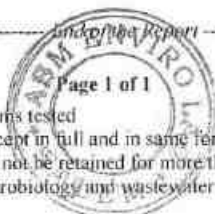
DISCIPLINE		CHEMICAL TESTING		
PRODUCT NAME		SOIL		
S.NO	PARAMETERS	PROTOCOL	UNIT	RESULT
1	Water Content (Moisture)	IS 2720 (Part 2)	%	2.4
2	pH	IS 2720 (Part 26)	----	7.16
3	Electrical Conductivity	IS14767	µmho/cm	258
4	Bulk Density	ABMEL/CH/S/SOP/04: (Issue No: 01, Issue Date: 03.06.2024)	g/cc	1.2
5	Water Holding capacity	ABMEL/CH/S/SOP/05: (Issue No: 01, Issue Date: 03.06.2024)	%	48
6	Water Soluble Calcium (as Ca) in saturation extract	ABMEL/CH/S/SOP/07: (Issue No: 01, Issue Date: 03.06.2024)	meq/l	0.8
7	Water Soluble Magnesium (Mg) in saturation extract	ABMEL/CH/S/SOP/08: (Issue No: 01, Issue Date: 03.06.2024)	meq/l	0.6
8	Water Soluble Chlorides (as Cl-) in saturation extract	ABMEL/CH/S/SOP/09: (Issue No: 01, Issue Date: 03.06.2024)	meq/l	0.7
9	Organic Matter	IS 2720 (Part 22)	%	0.2
10	Calcium Carbonate	IS 2720 (Part 23)	%	12.48
11	TKN	IS 14684	mg/kg	598
12	Water Soluble Sodium (as Na) in saturation extract	ABMEL/CH/S/SOP/13: (Issue No: 01, Issue Date: 03.06.2024)	%	2.4
13	Water Soluble Potassium (as K) in saturation extract	ABMEL/CH/S/SOP/14: (Issue No: 01, Issue Date: 03.06.2024)	%	0.63

BDL = Below Detectable Limit ; DL = Detection Limit

For ABM ENVIRO LAB

Verified BY
A. Nagadevi
TECHNICAL MANAGER
ABM ENVIRO LAB

S. Suriya Kumar
Authorized Signatory
Reviewed & Approved by
Mr. S. SURIYA KUMAR
Quality Manager
Authorized Signatory



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TEST REPORT

Report Number : ABMEL/TR-30/2025-2026		Report Date: 21.02.2026	
Customer Name/Address		M/s. G.P. EXPORTS No.12/128, Vellagoundanpatti, K. Pitchampatti, Karur Taluk, Karur District.	
Sample Mark	Buffer Zone-I	Sample Code	ABMEL/S/30(b)
Date of Sampling	16.02.2026	Sample Description	Brown
Sample Received on	17.02.2026	Sampling Method	ABMEL/QSP/20
Test Commenced on	17.02.2026	Sample BY	Customer
Test Completed on	21.02.2026	Sample Quantity	1Kg

DISCIPLINE		CHEMICAL TESTING		
PRODUCT NAME		SOIL		
S.NO	PARAMETERS	PROTOCOL	UNIT	RESULT
1	Water Content (Moisture)	IS 2720 (Part 2)	%	2.6
2	pH	IS 2720 (Part 26)	----	7.05
3	Electrical Conductivity	IS14767	µmho/cm	297
4	Bulk Density	ABMEL/CH/S/SOP/04: (Issue No: 01, Issue Date: 03.06.2024)	g/cc	1.06
5	Water Holding capacity	ABMEL/CH/S/SOP/05: (Issue No: 01, Issue Date: 03.06.2024)	%	56
6	Water Soluble Calcium (as Ca) in saturation extract	ABMEL/CH/S/SOP/07: (Issue No: 01, Issue Date: 03.06.2024)	meq/l	1.2
7	Water Soluble Magnesium (Mg) in saturation extract	ABMEL/CH/S/SOP/08: (Issue No: 01, Issue Date: 03.06.2024)	meq/l	0.6
8	Water Soluble Chlorides (as Cl-) in saturation extract	ABMEL/CH/S/SOP/09: (Issue No: 01, Issue Date: 03.06.2024)	meq/l	0.9
9	Organic Matter	IS 2720 (Part 22)	%	0.26
10	Calcium Carbonate	IS 2720 (Part 23)	%	11.95
11	TKN	IS 14684	mg/kg	564
12	Water Soluble Sodium (as Na) in saturation extract	ABMEL/CH/S/SOP/13: (Issue No: 01, Issue Date: 03.06.2024)	%	2.3
13	Water Soluble Potassium (as K) in saturation extract	ABMEL/CH/S/SOP/14: (Issue No: 01, Issue Date: 03.06.2024)	%	0.43

BDL = Below Detectable Limit ; DL = Detection Limit

For ABM ENVIRO LAB

Deep A
Verified BY

A. Nagadevi

TECHNICAL MANAGER
ABM ENVIRO LAB



S. Surja Kumar
Authorized Signatory
Reviewed & Authorized by
Mr. S. SURYA KUMAR
Quality Manager
Authorized Signatory

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TEST REPORT

Report Number : ABMEL/TR-30/2025-2026		Report Date: 21.02.2026	
Customer Name/Address		M/s. G.P. EXPORTS No.12/128, Kottanatham, K. Pitchampatti, Karur Taluk, Karur District.	
Sample Mark	Buffer Zone-II	Sample Code	ABMEL/S/30(b)
Date of Sampling	16.02.2026	Sample Description	Brown
Sample Received on	17.02.2026	Sampling Method	ABMEL/QSP/20
Test Commenced on	17.02.2026	Sample BY	Customer
Test Completed on	21.02.2026	Sample Quantity	1Kg

DISCIPLINE		CHEMICAL TESTING		
PRODUCT NAME		SOIL		
S.NO	PARAMETERS	PROTOCOL	UNIT	RESULT
1	Water Content (Moisture)	IS 2720 (Part 2)	%	1.9
2	pH	IS 2720 (Part 26)	---	7.16
3	Electrical Conductivity	IS14767	µmho/cm	185
4	Bulk Density	ABMEL/CH/S/SOP/04: (Issue No: 01, Issue Date: 03.06.2024)	g/cc	1.24
5	Water Holding capacity	ABMEL/CH/S/SOP/05:(Issue No: 01, Issue Date: 03.06.2024)	%	64
6	Water Soluble Calcium (as Ca) in saturation extract	ABMEL/CH/S/SOP/07: (Issue No: 01, Issue Date: 03.06.2024)	meq/l	1.2
7	Water Soluble Magnesium (Mg) in saturation extract	ABMEL/CH/S/SOP/08: (Issue No: 01, Issue Date: 03.06.2024)	meq/l	1.0
8	Water Soluble Chlorides (as Cl-) in saturation extract	ABMEL/CH/S/SOP/09: (Issue No: 01, Issue Date: 03.06.2024)	meq/l	0.8
9	Organic Matter	IS 2720 (Part 22): 1972	%	0.3
10	Calcium Carbonate	IS 2720 (Part 23): 1976	%	12.05
11	TKN	IS 14684	mg/kg	548
12	Water Soluble Sodium (as Na) in saturation extract	ABMEL/CH/S/SOP/13: (Issue No: 01, Issue Date: 03.06.2024)	%	2.8
13	Water Soluble Potassium (as K) in saturation extract	ABMEL/CH/S/SOP/14: (Issue No: 01, Issue Date: 03.06.2024)	%	0.49

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For ABM ENVIRO LAB

Verified BY
A. Nagadevi
TECHNICAL MANAGER
ABM ENVIRO LAB



S. Suriya Kumar
Authorized Signatory
Reviewed & Authorized by
Mr. S. SURIYA KUMAR
Quality Manager
Authorized Signatory

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ABM ENVIRO LAB

(A Unit of Aadhi Boomi Mining and Enviro Tech (P) Ltd.)



NIPBASS PLAZA
4/77-L, Indrani Nagar, Santhai Road
Narasothipatti, Salem - 636004, Tamil Nadu
Mob: 9842729655, 9443290855



✉ suriyakumarsembun@gmail.com / abmenvirotech@gmail.com

TEST REPORT

Report Number : ABMEL/TR-30/2025-2026		Report Date: 21.02.2026	
Customer Name/Address		M/s. G.P. EXPORTS No.12/128, K.Pichampatti, K. Pitchampatti, Karur Taluk, Karur District.	
Sample Mark	Buffer Zone-III	Sample Code	ABMEL/S/30(b)
Date of Sampling	16.02.2026	Sample Description	Brown
Sample Received on	17.02.2026	Sampling Method	ABMEL/QSP/20
Test Commenced on	17.02.2026	Sample BY	Customer
Test Completed on	21.02.2026	Sample Quantity	1Kg

DISCIPLINE		CHEMICAL TESTING		
PRODUCT NAME		SOIL		
S.NO	PARAMETERS	PROTOCOL	UNIT	RESULT
1	Water Content (Moisture)	IS 2720 (Part 2)	%	2.5
2	pH	IS 2720 (Part 26)	----	6.96
3	Electrical Conductivity	IS14767	µmho/cm	215
4	Bulk Density	ABMEL/CH/S/SOP/04: (Issue No: 01, Issue Date: 03.06.2024)	g/cc	1.04
5	Water Holding capacity	ABMEL/CH/S/SOP/05:(Issue No: 01, Issue Date: 03.06.2024)	%	44
6	Water Soluble Calcium (as Ca) in saturation extract	ABMEL/CH/S/SOP/07: (Issue No: 01, Issue Date: 03.06.2024)	meq/l	1.8
7	Water Soluble Magnesium (Mg) in saturation extract	ABMEL/CH/S/SOP/08: (Issue No: 01, Issue Date: 03.06.2024)	meq/l	1.0
8	Water Soluble Chlorides (as Cl-) in saturation extract	ABMEL/CH/S/SOP/09: (Issue No: 01, Issue Date: 03.06.2024)	meq/l	1.4
9	Organic Matter	IS 2720 (Part 22)	%	0.2
10	Calcium Carbonate	IS 2720 (Part 23)	%	11.55
11	TKN	IS 14684	mg/kg	537
12	Water Soluble Sodium (as Na) in saturation extract	ABMEL/CH/S/SOP/13: (Issue No: 01, Issue Date: 03.06.2024)	%	3.1
13	Water Soluble Potassium (as K) in saturation extract	ABMEL/CH/S/SOP/14: (Issue No: 01, Issue Date: 03.06.2024)	%	0.51

BDL = Below Detectable Limit ; DL = Detection Limit

For ABM ENVIRO LAB

A. Nagadevi
Verified BY

S. Suriya Kumar
Authorized Signatory

A. Nagadevi
TECHNICAL MANAGER
ABM ENVIRO LAB



Reviewed & Authorized by
Mr. S. SURIYA KUMAR
Quality Manager
Authorized Signatory

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TEST REPORT

Report Number :ABMEL/TR-30/2025-2026		Report Date: 21.02.2026	
Customer Name/Address		M/s. G.P. EXPORTS No.12/128, Thalappatti, K. Pitchampatti, Karur Taluk, Karur District.	
Sample Mark	Core Zone	Sample Code	ABMEL/S/30(b)
Date of Sampling	16.02.2026	Sample Description	Brown
Sample Received on	17.02.2026	Sampling Method	ABMEL/QSP/20
Test Commenced on	17.02.2026	Sample BY	Customer
Test Completed on	21.02.2026	Sample Quantity	1Kg

DISCIPLINE			CHEMICAL TESTING		
PRODUCT NAME			SOIL		
S.NO	PARAMETERS		PROTOCOL	UNIT	RESULT
1	Texture	Sand	IS 10317	%	48
		Silt		%	32
		Clay		%	20
				Sandy Loam	
BDL = Below Detectable Limit ; DL = Detection Limit					

Deepa A
Verified BY
A. Nagadevi
TECHNICAL MANAGER
ABM ENVIRO LAB

For ABM ENVIRO LAB
S. Suresh Kumar
Authorized Signatory
Reviewed & Approved by
Mr. S. SURESH KUMAR
Quality Manager
Authorized Signatory



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ABM ENVIRO LAB

(A Unit of Aadhi Broom Mining and Enviro Tech (P) Ltd.)

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TEST REPORT

Report Number : ABMEL/TR-30/2025-2026		Report Date: 21.02.2026	
Customer Name/Address		M/s. G.P. EXPORTS No.12/128, Vellagoundanpatti, K. Pitchampatti, Karur Taluk, Karur District.	
Sample Mark	Buffer Zone-I	Sample Code	ABMEL/S/30(b)
Date of Sampling	16.02.2026	Sample Description	Brown
Sample Received on	17.02.2026	Sampling Method	ABMEL/QSP/20
Test Commenced on	17.02.2026	Sample BY	Customer
Test Completed on	21.02.2026	Sample Quantity	1Kg

DISCIPLINE			CHEMICAL TESTING		
PRODUCT NAME			SOIL		
S.NO	PARAMETERS		PROTOCOL	UNIT	RESULT
1	Texture	Sand	IS 10317	%	54
		Silt		%	24
		Clay		%	22
		Sandy Clay Loam			
BDL = Below Detectable Limit ; DL = Detection Limit					

Verified BY

A. Nagadevi

TECHNICAL MANAGER
ABM ENVIRO LAB

For ABM ENVIRO LAB

Authorized Signatory

Reviewed & Authorized by
Mr. S. SURYA KUMAR
Quality Manager
Authorized Signatory

End of the Report



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ABM ENVIRO LAB

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Narasothipatti, Salem - 636004, Tamil Nadu
Mob: 9842729655, 9443290855

suriyakumarsemban@gmail.com / abmenvirotech@gmail.com



TEST REPORT

Report Number : ABMEL/TR-30/2025-2026		Report Date: 21.02.2026	
Customer Name/Address		M/s. G.P. EXPORTS No.12/128, Kottanatham, K. Pitchampatti, Karur Taluk, Karur District.	
Sample Mark	Buffer Zone-II	Sample Code	ABMEL/S/30(b)
Date of Sampling	16.02.2026	Sample Description	Brown
Sample Received on	17.02.2026	Sampling Method	ABMEL/QSP/20
Test Commenced on	17.02.2026	Sample BY	Customer
Test Completed on	21.02.2026	Sample Quantity	1Kg

DISCIPLINE			CHEMICAL TESTING		
PRODUCT NAME			SOIL		
S.NO	PARAMETERS		PROTOCOL	UNIT	RESULT
1	Texture	Sand	IS 10317	%	52
		Silt		%	28
		Clay		%	20
					Sandy Loam
BDL = Below Detectable Limit ; DL = Detection Limit					

Deef.A
Verified BY
A. Nagadevi
TECHNICAL MANAGER
ABM ENVIRO LAB

For ABM ENVIRO LAB

S. Suresh Kumar
Authorized Signatory

Reviewed & Authorized by
Mr. S. SURESH KUMAR
Quality Manager
Authorized Signatory



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TEST REPORT

Report Number : ABMEL/TR-30/2025-2026		Report Date: 21.02.2026	
Customer Name/Address		M/s. G.P. EXPORTS No.12/128, K.Pichampatti, K. Pitchampatti, Karur Taluk, Karur District.	
Sample Mark	Buffer Zone-III	Sample Code	ABMEL/S/30(b)
Date of Sampling	16.02.2026	Sample Description	Brown
Sample Received on	17.02.2026	Sampling Method	ABMEL/QSP/20
Test Commenced on	17.02.2026	Sample BY	Customer
Test Completed on	21.02.2026	Sample Quantity	1Kg

DISCIPLINE			CHEMICAL TESTING		
PRODUCT NAME			SOIL		
S.NO	PARAMETERS		PROTOCOL	UNIT	RESULT
1	Texture	Sand	IS 10317	%	48
		Silt		%	28
		Clay		%	24
		Sandy Loam			
BDL = Below Detectable Limit ; DL = Detection Limit					

A. Nagadevi
 Verified BY

 TECHNICAL MANAGER
 ABM ENVIRO LAB

For ABM ENVIRO LAB

 Authorized Signatory
 Reviewed & Authorized by
Mr. S. SURESH KUMAR
 Quality Manager
 Authorized Signatory



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NIPBASS PLAZA

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TEST REPORT

Report Number : ABMEL/TR-30/2025-2026		Report Date: 21.02.2026	
Customer Name/Address		M/s. G.P. EXPORTS No.12/128, Thirumakkampatti, K. Pitchampatti, Karur Taluk, Karur District.	
Sample Mark	Buffer Zone-IV	Sample Code	ABMEL/S/30(b)
Date of Sampling	16.02.2026	Sample Description	Brown
Sample Received on	17.02.2026	Sampling Method	ABMEL/QSP/20
Test Commenced on	17.02.2026	Sample BY	Customer
Test Completed on	21.02.2026	Sample Quantity	1Kg

DISCIPLINE			CHEMICAL TESTING		
PRODUCT NAME			SOIL		
S.NO	PARAMETERS		PROTOCOL	UNIT	RESULT
1	Texture	Sand	IS 10317	%	52
		Silt		%	28
		Clay		%	20
					Sandy Loam
BDL = Below Detectable Limit ; DL = Detection Limit					

Verified BY
A. Nagadevi
TECHNICAL MANAGER
ABM ENVIRO LAB

For ABM ENVIRO LAB
S. Suriya Kumar
Authorized Signatory
Reviewed & Authorized by
Mr. S. SURIYA KUMAR
Quality Manager
Authorized Signatory



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TEST REPORT

Report Number : ABMEL/TR-30/2025-2026		Report Date: 21.02.2026	
Customer Name/Address	M/s. G.P. EXPORTS No.12/128, Thalappatti, K. Pitchampatti, Karur Taluk, Karur District.		
Sample Mark	Core Zone	Sample Code	ABMEL/A/30(c)
Date of Sampling	16.02.2026	Sample Description	Ambient Air
Sample Received on	17.02.2026	Sampling Method	ABMEL/QSP/20
Test Commenced on	17.02.2026	Sample BY	Customer
Test Completed on	21.02.2026	Sample Quantity	Filter Paper, 25ml Absorbing Solution

Discipline		Chemical Testing		
Product Name		Atmospheric Pollution		
S.no	Parameters	Protocol	Unit	Result
1	Particulate Matter (less than 2.5-micron size particles as PM _{2.5})	IS 5182 (Part 24)	µg/m ³	27
2	Respirable Particulate Matter (less than 10-micron size particles as PM ₁₀)	IS 5182 (Part 23)	µg/m ³	49
3	Sulphur dioxide(SO ₂)	IS 5182 (Part 2)	µg/m ³	15
4	Oxides of Nitrogen (NO ₂)	IS 5182 Part 6	µg/m ³	22
5	Ozone (O ₃)	IS 5182(Part 9)	µg/m ³	35
6	Ammonia (NH ₃)	IS 5182 (Part 25)	µg/m ³	29
7	Lead	IS 5182 (Part 22)	µg/m ³	BDL(DL:0.1)
8	Nickel	IS 5182 (Part -26)	ng/m ³	BDL(DL:0.1)

BDL = Below Detectable Limit; DL = Detection Limit

Verified BY

(V. Kalai Veeni)

For ABM ENVIRO LAB

Authorized Signatory

Reviewed by

Mr. S. S. SURESH Kumar

Quality Manager

Authorized Signatory

----- End of the Report -----



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BIV ENVIRO LA
(A Unit of Aathi Boomi Mining and Enviro Tech (P) Ltd.)



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Narasothipatti, Salem - 636004, Tamil Nadu
Mob: 9842729655, 9443290855



 suriyakumarsemban@gmail.com / abmenyvirotech@gmail.com

TEST REPORT

Report Number : ABMEL/TR-30/2025-2026		Report Date: 21.02.2026	
Customer Name/Address	M/s. G.P. EXPORTS No.12/128, Vellagoundanpatti, K. Pitchampatti, Karur Taluk, Karur District.		
Sample Mark	Buffer Zone-1	Sample Code	ABMEL/A/30(c)
Date of Sampling	16.02.2026	Sample Description	Ambient Air
Sample Received on	17.02.2026	Sampling Method	ABMEL/QSP/20
Test Commenced on	17.02.2026	Sample BY	Customer
Test Completed on	21.02.2026	Sample Quantity	Filter Paper, 25ml Absorbing Solution

Discipline		Chemical Testing		
Product Name		Atmospheric Pollution		
S.no	Parameters	Protocol	Unit	Result
1	Particulate Matter (less than 2.5-micron size particles as PM _{2.5})	IS 5182 (Part 24)	µg/m ³	28
2	Respirable Particulate Matter (less than 10-micron size particles as PM ₁₀)	IS 5182 (Part 23)	µg/m ³	44
3	Sulphur dioxide(SO ₂)	IS 5182 (Part 2)	µg/m ³	12
4	Oxides of Nitrogen (NO ₂)	IS 5182 Part 6	µg/m ³	25
5	Ozone (O ₃)	IS 5182(Part 9)	µg/m ³	32
6	Ammonia (NH ₃)	IS 5182 (Part 25)	µg/m ³	26
7	Lead	IS 5182 (Part 22)	µg/m ³	BDL(DL:0.1)
8	Nickel	IS 5182 (Part -26)	ng/m ³	BDL(DL:0.1)

BDL = Below Detectable Limit; DL = Detection Limit

For ABM ENVIRO LAB

D. Prigalis
Authorized Signatory

Reviewed and Approved by
Mr. S. S. KUMAR
Quality Manager
Authorized Signatory

Verified BY *V. S. Singh*

(v. kəkrivahi)



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TEST REPORT

Report Number : ABMEL/TR-30/2025-2026		Report Date: 21.02.2026	
Customer Name/Address		M/s. G.P. EXPORTS No.12/128, Kottanatham, K. Pitchampatti, Karur Taluk, Karur District.	
Sample Mark	Buffer Zone-II	Sample Code	ABMEL/A/30(c)
Date of Sampling	16.02.2026	Sample Description	Ambient Air
Sample Received on	17.02.2026	Sampling Method	ABMEL/QSP/20
Test Commenced on	17.02.2026	Sample BY	Customer
Test Completed on	21.02.2026	Sample Quantity	Filter Paper, 25ml Absorbing Solution

Discipline		Chemical Testing		
Product Name		Atmospheric Pollution		
S.no	Parameters	Protocol	Unit	Result
1	Particulate Matter (less than 2.5-micron size particles as PM _{2.5})	IS 5182 (Part 24)	µg/m ³	24
2	Respirable Particulate Matter (less than 10-micron size particles as PM ₁₀)	IS 5182 (Part 23)	µg/m ³	48
3	Sulphur dioxide(SO ₂)	IS 5182 (Part 2)	µg/m ³	11
4	Oxides of Nitrogen (NO ₂)	IS 5182 Part 6	µg/m ³	21
5	Ozone (O ₃)	IS 5182(Part 9)	µg/m ³	30
6	Ammonia (NH ₃)	IS 5182 (Part 25)	µg/m ³	24
7	Lead	IS 5182 (Part 22)	µg/m ³	BDL(DL:0.1)
8	Nickel	IS 5182 (Part -26)	ng/m ³	BDL(DL:0.1)
BDL = Below Detectable Limit; DL = Detection Limit				

Verified BY

(V. Kalairani)

For ABM ENVIRO LAB

Authorized Signatory

Reviewed & Authorized by
Mr. S. SURIYA KUMAR
Quality Manager
Authorized Signatory



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TEST REPORT

Report Number : ABMEL/TR-30/2025-2026		Report Date: 21.02.2026	
Customer Name/Address		M/s. G.P. EXPORTS No.12/128, K.Pichampatti, K. Pitchampatti, Karur Taluk, Karur District.	
Sample Mark	Buffer Zone-III	Sample Code	ABMEL/A/30(c)
Date of Sampling	16.02.2026	Sample Description	Ambient Air
Sample Received on	17.02.2026	Sampling Method	ABMEL/QSP/20
Test Commenced on	17.02.2026	Sample BY	Customer
Test Completed on	21.02.2026	Sample Quantity	Filter Paper, 25ml Absorbing Solution

Discipline		Chemical Testing		
Product Name		Atmospheric Pollution		
S.no	Parameters	Protocol	Unit	Result
1	Particulate Matter (less than 2.5-micron size particles as PM _{2.5})	IS 5182 (Part 24)	µg/m ³	29
2	Respirable Particulate Matter (less than 10-micron size particles as PM ₁₀)	IS 5182 (Part 23)	µg/m ³	46
3	Sulphur dioxide(SO ₂)	IS 5182 (Part 2)	µg/m ³	13
4	Oxides of Nitrogen (NO ₂)	IS 5182 Part 6	µg/m ³	23
5	Ozone (O ₃)	IS 5182(Part 9)	µg/m ³	36
6	Ammonia (NH ₃)	IS 5182 (Part 25)	µg/m ³	30
7	Lead	IS 5182 (Part 22)	µg/m ³	BDL(DL:0.1)
8	Nickel	IS 5182 (Part -26)	ng/m ³	BDL(DL:0.1)

BDL = Below Detectable Limit; DL = Detection Limit

Verified BY

CV Kalai Vani



For ABM ENVIRO LAB

S. Suriya Kumar

Authorized Signatory

Reviewed & Authorized by

Mr. S. SURIYA KUMAR

Quality Manager

Authorized Signatory

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TEST REPORT

Report Number : ABMEL/TR-30/2025-2026		Report Date: 21.02.2026	
Customer Name/Address		M/s. G.P. EXPORTS No.12/128, Thirumakkampatti, K. Pitchampatti, Karur Taluk, Karur District.	
Sample Mark	Buffer Zone-IV	Sample Code	ABMEL/A/30(d)
Date of Sampling	16.02.2026	Sample Description	Ambient Air
Sample Received on	17.02.2026	Sampling Method	ABMEL/QSP/20
Test Commenced on	17.02.2026	Sample BY	Customer
Test Completed on	21.02.2026	Sample Quantity	Filter Paper, 25ml Absorbing Solution

Discipline		Chemical Testing		
Product Name		Atmospheric Pollution		
S.no	Parameters	Protocol	Unit	Result
1	Particulate Matter (less than 2.5-micron size particles as PM _{2.5})	IS 5182 (Part 24)	µg/m ³	31
2	Respirable Particulate Matter (less than 10-micron size particles as PM ₁₀)	IS 5182 (Part 23)	µg/m ³	47
3	Sulphur dioxide(SO ₂)	IS 5182 (Part 2)	µg/m ³	14
4	Oxides of Nitrogen (NO ₂)	IS 5182 Part 6	µg/m ³	24
5	Ozone (O ₃)	IS 5182(Part 9)	µg/m ³	34
6	Ammonia (NH ₃)	IS 5182 (Part 25)	µg/m ³	27
7	Lead	IS 5182 (Part 22)	µg/m ³	BDL(DL:0.1)
8	Nickel	IS 5182 (Part -26)	ng/m ³	BDL(DL:0.1)
BDL = Below Detectable Limit; DL = Detection Limit				

Verified BY

(V. Karthikeyan)

For ABM ENVIRO LAB

Authorized Signatory

Reviewed & Authorized by
Mr. S. SURIYA KUMAR
Quality Manager
Authorized Signatory



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NIPBASS PLAZA
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Mob: 9842729655, 9443290855

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TEST REPORT

Report Number : ABMEL/TR-30/2025-2026		Report Date: 21.02.2026	
Customer Name/Address		M/s. G.P. EXPORTS No.12/128, Thalappatti, K. Pitchampatti, Karur Taluk, Karur District.	
Sample Mark	Core Zone	Sample Code	ABMEL/N/30(d)
Date of Sampling	16.02.2026	Sample Description	Sound Level
Data Received on	17.02.2026	Sampling Method	ABMEL/QSP/20

DISCIPLINE		CHEMICAL TESTING			
PRODUCT NAME		NOISE			
S.NO	PARAMETERS	PROTOCOL	UNIT	LOCATION	RESULT
1	Sound Level	IS 9989	dB(A)	N	42.9
2				W	47.2
3				E	44.5
4				S	39.9
5				Core Zone	44.1
BDL = Below Detectable Limit; DL = Detection Limit					

For ABM ENVIRO LAB

Authorized Signatory

Verified By

C.V. Kalavani

Reviewed & Approved by

Mr. S. SUNDARARAMAN
Quality Manager
Authorized Signatory



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The date of issue of test report (exceptional for microbiology and wastewater for which retaining time 7 days)

ABM ENVIRO LAB

(A Unit of Aadhi Boomi Mining and Enviro Tech (P) Ltd.,)



NIPBASS PLAZA
4/77-L, Indrani Nagar, Santhal Road
Narasothipatti, Salem - 636004, Tamil Nadu

Mob: 9842729655, 9443290855

suriyakumarsemban@gmail.com / abmenvirotech@gmail.com



TEST REPORT

Report Number : ABMEL/TR-30/2025-2026		Report Date: 21.02.2026	
Customer Name/Address		M/s. G.P. EXPORTS No.12/128, Vellagoundanpatti, K. Pitchampatti, Karur Taluk, Karur District.	
Sample Mark	Buffer Zone-I	Sample Code	ABMEL/N/30(d)
Date of Sampling	16.02.2026	Sample Description	Sound Level
Data Received on	17.02.2026	Sampling Method	ABMEL/QSP/20

DISCIPLINE		CHEMICAL TESTING			
PRODUCT NAME		NOISE			
S.NO	PARAMETERS	PROTOCOL	UNIT	LOCATION	RESULT
1	Sound Level	IS 9989	dB(A)	Vellagoundanpatti	41.4
BDL = Below Detectable Limit; DL = Detection Limit					

For ABM ENVIRO LAB

Verified By

C. K. Kalaiyandi

Authorized Signatory

Reviewed & Authorized by

Mr. S. SURIYA KUMAR

Quality Manager

Authorized Signatory



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TEST REPORT

Report Number : ABMEL/TR-30/2025-2026		Report Date: 21.02.2026	
Customer Name/Address		M/s. G.P. EXPORTS No.12/128, Kottanatham, K. Pitchampatti, Karur Taluk, Karur District.	
Sample Mark	Buffer Zone-II	Sample Code	ABMEL/N/30(d)
Date of Sampling	16.02.2026	Sample Description	Sound Level
Data Received on	17.02.2026	Sampling Method	ABMEL/QSP/20

DISCIPLINE		CHEMICAL TESTING			
PRODUCT NAME		NOISE			
S.NO	PARAMETERS	PROTOCOL	UNIT	LOCATION	RESULT
1	Sound Level	IS 9989	dB(A)	Kottanatham	38.9
BDL = Below Detectable Limit; DL = Detection Limit					

Verified By

(V. Kalaiarani)

For ABM ENVIRO LAB

(Signature)
Authorized Signatory

Reviewed & Authorized by
Mr. S. SURIYA KUMAR
Quality Manager
Authorized Signatory



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TEST REPORT

Report Number : ABMEL/TR-30/2025-2026		Report Date: 21.02.2026	
Customer Name/Address		M/s. G.P. EXPORTS No.12/128, K.Pichampatti, K. Pitchampatti, Karur Taluk, Karur District.	
Sample Mark	Buffer Zone-III	Sample Code	ABMEL/N/30(d)
Date of Sampling	16.02.2026	Sample Description	Sound Level
Data Received on	17.02.2026	Sampling Method	ABMEL/QSP/20

DISCIPLINE		CHEMICAL TESTING			
PRODUCT NAME		NOISE			
S.NO	PARAMETERS	PROTOCOL	UNIT	LOCATION	RESULT
1	Sound Level	IS 9989	dB(A)	K.Pichampatti	41.3
4BDL = Below Detectable Limit; DL = Detection Limit					

For ABM ENVIRO LAB

Verified By

(V. Kalairani)

Authorized Signatory

Reviewed & Authorized by
Mr. S. SURIYA KUMAR
Quality Manager
Authorized Signatory



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TC-15822

TEST REPORT

Report Number : ABMEL/TR-30/2025-2026		Report Date: 21.02.2026	
Customer Name/Address		M/s. G.P. EXPORTS No.12/128, ThirumakkamPatti, K. Pitchampatti, Karur Taluk, Karur District.	
Sample Mark	Buffer Zone-IV	Sample Code	ABMEL/N/30(d)
Date of Sampling	16.02.2026	Sample Description	Sound Level
Data Received on	17.02.2026	Sampling Method	ABMEL/QSP/20

DISCIPLINE		CHEMICAL TESTING			
PRODUCT NAME		NOISE			
S.NO	PARAMETERS	PROTOCOL	UNIT	LOCATION	RESULT
1	Sound Level	IS 9989	dB(A)	ThirumakkamPatti	41.6
4BDL = Below Detectable Limit; DL = Detection Limit					

Verified By

C. V. Kalai Vani

For ABM ENVIRO LAB

Authorized Signatory

Reviewed & Authorized by
Mr. S. SURIYA KUMAR
Quality Manager
Authorized Signatory



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